

**PROPOSED ESTIMATE FOR CONSTRUCTION OF LOW-VOLUME BITUMINOUS ROAD ON EXISTING
SUB-BASE**

The rates are taken from PWD(WB) schedule of rate for Road & Bridge works 1.12.15 & 11 th,12th ,13th,14th Addenda & Corrigenda and Building works of Midnapore west effect from 01.11.2017 .

Length of the Road = 1000 m. Width of the Road= 2.4 m.

SL. No.	Description										Quantity	Rate	Unit	Amount
	N	x	L. (m)	x	B. (m)	x	H (m)		=	Qty.				
1	Page No.-245, Item No.-4.11(iii). : Water Bound Macadam Base Course										180.00	Rs.2,938.09	M ³	Rs. 5,28,855.30
	Providing , Laying spreading and compacting stone aggregates of specific sizes to water bound macadam specification including spreading in uniform thickness, hand packing, rolling with vibratory roller 8 -10 tonnes in stages to proper grade and camber, applying and brooming requisite type of screening / binding materials to fill up the interstices of coarse aggregates watering including lighting , guarding, barricading and macking necessary earthen bundh of one metre width on each side and preparing the bed by necessary cutting or filling , including cost of all materials and hire and labour charges of all men and machinary and compacting to the required density, as per Clause - 4 of Specification for Road & Bridge Works of MoRT&H (5- th Revision) (iii) Grading -II Aggregates (53 mm to 22.4) Using Stone Screnning Type B (11.2 mm) A. Mechanical Means In road crust 1 x 1000 x 2.4 x 0.075 = 180.00 <hr/> 180.00													
2	Page No.-248, Item No.- 5.02 - (ii) :- Tack Coat										2400.00	Rs.9.78	M ²	Rs. 23,467.87
	Providing and applying tack coat with Catonic Bitumen Emulsion of approved grade conforming to IS: 8887 - 1978 on the prepard surface cleaned with Hydraulic broom, moistening the surface including cost and carriage of emulsion , hire charges of machinery and labour, cost of fuel and lubricants all complete as per Clause 503 of Specifications for Road Bridge Works of MoRT& H (5th Revision) ii) On Granular surfaces treated with Primer (Using Bitumen emulsion at the rate of 0.25 to 0.30 kg per Sq.M. By Manual Means In road crust 1 x 1000 x 2.4 = 2400.00 1 x 0 x 0 = 0.00 <hr/> 2400.00													

SL. No.	Description										Quantity	Rate	Unit	Amount
	N	x	L. (m)	x	B. (m)	x	H (m)	=	Qty.					
3	Page No. - 254, Item No. - 5.11, - (20mm thick Premixed Chipping Carpet over Tack Coat)Open Graded Premix surfacing using Bituminous (Viscosity grade Paving Bitumen / Modified Bitumen) Binder and Mobile Hot Mix Plant (Light Duty)													
	Proving, Laying and rolling of open -graded premix surfacing of 20 mm thickness composed of 13.2 mm ((@ 0.018 m3 per m2) and 11.2 mm (@ 0.009 m3 per m2) size stone aggregats, including thoroughly cleaning of the surface, screening, cleaning and pre-heating stone chips and fully pre coating the same either using viscosity grade paving Bitumen or cut back or emulsion , carrying the mixture by any suitable arrangements, laying the mixture uniformly over the surface, including line, grade and level to serve as wearing course on a previously prepared base, including mixing in mobile Hot Mix Plant (Light Duty) and thoroughly rolling with a smooth wheeled roller 8 - 10 Tonne capacity, finished to required level and grades including the cost and carriage of stone chips and matix heating the matix, preheating the In road crust 1 x 1000 x 2.4 2400.00 1 x 0 x 0 0.00 = 2400.00													
4	Page No. - 255, Item No. - 5.13 - B - (I) - (i)													
	Providing and laying Premixed <i>Seal Coat (Type - B)</i> with approved quality sand / grit @ 0.60 m3 / 100 m2 and bitumen binder on thoroughly cleaned black top surface coated with tack coat, including heating and mixing cleaned sand / grit (100 % passing through 2.36 mm sieve and retained on 180 micron sieve) uniformly with bitumen binder, laying and spreading the mix at an uniform rate usding suitable means, brushing the surface, if necessary, to ensure uniformly, followed by rolling with power roller including the cost and carriage of binder and aggregates, cost of heating the binder and aggregates and all other incidental charges cost of fuel and lubricants including hire charges of machineries, tools & plants required for construction and quality control complete as per Clause 511 of Specifications for Road & Bridge Works of MoRT&H (5-th Revesion) I) By Mechanical Means ii) With Hot Bitumen Binder (@ 6.80 kg / 10 Sq.m.) In road crust 1 x 1000 x 2.4 2400.00 1 x 0 x 0 0.00 = 2400.00													
TOTAL COST (A)													Rs.	9,01,652.87
Add GST(6% CGST+6% SGST)On Sl No A) B@12.0%													Rs.	1,08,198.34
Cost of Civi works excluding labour welfare cess Total (C=A+B)													Rs.	9,01,652.87
Labour welfare cess (on Sl.no C)@1.0% D													Rs.	9,016.53
Cost of Civi works including labour welfare cess amount (E=C+D)													Rs.	9,10,669.40
Add Contingency (on Sl.no C) @3.0% Rs.													Rs.	27,320.08
TOTAL ESTIMATED COST Rs.													Rs.	9, 37, 990.00
TOTAL ESTIMATE (IN WORD)-NINE LAKHS THIRTY SEVEN THOUSANDS NINE HUNDRED NINETY ONLY														

Rate Analysis of Materials										
Carriage charges										
1	Material cost	loading into truck at lifting point , unloading at destination ,	rate up to 5 km	5 to 10 km	10 to 20 km	20 to 50 km	Total transport cost	Total final cost		
	Grade 2 aggregate	1421	77	124	10.9	10.1	9.5	527.5	1948.5	
	stone screening	1010	62	124	10.9	10.1	9.5	512.5	1522.5	
Rate analysis for Providing , Laying spreading and compacting stone aggregates of specific sizes to water bound macadam specification including spreading in uniform thickness, hand packing, rolling with vibratory roller 8 -10 tonnes in stages to proper grade and camber, applying and brooming requisite type of screening / binding materials to fill up the interstices of coarse aggregates watering including lighting , guarding, barricading and macking necessary earthen bundh of one metre width on each side and preparing the bed by necessary cutting or filling , including cost of all materials and hire and labour charges of all men and machinery and compacting to the required density, as per Clause - 4 of Specification for Road & Bridge Works of MoRT&H (5- th Revision)										
	Stone metal screening material		1.21	1948.5	2357.685					
	Labour cost for mechanical means		1	215	215					
			Total	2938.085						
2	Description							Qty		
	Providing and applying tack coat with Catonic Bitumen Emulsion of approved grade conforming to IS: 8887 - 1978 on the prepared surface cleaned with Hydraulic broom, moistening the surface including cost and carriage of emulsion , hire charges of machinery and labour, cost of fuel and lubricants all complete as per Clause 503 of Specifications for Road Bridge Works of MoRT& H (5th Revision) on granular surface treated with premix (using bitumen emulsion @ of 0.25 to .30 kg/m2									
	a) cost of cataionic bitumen emulsion @ .275 kg/m2							0.275 kg	30830.10/MT	8.4782775
								1m2	1.3	1.3
									Total	9.7782775
3	Description							Qty		
	Providing, Laying and rolling of open -graded premix surfacing of 20 mm thickness composed of 13.2 mm (@ 0.018 m3 per m2) and 11.2 mm (@ 0.009 m3 per m2) size stone aggregates, including thoroughly cleaning of the surface, screening, cleaning and pre-heating stone chips and fully pre coating the same either using viscosity grade paving Bitumen or cut back or emulsion , carrying the mixture by any suitable arrangements, laying the mixture uniformly over the surface, including line, grade and level to serve as wearing course on a previously prepared base, including mixing in mobile Hot Mix Plant (Light Duty) and thoroughly rolling with a smooth wheeled roller 8 - 10 Tonne capacity, finished to required level and grades including the cost and carriage of stone chips and matix heating the matix, preheating the aggregates to required temperature and including the hire charges of Mobile Hot Mix Plant (Light Duty) and other machinery, pay of operators, cost of fuel and lubricants etc. complete to be followed by seal coat of either Type - A or Type - B as per Tecnical Specification Clause 508 for Rural Roads of MORD									
	cost of 13.2 mm stone chips @ .018m3 per m2							.018m3	2041.5	36.747
	cost of 11.2 mm stone chips @ .009m3 per m3							.009m3	1902.5	17.1225
	Cost of bitumen 60/70 (packed) @ 1.46 kg per m2							1.46 kg	26349	38.46954
	L/C by mobile hot mix plant including cost of fuel							1 m2	14.1	14.1
									Total	106.43904
4	Description							Qty		
	Providing and laying Premixed Seal Coat (Type - B) with approved quality sand / grit @ 0.60 m3 / 100 m2 and bitumen binder on thoroughly cleaned black top surface coated with tack coat, including heating and mixing cleaned sand / grit (100 % passing through 2.36 mm sieve and retained on 180 micron sieve) uniformly with bitumen binder, laying and spreading the mix at an uniform rate usding suitable means, brushing the surface, if necessary, to ensure uniformly, followed by rolling with power roller including the cost and carriage of binder and aggregates, cost of heating the binder and aggregates and all other incidental charges cost of fuel and lubricants including hire charges of machineries, tools & plants required for construction and quality control complete as per Clause 511 of Specifications for Road & Bridge Works of MoRT&H (5- th Revision)									
	cost of bitumen 60/70 (packed) @ .68 kg per M2							0.68kg	26349.9	17.917932
	cost of stone grit @ .6 m3 per 100 M2							0.006 M3	1549.5	9.297
	L/C by mobile hot mix plant including cost of fuel							1m2	11.9	11.9
									Total	39.114932