

**Sub:- Construction of 4 Test Tracks (Trench Crossing, Step Claiming, Articulation & Corrugated tests) for the HMV vehicle at BEML LTD, Palakkad Complex**

## BOQ

Sl. No	Description	Unit	Qty	Rate	Amount
1	Earth work in <b>surface excavation</b> not exceeding 15 cm in depth but exceeding 1.5 m in width as well as 10 sqm on plan including disposal of excavated earth within a lead of 1Km., and lift up to 1.5 m, disposed soil to be levelled and neatly dressed. For soft/loose soil complete all as specified and directed by Engineer-in-charge.	Sqm	2000.00		
2	<b>Earth work</b> in excavation by mechanical means (Hydraulic excavator)/ manual means over areas (exceeding 30 cm in depth, 1.5 m in width as well as 10 sqm on plan) Footing and plinth beam, including getting out and disposal of excavated earth lead upto 250m and lift upto 1.5 m from periphery, as directed by Engineer-in-charge. Excavation in all kind of soil below <b>NGL to 1.5m</b> . The rate shall include the cost of bailing out of water in pits/trenches etc as directed by Engineer-in-charge., if any. No additional payment shall be made for dewatering from the pits.	Cum	900.00		
3	Back Filling with available earth free from boulders and rubbish under floor etc, wherever required in layers not exceeding 20cm depth and consolidating in each layer by rammering and watering after use <b>1 ton roller to rolled for compaction</b> , with water to a dense mass laid in layers and compacted to achieve the required thickness to make as a hard base for the foundation. etc, complete as per the direction of engineer in charge.	Cum	400.00		
4	Supply, Laying and compacting <b>WMM laid in layers</b> of thickness not more than 150 mm laid in 2 layers of 75mm each. Wet mix macadam (WMM) grading as per table 400-13 of MoRTH specifications for road and bridge works 2013 manufactured in WMM plant, material comprising of clean, crushed graded aggregate and granular material premixed with water & rolling with vibratory roller of <b>capacity 80-100 KN</b> static weight and for compaction to a dense mass laid in layers and compacted to achieve the required thickness to make as a hard base for the foundation. The finished tolerances as per Table 900-1 of MORTH specifications for Roads and Bridges.	SqM	1350.00		
5	Providing and laying <b>PCC M-10 (1:4:8) Grade</b> using 40/20mm down size aggregates below flooring in foundations, Footing base concrete, flooring foundations, Plinth beam sides, walls or retaining walls etc, including, base preparation, proper compaction, vibration, curing, tools and tackles, necessary dewatering, etc complete at all levels as directed by Engineer-in-charge.	Cum	112.50		
6	Providing & laying controlled <b>R.C.C. (M-25)</b> confirming to grades as specified (IS 456-2000) as per specifications using 20mm down size aggregates at any depth or heights excluding the cost of steel reinforcement. Cost also including preparing the base by hacking and making rough concrete surface wherever the concrete is done on the existing flooring. Providing and placing RMC concrete work in <b>RCC M-25</b> The rate shall including Flooring, Footings, Foundations beams, bases for Columns, plinth beams, and basement to the required shape, compaction, levelling, vibrating, curing, excluding form work and Steel reinforcement ,etc., complete.	Cum	15.00		

Sl. No	Description	Unit	Qty	Rate	Amount
7	Providing & laying controlled <b>R.C.C. (M-30)</b> confirming to grades as specified (IS 456-2000) as per specifications using 20mm down size aggregates at any depth or heights excluding the cost of steel reinforcement. Cost also including preparing the base by hacking and making rough concrete surface wherever the concrete is done on the existing flooring. Providing and placing RMC concrete work in <b>RCC M-30</b> The rate shall including Flooring, Footings, Foundations beams, bases for Columns, plinth beams, and basement to the required shape, compaction, levelling, vibrating, curing, excluding form work and Steel reinforcement ,etc., complete.	Cum	62.00		
8	Providing & laying controlled <b>200mm of M30 Grade RMC R.C.C.</b> (for Hardstand concrete road) confirming to grades as specified (IS 456-2000) as per specifications using 20mm down size aggregates for Hardstand concrete road. including sub-base and LDPE Sheet layers for the floors. Design mix to be provided. The rate shall including M30 grade concrete, finishing with <b>power trowelling</b> to rough finish by applying <b>floor hardener of 2kg/sqM</b> , necessary <b>groove cutting</b> and filling with expansion joint fillers/PU sealant, levelling, vibrating, curing, excluding form work and Steel reinforcement ,etc., complete. In addition to above, cost also inclusive of supply, mixing and laying of <b>secondary reinforcement</b> of 12mm high dispersion <b>polymer/glass</b> fibres at dosage of 600-900g/CuM in RMC concrete as per manufacturers recommendation dosage and procedure during laying of concrete. Note: Curing is mandatory by adopting Pond with gunny bag curing to be done and testing as per standards	Cum	185.00		
9	Supplying and Fixing of <b>Steel reinforcement R.C.C.</b> work for TMT bars conforming to IS : 1786(Latest) and the yield strength of 0.2% proof stress shall not to be less than 500N/Sqmm (Fe500/550 D Grade of steel) Rates include for Straightening, cutting, bending, placing at any level, binding in position high yield strength steel reinforcements including cost of reinforcement and binding wire, labour and scaffolding at all levels and heights etc. complete all as per specifications & drawings. Note: a) The TMT bars required shall be procured from the reputed manufacturers confirming to relevant IS specification. b) The contractor shall arrange for testing of TMT bars for physical properties from an authorized agency as per the relevant IS code. The test reports shall be submitted for our records. c) The quoted rate shall deem to include for the cost of testing. d) Any Reputed make shall be used for the work.	Kgs	10250.00		
10	Providing <b>Rubble Stone</b> Boulder pitching, laid dry, hand packed tightly, uncoursed 200mm thk, well bonded, bedded and solidly hearted, built in CM 1:6 with hard stone where ever required, including scaffolding, dressing of stones, packing interstices, levelling, joints, Slope, curing etc. complete as directed at all levels.	Cum	78.00		
11	Supplying and erecting <b>CENTERING</b> for sides and soffits including supports and Shuttering in all floors with all cross bracings using marine plywood's or Equivalent mild steel sheets and supported by steel props and bracing etc., complete and as directed. Steel Form work for <b>flooring kerb wall</b> up to basement and Column basement to <b>foundation flooring</b> beams as per specification up to GL	Sqm	370.00		
12	Providing <b>structural steel</b> / plates / <b>angle support for the edge</b> protection of the cratings as per the instruction of Engineer incharge. Rate shall inclusive of cutting, laying, welding and insertion in the concrete / reinforcement. Fe 410 -W (GdeE- 250) quality-A., fabricating & fixing., complete all as specified and directed by Engineer-in-charge.	Kgs	425.00		

Sl. No	Description	Unit	Qty	Rate	Amount
13	Painting of <b>Kerb wall</b> with approved pattern (black & yellow) using <b>synthetic enamel paint</b> of approved shade and brand conforming to IS:2932, including surface preparation by cleaning, scraping, removing dirt/loose material, applying one coat of cement primer and two or more coats of synthetic enamel paint, with each coat dried and sanded smooth, complete in all respects, including labour, scaffolding, and materials. complete all as specified and directed by the Engineer in charge.	Sqm	400.00		
14	Supplying of <b>Steel fibres</b> to be used in Reinforced Concrete Floor / Pavements shall be produced from cold drawn steel wires and shall confirm to EN 14889-1. The fibres shall be 60 mm long and shall have a diameter of 0.75 mm. The Steel fibres shall be glued together to prevent fibre balling and to ensure good homogenous distribution in the concrete. Steel fibres shall have Single hooked ends, shall have Aspect ratio (Length / Diameter) of 80 and the minimum fibre tensile strength shall be 1250 N/mm2 . The <b>steel fibres of 8 kg per 1 cubic</b> can be added during or after the batching of the concrete thoroughly mix with the concrete to ensure uniform distribution of the fibres throughout the concrete.	Kgs	496.00		
15	Supply, laying, jointing, and testing of <b>300 mm dia RCC NP2</b> class hume pipe conforming to IS: 458-2003 (latest revision), suitable for gravity drainage and stormwater lines with collar joint in cement mortar (1:1), including preparation of bed, laying to proper grade and alignment, jointing, testing, backfilling and all accessories, labour, loading, unloading, equipment, and testing. complete as directed by the Engineer-in-Charge.	Rmt	16.00		
				<b>Total Amount (Excl GST)</b>	
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