



**MAZAGON DOCK SHIPBUILDERS LIMITED**

(Formerly known as Mazagon Dock Ltd.)

CIN : U35100MH1934GOI002079

(A Government of India Undertaking)

Shipbuilders to the Nation

Dockyard Road, Mazagon,

Mumbai 400 010.

INDIA

**Asphalting Work and Construction of storm  
water drain line at East Yard, MDL, Mumbai**

**VOLUME-III**

**Scope of Work**

**List of Tender Drawings**

**Price Bid (Part-II)**

<b>Table of Contents</b>		
Clause No.	PERTICULARS	PAGE No.
1.	SCOPE OF WORK	02
2.	LIST OF TENDER DRAWINGS	03
3.	BILL OF QUANTITIES PRICE BID (PART II) ( <b>Enclosure-1</b> )	04

**1. SCOPE OF WORK:**

**1.1. Scope of Work in brief is as under.**

- a. Removal of existing paver blocks along with sand cushioning and disposal of unserviceable material outside MDL Premises.
- b. Dismantling existing storm water drainage line and laying new drainage line with higher diameter Hume pipes along with encasing with M25 grade concrete, construction of new chambers, covers, gratings, making connection with existing chambers etc. Construction of new additional storm water drain from D2 building to Ritchie Dry Dock. Rain water will be discharged into Ritchie Dry dock since the existing discharge of rain water towards South Yard is blocked.
- c. Dismantling existing damaged portion of concrete including disposal outside MDL premises at Municipal dumping yards.
- d. Earth work in excavation and disposal of excavated surplus earth outside MDL premises at Municipal dumping yards.
- e. Preparation sub grade with power road roller 8-12 T capacity and dressing to camber as directed.
- f. Providing, and laying 225mm size trap stone Quarry rubble including filling in the interstices with stone chips, spalls, oversized metal, excavated earth etc. complete.
- g. Supplying, laying, spreading and compacting stone aggregate of 90 mm to 45mm size to WBM sub-base compacted thickness of 120mm as per BOQ / IS specification including cleaning and preparing the WBM surface for applying tack coat as per specifications.
- h. Providing and applying tack coat using hot straight run bitumen of grade VG-10 or 80/100 on WBM /existing road @ 0.75 Kg/Sqm, etc. all complete as directed.
- i. Providing and laying Bituminous Macadam on prepared surface (on WBM) 75mm average compacted thickness with bitumen of VG-30 (60/70) grade @ 3.5% (percentage by weight of total mix) with crushed stone aggregate as per specifications.
- j. Providing and laying Bituminous concrete on prepared surface (on Bituminous Macadam) 40mm/50mm compacted thickness with bitumen of VG-30 (60/70) grade @ 5.5% and lime @ 3 % (percentage by weight of total mix) with stone aggregate for wearing course as per specifications.
- k. The work listed above to be executed as per specification enclosed with tender,

MOST/MORTH standard specification and relevant IS Standard applicable for all the BOQ items.

**The detailed scope of work has been indicated in the Bill of Quantities (BOQ) Price Bid Part-II at Enclosure-1.**

**2. LIST OF TENDER DRAWINGS**

<b>SR. No.</b>	<b>DRG. REF.</b>	<b>DESCRIPTION</b>
<b>A</b>	<b>CIVIL &amp; INTERIOR WORKS</b>	
1	IP/EY/PB-1	LAYOUT FOR PAVER BLOCKS
2	IP/EY/DR-1	EXISTING STROM WATER DRAINAGE LAYOUT
3	IP/EY/DR-2	PROPOSED STROM WATER DRAINAGE LAYOUT

**Enclosure-1**

**PRICE BID (PART-II)**  
**BILL OF QUANTITIES**  
**(To be submitted online)**

**Sub: Asphaltting Work and Construction of storm water drain line at East Yard,  
MDL, Mumbai**

**Ref: MDL Tender No. 1800000041**

**INSTRUCTION TO THE BIDDER:**

1. The Work Contract Tax (WCT) under VAT and Service Tax **IS NOT INCLUDED** in the rates indicated below for this section. Bidder is required to quote Work Contract Tax (WCT) under VAT and Service Tax including Swachh Bharat Cess and Kisan Kalyan Cess separately in Percentage which will be added to the rate quoted for this section.
2. Bidder to note Clause No. 2 (Defect Liability Period), Clause No 3 (Performance bank Guarantee), Clause No 7 (Prices and Taxes) & Clause No 16 (Insurance) of Volume II before quoting.
3. MDL reserves the right to increase the quantity of any item in the BOQ to any extent provided the increase in the total Estimated Amount due to this change in the quantity over BOQ quantity multiplied by specified rate for all the items put together do not exceed 25% of the Accepted Contract Value. Bidder to note Clause No 12 of Volume II before quoting

SR.NO	ITEM DESCRIPTION	UNIT	QTY	RATE	AMOUNT
1	Excavation for trenches with required width for pipes, cables etc. including excavation for sockets, dressing of sides and ramming of bottoms, depth upto 1.50m including getting out excavated soil, and then returning the soil as required, in layers not exceeding 20cm in depth including consolidation of each deposited layer by raming and disposal of surplus soil as directed within lead of 50 m, --- through all kind of soil for pipes, cales etc. exceeding 300mm but not exceeding 600mm diameter.				
a	Depth up to 1.5 m	metre	100.00	487.41	48741.00
b	Depth above 1.5 m upto 3.0m	metre	250.00	619.01	154752.50
2	Dismantling of old Storm water pipes including breaking of joints and bed concrete stacking of useful materials near the site within 50 m lead and disposal of unserviceable materials into municipal dumps :				
a	<b>150mm diameter</b>	metre	200.00	55.60	11120.00
b	<b>200 mm diameter</b>	metre	100.00	59.20	5920.00
3	Dismantling of manholes including RCC top slab, C.I. / M.S. cover with frame and stacking usable material within MDL premises and disposal of un-serviceable material outside MDL	each	15.00	1446.93	21703.95

	premises to municipal dumping ground all as per direction of Engineer in-charge.				
4	Providing and laying Non Pressure NP-2 class (Light duty) R.C.C. pipes including collars/spigot jointed with stiff mixture of cement mortar in the proportion of 1:2 (1 cement : 2 fine sand) including testing of joints etc. complete				
a	250 mm dia. R.C.C. pipe	metre	100.00	667.49	66749.00
b	450 mm dia. R.C.C. pipe	metre	250.00	998.29	249572.50
5	Providing <b>Brick masonry</b> with conventional / IS type bricks of grater than one brick thickness SET IN CEMENT MORTAR ( 1 : 4 ) including scaffolding, waterring, racking out joints etc. complete - In superstructure upto floor V level	Cum	30.00	4646.08	139382.40
6	Providing and applying <b>plastering</b> on RCC/brick masonry work with 12 mm thick cement mortar (1:4) finished with a floating coat of neat cement including curing etc; all complete as directed.	Sqm	105.00	296.60	31143.00
7	Providing and laying in position ready mixed <b>plain cement concrete</b> , using fly ash and cement content as per approved design mix and manufactured in fully automatic batching plant and transported to site of work in transit mixer for all leads, having continuous agitated mixer, manufactured as per mix design of specified grade for plain cement concrete work, including pumping of R.M.C. from transit mixer to site of laying and curing, excluding the cost of centering, shuttering and finishing, including cost of curing, admixtures in recommended proportions as per IS : 9103 to accelerate/ retard setting of concrete, improve workability without impairing strength and durability as per direction of the Engineer - in - charge. Note : (1) Excess/less cement used than specified in this item is payable/ recoverable separately. (2) Fly ash conforming to grade I of IS 3812 (Part-1) only be used as part replacement of OPC as per IS : 456. Uniform blending with cement is to be ensured in accordance with clauses 5.2 and 5.2.1 of IS: 456 - 2000 in the items of BMC and RMC. - All works upto plinth level.				
a	M-15 grade plain cement concrete (cement content considered @ 240	Cum	25.00	8400.20	210005.00

	kg/cum)				
b	M-25 grade plain cement concrete (cement content considered @ 330 kg/cum)	Cum	100.00	9238.60	923860.00
8	Providing and fixing in position pre-cast R.C.C. <b>manhole cover</b> and frame of required shape and approved quality-				
a	L D- 2.5- Rectangular shape 600x450 mm internal dimensions	each	10.00	1515.58	15155.80
b	HD- 20- circular shape 560 mm internal diametre.	each	10.00	1801.41	18014.10
9	Supplying and fixing C.I. cover without frame for manholes				
a	455x610 mm rectangular C.I. cover (light duty) the weight of the cover to be not less than 23 kg	each	5.00	1699.22	8496.10
b	560 mm diameter C.I. cover (heavy duty) the weight of the cover to be not less than 108 kg	each	5.00	8157.47	40787.35
10	Making connection of drain or sewer line with existing manhole including breaking into and making good the walls, floors with cement concrete 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) cement plastered on both sides with cement mortar 1:3 (1 cement : 3 coarse sand), finished with a floating coat of neat cement and making necessary channels for the drain etc. complete				
a	For pipes 100 to 250 mm diameter	each	5.00	541.62	2708.10
b	For pipes 250 to 300 mm diameter	each	5.00	641.73	3208.65
11	Steel work welded in built up sections/ framed work for gratings, frames, guard bars, lader, railing, baracjets, gates etc. including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer using structural steel etc. as required.	Kg	5100.00	119.01	606951.00
12	Providing and applying <b>Two or more coats of synthetic enamel paint</b> of approved brand and manufacutre of required colour to give an even shade including the cleaning the surface and scaffolding complete and including rakes/storage platforms	Sqm	200.00	108.56	21712.00
13	Constructing brick masonry manhole in cement mortar 1:4 (1 cement : 4 coarse sand) with RCC top slab with 1:2:4 mix (1 cement :2 coarse sand: 4 graded stone aggregate 20mm nominal size), foundation concrete 1:4:8 mix (1 cement : 4 coarse sand: 8 graded stone aggregate 40mm nominal size), inside	each	10.00	11955.53	119555.30

	plastering 12mm thick in cement mortar 1:3 (1 cement : 3 coarse sand) finished with floating coat of neat cement and making chanel in cement concrete 1:2:4 mix (1 cement :2 coarse sand: 4 graded stone aggregate 20mm nominal size), finished with floating coat of neat cement complete as per standard design : inside size 90x 80 cm and 45 cm depth including C.I cover with frame light duty 455 x610 mm internal diemention, total weight of cover and frame not less than 38 kg ( weight of cover 23 kg and weight of frame 15 kg) -- With common burnt clay F.P.S. (non modular ) bricks of class designation 7.5				
14	Extra for depth for manhole size 90 x 80 cm with common burnt clay F.P.S. (non modular ) bricks of class designation 7.5	metre	20.00	7918.47	158369.40
15	Pumping out water from trenches, pits etc upto 4 mtrs. Depth from ground level and discharging of the water through hose to the nearest water gully/manhole/drain complete as directed (Pumping capacity should not be less than 3 litres per second) <b>Note:</b> <u>This item may be operated in areas other than excavation areas where puddles of water is noticed during execution of work is in progress solely at the discretion to the engineer-in-charge.</u>	Pump working hour	50.00	185.18	9259.00
16	Providing & fixing G.I. pipes complete with G.I. fittings including necessary trenching and refilling etc. as directed by Engineer In-charge.				
a	40 mm dia pipe	metre	100.00	416.86	41686.00
b	25 mm dia pipe	metre	100.00	285.04	28504.00
17	<b>Taking out existing CC interlocking paver blocks</b> from footpath/ central verge, including removal of rubbish etc., disposal of unserviceable material to the dumping ground, for which payment shall be made separately and stacking of serviceable material within 50 metre lead as per direction of Engineer-in-Charge.	Sqm	4000.00	74.70	298800.00
18	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means in foundation trenches or drains (not exceeding 1.5 m in width or 10 sqm on plan), including dressing of sides and ramming of bottoms, lift upto 1.5 m, including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m.-All kind of soil				

a	Depth up to 1.5 m	Cum	1200.00	230.41	276492.00
19	Dismantling carefully Concrete PCC/ RCC Work including cutting bars and stacking of steel bars within MDL premises and disposal of un-serviceable material within 50 m lead etc. complete as directed at any height / Location etc.	Cum	450.00	2014.10	906345.00
20	<b>Consolidation:-</b> Preparation and consolidation of sub grade with power road roller of 8 to 12 tonne capacity after excavating earth to an average of 22cm depth, dressing to camber and consolidating with road roller cm depth, dressing to camber and consolidating with road roller grade and disposal of surplus earth with lead upto 50 metres	Sqm	2800.00	124.76	349328.00
21	Extra for compaction of earth work in embankment under optimum moisture conditions to give at least 95% of the maximum dry density (proctor density).	Cum	850.00	14.82	12597.00
22	Providing and laying dry <b>rubble soling</b> in thickness specified by Engineer-In-charge with hand set in regular lines and to required camber and gradient, interstices being filled in with small pieces of stones, hard murrum etc. thoroughly rammed, consolidated and watered complete as directed and specified.	Cum	700.00	1406.63	984641.00
23	<b>Water Bound Macadam 120 Thk-</b> Supplying, laying, spreading and compacing stone aggregate of 90 mm to 45mm size to WBM specification including spreading in uniform consolidated depth of 120 mm thick, hand packing , rolling with 3 wheeled road /vibratory roller 8-10 tonne capacity in stages to proper grade and camber, applying and brooming requisite type of screening / binding material to fill up interstices of coarse aggregate, watering and compacting to the required density as per standard specification and as directed by engineer.	Cum	400.00	2471.87	988748.00
24	<b>Tack coat</b> - Providing and applying tack coat using hot straight run bitumen of <b>grade 80/100</b> including heating bitumen, spraying the bitumen with hand/ mechanically operated spray unit fitted on bitumen boiler, cleaning and preparing the existing road surface as per specification on WBM /existing road @ 0.75 Kg/Sqm, etc. all complete as directed	Sqm	4000.00	50.40	201600.00
25	<b>Bituminous Macadam 75mm Thk</b>	Cum	400.00	7903.86	3161544.00



	<b>average</b> -Providing and laying Bituminous Macadam on prepared surface ( on WBM) with 75mm average compacted thickness with bitumen of VG-30 @ 3.5% (percentage by weight of total mix) with graded crushed stone aggregate for profile corrective base /binder course including loading of aggregate with F.E. loader, hot mixing of stone aggregates and bitumen in hot mix plant, transporting the mixed material by tippers to pavers and laying the mixed material with pavers finisher fitted with electronic sensing device to the required level and grade and rolling with road rollers 8-12Tonnes as per specification to achieve the desired density and compaction directed by engineer.				
26	<b>Asphalting Concrete 50mm thk-</b> Providing and laying Bituminous concrete on prepared surface (on Bituminous Macadam) <b>40mm/50mm compacted thickness with bitumen of grade VG-30@ 5.5% (percentage by weight of total mix) and lime filler @ 3 %(percentage by weight of total mix)</b> with stone aggregate for wearing course including loading of aggregate with F.E. loader, hot mixing of bitumen with filler and stone aggregates in hot mix plant, transporting the mixed material by tippers to paver and laying the mixed material with mechanical paver finisher fitted with electronic sensing device to the required level and grade and rolling with 8-12Tonnes as per specification to achieve the desired density and compaction as directed by engineer.	Cum	400.00	10888.97	4355588.00
27	<b>Seal coat 6mm thick-</b> Providing and laying 6mm thick seal coat of premixed fine aggregate ( passing 2.36mm and retained on 180 micron sieve) with bitumen using 128 kg of bitumen of grade VG-10 bitumen per Cu.m of fine aggregate and 0.6 Cu.m of fine aggregate per 100 sqm of road surface including rolling and finishing with road roller all complete	Sqm	4000.00	82.39	329560.00
28	Providing and laying at or near ground level factory <b>made kerb stone</b> of M-25 grade cement concrete in position to the required line, level and curvature, jointed with cement mortar 1:3 (1 cement: 3 coarse sand), including	Cum	25.00	6940.95	173523.75

	making joints with or without grooves (thickness of joints except at sharp curve shall not to more than 5mm), including making drainage opening wherever required complete etc. as per direction of Engineer-in-charge (length of finished kerb edging shall be measured for payment). (Precast C.C. kerb stone shall be approved by Engineer-in-charge).				
29	Providing and applying <b>2.5 mm thick road marking strips</b> (retroreflective) of specified shade/ colour using hot thermoplastic material by fully/ semi automatic thermoplastic paint applicator machine fitted with profile shoe, glass beads dispenser, propane tank heater and profile shoe heater, driven by experienced operator on road surface including cost of material, labour ,T&P, cleaning the road surface of all dirt, seals, oil, grease and foreign material etc. complete as per direction of Engineer-in-charge and accordance with applicable specifications.	Sqm	35.00	541.76	18961.60
30	<b>Carriage of Building rubbish</b> by mechanical transport including loading, unloading and carting away up to Municipal Dumping Ground. (Building rubbish includes excavated unserviceable material, dismantled concrete, plaster work, asphalt concrete, dismantled plaster. etc.)	Cum	2100.00	516.81	1085301.00
	<b>TOTAL</b>				<b>16080385.50</b>
	<b>WCT under VAT (in Percentage)</b>				
	<b>Service Tax including Swachh Bharat Cess and Kisan Kalyan Cess ( in Percentage)</b>				
	<b>GRAND TOTAL</b>				