

MAHARASHTRA STATE WAREHOUSING CORPORATION

583/B, MARKET YARD, GULTEKADI, PUNE-411037

**STANDARD ESTIMATE FOR CONSTRUCTION OF 1/1800 MT CAPACITY PRE
ENGINEERED WH BLDG WITH ANCILLARY WORKS**

Sub Work No:-III :-Bituminious Road

MEASUREMENT SHEET

Item Nos & Description of Items	NO.S				LENGTH	BREDTH	DEPTH / HIGHT	TOTAL QUANTITY	Unit
	1	X	2						
2									3

New Road									
Long Side	1	x	1	X	57.39	X	6.50	=	373.05
Long Side	1	x	1	X	57.39	X	6.50	=	373.05
Short Side	1	x	1	X	22.39	X	6.00	=	134.35
Short Side	1	x	1	X	22.39	X	6.00	=	134.35

- 1 Excavation for roadway in earth, soil of all sorts, sand, gravel or soft murum including cum dressing section to the required grade, camber and side slopes and conveying the excavated materials outside the complex including all leads & lifts.

Road formation

New Road

Long Side	1	x	1	X	57.39	X	6.50	X	0.60	=	223.83
Long Side	1	x	1	X	57.39	X	6.50	X	0.60	=	223.83
short Side	1	x	1	X	22.39	X	6.00	X	0.60	=	80.61
Short Side	1	x	1	X	22.39	X	6.00	X	0.60	=	80.61
Approach Road	1	X	1	X	2.74	X	6.50	X	0.60	=	10.68

Total Net 619.56
Say 620.00 cum

- 2 Picking the road surface including sectioning etc. complete (WBM surface.) Sqm

Existing Road

Long Side	0	x	0	X	0.00	X	6.00	=	0.00
Short Side	0	x	0	X	0.00	X	6.00	=	0.00

Total Net 0.00
Total Net 0.00
Say 0.00 Sqm

- 3 Excavation for roadway in hard murum and boulder including dressing section to the cum required grade, camber and side slopes and conveying the excavated materials with all lifts upto a lead of 50m.and spreading for embankment or stacking as directed.

New Road

Long Side	1	x	1	X	57.39	X	6.50	X	0.40	=	149.22
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Long Side	1	x	1	X	57.39	X	6.50	X	0.40	=	149.22
short Side	1	x	1	X	22.39	X	6.00	X	0.40	=	53.74
Short Side	1	x	1	X	22.39	X	6.00	X	0.40	=	53.74

Total	Net	1.00
Total	Net	1.00
	Say	1.00 cum

- 4 Excavation for roadway in soft rock, including dressing section to the required grade, cum camber and side slopes and conveying the excavated materials with all lifts upto a lead of 50m. and spreading or stacking

Road formation

Provision											1.00
						Total	Net				1.00
							Say				1.00 cum

- 5 Excavation for roadway in hard rock by controlled blasting including dressing section to cum the required grade, camber and side slopes and conveying the excavated materials with all lifts upto a lead of 50m. and spreading for embankment or stocking as directed.

Road formation

Provision											1.00
						Total	Net				1.00
							Say				1.00 cum

- 6 Providing soling using 80 mm size trap metal in 15 cm. layer including filling voids with cum Crushed sand/grit, ramming, watering etc. complete.

Road formation

New Road

Long Side	1	x	1	X	57.39	X	6.50	X	0.23	=	85.80
Long Side	1	x	1	X	57.39	X	6.50	X	0.23	=	85.80
short Side	1	x	1	X	22.39	X	6.00	X	0.23	=	30.90
Short Side	1	x	1	X	22.39	X	6.00	X	0.23	=	30.90

Total	Net	233.40
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Say 233.00 cum

Supplying **80 mm trap stone** metal at the road side including conveying & stacking etc. cum complete.

7

New Road

Long Side	1	x	1	X	57.39	X	6.50	X	0.15	=	55.96
Long Side	1	x	1	X	57.39	X	6.50	X	0.15	=	55.96
short Side	1	x	1	X	22.39	X	6.00	X	0.15	=	20.15
Short Side	1	x	1	X	22.39	X	6.00	X	0.15	=	20.15

Total	152.22
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Add 32. % Voids 48.71

Say	200.93
Say	201.00 cum

Supplying **40 mm trap stone** metal at the road side including conveying & stacking etc. cum
8 complete.

New Road

Long Side	1	x	1	X	57.39	X	6.50	X	0.10	=	37.30
Long Side	1	x	1	X	57.39	X	6.50	X	0.10	=	37.30
short Side	1	x	1	X	22.39	X	6.00	X	0.10	=	13.44
Short Side	1	x	1	X	22.39	X	6.00	X	0.10	=	13.44

Total 101.48

Add for Compaction factor
32 %

32.47
Total 133.95
Say **134.00** cum

9 **Spreading 80 mm trap stone metal** including sectioning as directed etc. complete. cum

Qty. as per item 6 = **201.00**
Total 201.00
Say **201.00** cum

10 **Spreading 40 mm trape stone metal** including sectioning as directed etc. complete. cum

Qty. as per item 7 = **134.00**
Total 134.00
Say **134.00** cum

11 Supplying hard murum/ kankar at the road site, including conveying and stacking cum complete.

New Road

Long Side	1	x	1	X	57.39	X	6.50	X	0.05	=	18.65
Long Side	1	x	1	X	57.39	X	6.50	X	0.05	=	18.65
short Side	1	x	1	X	22.39	X	6.00	X	0.05	=	6.72
Short Side	1	x	1	X	22.39	X	6.00	X	0.05	=	6.72

For side Shoulder

Long Side	1	x	1	X	57.39	X	0.50	X	0.25	=	7.17
Long Side	1	x	1	X	57.39	X	0.50	X	0.25	=	7.17
short Side	1	x	1	X	22.39	X	0.50	X	0.25	=	2.80
Short Side	1	x	1	X	22.39	X	0.50	X	0.25	=	2.80

Total 70.69

add for compaction 20% 14.14

Net 84.82
Say **85.00** cum

12 Spreading hard murum/ soft murrum/ gravel or kankar for side width complete cum

Qty. as per item 10 = 85.00
Total 85.00
Say **85.00** cum

13 **Compacting oversize metal layer** with H. M. with power roller including artificial sqm watering & necy. Labour etc. complete.

For Rubble soiling	1	X	1014.80	=	1014.8
For 80mm	1	X	1014.80	=	1014.8
For 40mm	1	X	1014.80	=	1014.8
			Total		3044.40
			Say		3044.40

14 Compacting the hard murum side widths including laying in layers on each side with sqm vibratory roller including artificial watering etc. complete

For side Shoulder

Long Side I-J	1	x	1	X	57.39	X	0.50	=	28.70
Long Side G-H	1	x	1	X	57.39	X	0.50	=	28.70
Long Side B-C, E-F	1	x	1	X	22.39	X	0.50	=	11.20
Short Side C-F, G-I, H-J	1	x	1	X	22.39	X	0.50	=	11.20
					Total		Net Say		79.78 80.00 sqm

15 Providing and constructing 75 mm. thick Modified Penetration Macadam (MPM) road surface including all materials, preparing the existing road surface, spreading 40 mm. stone metal layers 100% crusher broken metal with conical crusher plant heating and spraying the bitumen of specified grade @ 2 Kilogram/Square Metre, spreading 12 mm.size chips compacting with three wheel static roller having weight 8 to 10 MT. to achive the desired degree of compaction as per Technical Specification Clause 506 etc. complete. (VG-30 bulk bitumen) Sqm

New Road

Long Side	1	x	1	X	57.39	X	6.50	=	373.05
Long Side	1	x	1	X	57.39	X	6.50	=	373.05
Long Side	1	x	1	X	22.39	X	6.00	=	134.35
Short Side	1	x	1	X	22.39	X	6.00	=	134.35
								=	1014.80
					Total			=	1014.80
							Say	=	1015.00 Sqm

16 Providing and applying tack coat on the prepared surface heating by fames in Boiler and spraying bitumen set footed in bitumen boller on B.T. surface 2.5 kg/10 sqm.(VG-30 bulk bitumen rates are considered to arrive at rates) Sqm

New Road

Long Side I-J	1	x	1	X	57.39	X	6.50	=	373.05
Long Side G-H	1	x	1	X	57.39	X	6.50	=	373.05
Long Side B-C, E-F	1	x	1	X	22.39	X	6.00	=	134.35
Short Side C-F, G-I, H-J	1	x	1	X	22.39	X	6.00	=	134.35
								=	1014.80
					Total			=	1014.80
							Say	=	1015.00 Sqm

- 17 Open Graded Premix Surfacing- Providing and Laying OGC 20 mm thickness composed of 13.2 mm to 5.6 mm aggregates premixed with bituminous binder @ 1.56 Kg/Sqm transported to site with VTS, laid over a previously prepared surface, finished to the required grade, level, alignment, and rolling to achieve the desired compaction but excluding prime / tack and Seal coat. For Bitumen of specified grade--USING drum mix type hot mix plant, Paver and Vibratory roller (Over MPM Surface) (VG-30 bulk Grade 60/70) sq,m

for existing Road & New road

$$1.00 \times 1014.80 \times = 1014.80$$

$$\text{Total} = 1014.80$$

$$\text{Say} = \mathbf{1015.00 \text{ sqm}}$$

- 18 9 MM SEAL COAT: Providing and laying of Type A 9 mm premix seal coat with HMP of Sqm appropriate capacity crushed stone chipping 6.7 mm size and penetration bitumen of specified grade @ 1.2 kg/Sq.m, preparing existing road surface by mechanical means, spreading chips and rolling, by static roller having weight 8 to 10 MT etc. complete. (VG-30 bulk bitumen rates are considered to arrive at rates)

$$1.00 \times 1014.80 \times = 1014.80$$

$$\text{Total} = 1014.80$$

$$\text{Say} = \mathbf{1015.00 \text{ sqm}}$$

- 19 Providing & fixing R. C. C. 1:2:4 guard stones as per type design including painting Nos numbering fixing in std. Size C. C. 1:4:8 block complete.

Lumpsum considered 75.00

$$\text{Total} = 75.00$$

$$\text{Say} = \mathbf{75.00 \text{ Nos}}$$

PART II :- CROSS DRAINAGE WORKS

- 20 Excavation for foundation in earth, soil of all types, sand, gravel and soft murum, including removing the excavated material up to adistance of 50 m. beyond the building area and stacking and spreading as directed, dewatering, preparing the bed for the foundation and necessary back filling, ramming, watering including shoring and strutting etc. complete. (Lift upto 1.5 m.) By Mechanical Means

cum

$$\text{C D Works} \quad 1 \times 2 \times 10.00 \times 1.50 \times 0.75 = 22.50 \text{ cum}$$

$$\text{C D work Head wall} \quad 1 \times 2 \times 2.00 \times 0.75 \times 0.15 = 0.45$$

$$\text{Total} = 22.95 \text{ cum}$$

$$\text{Say} = \mathbf{23.00 \text{ cum}}$$

- 21 Excavation for foundation in hard murum including removing the excavated material upto distance of 50 metres beyond the building area and stacking and spreading as directed, dewatering, preparing the bed for the foundation and necessary back filling, ramming, watering including shoring and strutting etc. complete. (Lift upto 1.50 m) By Mechanical Means

cum

$$\text{C D Works} \quad 1 \times 2 \times 10.00 \times 1.50 \times 0.15 = 4.50 \text{ cum}$$

$$\text{App. C D work Head wall} \quad 1 \times 2 \times 2.00 \times 0.75 \times 0.15 = 0.45$$

$$\text{Total} = 4.95 \text{ cum}$$

$$\text{Say} = \mathbf{5.00 \text{ cum}}$$

- ## By Mechanical Means

C D Works	1	x	2	x	10.00	x	1.50	x	0.10	=	3.00 cum
App. C D work Head wall	1	x	2	x	2.00	x	0.75	x	0.10	=	0.30
								Total			3.30 cum
								Say			3.00 cum

- cum

Total	Net	=	1.00
	Say		1.00
			1.00 cum

- cum

C D Works	1	x	2	x	10.00	x	1.50	x	0.10	=	3.00 cum
App. C D work Head wall	1	x	2	x	2.00	x	0.75	x	0.10	=	0.30
								Total			3.30 cum
								Say			4.00 cum

- cum

C D Works	2 x	2 x	10.00 x	0.445 x	0.35	6.23
App. C D work Head wall	1 x	2 x	2.00 x	0.45 x	1.2	2.16
					Total	8.39 cum
					Sav	9.00 cum

- MT

at 210Kgs / CuM	6.0	1	210		1.26 MT
				Total	1.26 MT
				Say	1.30 MT

- 27 Providing and laying Cast in situ/Ready Mix cement concrete M-25 of trap/ granite / quartzite/ gneiss metal for R.C.C. slabs and landings as per detailed designs and drawings including steel centering, formwork, cover blocks, laying/pumping, compaction finishing the formed surfaces with cement mortar 1:3 of sufficient minimum thickness to give a smooth and even surface or roughening if special finish is to be provided and curing etc. complete,(Excluding reinforcement and structural steel). With fine aggregate (Crushed sand VSI Grade)

Slab	1.00	2.00	10.00	1.30	0.20	5.20
					Total	5.20 cum
					Say	6.00 cum

- 28 Providing cement plaster 20 mm thick in two coats in C. M. 1 : 4 with slurry finish to concrete or brick surface or U. C. R surface in all positions including scaffolding & curing smooth cement slurry finish of 1.5 mm thickness etc. complete as directed. (Crushed sand VSI Grade)

						sqm
C D Works	1 x	2 x	10.00 x	1.2		24.00 sqm
App. C D work Head wall	1 x	2 x	2.0 x	0.65		2.60
	2 x	2 x	0.45 x	0.1	=	0.18
					Total	26.78 sqm
					Say	27.00 sqm

- 29 Providing flush grooved pointing with cement mortar 1:3 for brick work including scaffolding and curing etc. complete.

						sqm
	2 x	2 x	2.00 x	0.65 x	.=	5.20 sqm
	2 x	2 x	2.00 x	0.45 x	.=	3.60
					Total	8.80 sqm
					Say	9.00 sqm

- 30 Providing and laying cement concrete pipe of IS 458:2003 NP-2 class of 600mm diameter in proper line, level and slope including providing and fixing collars in cement mortar 1:2 and curing etc. complete.

						Rmt
I S N P III Class pipe	1 x	1 x	10.00		=	10.00 Rmt
					Total	10.00 Rmt
					Say	10.00 Rmt

- 31 Supplying & spreading Hard mumrum for cushioning of R C C pipe including watering ramming & leveling etc complete.

						cum
I S N P III Class pipe	1 x	1 x	10.00 x	1.5 x	0.9 =	13.50 cum
					Net	13.50 cum
					Say	14.00 cu m

- 32 Providing and casting in situ / ready mix PCC M15 grade of trap metal for coping to head walls / parapet including centering, form work, compaction and curing etc. complete. (Crushed sand VSI Grade)

						cum
App. C D work Head wall	1 x	2 x	2.00 x	0.45 x	0.1 =	0.18 cum
Above C.C. pipe	1 x	1 x	10.00 x	1.5 x	0.15 =	2.25
					Total	2.43 cum
					Say	3.00 cu m

