

Bill of Quantities for Non Motorised Transport (NMT) for
Katanga Crossing to Jhanda Chowk Gwarighat Road

Length of the Road = 5500 m

NMT Width 2.5 m either sides of the carriageway

Existing

- 1 Carriageway both side width 7.5m
- 2 Median width 0.75m and Center Lighting
- 3 Hard Shoulder both side width 3.5m
- 4 Existing Drain both side width 0.7m to .9m (Lined or Unlined)

Provisions :-

Katanga crossing to Bandariya Crossing

LEFT SIDE -

- 1 2.5 m wide Paver Block in NMT
- 2 Steel Railing at 1.2 m high.

RIGHT SIDE -

- 1 2.5 m wide Paver Block in NMT
- 2 Steel Railing at 1.2 m high (Only 20% of the total length)

Bandariya Crossing to Rampur Chowk

LEFT SIDE -

- 1 Paved shoulders recently constructed on Left Side

RIGHT SIDE -

- 1 2.5 m wide Paver Block in NMT
- 2 Steel Railing at 1.2 m high.

Rampur Chowk to Polipather entrance

LEFT & RIGHT SIDE- SAME

- 1 2.5 m Wide Bituminous Lane in NMT
- 2 Bollard (Concrete) c/c 1.0 m (size 300 x 300 x 600 mm)

End of Polipather to ROB

LEFT SIDE -

- 1 2.5 m Wide Bituminous Lane in NMT
- 2 Bollard (Concrete) c/c 1.0 m (size 300 x 300 x 600 mm)

RIGHT SIDE -

- 1 2.5 m wide Paver Block in NMT
- 2 Bollard (Concrete) c/c 1.0 m (size 300 x 300 x 600 mm)

ROB to Jhanda Chowk

LEFT & RIGHT SIDE- SAME

- 1 2.5 m Wide Bituminous Lane in NMT
- 2 Bollard (Concrete) c/c 1.0 m (size 300 x 300 x 600 mm)

Notes:- These Bollards will not be provided at Junctions or At cross roads. Also as per site conditions space will be left free of bollards as directed by the Engineer in Charge. The spacing of Concrete Bollards may be changed as per requirement of site and as per instruction of Client. The shape of concrete bollard will also be required to get approved from the client before execution.

Bill of Quantities for Non Motorised Transport (NMT) for
Katanga Crossing to Jhanda Chowk Gwarighat Road

1- Estimate of NMT with paver block, Ch - 0 to 1374 (Katanga tiraha to Bandariya Tiraha at left side)										
S.No.	UADD SOR Vol III, ITEM NO	Descriptions of Item	Measurement					Rate	Unit	Amount
			No.	L	B	H	Quantity			
1	3.1, Vol III	Excavation								
		Excavation for roadway in soil including loading in truck for carrying of cut earth to embankment site with all lifts and lead upto 1000 metres and as per relevant clauses of section-300								
		For NMT (Average Thickness)								
			1.00	1374	2.5	0.255	876			
		Total					876	98.00	cum	85841
2	2.27, Vol II	Filling								
		Supply and Filling in plingth in under floor including , watering ,Ramming consloditing and dressing complete								
		Moorum/Hard copra								
		Road Ch. 0 to 1374	1.00	1374	2.5	0.100	344			
		Total					344	570.00	cum	195795
3	4.1.4, Vol II	M 10								
		Cement Concrete Grade M-10 (Nominal mix) with 20mm maximum size of stone aggrigate								
		Road Ch. 0 to 1374	1.00	1374	2.5	0.075	258			
		Total						258	3595.0	cum
4	11.46. 1 Vol II	Paver Block								
		Providing & Laying 80mm thick Factory made cement concrete interlocking paver block of M-30 Grade made by block macking machine with strong vibratory compaction and of aproved size and design/shape laid in required colure and pattern overand including 50mm thick comacted bed of coarse sand,filling the joint with coarse sand ext.								
		Road Ch. 0 to 1374	1.00	1374	2.5	0.080	275			
		Total						275	568.0	cum
5	4.1.2 Vol III	M-15 for Beam at both side								
		Cement Concrete Grade M-15 (Nominal mix) with 20mm maximum size of stone aggrigate								
		Road Ch. 0 to 1374	2.00	1374	0.100	0.180	49			
		Total quantity					49	4154.0	cum	205473
6	8.16 Vol III	Railing								
		Tubbular steel railing on medium weight steel								
			1.00	1099			1099			
		20% Deduction for Bunglows Entry & Colony Roads								
		Total quantity				1099	1536.00	rm	1688371	
							Total			3257729
							Say in Lakh.	Rs		32.58

Bill of Quantities for Non Motorised Transport (NMT) for
Katanga Crossing to Jhanda Chowk Gwarighat Road

2 - Estimate of NMT with paver block, Ch - 0 to 1374 (Katanga tiraha to Bandariya Tiraha at Right side)

S.No.	UADD SOR Vol III, ITEM NO	Descriptions of Item	Measurement					Rate	Unit	Amount
			No.	L	B	H	Quantity			
1	3.1, Vol III	Excavation								
		Excavation for roadway in soil including loading in truck for carrying of cut earth to embankment site with all lifts and lead upto1000 metres and as per relevant clauses of section-300								
		For NMT (Average Thickness)	1.00	1374	2.5	0.255	876	98.00	cum	85841
2	2.27, Vol II	Filling								
		Supply and Filling in plingth in under floor including , watering ,Ramming consloditing and dressing complete								
		Moorum/Hard copra								
		Road Ch. 0 to 1374	1.00	1374	2.5	0.100	344			
		Total				344	570.00	cum	195795	
3	4.1.4, Vol II	M 10								
		Cement Concrete Grade M-10 (Nominal mix) with 20mm maximum sixe of stone aggrigate								
		Road Ch. 0 to 1374	1.00	1374	2.5	0.075	258			
		Total				258	3595.0	cum	926162	
4	11.46. 1 Vol II	Paver Block								
		Providing & Laying 80mm thick Factory made cement concrete interlocking paver block of M-30 Grade made by block macking machine with strong vibratory compaction and of aproved size and design/shape laid in required colure and pattern overand including 50mm thick comacted bed of coarse sand,filling the joint with coarse sand ext.								
		Road Ch. 0 to 1374	1.00	1374	2.5	0.080	275			
		Total				275	568.0	cum	156086	
5	4.1.2 Vol III	M-15 for Beam at both side								
		Cement Concrete Grade M-15 (Nominal mix) with 20mm maximum sixe of stone aggrigate								
		Road Ch. 0 to 1374	2.00	1374	0.100	0.180	49			
		Total quantity				49	4154.0	cum	205473	
6	8.16 Vol III	Railing								
		Tubbular steel railing on medium weight steel channel (ISMC serier) 100mm x 50 mm (providing,fixing and erecting 50m dia GI pipe(medium class)Railing in 3 rows duly painted on medium weight steel channels(ISMC series)100mm x 50mm ,1.2 m High Above ground ,2m center to center,complete as per approved drawings as per relevant clauses of section 800 of specification.								
		75% Deduction for house Entry & Colony Roads	1.00	344			344			
		Total quantity				344	1536.00	rm	527616	
							Total		2011133	
							Say in Lakh.	Rs	20.11	

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3 - Estimate of NMT with paver block,Ch -1374 to 1687 (Bandariya Tiraha to Rampur Chowk at Right side)

S.No.	UADD SOR Vol III, ITEM NO	Descriptions of Item	Measurement					Rate	Unit	Amount
			No.	L	B	H	Quantity			
1	3.1, Vol III	Excavation								
		Excavation for roadway in soil including loading in truck for carrying of cut earth to embankment site with all lifts and lead upto1000 metres and as per relevant clauses of section-300								
		For NMT (Average Thickness)	1.00	313	2.5	0.255	200	98.00	cum	19555
2	2.27, Vol II	Filling								
		Supply and Filling in plingth in under floor including , watering ,Ramming consloditing and dressing complete								
		Moorum/Hard copra								
		Road 1374 to 1687	1.00	313	2.5	0.100	78			
		Total					78	570.00	cum	44603
3	4.1.4, Vol II	M 10								
		Cement Concrete Grade M-10 (Nominal mix) with 20mm maximum sixe of stone aggrigate								
		Road 1374 to 1687	1.00	313	2.5	0.075	59			
		Total					59	3595.0	cum	210982
4	11.46. 1 Vol II	Paver Block								
		Providing & Laying 80mm thick Factory made cement concrete interlocking paver block of M-30 Grade made by block macking machine with strong vibratory compaction and of aproved size and design/shape laid in required colure and pattern overand including 50mm thick comacted bed of coarse sand,filling the joint with coarse sand ext.								
		Road 1374 to 1687	1.00	313	2.5	0.080	63			
		Total					63	568.0	cum	35557
5	4.1.2 Vol III	M-15 for Beam at both side								
		Cement Concrete Grade M-15 (Nominal mix) with 20mm maximum sixe of stone aggrigate								
		Road 1374 to 1687	2.00	313	0.100	0.180	11			
		Total quantity					11	4154.0	cum	46807
6	8.16 Vol III	Railing	1.00	313			313			
		Tubbular steel railing on medium weight steel channel (ISMC serier) 100mm x 50 mm (providing,fixing and erecting 50m dia GI pipe(medium class)Railing in 3 rows duly painted on medium weight steel channels(ISMC series)100mm x 50mm ,1.2 m High Above ground ,2m center to center,complete as per approved drawings as per relevant clauses of section 800 of specification.								
		20% Deduction for Bunglows Entry & Colony Roads								
		Total quantity					250	1536.00	rm	384614
		Total								742117
		Say in Lakh.						Rs		7.42

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4 - Estimate of NMT with Paver Block Ch - 3261 to 4773 (End of Polipathar to ROB at Right side)

S.No.	UADD SOR Vol III, ITEM NO	Descriptions of Item	Measurement					Rate	Unit	Amount
			No.	L	B	H	Quantity			
1	3.1, Vol III	Excavation								
		Excavation for roadway in soil including loading in truck for carrying of cut earth to embankment site with all lifts and lead upto 1000 metres and as per relevant clauses of section-300 For NMT (Average Thickness)	1.00	1512	2.5	0.255	964	98.00	cum	94462
2	2.27, Vol II	Filling								
		Supply and Filling in plinth in under floor including , watering ,Ramming consloditing and dressing complete								
		Moorum/Hard copra Road Ch. 3261 to 4773	1.00	1512	2.5	0.100	378	570.00	cum	215460
3	4.1.4, Vol II	M 10								
		Cement Concrete Grade M-10 (Nominal mix) with 20mm maximum size of stone aggregate Road Ch. 3261 to 4773	1.00	1512	2.5	0.075	284	3595.0	cum	1019183
4	11.46. 1 Vol II	Paver Block								
		Providing & Laying 80mm thick Factory made cement concrete interlocking paver block of M-30 Grade made by block macking machine with strong vibratory compaction and of aproved size and design/shape laid in required colure and pattern overand including 50mm thick comacted bed of coarse sand,filling the joint with coarse sand ext. Road Ch. 3261 to 4773	1.00	1512	2.5	0.080	302	568.0	cum	171763
5	4.1.2 Vol III	M-15 for Beam at both side								
		Cement Concrete Grade M-15 (Nominal mix) with 20mm maximum size of stone aggregate Road Ch. 3261 to 4773	2.00	1512	0.100	0.180	54	4154.0	cum	226111
6	13.6 Vol III	M20 Bollard (Concrete) (or Wheel Guard)								
		Providing and laying Plain/Reinforced cement concrete (mixed in concrete mixture) in open foundation including form work shuttering etc. complete as per drawing and technical ecifications and as per relevant clauses of sections 1500, 1700 & 2100 with								
		(e) RCC Grade M20 with 20 mm maximum size of aggregate Bollard Concrete(@ 1.0 m Spacing) 10% Space Traffic Junction etc. will be left free. Also access will be provided to enter shops and homes after every 10 m interval in densely built up areas as per instruction of Client. Here for Estimate purpose its shape is taken as rectangular in plan, but it may be changed as per instruction of Client.(Both side of the pathway) (10% Deduction in bollards for colony road)	1134	0.60	0.3	0.300	61.24			
		Total quantity				61.24	4277	Cum	261906	
7	14.6 Vol III	Reinforcemnet STEEL for bollard								
		Supplying, fitting and placing HYSD bar reinforcement in sub-structure complete as per drawing and technical specifications and as per relevant clauses of sections 1600.								
		Main Bar 8mm# 4No. Per Wheel Guard or Bollard	1134	4.00	0.7	0.395	1254			
		Distribution bar 8mm dia 200c/c	1134	4.00	0.8	0.395	1433			
		Total quantity KG					2688		KG	
		Total quantity MT				2.69	57086	MT	153423	
							Total		2047846	

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							Say in Lakh.	Rs	20.48	
5 - Estimate of NMT With BT Road CH - 1687 to 3261 (Rampur to Polipathar at Both side)										
S.No.	UADD SOR Vol III, ITEM NO	Descriptions of Item	Measurement					Rate	Unit	Amount
			No.	L	B	H	Quantity			
1	3.1, Vol III	Excavation								
		Excavation for roadway in soil including loading in truck for carrying of cut earth to embankment site with all lifts and lead upto1000 metres and as per relevant clauses of section-300								
		For NMT (Average Thickness)	2.00	1574	2.5	0.670	5273	98.00	cum	516744
2	3.19, Vol III	Earthwork for NMT of road work for sub grade material								
		item taken from - Construction of Hard Shoulder with approved material/selected soil having CBR >12 i/c excavation all lifts & leads i/c grading to required slope & camber of 4% and compacting using vibratory roller of 80 to 100 kN static weight to meet requirement as per relevant clause of 400.								
		NMT	2.00	1574	2.5	0.300	2361	333.0	cum	786213
3	4.8(b) I Vol III	GSB (granular sub-base)								
		Construction of granular sub-base by providing coarse graded material, spreading in uniform layers with on prepared surface, mixing by mix in place method at OMC, and compacting with vibratory roller to achieve the desired density, complete in all respect and as per relevant clauses of section-400.Grade III								
			2.00	1574	2.5	0.150	1181	600.0	cum	708300
4	4.5 Vol III	Water Bound Macadam								
		Providing, laying, spreading and compacting stone aggregates of specific sizes to water bound macadam ecification including spreading in uniform ckness,hand acking, rolling with vibratory roller 8-10 tonnes in stages to proper gradeand camber, applying and brooming requisite type of reening/ binding materialsto fill up the tices of coarse te,ateringandcompacting to therequired density and as per relevant clauses of section-400								
		WBM GII (75 + 75mm) 2 Layer	2.00	1574	2.5	0.150	1181	973.0	cum	1148627
5	5.1 Vol III	Primer Coat								
		Providing and applying primer coat with bitumen emulsion on prepared surface of granular Base including clearing of road surface and spraying primer at the rate of 0.75 kg/sqm using mechanical / Manual means and as per relevant clauses of section 502.								
			2.00	1574	2.5		7870	26.00	sqm	204620
6	5.2 (i) Vol III	Tack Coat								
		Providing and applying tack coat with bitumen emulsion using emulsion pressure distributor on the prepared bituminous / granular surface cleaned with mechanical broom and as per relevant clauses of section 503. '@0.25 kg per sqm								
			2.00	1574	2.5		7870	9.00	sqm	70830

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7	5.3 Vol III	BM (bituminous macadam)								
		Providing and laying Bituminous macadam with hot mix paint using crushed aggregates of specified grading pre mixed with bituminous binder, transported to site laid over a previously prepared surface with mechanical paver finisher to the required grade, level and alignment and rolled as per clauses 501.6 and 501.7 to achieve the desired paction complete in all respects and as per relevant clauses of section-500. For Grading II 60mm								
		Total quantity	2.00	1574	2.5	0.060	472	5726	Cum	2703817
8	5.7 (iv) Vol III	SDBC								
		Providing and laying semi dense bituminous concrete with hot mix plant using crushed aggregates of specified grading, premixed with bituminous binder, transporting the hot mix to work site, laying with mechanical paver finisher to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction in all respects and as per relevant clauses of section-508. (Only cement will be used as filler).								
		iv) For Grading II with 60/70 bitumen								
		Total quantity	2.00	1574	2.5	0.025	197	8391.00	cum	1650929
9	8.16 Vol III	Railing								
		Tubbular steel railing on medium weight steel channel (ISMC serier) 100mm x 50 mm (providing,fixing and erecting 50m dia GI pipe(medium class)Railing in 3 rows duly painted on medium weight steel channels(ISMC series)100mm x 50mm ,1.2 m High Above ground ,2m center to center,complete as per approved drawings as per relevant clauses of section 800 of specification.								
			2.00	1574			3148			
		20% Deduction for Bunglows Entry & Colony Roads					-630			
		Total quantity					2518	1536.00	rm	3868262
								Total		11658343
								Say in Lakh. Rs		116.58

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Katanga Crossing to Jhanda Chowk Gwarighat Road

6 - Estimate of NMT with BT road Ch - 3261 to 4773 (End of Polipathar to ROB at left side)

S.No.	UADD SOR Vol III, ITEM NO	Descriptions of Item	Measurement					Rate	Unit	Amount
			No.	L	B	H	Quantity			
1	3.1, Vol III	Excavation Excavation for roadway in soil including loading in truck for carrying of cut earth to embankment site with all lifts and lead upto1000 metres and as per relevant clauses of section-300 For nmt (Average Thickness)	1.00	1512	2.5	0.670	2533	98.00	cum	248195
		Total					2533			
2	3.19, Vol III	Earthwork for NMT of road work for sub grade material item taken from - Construction of Hard Shoulder with approved material/selected soil having CBR >12 i/c excavation all lifts & leads i/c grading to required slope & camber of 4% and compacting using vibratory roller of 80 to 100 kN static weight to meet requirement as per relevant clause of 400. NMT	1.00	1512	2.5	0.300	1134	333.0	cum	377622
		Total					1134			
3	4.8(b) I Vol III	GSB (granular sub-base) Construction of granular sub-base by providing coarse graded material, spreading in uniform layers with on prepared surface, mixing by mix in place method at OMC, and compacting with vibratory roller to achieve the desired density, complete in all respect and as per relevant clauses of section-400.Grade III NMT	1.00	1512	2.5	0.150	567	600.0	cum	340200
		Total					567			
4	4.5 Vol III	Water Bound Macadam Providing, laying, spreading and compacting stone aggregates of specific sizes to water bound macadam ecification including spreading in uniform ckness,hand acking, rolling with vibratory roller 8-10 tonnes in stages to proper gradeand camber, applying and brooming requisite type of reening/ binding materialsto fill up the tices of coarse te,ateringandcompacting to therequired density and as per relevant clauses of section-400 WBM GII (75 + 75mm) 2 Layer NMT	1.00	1512	2.5	0.150	567	973.0	cum	551691
		Total quantity					567			

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5	5.1 Vol III	Primer Coat								
		Providing and applying primer coat with bitumen emulsion on prepared surface of granular Base including clearing of road surface and spraying primer at the rate of 0.75 kg/sqm using mechanical / Manual means and as per relevant clauses of section 502.								
		Road 0 to 580m = 580m	1.00	1512	2.5		3780			
		Total quantity				3780	26.00	sqm	98280	
6	5.2 (i) Vol III	Tack Coat								
		Providing and applying tack coat with bitumen emulsion using emulsion pressure distributor on the prepared bituminous / granular surface cleaned with mechanical broom and as per relevant clauses of section 503. '@0.25 kg per sqm								
			1.00	1512	2.5		3780			
		Total quantity				3780	9.00	sqm	34020	
7	5.3 Vol III	BM (bituminous macadam)								
		Providing and laying Bituminous macadam with hot mix paint using crushed aggregates of specified grading pre mixed with bituminous binder, transported to site laid over a previously prepared surface with mechanical paver finisher to the required grade, level and alignment and rolled as per clauses 501.6 and 501.7 to achieve the desired paction complete in all respects and as per relevant clauses of section-500. For Grading II 60mm								
		Total quantity	1.00	1512	2.5	0.060	227	5726	Cum	1298657
8	5.7 (iv) Vol III	SDBC								
		Providing and laying semi dense bituminous concrete with hot mix plant using crushed aggregates of specified grading, premixed with bituminous binder, transporting the hot mix to work site, laying with mechanical paver finisher to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction in all respects and as per relevant clauses of section-508. (Only cement will be used as filler).								
		iv) For Grading II with 60/70 bitumen								
		Total quantity	1.00	1512	2.5	0.025	95	8391.00	cum	792950

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9	13.6	M20 Bollard (Concrete) (or Wheel Guard)								
	Vol III	Providing and laying Plain/Reinforced cement concrete (mixed in concrete mixture) in open foundation including form work shuttering etc. complete as per drawing and technical ecifications and as per relevant clauses of sections 1500, 1700 & 2100 with								
		(e) RCC Grade M20 with 20 mm maximum size of aggregate								
		Bollard Concrete(@ 1.0 m Spacing) 10% Space Traffic Junction etc. will be left free. Also access will be provided to enter shops and homes after every 10 m interval in densly built up areas as per instruction of Client. Here for Estimate purpose its shape is taken as rectangular in plan, but it may be changed as per instruction of Client.(Both side of the pathway)								
			925	0.60	0.3	0.300	49.95			
		Total quantity					49.95	4277	Cum	213636
10	14.6	Reinforcemnet STEEL for bollard								
	Vol III	Supplying, fitting and placing HYSD bar reinforcement in sub-structure complete as per drawing and technical specifications and as per relevant clauses of sections 1600.								
		Main Bar 8mm# 4No. Per Wheel Guard or Bollard	925	4.00	0.7	0.395	1023			
		Distribution bar 8mm dia 200c/c	925	4.00	0.8	0.395	1169			
		Total quantity KG					2192		KG	
		Total quantity MT					2.19	57086	MT	125147
								Total		4080397
								Say in Lakh.	Rs	40.80

Bill of Quantities for Non Motorised Transport (NMT) for
Katanga Crossing to Jhanda Chowk Gwarighat Road

7 - Estimate of NMT with BT road Ch - 4773 to 5500 (ROB to Jhanda chowk at Both side)

S.No.	UADD SOR Vol III, ITEM NO	Descriptions of Item	Measurement					Rate	Unit	Amount
			No.	L	B	H	Quantity			
1	3.1, Vol III	Excavation								
		Excavation for roadway in soil including loading in truck for carrying of cut earth to embankment site with all lifts and lead upto1000 metres and as per relevant clauses of section-300								
		For nmt (Average Thickness)								
			2.00	727	3.0	0.670	2923			
		Total					2923	98.00	cum	286409
2	3.19, Vol III	Earthwork for NMT of road work for sub grade material								
		item taken from - Construction of Hard Shoulder with approved material/selected soil having CBR >12 i/c excavation all lifts & leads i/c grading to required slope & camber of 4% and compacting using vibratory roller of 80 to 100 kN static weight to meet requirement as per relevant clause of 400.								
		NMT								
			2.00	727	3.0	0.300	1309			
		Total					1309	333.0	cum	435764
3	4.8(b) I Vol III	GSB (granular sub-base)								
		Construction of granular sub-base by providing coarse graded material, spreading in uniform layers with on prepared surface, mixing by mix in place method at OMC, and compacting with vibratory roller to achieve the desired density, complete in all respect and as per relevant clauses of section-400.Grade III								
		NMT								
			2.00	727	3.0	0.150	654			
		Total					654	600.0	cum	392580
4	4.5 Vol III	Water Bound Macadam								
		Providing, laying, spreading and compacting stone aggregates of specific sizes to water bound macadam ecification including spreading in uniform ckness,hand acking, rolling with vibratory roller 8-10 tonnes in stages to proper gradeand camber, applying and brooming requisite type of reening/ binding materialsto fill up the tices of coarse te,ateringandcompacting to therequired density and as per relevant clauses of section-400								
		WBM GII (75 + 75mm) 2 Layer								
		NMT								
			2.00	727	3.0	0.150	654			
		Total quantity					654	973.0	cum	636634

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5	5.1 Vol III	Primer Coat								
		Providing and applying primer coat with bitumen emulsion on prepared surface of granular Base including clearing of road surface and spraying primer at the rate of 0.75 kg/sqm using mechanical / Manual means and as per relevant clauses of section 502.								
		Road 0 to 580m = 580m	2.00	727	3.0		4362			
		Total quantity					4362	26.00	sqm	113412
6	5.2 (i) Vol III	Tack Coat								
		Providing and applying tack coat with bitumen emulsion using emulsion pressure distributor on the prepared bituminous / granular surface cleaned with mechanical broom and as per relevant clauses of section 503. '@0.25 kg per sqm								
		0.00	2.00	727	3.0		4362			
		Total quantity					4362	9.00	sqm	39258
7	5.3 Vol III	BM (bituminous macadam)								
		Providing and laying Bituminous macadam with hot mix paint using crushed aggregates of specified grading pre mixed with bituminous binder, transported to site laid over a previously prepared surface with mechanical paver finisher to the required grade, level and alignment and rolled as per clauses 501.6 and 501.7 to achieve the desired paction complete in all respects and as per relevant clauses of section-500. For Grading II 60mm								
		Total quantity	2.00	727	3.0	0.060	262	5726	Cum	1498609
8	5.7 (iv) Vol III	SDBC								
		Providing and laying semi dense bituminous concrete with hot mix plant using crushed aggregates of specified grading, premixed with bituminous binder, transporting the hot mix to work site, laying with mechanical paver finisher to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction in all respects and as per relevant clauses of section-508. (Only cement will be used as filler).								
		iv) For Grading II with 60/70 bitumen								
		Total quantity	2.00	727	2.5	0.025	91	8391.00	cum	762532

Bill of Quantities for Non Motorised Transport (NMT) for
Katanga Crossing to Jhanda Chowk Gwarighat Road

9	13.6 Vol III	M20 Bollard (Concrete) (or Wheel Guard)								
		Providing and laying Plain/Reinforced cement concrete (mixed in concrete mixture) in open foundation including form work shuttering etc. complete as per drawing and technical ecifications and as per relevant clauses of sections 1500, 1700 & 2100 with								
		(e) RCC Grade M20 with 20 mm maximum size of aggregate								
		Bollard Concrete(@ 2.0m Spacing) 10% Space Traffic Junction etc. will be left free. Also access will be provided to enter shops and homes after every 10 m interval in densly built up areas as per instruction of Client. Here for Estimate purpose its shape is taken as rectangular in plan, but it may be changed as per instruction of Client. (Both side of the road of each patway= 727 x 2)								
			1454	0.60	0.3	0.300	78.52			
		Total quantity					78.52	4277	Cum	335813
10	14.6 Vol III	Reinforcemnet STEEL for bollard								
		Supplying, fitting and placing HYSD bar reinforcement in sub-structure complete as per drawing and technical specifications and as per relevant clauses of sections 1600.								
		Main Bar 8mm# 4No. Per Wheel Guard or Bollard	727	4.00	0.7	0.395	1608			
		Distribution bar 8mm dia 200c/c	727	4.00	0.8	0.395	1838			
		Total quantity KG					3446		KG	
		Total quantity MT					3.45	57086	MT	196717
								Total		6878895
								Say in Lakh.	Rs	68.79