

कार्यालय टिप्पणी  
जयपुर विकास प्राधिकरण

Subject :- "Restoration work of Road cut by PHED at Brij Colony S 1B, Balaji Nagar S-1A and Rising main of Loha Mandi Road Zone 6 JDA Phase II."

:- Approval of Factors for price escalation.

As above subjected work, the price escalation factor has been prepared and attached at page no. ....../C to ....../C. The factors has been prepared on in the same BSR on which G-Schedule has been prepared i.e JDA BSR 2016.

Silent feature are below :-

Factors for price escalation

Component factors for price escalation have been prepared as per the G-Schedule of this work. These are as below:-

Labour (P <sub>1</sub> )	7.32%
Cement (P <sub>c</sub> )	4.74%
Steel (P <sub>s</sub> )	0.14%
Bitumen - (P <sub>b</sub> )	45.58%
POL-P	5.55%
Other materials (P <sub>m</sub> )	36.67%
Total	100.00%

As per SOP Competency to approve component factors lies with SE-XIII.

So case is submitted for approval please.

2.

3.

4.

- 5-

AFS

AFS

Plz check & put up.

AAJ-II. पैरा 41N में पालना में Price Escalation Factor को बीच में रद्द (जोय पश्चात अनुसूचना में, पालना है।

11/12/24

11/12/24

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- 06 - Kindly Peruse Para 1/N to S/N, price escalation factor for the work " Restoration work of Road cut by PHED at Brij Colony SIB, Balaji Nagar S-1A and rising main at Loha Mandi Road Zone 6 JDA Phase-II" is submitted for kind Perusal and approval please.

SE-13.

  
12/12/24  
SANDEEP GUPTA  
EXECUTIVE ENGINEER  
JDA, JAIPUR

As per

  
12/12/24  
(राम प्रसाद) (रंगर)  
अधीक्षक अभियंता-VIII  
जयपुरा, जयपुर



AENI

  
12/12/24

# JAIPUR DEVELOPMENT AUTHORITY, JAIPUR

Name of work : Restoration work of Road cut by PHED at Brij Colony S 1B, Balaji Nagar S-1A and Rising main of Loha Mandi Road Zone 6 JDA Phase II

## Factor for Price Escalation

Labour (P <sub>1</sub> )	7.32%	/
Cement (P <sub>c</sub> )	4.74%	/
Steel (P <sub>s</sub> )	0.14%	/
Bitumen - (P <sub>b</sub> )	45.58%	/
POL-P	5.55%	/
Other materials (P <sub>m</sub> )	36.67%	/
<u>Total</u>	<u>100.00%</u>	

J.E.N.  
JDA, Jaipur

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Executive Engineer  
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Supdt. Engineer  
JDA, Jaipur

Name of work :- Restoration work of Road cut by PHED at Brij Colony S 1B, Balaji Nagar S-1A and Rising main of Loha Mandi Road Zone 6 JDA, Jaipur phase II

Factor for Price Escalation

Based on JDA BSR 2016

Sl No	As per G Schedule Particulars	Unit	Qty	Rate	Amount	Factors as AOR						Factored Amount						Total					
						Labour (P)	Cement (T)	Steel (P)	Bitumen (P)	Plant & Machinery Source	Other materials (Tn)	Labour (P)	Cement (T)	Steel (P)	Bitumen (P)	Plant & Machinery Source	Other materials (Tn)						
1	Excavation in Soil using Hydraulic Excavator and Tipper with disposal upto 1000 m. Excavation for roadwork in soil with hydraulic excavator of 0.9 cum bucket capacity including cutting and loading in tipper, trimming bottom and side slopes, in accordance with requirements of lines, grades and cross-sections, and transporting to the embankment location with a lift upto 1.5 m and lead upto 1000 m as per MoRD Specification Clause 302.3	Cum	14646.500	26.10	382273.65	0.033					0.967					12615.03	0.00	0.00	0.00	0.00	369658.62	0.00	382273.65
2	Gravel/Soil-Aggregate Base/Sub-base Gravel/Soil-Aggregate Base (Table 400.2) Grading-A Construction of gravel/soil-aggregate base by providing well graded material of Grading-A as per Table 400.2 of specifications, spreading in uniform layers with Tractor Mount Grader on prepared surface, mixing by mix in place method with rotavator at OMC, and compacting with three wheel 80-100 kN static roller to achieve the desired density, complete as per MoRD Specifications Clause 402	Cum	5440.000	450.00	2448000.00	0.012					0.076	0.912	29376.00	0.00	0.00	0.00	0.00	0.00	0.00	186048.00	2232576.00		2448000.00
3	Wet Mix Macadam Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the material with water at OMC in mechanical mixer (Pug Mill), carriage of mixed material by tipper to site, laying in uniform layers in sub-base/course on a well prepared sub-base and compacting with smooth wheel roller of 80 to 100kN weight to achieve the desired density including lighting, barricading and maintenance of diversion, etc as per Tables 400.11 & 400.12 and MoRD Specification Clause 406 By Mechanical Means with 1 km lead	Cum	7920.000	1071.00	8482320.00	0.017					0.192	0.791	144199.44	0.00	0.00	0.00	0.00	0.00	0.00	1628605.44	6709515.12		8482320.00
4	Providing and laying dense graded bituminous macadam with 100-120 TPH batch type HMAF producing an average output of 75 tones per hour using crushed aggregates of specified grading, premixed with bituminous binder @ 4.0 to 4.5 per cent by weight of total mix and filler, transporting the hot mix to work site, laying with a hydraulic paver finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MoRT&H Specifications Clause 507 complete in all respects for Grading II ( 19 mm nominal size )	P.MT	30600.000	2722.50	8330850.00	0.003					0.722	0.097	0.178	24992.55	0.00	0.00	0.00	6014873.70	808092.45	1482891.30		8330850.00	

G Schedule

Particulars	Unit	Qty	Rate	Amount	Factors as AOR					Factored Amount					Total			
					Labour (P)	Concrete (P)	Sand (P)	Bitumen (P)	Plant & Machinery (P)	Other materials (P)	Labour (P)	Concrete (P)	Sand (P)	Bitumen (P)		Plant & Machinery (P)	Other materials (P)	
<p>5 Providing and laying bituminous concrete with 100-120 TPH batch type hot mix plant producing an average output of 75 tonnes per hour using crushed aggregates of specified grading, primed with bituminous binder @ 5.4 to 5.6 per cent of mix and filler, transporting the hot mix to work site, laying with a hydrostatic paver/finisher with sensor control to the required grade, level and alignment, rolling with smooth wheel, vibratory and tandem rollers to achieve the desired compaction as per MoRT &amp; H Specifications Clause 509 complete in all respects for Grading-II (13 mm nominal size) Bitumen (VG-30)</p>	PMT	4381.500	2934.00	12855311.00	0.003			0.768	0.084	0.145	38565.96	0.00	0.00	9872836.53	1079846.96	1864021.55	12855311.00	
<p>6 CEMENT CONCRETE (CAST-IN-SITU) Providing and laying in position cement concrete including curing, compaction etc. complete in specified grade excluding the cost of centering and shuttering - All work up to plinth level. M10 grade Nominal Max. 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20mm nominal size)</p>	Cum	448.500	2398.50	1075727.25	0.172	0.449			0.024	0.355	185025.09	483001.54	0.00	0.00	0.00	25817.45	381883.17	1075727.25
<p>7 Cement Concrete Pavement Construction of un-reinforced, dowel jointed at expansion and construction joint only, plain cement concrete pavement, thickness as per design, over a prepared sub base, with 43 grade cement or any other type as per Clause 1501.2.2 M30 (Grade), coarse and fine aggregates conforming to IS 383, maximum size of coarse aggregate not exceeding 25 mm, mixed in a concrete mixer of not less than 0.2 cum capacity and appropriate weight batcher using approved mix design, laid in approved fixed side formwork (steel channel, laying and fixing of 125 mm thick polythene film, wedges, steel plates including leveling the formwork as per drawing), spreading the concrete with shovel, rakes, compacted using needle, screed and plate vibrators and finished in continuous operation including provision of construction and expansion, construction joints, applying de-bonding strip, primer, sealant, dowel bars, steel expansion to bridge/culvert and construction joints, structures as approved, curing of concrete slab for 14-days, using curing compound and water</p>	Cum	598.000	5188.50	3102723.00	0.075	0.430	0.017	0.005	0.033	0.440	232704.23	1334170.89	52746.29	15513.62	102389.86	1365198.12	3102723.00	
<p>8 Prime Coat Providing and applying primer coat with bitumen emulsion (SS-1) on prepared surface of granular base including cleaning of road surface and applying primer at the rate of 0.70-1.0 kg/sqm using mechanical means as per MoRT &amp; H Specification Clause 502</p>	Squm	27200.000	31.50	856800.00	0.003			0.975	0.017	0.005	2570.40	0.00	0.00	835380.00	14565.60	4284.00	856800.00	

Particulars	Unit	Qty	Rate	Amount	Factors as AOR					Factored Amount					Total		
					Labour (P)	Cement (Pc)	Steel (Ps)	Bitumen (Pb)	Plant & Machinery (Pm)	Other materials (Pm)	Labour (P)	Cement (Pc)	Steel (Ps)	Bitumen (Pb)		Plant & Machinery (Pm)	Other materials (Pm)
9 Coat Providing and applying tack coat with Bitumen emulsion (RS-1) using emulsion distributor at the rate of 0.20 to 0.25 kg per sqm on the prepared bituminous surface cleaned with Hydraulic broom as per MoRD Specification Clause 503	Sqm	27200.000	9.00	244800.00	0.010			0.937	0.053		2448.00	0.00	0.00	229377.60	12974.40	0.00	244800.00
10 Providing and applying tack coat with Bitumen emulsion (RS-1) using emulsion distributor at the rate of 0.25 to 0.30 kg per sqm on the prepared dry and hungry bituminous surface cleaned with Hydraulic broom as per MoRD Specification Clause 503	Sqm	22925.000	10.80	247590.00	0.008			0.948	0.044		1980.72	0.00	0.00	234715.32	10893.96	0.00	247590.00
11 Providing and applying tack coat with Bitumen emulsion (RS-1) using emulsion distributor at the rate of 0.25 to 0.30 kg per sqm on the prepared granular surface treated with primer & cleaned with Hydraulic broom as per MoRD Specification Clause 503	Sqm	24700.000	10.80	266760.00	0.008			0.948	0.044		2134.08	0.00	0.00	252838.48	11737.44	0.00	266760.00
Total	%			38293164.90							676611.50	1817172.43	52746.29	17455635.24	4250630.19	14040369.26	38293164.90
											1.77%	4.74%	0.14%	45.58%	11.10%	36.67%	100.00%

As per SBD document of MoRTTI, Plant, M/c and its POL has equal proportion, so it's 50 % added in labour component as m/c part and 50 % for POL- diesel

Factor for Price Escalation  
 Labour (P) 7.32%  
 Cement (Pc) 4.74%  
 Steel (Ps) 0.14%  
 Bitumen - (Pb) 45.58%  
 POL-P 5.55%  
 Other materials (Pm) 36.67%  
 Total 100.00%

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Description	Unit	Quantity	Rate (Rs.)	Amount (Rs.)	JDA-BSR 90%	Component Cost as per ADR per Unit	Component Cost as per Unit	Component Factor	Involved Component	Remarks
Excavation for roadwork in soil with hydraulic excavator of 0.9 cum bucket capacity including cutting and loading in tippers, trimming bottom and side slopes, in accordance with requirements of lines, grades and cross-sections, and transporting to the embankment location with a lift upto 1.5 m and lead upto 1000 m as per Technical Specification Clause 302.3										
Unit = cum Taking output = 360 cum										
Labour										
Mate										
Mazdoor (Unskilled)	day	0.08	157.00	12.56	11.30					
Total	day	2.00	147.00	294.00	264.60	275.90		0.033	Labour	
Machinery				306.56	275.90					
Hydraulic excavator 0.9 cum bucket capacity @ 100 cum per hour	hour	3.60	600.00	2160.00	1944.00					
Tipper 5.5 cum capacity, 4 trips per hour	hour	15.00	450.00	6750.00	6075.00	8019.00		0.967	Plant & TP	
Total				8910.00	8019.00					
Grand Total (a+b)				9216.56	8294.90					
Overheads Charges @10% on (a+b)				921.66	829.49					
Contractor's profit @10% on (a+b)				1013.82	912.44					
Grand Total (a+b+c+d)				11152.04	10036.83					
Cost for 360 cum = a+b+c+d				11152.04	10036.83					
Rate per cum = (a+b+c+d)/360				30.98	27.88			1.000		

Sr. No.	Reference of MORB Specification	Description	Unit	Quantity	Rate (Rs.)	Amount (Rs.)	JDA BSR 90%	Component cost as per AOR QTY	Component cost as per Unit QTY	Component Factor	Invoiced Component	Remarks
402	1)	Gravel/Soil-Aggregate Base (Table 400.2) Grading A Construction of Gravel/soil-aggregate base by providing well graded material of Grading-A as per Table 400.2 of specifications, spreading in uniform layers with Tractor Mount Grader on prepared surface, mixing by mix in place method with rotavator at OMC, and compacting with three wheel 80-100 kN static roller to achieve the desired density, complete as per MoRD Specifications Unit = cum										
		Taking output = 300 cum										
	a)	Labour	day	0.40	157.00	62.80	56.52					
		Material	day	2.00	167.00	334.00	300.60					
		Mazdoor (Skilled)	day	2.00	167.00	334.00	300.60					
		Mazdoor (Unskilled)	day	8.00	147.00	1,176.00	1,058.40					
	b)	Machinery	hour	12.00	160.00	1,920.00	1,728.00	1,415.52		0.012	Labour	
		Three wheel 80-100 kN static roller @ 10 cum per hour	hour	30.00	170.00	5,100.00	4,590.00					
		Water tanker 6 kl capacity	hour	5.00	230.00	1,150.00	1,035.00					
		Tractor with Rotavator 25 cum per hour	hour	12.00	160.00	1,920.00	1,728.00	9,081.00		0.076	P&M	
	c)	Well Graded granular sub-base materials as per Table	cum	360.00	330.00	1,18,800.00	1,06,920.00					
		Water	kl	30.00	90.00	2,700.00	2,430.00					
		<b>TOTAL</b>				<b>1,33,162.80</b>	<b>1,19,846.52</b>	<b>1,19,846.52</b>				
	d)	Overheads @ 2.50% on (a+b+c)				3,329.07	2,996.15					
	e)	Contractor's Profit @ 10% on (a+b+c+d)				13,649.19	12,284.27					
		Cost for 300 cum = a+b+c+d+e				1,50,141.06	1,35,126.95					
		Rate per cum = (a+b+c+d+e)/300				500.47	450.42					

Description	Unit	Quantity	Rate (Rs.)	Amount (Rs.)	JDA-BSR 90%	Component cost as per AOR QTY	Component cost as per Unit	Component Factor	Involved Component	Remarks
Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam (Pug Mill), carriage of mixed material by tipper to site, laying in uniform layers in sub-base/base course on a well prepared sub-base and compacting with smooth wheel roller of 80 to 100kN weight to achieve the desired density including lighting, barricading and maintenance of diversion, etc as per Tables 400.11 & 400.12 and Technical Specification Clause 406										
<b>By Mechanical Means with 1 km lead</b>										
Unit = cum										
Taking output = 100 cum										
Labour										
Mate	day	0.40	157.00	62.80	56.52					
Dresser (Skilled) for alignment	day	8.00	167.00	1336.00	1202.40					
Mazdoor Skilled	day	2.00	167.00	334.00	300.60	1559.52		0.017	Labour	
Total a				1732.80	1559.52					
Machinery					0.00					
Front end loader 1 cum capacity	hour	4.00	600.00	2400.00	2160.00					
Wet mix plant (Pug Mill)	hour	4.00	3000.00	12000.00	10800.00					
Tipper/Dumper (10-t) capacity	hour	5.00	450.00	2250.00	2025.00					
Motor Grader @ 50 cum per hour	hour	2.00	1100.00	2200.00	1980.00					
Water tanker 6 kl capacity	hour	1.33	230.00	305.90	275.31					
Three wheel 80-100 kN static roller @ 16 cum per hour	hour	6.25	170.00	1062.50	956.25	18196.56		0.192	Plant & TP	
Total b				20218.40	18196.56					
Material										
Coarse aggregate 45 mm to 22.4 mm @ 30 per cent	cum	39.90	700.00	27930.00	25137.00					
Aggregates 22.4 mm to 2.36 mm @ 40 per cent	cum	53.20	650.00	34580.00	31122.00					
Fine aggregate/Crushed sand 2.36 mm to 75 micron @ 30 pe cent	cum	39.90	495.00	19750.50	17775.45					Other material
Water	kl	8.00	90.00	720.00	648.00	74682.45		0.791		
Total c				82980.50	74682.45					
Grand Total a+b+c				104931.70	94438.53	94438.53		1.000		
Overheads @ 2.50% on (a+b+c)				2623.29	2360.96					
Contractor's profit @ 10% on (a+b+c+d)				10755.50	9679.95					
Grand Total a+b+c+d+e				118310.49	106479.44					
Cost for 100 cum = a+b+c+d+e				118310.49	106479.44					
Rate per cum = (a+b+c+d+e)/100				1183.10	1064.79					

Description	Unit	Quantity	Rate (Rs.)	Amount (Rs.)	JDA-BSR 90%	Component cost as per AOR QTY	Component cost as per Unit	Component Factor	Involved Component	Remarks
<p>Providing and laying dense graded bituminous macadam with 100-120 TPH batch type HMP producing an average output of 75 tones per hour using crushed aggregates of specified grading, premixed with bituminous binder @ 4.0 to 4.5 per cent by weight of total mix and filler, transporting the hot mix to work site, laying with a hydrostatic paver finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MoRT&amp;H Specifications Clause 507 complete in all respects. Grading II (19mm nominal size)</p>										
Unit = cum										
Taking output = 195 cum (450 tonnes)										
a) Labour										
Mate	day	0.840	157.00	131.88	118.69	3130.99		0.003	Labour	
Mazdoor working with HMP, mechanical broom, paver, roller, asphalt cutter and assistance for setting out lines, levels and layout of construction	day	16.000	157.00	2512.00	2260.80					
Skilled mazdoor for checking line & levels	day	5.000	167.00	835.00	751.50					
Total a				3478.88	3130.99					
b) Machinery										
Batch mix HMP @ 75 tonne per hour	hour	6.000	12000.00	72000.00	64800.00	110119.50		0.097	Plant & machinery	
Paver finisher hydrostatic with sensor control @ 75 cum per hour	hour	6.000	1900.00	11400.00	10260.00					
Generator 250 KVA	hour	6.000	1900.00	11400.00	10260.00					
Front end loader 1 cum bucket capacity	hour	6.000	600.00	3600.00	3240.00					
Tipper 10 tonne capacity	tonne/km	9000.000	1.85	16650.00	14985.00					
Add 10 per cent of cost of carriage to cover cost of loading and unloading				1665.00	1498.50					
smooth wheeled roller 8-10 tonnes for initial break down rolling.	hour	6.000	170.00	1020.00	918.00					

Description	Unit	Quantity	Rate (Rs.)	Amount (Rs.)	JDA-BSR 90%	Component cost as per AOR QTY	Component cost as per Unit QTY	Component Factor	Involved Component	Remarks
Vibratory roller 8 tonnes for intermediate rolling.	hour	6,000	600.00	3600.00	3240.00					
Finish rolling with 6-8 tonnes smooth wheeled tandem roller.	hour	6,000	170.00	1020.00	918.00					
Total b				122355.00	110119.50					
c) Materials										
Bitumen @ 4.50 per cent of weight of mix Aggregate	tonne	20,250	45000.00	911250.00	820125.00	820125.00		0.722	Bitumen	
Total c				911250.00	820125.00					
Total weight of mix = 450 tonnes										
Weight of bitumen = 20.25 tonnes										
Weight of aggregate = 450 - 20.25 = 429.75 tonnes										
Taking density of aggregate = 1.5 ton/cum										
Volume of aggregate = 286.50 cum										
Grading II (19mm nominal size)										
25 - 10 mm 30 per cent	cum	86.160	750.00	64620.00	58158.00	202682.70		0.178	other material	
10 - 5 mm 28 per cent	cum	80.430	700.00	56301.00	50670.90					
5 & below 40%	cum	114.900	600.00	68940.00	62046.00					
Filler @ 2 per cent of weight of aggregates.	tonne	8.620	4100.00	35342.00	31807.80					
Total				225203.00	202682.70	1136058.19		1.000		
Grand Total				1262286.88	1136058.19					
d) Add Overhead charges & Contractor's profit @ 12.5% on (a+b+c)				157785.86	142007.27					
Cost for 195 cum = a+b+c+d+e				1420072.74	1278065.47					
Rate per cum = (a+b+c+d+e)/195	P. Cum			7282.42	6554.18					
Rate per MT = (a+b+c+d+e)/450	P. MT			3155.72	2840.15					

2934 I

Description	Unit	Quantity	Rate (Rs.)	Amount (Rs.)	JDA-BSR 90%	Component cost as per AOR per QTY	Component cost as per Unit	Component Factor	Invoiced Component	Remarks
Providing and laying bituminous concrete with 100-120 TPH batch type hot mix plant producing an average output of 75 tonnes per hour using crushed aggregates of specified grading, premixed with bituminous binder @ 5.4 to 5.6 per cent of mix and filler, transporting the hot mix to work site, laying with a hydrostatic paver finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MoRT & H Specifications Clause 509 complete in all respects										
Unit = cum										
Taking output = 191 cum (450 tonnes)										
Labour										
Mate	day	0.84	157.00	131.88	118.69					
Mazdoor (semi skilled), working with HMP, mechanical broom, paver, roller, asphalt cutter and assistance for setting out lines, levels and layout of construction	day	16.00	157.00	2512.00	2260.80					
Skilled mazdoor for checking line & levels	day	5.00	167.00	835.00	751.50	3130.99		0.003	Labour	
Total a				3478.88	3130.99					
Machinery Batch mix HMP @ 75 tonne per hour	hour	6.00	12000.00	72000.00	64800.00					
Paver finisher hydrostatic with sensor control @ 75 cum per hour	hour	6.00	1900.00	11400.00	10260.00					
Generator 250 KVA "	hour	6.00	1900.00	11400.00	10260.00					
Front end loader 1 cum bucket capacity	hour	6.00	600.00	3600.00	3240.00					
Tipper 10 tonne capacity	tonne/km	9000.00	1.85	16650.00	14985.00					
Add 10 percent of cost of carriage to cover cost of loading and unloading				1665.00	1498.50					
Smooth wheeled roller 8-10 tonnes for initial break down rolling.	hour	6.00	170.00	1020.00	918.00					
Vibratory roller 8 tonnes for intermediate rolling.	hour	6.00	600.00	3600.00	3240.00					

Description	Unit	Quantity	Rate (Rs.)	Amount (Rs.)	JDA-BSR 90%	Component Cost as per ACR QTY	Component Cost as per Unit QTY	Component Factor	Involved Component	Remarks
Finish rolling with 6-8 tonnes smooth wheeled tandem roller.	hour	6.00	170.00	1020.00	918.00	110119.50		0.084	Plant	
Total b										
Material				122355.00	110119.50					
i) Bitumen VG-30	tonne	24.75	45000.00	1113750.00	1002375.00	1002375.00		0.768	Bitumen	
Total c										
ii) Aggregate				1113750.00	1002375.00					
Total weight of mix = 450 tonnes										
Weight of bitumen = 24.75 tonnes										
Weight of aggregate = 450 - 24.75 = 425.25 tonnes.										
Taking density of aggregate = 1.5 ton/cum										
Volume of aggregate = 283.50 cum										
* Grading -II 13 mm (Nominal Size)										
13.2 mm - 10 mm 30%	cum	85.05	750.00	63787.50	57408.75					
10 mm - 5 mm 25%	cum	70.87	700.00	49609.00	44648.10					
5 mm and below 43%	cum	121.91	600.00	73146.00	65831.40					
Filler @ 2 per cent of weight of aggregates.	tonne	5.67	4100.00	23247.00	20922.30	188810.55		0.145	other material	
Total (Gr-II)										
Grand Total a+b+c				209789.50	188810.55	1304436.04		1.000		
Add Overhead charges & Contractor's profit @ 12.5% on (a+b+c)				1449373.38	1304436.04					
Cost for 191 cum = a+b+c+d+e				181171.67	163054.51					
Rate per cum = (a+b+c+d+e)/191	P.Cum			1630545.05	1467490.55					
Rate per MT = (a+b+c+d+e)/450	P. MT			8536.89	7683.20					
				3623.43	3261.09					

Sr. No.	Description	Unit	Quantity	Rate (Rs.)	Amount (Rs.)	JDA BSR 90%	Component cost as per AOR QTY	Component cost as per Unit QTY	Component Factor	Involved Component	Remarks
3.1	Providing and laying in position cement concrete including curing, compaction etc. complete in specified grade excluding the cost of centering and shuttering - All work up to plinth level										
3.1.4	M10 grade Nominal Mix 1: 3: 6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20mm nominal size).										
	Details of cost for 1 cum.										
	Materials:										
	295 Stone aggregate 20mm	cum	0.7	600.00	420.00	378.00	783.24		0.355	Material	
	297 Stone aggregate 10mm	cum	0.24	600.00	144.00	129.60					
	2.202 Carriage of aggregate	cum	0.94	0.00		0.00					
	982 Coarse sand	cum	0.47	600.00	282.00	253.80					
	2.203 Carriage of coarse sand	cum	0.47	0.00		0.00					
	367 Cement (0.15674 cum)	tonne	0.22	5000.00	1100.00	990.00	990.00		0.445	Cement	
	2.209 Carriage of cement	tonne	0.22	0.00	0.00	0.00					
	Labour:										
	155 Mason	Day	0.1	250.00	25.00	22.50	378.99		0.172	Labour	
	114 Beldar	Day	1.63	170.00	277.10	249.39					
	101 Bhishi	Day	0.7	170.00	119.00	107.10					
	2 Mixer	Day	0.07	440.00	30.80	27.72	53.75		0.024	P&M	
	12 Vibrator	Day	0.07	220.00	15.40	13.86					
	9.999 Sundries	L.S.	13.52	1.00	13.52	12.17					
	TOTAL				2426.82	2184.14	2205.98		1.000		
	9997 Add 1% for water charges				24.27	21.84					
	TOTAL				2451.09	2205.98					
	9998 Add 10% for contractor's profit and overheads			10.00%	245.11	220.60					
	Cost of 1 cum				2696.20	2426.58					
	Say				2696.20	2426.58					
					2696.00	2426.40					

5188.40 f

No	Reference of MOR Specifications	Description	Unit	Quantity	Rate (Rs.)	Amount (Rs.)	Component cost as per AOR QTY	Component cost as per Unit QTY	Component Factor	Involved Component	Remarks
		Construction of un-reinforced, dowel jointed at expansion and construction joint only, plain cement concrete pavement, thickness as per design, over a prepared sub base, with 43 grade cement or any other type as per Clause 1501.2.2 M30 (Grade), coarse and fine aggregates conforming to IS:383, maximum size of coarse aggregate not exceeding 25 mm, mixed in a concrete mixer of not less than 0.2 cum capacity and appropriate weigh batcher using approved mix design, laid in approved fixed side formwork (steel channel, laying and fixing of 125 micron thick polythene film, wedges, steel plates including levelling the formwork as per drawing), spreading the concrete with shovels, rakes, compacted using needle, screed and plate vibrators and finished in continuous operation including provision of contraction and expansion, construction joints, applying debonding strips, primer, sealant, dowel bars, near approaches to bridge/culvert and construction joints, admixtures as approved, curing of concrete slabs for 14-days, using curing compound and water finishing to lines and grade as per drawing and MoRD Specification Clause 1501 including vacuum dewatering process with all required equipments									
		Unit = cum									
		Taking output = 75 cum (172.50 t) (100 x 3.75 x 0.200)									
	a)	Labour	day	7.000	157.00	1,099.00	989.10	24,744.60	0.075	labour	
		Mate	day	5.000	300.00	1,500.00	1,350.00				
		Mason (1st class)	day	5.000	250.00	1,250.00	1,125.00				
		Mason (2nd class)	day	129.000	147.00	18,963.00	17,066.70				
		Mazdoor (Unskilled)	day	6.000	167.00	1,002.00	901.80				
		Mazdoor (Skilled)	day	2.000	250.00	500.00	450.00				
		Surveyor	day	6.000	157.00	942.00	847.80				
		Mazdoor (Semi-Skilled)	day	14.000	147.00	2,058.00	1,852.20				
		Bhisti	day	1.000	180.00	180.00	162.00				
		Blacksmith for cutting of dowel bars including removal of burrs, fabrications & fixing of dowel bars -	day								
	b)	Machinery	hour	36.000	250.00	9,000.00	8,100.00	11,097.00	0.033	P&M	
		Concrete mixer 0.28 / 0.4 cum capacity (6 mixers) with weigh batcher and suitable capacity calibrated water tank	hour	9.000	50.00	450.00	405.00				
		Needle vibrator	hour	9.000	75.00	675.00	607.50				
		Screed vibrator	hour	9.000	55.00	495.00	445.50				
		Plate vibrator	hour	4.000	40.00	160.00	144.00				
		Concrete joint cutting machine for initial & final cuts	hour	5.000	230.00	1,150.00	1,035.00				
		Water tanker 6 kl capacity	hour	2.000	200.00	400.00	360.00				
		Air Compressor (1 hour initial + 1 hour final)	hour								
	c)	Material	cum	67.500	700.00	47,250.00	42,525.00	1,46,202.75	0.430	material	
	(i)	Crushed stone coarse aggregates, grading will be as per Clause 1501.2.4.1 (Table 1500.1) of specifications @ 0.90 cum/cum of concrete	cum	33.750	600.00	20,250.00	18,225.00				
	(ii)	Sand as per IS:383 and conforming to Clause 1500.2.4.2 @ 0.45 cum/cum of concrete	cum	1	6,050.00	6,050.00	1,42,931.25	1,42,931.25	0.430	cement	
	(iii)	Cement @ 310 Kp/cum of concrete		26.250							

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Reference of MORD Specifications	Description	Unit	Quantity	Rate (Rs.)	Amount (Rs.)	Component cost as per AOR QTY	Component cost as per Unit QTY	Component Factor	Involved Component	Remarks
(iv)	Polythene sheet 125 micron	sqm	412.500	85.00	35,062.50	31,556.25				
(v)	Mild steel dowel bar 25 mm dia of grade S 240. 500 mm long 15 Nos. at culvert/bridge slab and at construction joint including 5 per cent wastage. $(4 \times 15 \times 0.500) + 5 \text{ per cent wastage} = 31.5 \text{ m} @ 3.85 \text{ Kg per m} = 121.275 \text{ kg}$	kg	121.275	52.00	6,306.30	5,675.67	5,675.67	0.017	steel	
	Bitumen primer @ 200 ml per joint for 23 joints	l	0.035	35,500.00	177.50	159.75				
	Bituminous sealant 800 ml per joint for 23 joints	litre	19.000	95.00	1,805.00	1,624.50	1,784.25	0.005	bitumen	
	Jute rope 12 mm dia including 5 per cent wastage	m	90.000	11.00	990.00	891.00				
	Debonding strips 3.75 m (length) x 10 mm (width) x 5 mm (thick) cut-out of rubber filler board or similar material including 5 per cent wastage	m	90.000	195.00	17,550.00	15,795.00				
	Polythene sheathing, covering 2/3rd dowel bars (4x15) and tight fit including 5 per cent wastage.	No.	63.000	85.00	5,355.00	4,819.50				
	Plasticizer 0.5 per cent by weight of cement	litre	122.000	130.00	15,860.00	14,274.00				
	Curing compound (if used) @ 0.33 litre per sqm	litre	131.250	120.00	15,750.00	14,175.00				
	Water for curing	kl	18.000	90.00	1,620.00	1,458.00				
	Joint filler board 20 mm thick as per IS:1838 $(4 \times 3.75 \times 0.200 = 3 \text{ sam})$	sqm	3.000	920.00	2,760.00	2,484.00				
	Total				3,69,372.80	3,32,435.52	3,32,435.52	1.000		
(d)	Formwork @ 3% of (a+b+c)				11,081.18	9,973.07				
(e)	Vacuum dewatering process including all required equipments	cum	75.000	40.00	3,000.00	2,700.00				
(f)	Overheads @ 2.5% on (a+b+c+d+e)				9,586.35	8,627.71				
(g)	Contractor's profit @ 10% on (a+b+c+d+e+f)				39,504.03	35,573.63				
	Cost for 75 cum = a+b+c+d+e+f+g				4,52,344.37	3,89,109.93				
	Rate per cum = (a+b+c+d+e+f)/75				5,764.59	5,188.13				

Description	Unit	Quantity	Rate (Rs.)	Amount (Rs.)	JDA-BSR 90%	Component cost as per AOR per Unit	Component cost as per Unit	Component Factor	Involved Component	Remarks
Providing and applying primer coat with bitumen emulsion (SS-1) on prepared surface of granular base including cleaning of road surface and spraying primer at the rate of 0.70-1.0 kg/sqm using mechanical means as per Technical Specification Clause 502										
Unit = sqm										
Taking output = 1750 sqm										
Labour										
Mate	day	0.04	157.00	6.28	5.65					
Mazdoor (Unskilled)	day	1.00	147.00	147.00	132.30	137.95		0.003	Labour	
Total a				153.28	137.95					
Machinery					0.00					
Hydraulic broom @ 1250 sqm per hour	hour	1.40	200.00	280.00	252.00					
Air compressor 210 cfm	hour	1.40	200.00	280.00	252.00					
Bitumen emulsion pressure distributor @ 1750 sqm per hour	hour	1.00	260.00	260.00	234.00					
Water tanker 6 kl capacity 1 trip per hour	hour	0.50	230.00	115.00	103.50	841.50		0.017	Plant & TP	
Total b				935.00	841.50					
Material					0.00					
Bitumen emulsion (SS1) @ 0.85 kg per sqm	t	1.48	35500.00	52540.00	47286.00	47286.00		0.975	Bitumen	
Water	kl	3.00	90.00	270.00	243.00	243.00		0.005	other material	
Total c				52810.00	47529.00			1.000		
Grand Total a+b+c				53898.28	48508.45	48508.45				
Overheads @ 10% on (a+b+c)				5389.83	4850.85					
Contractor's profit @ 10% on (a+b+c+d)				5928.81	5335.93					
Grand Total a+b+c+d+e				65216.92	58695.23					
Cost of 1750 sqm = a+b+c+d+e				65216.92	58695.23					
Rate per sqm = (a+b+c+d+e)/1750				37.27	33.54					

Description	Unit	Quantity	Rate (Rs.)	Amount (Rs.)	JDA-BSR 90%	Component cost as per AOR QTY	Component cost as per Unit QTY	Component Factor	Involved Component	remarks
Providing and applying tack coat with Bitumen emulsion (RS-1) using emulsion distributor at the rate of 0.20 to 0.25 kg per sqm on the prepared bituminous surface cleaned with Hydraulic broom as per Technical Specification Clause 503.										
Unit = sqm										
Taking output = 1750 sqm										
Labour										
Mate	day	0.04	157.00	6.28	5.65					
Mazdoor (Unskilled)	day	1.00	147.00	147.00	132.30	137.95		0.010	Labour	
Total a				153.28	137.95					
Machinery					0.00					
Hydraulic broom @ 1250 sqm per hour	hour	1.40	200.00	280.00	252.00					
Air compressor 210 cfm	hour	1.40	200.00	280.00	252.00					
Bitumen emulsion pressure distributor @ 1750 sqm per hour	hour	1.00	260.00	260.00	234.00	738.00		0.053	Plant & TP	
Total b				820.00	738.00					
Material					0.00					
Bitumen emulsion (RS-1) @ 0.225 kg per sqm	t	0.39	37000.00	14430.00	12987.00	12987.00		0.937	Bitumen	
Total c				14430.00	12987.00					
Grand Total a+b+c				15403.28	13862.95	13862.95		1.000		
Overheads @ 10% on (a+b+c)				1540.33	1386.30					
Contractor's profit @ 10% on (a+b+c+d)				1694.36	1524.92					
Grand Total a+b+c+d+e				18637.97	16774.17					
Cost of 1750 sqm = a+b+c+d+e				18637.97	16774.17					
Rate per sqm = (a+b+c+d+e)/1750				10.65	9.59					

9.00

Description	Unit	Quantity	Rate (Rs.)	Amount (Rs.)	Component cost as per AOR QTY	Component cost as per Unit	Component Factor	Involved Component	remarks
Providing and applying tack coat with bitumen emulsion (RS-1) using emulsion distributor at the rate of 0.25 to 0.30 kg/Sqm on the prepared dry and hungry bituminous surface cleaned with hydraulic broom as per technical specification clause 503.									
Unit = sqm									
Taking output = 1750 sqm									
Labour									
Mate									
Mazdoor (Unskilled)	day	0.04	157.00	6.28	5.65				
Total a	day	1.00	147.00	147.00	132.30	137.95	0.008	Labour	
Machinery									
Hydraulic broom @ 1250 sqm per hour	hour	1.40	200.00	280.00	252.00				
Air compressor 210 cfm	hour	1.40	200.00	280.00	252.00				
Bitumen emulsion pressure distributor @ 1750 sqm per hour	hour	1.00	260.00	260.00	234.00	738.00	0.044	Plant & TP	
Total b				820.00	738.00				
Material					0.00				
Bitumen emulsion (RS-1) @ 0.225 kg per sqm	t	0.48	37000.00	17760.00	15984.00	15984.00	0.948	Bitumen	
Total c				17760.00	15984.00				
Grand Total a+b+c				18733.28	16859.95	16859.95	1.000		
Overheads @ 10 % on (a+b+c)				1873.33	1686.00				
Contractor's profit @ 10 % on (a+b+c+d)				2060.66	1854.59				
Grand Total a+b+c+d+e				22667.27	20400.54				
Cost of 1750 sqm = a+b+c+d+e				22667.27	20400.54				
Rate per sqm = (a+b+c+d+e)/1750				12.95	11.66				

Description	Unit	Quantity	Rate (Rs.)	Amount (Rs.)	JDA-BGR 90%	Component cost as per AOR QTY	Component cost as per Unit QTY	Component Factor	Involved Component	Remarks
Providing and applying tack coat with bitumen emulsion (RS-1) using emulsion distributor at the rate of 0.25 to 0.30 kg/Sqm on the prepared granular surface treated with primer & cleaned with hydraulic broom as per technical specification clause 503.										
Unit = sqm										
Taking output = 1750 sqm										
Labour										
Mate	day	0.04	157.00	6.28	5.65					
Mazdoor (Unskilled)	day	1.00	147.00	147.00	132.30	137.95		0.008	Labour	
Total a				153.28	137.95					
Machinery										
Hydraulic broom @ 1250 sqm per hour	hour	1.40	200.00	280.00	252.00					
Air compressor 210 cfm	hour	1.40	200.00	280.00	252.00					
Bitumen emulsion pressure distributor @ 1750 sqm per hour	hour	1.00	260.00	260.00	234.00	738.00		0.044	Plant &TP	
Total b				820.00	738.00					
Material										
Bitumen emulsion (RS-1) @ 0.225 kg per sqm	t	0.48	37000.00	17760.00	15984.00	15984.00		0.948	Bitumen	
Total c				17760.00	15984.00					
Grand Total a+b+c				18733.28	16859.95	16859.95		1.000		
Overheads @ 10 % on (a+b+c)				1873.33	1686.00					
Contractor's profit @ 10 % on (a+b+c+d)				2060.66	1854.59					
Grand Total a+b+c+d+e				22667.27	20400.54					
Cost of 1750 sqm = a+b+c+d+e				22667.27	20400.54					
Rate per sqm = (a+b+c+d+e)/1750				12.95	11.66					