

**BEML LIMITED, BANGALORE**

**TENDER REF: 6300039365**

**Date: 12.03.2025**

ISSUED TO:	Period of contract:	12 Months
	EMD : (Rs)	15,08,000/-
<p><b>Sub: a) Removing the existing rails &amp; Providing new Standard Gauge &amp; Broad Gauge Rail for a length of 650 meter long including providing 100 meter long RCC inspection Pit for a depth of 1.0 meter with all necessary civil works, hardstanding concrete work at eastern end from new line 3 PEB Hangars to dog kennel area up to end at Gailath Yard.</b></p> <p><b>b) Proposed Electrical work for installation of additional 25 KV Test track for a length of 780 mteters approx at eastern end from new line 3 PEB Hangars to dog kennel area up to end at Gailath Yard.</b></p> <p><b>c) Providing Fencing &amp; Galvalume sheets for cladding covering work all around the entire length of existing perimeter wall for a length of approximately 500.0 meters at Bangalore Complex, BEML Limited, Bangalore.</b></p>		

**SCHEDULE 'A' - BILL OF QUANTITIES**

<b>A</b>	<b><u>CIVIL WORKS</u></b>				
Sl. No	Description	Unit	Qty	Rate/unit in fig. & in words Rs.	Amount (Rs)
1	Surface excavation in all kinds of soils including removal of rank vegetation/bushes and clearing the area etc.,and disposal of unusable materials or debris outside the site premises to a distance not exceeding 5.0 KM not objected by local civic authorities including lead ,lift etc.,complete all as specified and directed by Engineer in charge. <b>Note:</b> The dismantled materials shall be removed immediately from the premises without disturbing the regular production activities .	Sqm	2800.00		
2	Demolition/ dismantling the existing cement concrete flooring/hardstanding of any description and in any position not otherwise specifically provided etc and stacking of serviceable materials if any and disposal of unusable materials or debris outside the site premises to a distance not exceeding 5.0 KM which is not objected by any civic authorities including lead ,lift etc,complete all as specified and directed by Engineer in charge. <b>Note:</b> The dismantled materials shall be removed immediately from the premises without disturbing the regular production activities .	Cu.M	275.00		
3	Dismantling the existing IU rails carefully without damaging the same together with all accessories, clamps plates, bolts etc.,cleaning and stacking at a place as shown etc.,complete all as specified and directed by Engineer in charge.	Kgs	67600.00		
4	Dismantling the existing cast iron bearing plates with all accessories, clamps, plates, bolts etc., carefully laid over the existing rails without breaking and stacking at a place as shown etc.,cleaning and stacking at a place as shown etc.,complete all as specified and directed by Engineer in charge.	Kgs	65000.00		

Sl. No	Description	Unit	Qty	Rate/unit in fig. & in words Rs.	Amount (Rs)
5	Cutting through the existing Hardstanding concrete upto 150mm depth approximately by using a suitable cutting machine and trimming the edges of concrete surface and disposal of unusable materials or debris outside the site premises to a distance not exceeding 5.0 KM not objected by local civic authorities including lead ,lift etc.,complete all as specified and directed by Engineer in charge. <b>Note:</b> The dismantled materials shall be removed immediately from the premises without disturbing the regular production activities .	Rmt	1300.00		
6	Earthwork excavation by mechanical/ manual means in foundation trenches, pits not exceeding 1.50m in depth in all kinds of soil including getting out the excavated earth, dressing of sides, dewatering ground water/ rain water if any, compaction including disposal of debris/unserviceable surplus earth outside the site premises to a distance not exceeding 5.0KM not objected by local civic authorities including lead, lift etc.,complete all as specified and directed by Engineer in charge.	Cu.M	2110.00		
7	Earth work excavation by mechanical means/manual means in foundation trenches exceeding 1.5 Mtrs in depth & not exceeding 3.0 mtrs in depth in all kinds of soil but excluding hard rock for foundations/ pits including getting out the excavated earth and disposal of debris out side the premises to a distance exceeding 1.5m &not exceeding 5km, disposal of surplus excavated soil as directed including dressing of sides, dewatering ground water/rain water, compaction etc.,complete all as specified and as directed by Engineer in charge.	Cu.M	150.00		
8	Providing and laying in Position Plain Cement Concrete M10 grade 1:3:6 using 40mm graded down size granite aggregate, machine mixed, well compacted for foundation bed, under floors and other similar works including curing etc.,complete all as specified and as directed by Engineer in charge. <b>Note:</b> The rate quoted for the item is deemed to include for providing and removal of form work/centering/shuttering wherever necessary.	Cu.M	210.00		
9	Providing & laying in position Fe 500 grade TMT bars in reinforcement conforming to relevant IS in various diameters, locations & levels, cut to length and bent to shape required, binding spirally with MS wire (annealed) of size not less than 0.9 mm dia including all lead, lift, etc., complete all as specified and directed by Engineer in charge. <b>NOTE: a)</b> The rate quoted for the item is deemed to include for cement mortar cover blocks as per the requirement at site and providing and removal of scaffolding/staging wherever necessary. <b>b)</b> Reinforcement will be measured based on actual quantity placed in position on standard weight basis, no allowance will be made for rolling margin. <b>c)</b> Only authorized laps, chairs and spacers shall be measured and paid.	Kgs.	39600.00		

Sl. No	Description	Unit	Qty	Rate/unit in fig. & in words Rs.	Amount (Rs)
10	Supplying ,fixing in position 16mm diameter MS foundation bolts of minimum 450mm/600 mm in length including threading of required length, welding, drilling suitably including neccessary hardware items , bolts, nuts, washers of required size and diameter for holding of rails and welding the bolts to the reinforcement to the correct line and level etc., complete all as specified and directed by Engineer in charge.	Kgs.	6950.00		
11	Providing, and laying in position Reinforced Cement Concrete M25 grade 1:1:2, using 20mm graded down size granite aggregate machine mixed for Beams,etc complete including curing, vibrating, compacting, finishing,dewatering wherever necessary including lead, lift etc., complete all as specified and directed by Engineer in charge. <b>Note:</b> a) Reinforcement shall be measured and paid separately under relevant item. b) The rate is deemed to include for providing RCC Duct slab.	Cu.M	700.00		
12	Supplying, fabricating, hoisting and erecting in position MS Structural steel viz., channels, plates, angles, cleats, fixing to correct line & level including cutting, welding, bending to required shape, shims & packing pieces as required for levelling of the work, etc.,complete all as specified and as directed by engineer in charge. <b>Note:</b> 1) The rate quoted for the item is deemed to include for welding machine, welding rods, gas, consumables etc.2) The rate is deemed to include for providing required track shifter points with controlling arm at required points including points & crossing as per railway norms. 3) The rate is deemed to include for providing rail stoppers using IU Rails at end points.	Kgs	66150.00		
13	Returning & filling the available earth in plinth, trenches, foundations or around plinth with approved good quality earth of non swelling type, free from organic materials, consolidating in layers of not more than 200mm including watering, compaction, etc complete all as specficed and directed by Engineer in charge. <b>Note:</b> Net consolidated volume shall be measured for payment purposes.	Cu.M	540.00		
14	Supplying,Laying & aligning the IU Rails of 52kg/meter length on RCC beams, with correct line and level including cutting, welding etc., complete all as specified & directed by the Engineer in charge. <b>Note:-</b> a) The quoted rate is deemed to include for supplying MS cleats for levelling /placing of rails making necessary holes including cutting, fabrication, welding etc., b) The actual length of rails laid shall be measured for the purpose of payment. (c) The rate includes for bending the rails for the curvature portion of the track as per site condition to match with the existing BG/SG rail alignment.	Kgs	101400.00		

Sl. No	Description	Unit	Qty	Rate/unit in fig. & in words Rs.	Amount (Rs)
15	Providing, erecting and removal of leak proof formwork for beams, RCC wall, slabs (Centring and shuttering including strutting, propping etc) using MS/ plywood, conforming to relevant IS with necessary wooden formwork supports, metal propping, MS pipe ties, bracings, staging, applying of chemical releasing agent to MS/plywood surfaces to avoid sticking of cement so as to have a smooth finish at all levels while casting the concrete member of any shape, size and thickness etc complete all as specified and directed by Engineer-in-charge.	Sqm	6200.00		
16	Supplying and laying soling of 200mm compacted thickness below floor/foundation with good broken boulders/ soling or quarried stones of 150 to 200mm size laid in layers,well packed to the correct line & level, interstices filled with stone chips, sand or moorum and consolidated including transportation, etc., complete all as specified and as directed by Engineer in charge. <b>Note:</b> For payment net consolidated thickness shall be considered.	Sq.M	1500.00		
17	Providing and laying in Position Plain cement concrete M15 grade 1:2:4 150mm average thick using 20mm graded down size granite aggregate, machine mixed, laid in layers for hard standing concrete including finishing the top surface even, well compacted including curing, compacting etc.,complete all as specified and directed by Engineer in charge. <b>Note:</b> The rate quoted by the Contractor for the item is deemed to include for providing and removal of form work/centering/shuttering wherever necessary.	Sq.M	1500.00		
18	Spreading and levelling the available earth in layers not exceeding 25cms thick to achieve a uniform level on the sides of the compound wall etc., complete all as specified and as directed by Engineer in charge.	Cu.M	60.00		
19	Laying & aligning the available IU Rails on RCC beams, with correct line and level including cutting, welding etc., complete all as specified & directed by the Engineer in charge. <b>Note:-</b> a) The quoted rate is deemed to include for supplying MS cleats for levelling /placing of rails making necessary holes including cutting, fabrication, welding etc., b) The actual length of rails laid shall be measured for the purpose of payment. c) The required quantity of MS rails will be supplied by BEML Ltd. (d) The rate includes for bending the rails for the curvature portion of the track as per site condition to match with the existing BG/SG rail alignment.	Kgs.	7200.00		
20	Earthwork excavation by manual means for post holes not exceeding 0.5 cum including getting out, returning, filling in and ramming earth or broken rubble mixed with earth alround in layers not exceeding 25 cms, watering, and removing surplus soil to a distance not exceeding 50 mtrs and making good the surface etc.,complete all as specified and as directed by the Engineer in charge.	Each	175.00		

Sl. No	Description	Unit	Qty	Rate/unit in fig. & in words Rs.	Amount (Rs)
21	Preparing the steel surfaces by scrapping, removing dirt & applying two coats of synthetic enamel paint of first quality, approved brand and colour, Manufactured by M/s Asian paints/Berger over a coat of yellow/red oxide zinc chromate primer etc., Complete all as specified and directed by Engineer in charge. <b>Note:</b> The rate quoted is deemed to include for providing and removal of scaffolding, staging/ladder wherever necessary and protective measures etc.	Sq.m	1700.00		
22	Supplying & fixing 0.6mm thick galvalume single skin HI-Rib trapezoidal/approved profile PPGL colour coated sheet for <b>cladding</b> of approved color & shade, 1060mm supply width, 975mm-1000mm covered width 29mm-30mm crest height, 24mm crest width with min. 195mm-200mm pitch minimum 0.50mm thick TCT, Galvalume(55% aluminum-43%Zinc Coating), 150 GSM with minimum yield strength of 550 Mpa. The sheet shall have wide pans with stiffening ribs manufactured by M/s JSW/TATA. The sheet shall be fixed by means of anticorrosive self drilling self tapping mechanically galvanised fasteners with integral EPDM washers. The scope shall include all sealing of joints, curves, edges or other accessories with silicon sealant. The sheet shall be laid with a minimum lap of 150mm at the ends and special male & female lapping at each side. The minimum lap of sheets with ridges, hips & valleys shall be 200mm. The sheets shall be secured to purlins by means of self driven screws or GI J or L hook bolts and nuts with bitumen and GI limpet washer as per the requirement of site and as directed, etc , complete all as specified and as directed by Engineer in charge. <b>Note:-</b> 1) The finished/Covered area of roof sheet excluding lap length shall be measured for payment. 2) The rate quoted is deemed to include for providing and removal of scaffolding, staging/ladder wherever necessary and protective measures etc.	Sq.m	3800.00		
23	Supplying, placing in position & fixing Galvanised 2 strand steel barbed wire 2.24mm diameter barbed with 2mm dia barbs at 75mm spacings and straining and fixing to MS Y bracket fixed firmly including securing or tying at crossings with and provision of galvanised mild steel wire, etc., complete all as specified and directed by Engineer <b>Note:</b> 1) Each line wire will be measured for payment purpose. 2) The rate quoted for the item is deemed to include for providing & removal of scaffolding/staging wherever necessary.	Rmt	2500.00		
24	Supplying & fixing concertina coils micon 250 GSM rust proof 600mm diameter & 6Mtr stretchable length per coil including fixing to the MS Y angle & barbed wire etc., complete all as specified and directed by Engineer in charge. <b>Note:</b> The bidders to quote the unit rate per coil (01 no). 2)The rate quoted for the item is deemed to include for providing & removal of scaffolding/staging wherever necessary.	Coil	85.00		
25	Providing and constructing solid block masonry of required size in cement mortar 1:6, raking of joints including necessary curing, tools & tackles etc., complete all as specified and directed by Engineer in charge. <b>Note:-</b> The rate quoted for the item is deemed to include for providing and removal of scaffolding/staging wherever necessary.	Cu.M	10.00		

Sl. No	Description	Unit	Qty	Rate/unit in fig. & in words Rs.	Amount (Rs)
26	Rendering/Plastering for the brick masonry wall / concrete surfaces in cement mortar of mix proportion 1:4, 15mm thick including tools & tackles, scaffolding as required for the work, necessary curing etc., complete as specified and directed by Engineer in charge. <b>Note:</b> The rate quoted is deemed to include for providing & removal of scaffolding/staging wherever necessary.	Sq.M	500.00		
27	Preparing the new/old Plastered surface of external walls by water washing, sand papering/wire brushing including providing necessary repairs to cracks, and cleaning the surface from dust, dirt and filling/closing the cracks with suitable crack filling compound and applying two coats of exterior emulsion paint of first quality approved brand and colour manufactured by M/s.Asian Paints (ACE)/Berger Paints (Wall Masta) after successively drying each coat over a coat of primer and touch up putty wherever necessary etc., complete all as specified and directed by Engineer in charge. <b>Note:</b> The rate quoted is deemed to include for providing and removal of scaffolding, staging/ladder wherever necessary and protective measures etc.	Sq.M	250.00		
28	Supplying and fixing 600 mm diameter Reinforced concrete pipes, class NP2, laid and jointed with collars and other necessary fittings and fixtures etc., complete all as specified and as directed by Engineer in charge.	Rmt	20.00		
	<b>Total value of Civil work excluding GST (Rs). "A"</b>				
	<b>GST (Rs).</b>				
	<b>Total value of work inclusive of GST (Rs) "A"</b>				
<b>B</b>	<b>ELECTRICAL WORKS FOR 25KV ELECTRIFICATION WORKS FOR TEST TRACK (LENGTH - 780 MTRS)</b>				
	<b>OHE ITEMS</b>				
1	Supply,installation and erection of galvanized angle iron structure/ End mast of height 9mtrs with bracket assemblies, 33kv grade strain disc insulators for anchoring overhead contact wire with all required accessories /hardwares etc... complete as per relevant standards. This includes all related civil works like excavating in hard concrete floor,necessary foundation and making good the concrete surface.	SETS	2.00		
2.0	Supply,installation, erection,alignment and proper staggering of MS angle intermediate masts of height 9mtrs with all required OHE items like... bracket assemblies,stay arm, register arms, steady arms, bridle wire, catenary wire, hardware items, hooks, 33kv grade insulators etc... complete. These masts are to be spaced at equal intervals as per standards. Includes all related civil works like excavating in hard concrete floor, necessary foundation.etc and making good the concrete surface.	SETS	30.00		

Sl. No	Description	Unit	Qty	Rate/unit in fig. & in words Rs.	Amount (Rs)
3.0	Supply,installation, stringing,alignment and staggering of 107sqmm hard drawn overhead copper grooved conductor (tramway type) suitable for 25kv un-regulated OHE traction system to the complete length of the track with accessories like catenary wire, dropper wires, hardwares...etc complete as per relevant standards.	MTRS	1000.00		
4.0	Supply,erection and installation of 33kv grade,10kA lightning arresters with suitable line jump and connecting to earth stations.	SETS	2.00		
5.0	Supply,installation,erection and commissioning of LINE ISOLATOR , 1000A, 25kv grade,single pole, single break,outdoor , tilting type,manually operated air break isolator with hook operated type drop out fuse assembly for horizontal upright mounting on pole with all parts and accessories like mounting frame work, vertical operating handle, operating mechanism, vertical operating pipe,moving blade of copper silver coated, insulators,interlocking padlock arrangements both in open and closed positions, ON/OFF legend plates with required mounting structure, etc... complete as per standards & specifications. This has to be connected to 25kv output side of transformer and to OH line with cable. This includes all civil works like excavating in hard concrete/soft soil,making foundation	SETS	2.00		
6.0	Supply,installation,erection and commissioning of EARTH ISOLATOR, 25kv grade,1000A, single pole single break, outdoor, tilting type, manually operated air break isolator suitable for horizontal upright mounting on pole, including mounting frame work ,operating mechanism, vertical operating pipe, vertical operating handle, moving blade of copper duly silver plated, insulators, pad lock arrangements, ON/OFF legend plates with necessary mounting structure etc..., complete and conforming to relevant specifications & standards. This isolator to be connected to OH line and to earth stations with GI strip.This includes all civils works like excavating in hard concrete/soft soil, making foundation	SET	1.00		
	<b>TRANSFORMER</b>				
7.0	Supply, installation, testing and commissioning of OUTDOOR type, TRACTION Duty Transformer, capacity: 2500 KVA, 11KV 3 phase/25KV single phase, ONAN, with CT/PT for metering and protections, all other standard fitments and accessories as per manufacturer. Detailed Technical specifications as per Annex A	NO	1.00		
8.0	Supply of all required materials, construction of RCC foundation / pedestal for traction transformer, fabrication and erection of chain link fencing, MS gate for transformer yard.	JOB	1.00		
	<b>CABLES &amp; END TERMINATIONS</b>				

Sl. No	Description	Unit	Qty	Rate/unit in fig. & in words Rs.	Amount (Rs)
9.0	Supplying and laying 3 core X 240 Sqmm, 11KV grade, AL, Armoured, under ground XLPE cable and making 02 end terminations (01 Indoor type, 01 Outdoor type). The rate shall include excavation, sand, brick protections as per standards and refilling of soil to complete the installation. NOTE: cable to be laid between transformer & HV panel	MTRS	50.00		
10.0	Supply, laying 33KV grade, 1Cx300sqmm, AL, armoured, XLPE, UG cable in hard concrete/soft soil on MS pillars/masts /stanchions from transformer 25kv side to 1000A single pole isolator and making OUTDOOR end terminations . This includes all necessary civil works like excavation in hard concrete/soft soil, concreting and bringing back to original condition. Cable routed on stanchions/MS pillars/masts shall be provided with necessary clamps,supports, brackets..etc and all hardwares and the cable shall protected with PVC pipes of required size and length	MTRS	200.00		
11.0	Supply, laying and end terminations of 1.1KV grade, 4core x 1.5 sqmm, armoured copper multistrand cables laid in available trench	MTRS	4000.00		
	<b>TRIPPING, ALARMS &amp; PROTECTION SYSTEMS</b>				
12.0	Supply, installation, interconnecting, terminations of revolving indicators (RED/YELLOW colour combination blinkers) with intermittent hooters including required wiring/cabling	NOS	20.00		
13.0	Supply, fixing mushroom type push button stations (Push to TRIP, Release to RESET) with required wiring/cabling to trip in emergency the VCB panel during faults. NOTE: These are to be fixed at equal intervals throughout the length of the track and to be suitably wired such that once the line is ON all the hooters/indicators are ON and if emergency buttons are operated the VCB trips.	NOS	10.00		
14.0	Supply,installation,testing, erection and commissioning of 16 window Annunciator panel outdoor type made of CRCA sheet metal enclosure, comprising of switchgears such as Contactors, MCB's, Electronic timers, Digital Ammeter (range- 0-100 amps), Digital voltmeter (0-25KV), push buttons for LED TEST, ACCEPT, RESET, Selector switches, ON/OFF indications, etc... .. internally wired as per the requirement and interconnecting/interfaces with transformer, HV breaker, trip system, etc.	NO	1.00		
	<b>SAFETY DEVICES</b>				
15.0	Supply, fixing of 300 mm dia blinking Signal lights, RED Colour, operating voltage-230V, 1phase, AC, fixing the lights on MS pillars at equals intervals at required height with necessary mouting arrangements	NOS	15.00		



Sl. No	Description	Unit	Qty	Rate/unit in fig. & in words Rs.	Amount (Rs)
16.0	Supply, installation and testing of LED display boards OUTDOOR Type, scrolling signs, programmable, high resolution, wifi connectivity, pole mount type of approx size - 1feet x 3feet	NOS	10.00		
17.0	Supply, installation and testing of LED display boards OUTDOOR Type, scrolling signs, programmable, high resolution, wifi connectivity, pole mount type of approx size - 1feet x 10 feet	NOS	2.00		
18.0	Supply, fixing of 25000 volts Caution Boards made of MS sheets of size 450 mm x 450mm.	NOS	15.00		
19.0	Supply, installation and testing of Public address system (Audio annunciations) comprising the following: Power Amplifier-01 No., Message Scheduler- 01 No., Outdoor Horn type Speakers (40 - 45 watts) - 10 No's, 12 U Rack Unit with PDU, including all required materials, accessories such speaker cables, power & control cables, MS/PVC Conduits, etc... to an approximate length of 1000 mtrs, complete	SET	1.00		
	<b>EARTHING SYSTEM</b>				
20.0	<b>Body Earthing:</b> Supply and making earth pits by excavating in hard concrete / soft soil to a depth of 9 feet, inserting 2.50 mtr long 50 mm dia B class GI Pipe electrode connecting with GI flat and filling with alternate layers of salt and charcoal, back filling with soil, (or) equivalent chemical earthing, making cement concrete chamber, covering with heavy guage MS chequered cover plate	NOS	10.00		
21.0	<b>GI Earth Flat:</b> Supply & laying of 50 x 6 GI Flat in hard concrete / soft soil, walls, pillars etc. This includes all civil works related to laying of GI Flat like chipping, chasing, excavating, plastering/finishing the floor with cement to original condition etc	MTRS	150.00		
22.0	<b>Neutral Earthing :</b> Supply and making of neutral earthing by excavating to a depth of 2 metres, inserting of GI pipe electrode, B class, 50 mm dia, connecting 50x6 copper earth flat, 600 x 600 x 6 mm thick copper earth plate, salt, charcoal and making pit chamber and cover with heavy guage MS chequered plate (or) equivalent chemical earthing	NOS	2.00		
23.0	<b>Cu Earth Flat:</b> Supply & laying of 50 x 6 CU Flat in hard concrete / soft soil, walls, pillars etc. This includes all civil works related to laying of CU Flat like chipping, chasing, excavating, plastering/finishing the floor with cement to original condition etc	MTRS	50.00		
	<b>Total value of Electrical work excluding GST (Rs). "B"</b>				
	<b>GST (Rs).</b>				

Sl. No	Description	Unit	Qty	Rate/unit in fig. & in words Rs.	Amount (Rs)
	<b>Total value of Electrical work inclusive of GST (Rs) "B"</b>				
	<b>Total value of Civil + Electrical work excluding GST (Rs). (A+B)</b>				
	<b>GST (A+B) (Rs).</b>				
	<b>Total value of Civil + Electrical work inclusive of GST (Rs) (A+B)</b>				

**Note:-1.** The rate quoted for the above items is deemed to include for providing and removal of scaffolding/staging wherever necessary.

**2)** The contractors/ prospective bidders shall visit the site and acquaint themselves with the site conditions before submission of bid/ quote.

**3) L-1** Contractor to whom the contract is awarded has to survey the entire working site area and to submit the survey report and further the L-1 Contractor are required to submit the detailed design, drawings, load calculations for both Civil & electrical design, drawings, load calculations of the proposed Project.

**4).** The Electrical contractor/firm shall carry out the work / entrusted agency should possess Valid Class – I Electrical license issued by State Chief Electrical inspectorate.

**5)** The Electrical contractor shall have relevant experience in carrying out similar works.

(Total Amount in words Rupees.....  
.....)

Signature of the Contractor with seal