

**MUMBAI METRO RAIL CORPORATION LIMITED**

**Mumbai Metro Line-3 Project**

**IFB No: MM3-CBS-DEQ-9-04**

**Design, Manufacture, Supply, Installation, Testing & Commissioning of Rescue Vehicle (Rail cum Road Vehicle with Re-railing and Rescue Equipment).**

**Response to Bidders' Queries (SET-1)**

Sr. No.	Part No. & Section No.	Clause No.	Page No.	Bidding Document Clause Description	Bidder's Query /Clarification	MMRC Response
1	Part 1, Section II Bid Data Sheet	21.1	5 of 6	The Bid Security amount shall be of INR 10,00,000/- (Indian Rupees Ten Lakhs only) or USD 14,300/- (US Dollars Fourteen thousand three hundred only)	In this tender, the currency for Bid Security Submission are restricted only to INR & USD.  We request you to may permit us to submit Bid Security in EURO currency also.	Refer Sr No 1 of Addendum No 1.
2	Part 2 Section VI-A	14.3.1	41 of 85	<b>Mandatory Spares</b> The contractor shall supply the Mandatory Spares as included in the contract.	As per mentioned clause, the Mandatory Spares are included in the contract. However, the list of the spares is not given in the document. Hence we request you to provide the list of Mandatory Spares	The Supply of Mandatry Spares are not included in this RFP, hence list of Spares are not given. <b>Bid conditions prevail.</b>
3	Part 2 Section VI-B	3.1 (d)	10 of 21	<b>Detailed Scope of works</b> Provisions for Installation of Mobile Train Radio Equipment on board shall be planned by the contractor in interface with STPT (Signalling & Telecom) contractor. This Equipment will be operated at 110 V, the provision of which shall be provided by contractor.	Please confirm Apart from the 110 V electrical interface, are there any other installation required?	Refer Sr No 2 of Addendum No 1.
4	Part 2 Section VI-B	3.1 (h)	10 of 21	Submission of required documents and certificates where applicable for license application and registration with local statutory authorities before commencement of the Defects Liability Period. MMRC shall take necessary action for registration of Rail Cum Road Vehicle with Regional Transport Office and obtaining sanction other statutory authorities in India	Please clarify what kind of documents will be required to submit for license application.	Documents related to design parameters, performance and safety in operation shall be necessary for statutory compliances. <b>Bid conditions prevail</b>
5	Part 2 Section VI-B	3.2.2	11 of 21	<b>Transmission:</b> a)Synchromesh reversing transmission equipped with gear boxinvertor. b)Minimum 6 gears forward and 1 gear reverse or similar standard forward/reverse gear arrangement. c)Automatic transmission system is acceptable d)Single-disc clutch with torque convertor or equivalent arrangement	<b>Transmission:</b> a) Fully synchronised manual transmission b) 8 forward and 8 reverse gears c) If possible delete this clause d) Shift clutch with hydrodynamic torque converter	Please refer Sr No 3 of Addendum No 1.



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6	Part 2 Section VI-B	3.2.3	11 of 21	Brake d)Disc/ drum brake on both axles.	Brake d)Pneumatic 13 bar low-pressure disc brakes on all wheels with break wear indicator	<b>Bid conditions prevail.</b>
7	Part 2 Section VI-B	3.2.3	11 of 21	<b>Brake</b> a) Dual brake system b) Anti-lock brake system c) Parking brake d) Disc/Drum brake on both axles e) Compressed air connections for auxiliary use	Please confirm whether In addition to the service brake of the vehicle, is there a proper waggon brake system (supply of pressurized air for rolling stock's brake pipe) is required?	Supply of pressurized air for trailing stock (wagon etc) is not required. <b>Bid conditions prevail.</b>
8	Part 2 Section VI-B	3.2.4	11 of 21	Chassis: Wheel base approx. 3600 to 3800 mm,	Chasis a)Wheel Base approx. 4200 mm	Please refer Sr No 4 of Addendum No 1.
9	Part 2 Section VI-B	3.2.7	12 of 21	f)large instrument panel LCD displays, and gauge shall indicate the minimum following configurations but will not be limited to: • gauges for Speedometer kmph, RPM, • brake reservoir pressure, • coolant temperature, • fuel level, hydraulic oil temperature, • differential locks, brake pad wear, • brake fluid level, • coolant level, • steering fluid level, • air filter maintenance, • engine oil level, • windshield wiper fluid level, • transmission gear, • service hour counter, • Km and trip Km counter, clock, etc.	Brake fluid is not acceptable	<b>Bid conditions prevail.</b>



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10	Part 2 Section VI-B	3.2.7	12 of 21	g) Vehicle shall have facility of GPS based location monitoring system, which shall enable location monitoring of the Rescue Vehicle from Depot Control Centre/ Operation Control Centre.	g) Please explain about this.	The Rescue Vehicle shall be equipped with Global Positioning System based device to enable tracking its real time positioning. <b>Bid conditions prevail.</b>
11	Part 2 Section VI-B	3.2.9 (b)	13 of 21	<b>Speed</b> Maximum Running speed on rails $\geq 40$ kmph without load and $\geq 10$ kmph with load (8-car train without passengers weighing approx. 340 tons) under standard conditions – straight, dry and levelled track.	Please clarify what is the Maximum Track Gradient in the area where vehicle is required to haul 340-ton load?  Is the vehicle required to pull / push 340 tons load at gradient / curve sections as well?	On the main line, maximum gradient for hauling the 8-car train shall be 2% (effective). Within the Depot, minimum curve shall be 100 mts. and the gradient is zero. <b>Bid conditions prevail.</b>
12	Part 2 Section VI-B	3.2.10	12 of 21	Accessories: h) Engine number stamped into crankshaft housing,	h) Please delete.	Please refer Sr No 5 of Addendum No 1.
13	Part 2 Section VI-B	3.2.15	14 of 21	<b>Super Structure</b>	Please provide drawing of Train Kinematic Envelope with high resolution as the provided drawing does not have sufficient resolution in order to identify the train dimensions.	The train kinematic envelope in good resolution is attached herewith. <b>Bid conditions prevail.</b>
14	Part 2 Section VI-B	3.2.15	14 of 21	Superstructure a) Outer Dimensions: Length 2800 +/-200 mm Width 2300 +/-100 mm Height 1900 +/-100mm	Superstructure a) Outer Dimensions: Length 4000mm Width 2300mm Height 1900mm	Please refer Sr No 6 of Addendum No 1.
15	Part 2 Section VI-B	3.2.19	15 of 21	<b>Coupling System</b> a) Coupling system shall have cranked tow bar with flange, required for coupling the vehicle from both ends, front & rear. One end of the tow bar should be provided with a suitable adapter to couple the vehicle to Automatic/ semi- permanent type of coupler as per the design to be obtained from the Rolling Stock Contractor.	<b>Coupling System</b> Need to delete this. Drawing / picture / etc. of the coupler on the train to be provided if kept this on the specification.	The drawing of the Coupler of the train shall be taken by the Contractor from RS Contractor during design interface stage. Tentative data of Rolling Stock is provided in the Bidding documents. <b>Bid conditions prevail.</b>



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16	Part 2 Section VI-B	3.3		General	We have studied the specifications. We observe that, the quantity & capacity is not mentioned. Request to specify quantity of each item asked. Capacity, weight, stroke may please be specified with acceptable range. We would suggest to provide a tabular column for the quantity of each item asked to avoid post tender-communications.	The Contractor shall refer to different clauses for design parameters and also design the equipment suitable to meet the functional requirements. Please refer Sr No 7 of Addendum no 1 for quantity of different items.
17	Part 2 Section VI-B	3.3.1	16 of 21	<b>Petrol Engine Driven Hydraulic Pumping Set (Power Pack):</b>	<b>Petrol engine driven or Diesel engine driven?</b>	<b>Bid conditions prevail.</b>
18	Part 2 Section VI-B	3.3.1 a)	16 of 21	Portable Petrol / Diesel engine about 5.0 kW, two stages, all hydraulic piston pumps capable of generating 300 - 550 kg/cm <sup>2</sup> pressure with pressure bypass and maximum pressure valve shall be provided. Bypass valve should switch to idle position when jacks are not in operation.	1) 5 kW power is a huge for metro RRE in RRV, 5 kW Diesel engine itself weighs 45 kilos. (Difficult to handle) 2) Basically the pumping unit should be compact and light weight for underground metro. 3) Over-all set up time & operation should be optimized to complete the mission in a short time. 4) We recommend 2.5 kW approx Petrol engine which suffice the functional requirement. You will get optimized time to weight ratio. Compact Petrol pump as suggested is proven globally and currently working in Siemens (Gurgaon Metro & Hyderabad Metro). Hyderabad Metro Re-railing equipment is placed in Mercedes RRV. (Wright & size is a great concern for RRV)	Please refer Sr No 8 of Addendum no 1.



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19	Part 2 Section VI-B	3.3.1 b)	16 of 21	Oil tank shall have a capacity of minimum 40 liters & provided with an oil filter with optical clogging indicator, a filling filter with integral venting filter, oil sight glasses and oil drain screw with magnet insert.	• We will provide since you request for this. But clog indicator is not necessary for portable equipment of this nature	<b>Bid conditions prevail.</b>
20	Part 2 Section VI-B	3.3.1 c)	16 of 21	The weight of pumping set including oil filled shall be less than 110 kg.	110 kilo is possible only with 4.2 HP petrol engine power pack. (Weight of power pack 60 kilo & oil is 40 kilo and telescopic handle if asked, 10 kilos)	<b>Bid conditions prevail.</b>
21	Part 2 Section VI-B	3.3.1 d)	16 of 21	Power unit shall have telescopic extendable carrying handles for easy transportation even in rough areas.	Lifting handles that we offer provide ergonomic handling without telescopic extension. We will provide an arrangement for extension to use when found necessary. Telescopic handles are delicate when extended to full length. Please comment on this.	Please refer Sr No 9 of Addendum No 1.



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22	Part 2 Section VI-B	3.3.2	16 of 21	Auxilliary Hand Pump: a) Hydraulic two-stage portable hand pump with two connections shall be suitable for two jack operation. Oil tank shall have a minimum capacity of 10 litres and shall be provided with a filling filter with integral venting filter. b) Shall have Minimum pressure rating of 300 kg/cm2. c) The weight of Hand Pump with oil shall be less than 30 kg.	Auxilliary Hand Pump: (Operating pressure 530 bar) The hand pump is for operation of two double acting cylinders. Hand pump, 2-stage version, automatic switch-over 4/2 valve and two-way distributor valve Mounted with quick-connect couplings Oil delivery per piston stroke Automatic switch-over from LP to HP at 180 bar. Low-pressure                    10,8 ccm High-pressure                    4,2 ccm Capacity of oil reservoir    10.5 Ltr Usable oil capacity            8 Ltr Dimensions (LxWxH)        940x260x182 mm Weight, with oil approx.    21 Kg	<b>Bid conditions prevail.</b>
23	Part 2 Section VI-B	3.3.2 a)	16 of 21	Auxiliary Hand Pump: Hydraulic two-stage portable hand pump with two connections shall be suitable for two jack operation. Oil tank shall have a minimum capacity of 10 liters and shall be provided with a filling filter with integral venting filter	Hand pump is assumed to be manual pumping station with controls to use only when powered pumping unit fails or not allowed to work in certain areas. We recommend minimum 25 liters oil tank to take advantage of hand pump to use at golden hours for all necessary task in re-railing.	<b>Bid conditions prevail.</b>
24	Part 2 Section VI-B	3.3.2 b)	16 of 21	Shall have Minimum pressure rating of 300 kg/cm2.	• Operating Pressure :490 bar	<b>Bid conditions prevail.</b>
25	Part 2 Section VI-B	3.3.2 c)	16 of 21	The weight of Hand Pump with oil shall be less than 30 kg.	•Weightof hand pump shall be 50 Kg approx.	<b>Bid conditions prevail.</b>



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26	Part 2 Section VI-B	3.3.3	16 of 21	Control Console or Control Panel/Table a) Control Console or Control Table shall be complete with all necessary valves, controls and safety features. Control Console should have minimum four control valves for simultaneous/ independent operation of lifting and lowering of four jacks. Necessary pressure gauges for pressure monitoring and safety valves shall be provided. Control Table should have colour coded hose outlet for connecting colour coded hoses to make connections to jacks. Control table should have a sturdy portable frame and the weight shall be less than 70 kg.	Central Control Panel: (operating pressure 530 bar) for operation of 4 Lifting jack. 4 Pressure gauge for precise control of the pressure and the load on the cylinders 8 Control valves for sensitive lifting lowering, out of this 8 Control vales are 4 for shifting of the derailed rolling stocks. All valves are of "deadman" control type equipped with double safety and load holding provisions. Control panel with foldable rack for space saving storage in the vehicle and easy transportation Dimension of the item ( L x W x H ) 1310 x 640 x 1112 mm Weight : approx. 68 kg	<b>Bid conditions prevail.</b>



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27	Part 2 Section VI-B	3.3.3 a)	16 of 21	Control Console or Control Panel/Table: Control Console or Control Table shall be complete with all necessary valves, controls and safety features. Control Console should have minimum four control valves for simultaneous / independent operation of lifting and lowering of four jacks. Necessary pressure gauges for pressure monitoring and safety valves shall be provided. Control Table should have colour coded hose outlet for connecting colour coded hoses to make connections to jacks. Control table should have a sturdy portable frame and the weight shall be less than 70 kg.	We recommend the weight of the control console for 4 controls to be less than 45 kilos. As everyone manufacture this.  Size and weight is very important for the equipment that is going to be placed in RRV.  We provide foldable / removable leg for ease of storage.  One German company offer such control console with selector switch for synchronius lifting of an evenly distributed load. But set up time is huge since syncernization telescopic jacks needs pre-adjustment which takes all the respurces and time. We too have this model but we do not suggest the same to Metro.	<b>Bid conditions prevail.</b>





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28	Part 2 Section VI-B	3.3.3 b)	16 of 21	Control Console shall be provided with separate oil flows for simultaneous or independent lifting operation and a provision of inbuilt pressure gauge for individual control valves. It should have selector valve having position for lifting and traversing for a safe re-railing process.	<p>This type of control console is required only for Control console with separate oil flows of same quantity through each control valve which is not proved either in IR or in Metro in India .</p> <p>One German manufacturer had offered such system to Indian Railways which was not accepted due high cost &amp; non-suitability in normal Re-railing application.</p> <p>Inbuilt pressure gauge for individual control valves with a selector valve having position for lifting &amp; traversing has not been proved in either in Metro or in Indian Railways in India</p> <p>According to us, control table with four control valve &amp; one pressure gauge is enough for metro. It is safe, simple, fast &amp; economic.</p> <p>Note: If insisted on the same system enquired, we can supply &amp; we have already demonstrated such unit in DMRC and Nagpur metro. But the features cannot be used and in place of 45 kilos of compact console a 70 kilo big unit will have to be handled.</p>	<b>Bid conditions prevail.</b>



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29	Part 2 Section VI-B	3.3.3 c)	16 of 21	Separate oil flows of same quantity through each control valve shall facilitate simultaneous or independent lifting/lowering operation of jacks with ease, while eliminating chance of load failing from the jack and thus preventing accidents while re-railing due to unbalanced loads on jacks. Separate oil flows for each control valve shall also facilitate functioning of remaining jacks in case one or more jack fails.	Separate oil flows of same quantity through each control valve not recommended for Metro. The unit becomes heavier without serving any purpose apart from high cost.  Un balanced load generally occur in derailment of loaded wagons & not in Metro trains which are longer in length and well-connected to each compartment.  Metro car itself being lighter & running in underground conjected area, we recommend light weight, control console with 4 control valves & foldable / removable legs to store in small place available in RRV.	<b>Bid conditions prevail.</b>
30	Part 2 Section VI-B	3.3.3 d)	17 of 21	Control valves shall be covered with a casing to prevent in-gress of dust, etc. from pump unit to get into the hydraulic system during lifting, lowering and traversing operation.	Casing cannot prevent ingress of oil into hydraulic system.  Cover is for covering the valve bank and for affixing labels / indication for direction of control of respective DC valve.  Functionally cover has no role to prevent ingress of dirt.	Please refer Sr No 10 of Addendum no 1.
31	Part 2 Section VI-B	3.3.5	17 of 21	<b>Telescopic Jack with Base Plate:</b> Telescopic jacks of following capacity and specification shall be supplied: •60/30 T capacity, maximum close height 465 mm, minimum stroke 500 mm •60/30 T capacity, maximum close height 250 mm, minimum stroke 185 mm	<b>Telescopic Jack with Base Plate:</b> d)Telescopic Jack of following capacity and specification shall be supplied: o 60/30 T capacity,maximum close height 215 mm mm,minimum stroke 185 mm	<b>Bid conditions prevail.</b>



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32	Part 2 Section VI-B	3.3.5 d)	17 of 21	Telescopic Jack with Base Plate: Telescopic jacks of following capacity and specification shall be supplied: <input type="checkbox"/> 60/30 T capacity, maximum close height 465 mm, minimum stroke 500 mm  <input type="checkbox"/> 60/30 T capacity, maximum close height 250 mm, minimum stroke 185 mm	1. Closed height & weight of the jacks should be counted with the base / base plate of the jacks. 2. Closed height, stroke & lifting capacity of the jacks is normally $\pm 10\%$ of rated capacity. 3. Request provide acceptable tolerance to the specifications.  1. Closed height & weight of the jacks should be counted with the base / base plate of the jacks. 2. Closed height, stroke & lifting capacity of the jacks is normally $\pm 10\%$ of rated capacity. 3. Request provide acceptable tolerance to the specifications.	<b>Bid conditions prevail.</b>
33	Part 2 Section VI-B	3.3.5 e)	17 of 21	Jacks with integrated Base Plates or separate Base Plate are acceptable to ensure optimum stability during the operation of lifting! Traversing. In case separate Base Plates are proposed, price of Jacks shall be inclusive of Base Plates.	We offer integrated base plates. 1. Closed height & weight of the jacks should be counted with the base / base plate of the jacks.	<b>Bid conditions prevail.</b>
34	Part 2 Section VI-B	3.3.6	17 of 21	Displacing Jack or Duo Traversing Jack a) Displacing Jack shall be of 12/6 T capacity (12 T for pushing, 6 T for pulling) capacity, closed height about 575 mm, stroke about 350 mm with steel counter support. The working pressure shall be 300 - 550 kg/cm <sup>2</sup> . The displacing jack shall have integral oil retaining valves, colour coded connections and the weight shall be less than 24 kg.	Displacing Jack or Duo Traversing Jack: Double-acting, with hydraulically operated anchor pin; The traversing jack allows displacing in two directions over the full length of the re-railing bridge. It is controlled and adjusted from the control table. traversing/pulling force      170/90 kN piston stroke                      320 mm weight Approx.                      23 kg	<b>Bid conditions prevail.</b>



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35	Part 2 Section VI-B	3.3.7 a)	17 of 21	<b>Re-Railing Bridge:</b> The loading capacity of Re-railing bridges shall be tested at 1.25 times the stated capacity. The Re-railing bridges shall be fitted out with carrying handles and mounting points for bridge couplings. The maximum weight for the longest bridge shall be less than 180 kg.	In the field, the bridge is subjected to a load of maximum 60 ton between a span of 1435 mm ( Track Guage ). The bridge should withstand this load. The specification should stress on this part of testing.  When fully supported the bridge should take a load of 100 Tons with a over load capacity of 25% higher. Other metro have specified the same specs. 140 mm height Re-railing bridge may not withstand 60 ton load between span of 60 tons.	<b>Bid conditions prevail.</b>
36	Part 2 Section VI-B	3.3.7 b)	17 of 21	Re-Railing Bridges shall have carrying capacity of 60 T, 140 mm height and following dimensions: i. 3.30 m length, 140 mm height, 350 mm width ii. 2.20 m length, 140 mm height, 350 mm width iii. 1.10 m length, 140 mm height, 350 mm width	Bridges should practically carry 60 ton load when load is placed between a distance of 1435 (Gauge i.e. between two rails).  140 mm size bridges not suitable for this load. Load carrying capacity of the bridge is designated by its ability to withstand the load between two tracks / gauge width. (Load is 60 Tons) Bridges cannot be supported all along in the site.  We offer 180 mm height Re-railing bridges & the same are better suited for this application. DMRC has specified the same in the tenders.	<b>Bid conditions prevail.</b>



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37	Part 2 Section VI-B	3.3.8	18 of 21	<p>RollerCarriage:</p> <p>a)Roller carriage shall have 60 T Capacity with removable top plate. The height shall be less than 110 mm (without plate) – 140 mm (with plate) and the weight less than 60 kg (without plate) - 85 kg (with plate). The width shall be less than 260 mm.</p> <p>b)The Roller Carriages shall have carrying handles. The rollers shall be provided with maintenance free sealed bearings.</p>	<p>Roller Carriage to be equipped with:</p> <p>4 heavy duty low friction rollers 1 integrated,removable top sliding disc on Teflon plate for easy movemnt 1 stainless-steel rust protected cover plate 4 guiding pins to secure a linear movement 4 supports for distance bars and traversing cylinder 2 extendable carrying handles Loading Capacity - 750 KN Construction Height 130 mm Width 380 mm Weight 42 kgs</p>	<b>Bid conditions prevail.</b>
38	Part 2 Section VI-B	3.3.9	18 of 21	<p>Bridge Coupling:</p> <p>Bridge coupling shall be suitable for joining together two Re-Railing Bridges and shall be compatible to loading capacity and height of Re-Railing Bridges.</p>	<p>Connection Element for Bridges: consisting of 2 plates, 4 bolts and necessary nuts . Weight: 18 Kg The joint of two bridges must always be supported and secured</p>	<b>Bid conditions prevail.</b>
39	Part 2 Section VI-B	3.3.10	18 of 21	<p>Distance Bars:</p> <p>Distance bars shall be suitable for joining together two Roller Carriages and shall be compatible to loading capacity of Jacks and have adjustable length from 1,030 mm to 1,830 mm.</p>	<p>Distance Bar :</p> <p>Distance bar shall be suitable for joining together two Roller Carriages and shall be compatible to loading capacity and have adjustable length from 1030 mm to 1830 mm. Weight should less than 60 kgs</p>	<b>Bid conditions prevail.</b>
40	Part 2 Section VI-B	3.3.14	18 of 21	<p>Axle Pusher:</p> <p>Axle pusher unit shall be used for movement of wheel resting on the rail by a flange or for lateral displacement of the lifted vehicle consisting of two arms with hooks and with a crossbeam of light metal alloy.</p>	<p>Axle Pusher :</p> <p>If the wheels of the vehicle are positioned with the wheel flange on the rails, the axle pusher will push them back into the track.It consists of traverse with cylinder attachment .The weight of the axle pusher should be less than 30 kgs.</p>	<b>Bid conditions prevail.</b>



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Sr. No.	Part No. & Section No.	Clause No.	Page No.	Bidding Document Clause Description	Bidder's Query /Clarification	MMRC Response
41	Part 2 Section VI-B	3.3.15 b)	19 of 21	Auxiliary truck shall consist of side sections with rollers and carrying handle, connecting tubes suitable for a 1,435 mm track gauge, rated carrying capacity 16 T (maximum capacity 25T) and the maximum towing speed 25 km per hour. The maximum weight for the whole auxiliary truck shall be 120 kg.	<p>No comments except the weight.</p> <p>We have better design which is assembled directly underneath the Hot axle only by lifting respective axle against springs and not by lifting car.</p> <p>Weight of the unit is 200 kilo. Weight of individual component is ergonomically designed.</p> <p>Already supplied over competitor's conventional product &amp; very useful and purposeful design. Now a day's all tenders specifying our specs stressing upon our design</p>	<b>Bid conditions prevail.</b>
42	Part 2 Section VI-B	3.3.16	19 of 21	<p>Hauling Device:</p> <p>a)Hauling Device, capacity 25 T shall be complete with accessories including following:</p> <p>i.Pulling jack: capable of giving Tractive power of 250 kN: 1 No.</p> <p>ii.FasteningRope:1No.</p> <p>iii.PullingRope:1No.</p> <p>iv.RetainingRope:1No.</p> <p>v.RailBlock: 2No.</p> <p>vi.Wedges: 4No.</p> <p>b)Ropes shall be of atleast 10mm diameter.</p>	<p>Hauling Device consists of:</p> <p>1.Pulling Jack capacity - 22 tons;Stroke- 460 mm</p> <p>2.Holding Rope(fixing steel wire) for fixing jack with rail attachment- 2 Nos</p> <p>3.Pulling Rope,approx 9.5 mtr length - 1 Nos</p> <p>4.Rail attachments suitable for track gauge - 2 Nos</p>	<b>Bid conditions prevail.</b>



**MUMBAI METRO RAIL CORPORATION LIMITED**

**Mumbai Metro Line-3 Project**

**IFB No: MM3-CBS-DEQ-9-04**

**Design, Manufacture, Supply, Installation, Testing & Commissioning of Rescue Vehicle (Rail cum Road Vehicle with Re-railing and Rescue Equipment).**

**Response to Bidders' Queries (SET-1)**

Sr. No.	Part No. & Section No.	Clause No.	Page No.	Bidding Document Clause Description	Bidder's Query /Clarification	MMRC Response
43	Part 2 Section VI-B	3.3.17	19 of 21	<p>b)Pneumatic air compressor shall have displacement of at least 230 lpm and in-built air receiver capacity of at least 10 litres at minimum 10 bar pressure for inflating air bags. Compressor shall be provided along with electric motor, motor starter, control box for connecting and operating 2 airbags at a time and reinforced air hoses at-least 10 m long for connection between air compressor and the air - bags.</p> <p>c)Two set of hoses shall be supplied in different colour.</p>	<p>b) Pneumatic air compressor shall have displacement of at least 300 lpm and in-built air receiver capacity of at least 150 litres at 12 bar pressure for inflating air bags. Compressor shall be provided <b>with electiic motor</b>. Control box for connecting and operating 2 airbags at a time and reinforced air hoses at-least 10 m long for connection between air compressor and the air - bags.</p> <p>c) Two set of hoses shall be supplied in different colour.</p>	<b>Bid conditions prevail.</b>
44	Part 2 Section VI-B	3.3.18	19 of 21	<p>a)Airbags of following size and capacity shall be supplied:</p> <p>i.Size (Approx.): 600 x 650 – 650 x 0 mm, Lifting capacity : 270 - 320kN, Lifting height : 350 mm</p> <p>ii.Size (approx.): 900 x 900 – 950 x 950 mm, Lifting capacity: 670 - 700 kN, Lifting height : 500 mm</p> <p>b)Air bag of square/diamond shape sizes as stated above, or equivalent capacity circular shape air bags are acceptable.</p>	<p>a) Airbags of following size and capacity shall be supplied:</p> <p>i. Size (Approx.) : 608 x 530 mm, Thickness:27 mm Lifting capacity : 270 - 320kN, Lifting height: 320 mm Quantity : 2 Nos.</p> <p>ii. Size (approx.) : 827 x 750 mm, Thickness:27 mm Lifting capacity: 600 - 700 kN, Lifting height: Min 450 mm Quantity : 2 Nos.</p> <p>b) Air bag of Square / Rectangular / diamond shape sizes as stated above, or equivalent capacity circular shape air baqs are acceptable?</p>	Please refer Sr No 11 of Addendum no 1.
45	Part 2 Section VI-B	3.3.19	19 of 21	<p>a)Rescue devices shall comprise the following items:</p> <p>i.Hydraulically Operated Cutter ii.Hydraulically Operated Spreader</p>	<p>a) Rescue devices shall comprise the following items:</p> <p>i. Hydraulically Operated Cutter of Cutting Force: 550 kN (min), Weight 10 Kg (max). ii. Hydraulically Operated Spreader of Spreading Force: 275 kN (min), Weight 15 Kq (max).</p>	<b>Bid conditions prevail.</b>



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**Response to Bidders' Queries (SET-1)**

Sr. No.	Part No. & Section No.	Clause No.	Page No.	Bidding Document Clause Description	Bidder's Query /Clarification	MMRC Response
46	Part 2 Section VI-B	3.3.19	20 of 21	<p>c)The hydraulically operated cutters and spreader shall be provided with a suitable capacity power pack of 4-stroke petrol engine for the use of rescue devices with a minimum operating pressure of 630 bar and weight shall not be more than 30 kg.</p> <p>As an alternative, Battery-operated rescue devices namely cutter and spreader along with a set of spare battery and battery charger to facilitate effective continuous operation of battery-operated rescue devices can be offered.</p>	<p>c) The hydraulically operated cutters and spreader shall be provided with a suitable capacity power pack of 4- stroke petrol engine capable of developing adequate hydraulic pressure and pulsation free flow to operate minimum two hydraulic rescue devices at a time at high pressure for performing rescue operations. The pump shall be two stage /three stage for low and high-pressure outputs. Working Pressure of 700Bar ± 3% and Weight shall not be more than 25 Kg.</p> <p>As an alternative, Battery-Operated rescue devices namely cutter of Cutting Force: 550 kN (min), Weight 16 Kg (max including battery) and spreader of Spreading Force: 275 kN (min), Weight 21 Kg (max) along with a set of spare battery and battery charger to facilitate effective continuous operation of battery-operated rescue devices can be offered.</p>	<b>Bid conditions prevail.</b>
47	Part 2 Section VI-B	3.3.20	20 of 21	<p><b>Manually Operated Light Weight Combination Tool for Cutting and Spreading:</b> A manually operated light-weight combination tool for cutting and spreading with integrated pump shall be supplied for emergency operation when hydraulic and/or battery-operated rescue equipment fails.</p>	<p>A manually operated light-weight combination tool of Cutting Force: 200 kN (min), Spreading Force: 45 kN (min) &amp; Weight 10 Kg (max) for cutting and spreading with integrated pump shall be supplied for emergency operation when hydraulic and/or battery-operated rescue equipment fails.</p>	<b>Bid conditions prevail.</b>





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**Response to Bidders' Queries (SET-1)**

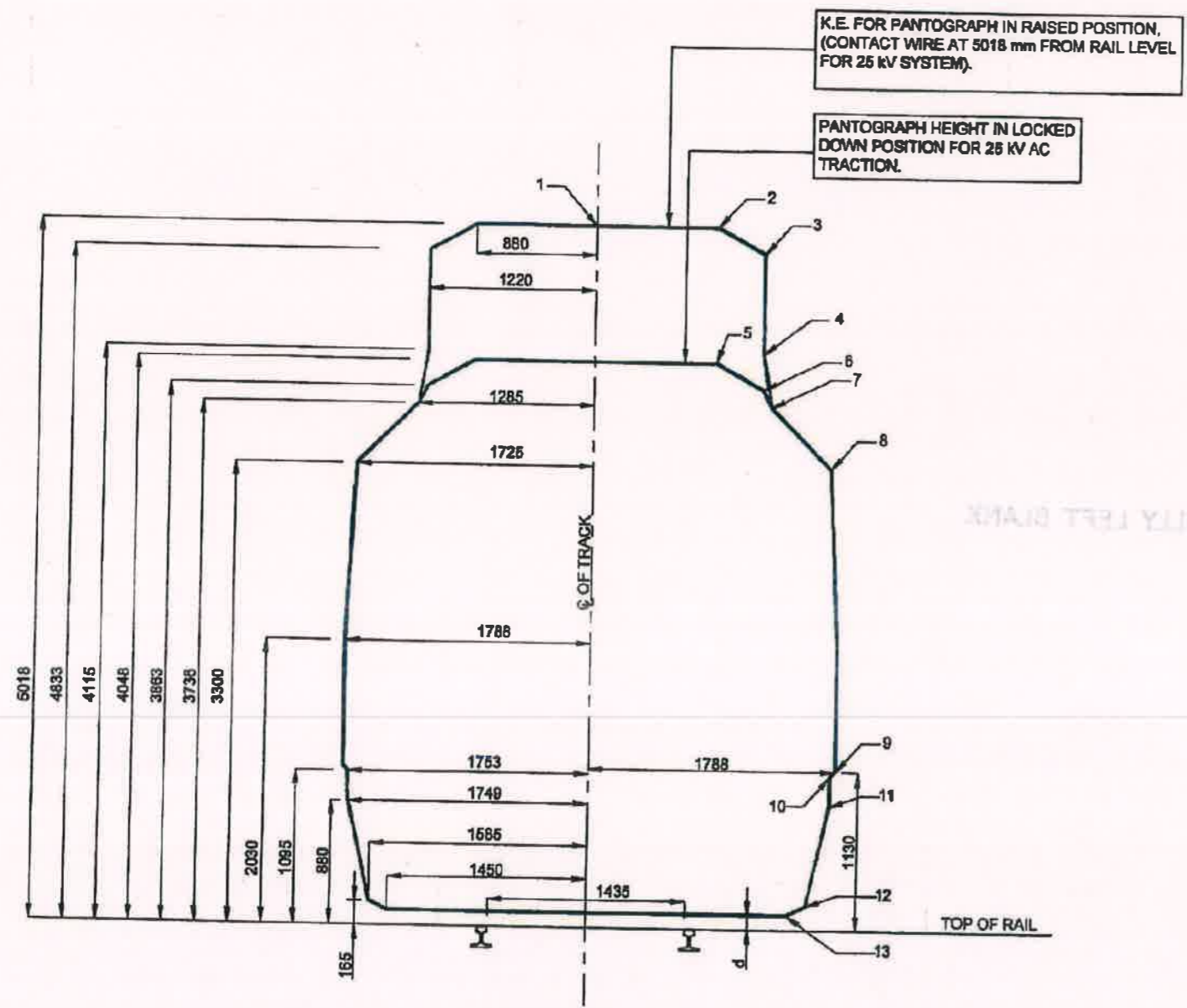
Sr. No.	Part No. & Section No.	Clause No.	Page No.	Bidding Document Clause Description	Bidder's Query /Clarification	MMRC Response
48	Part 2 Section VI-A	7.7.4	27 of 85	7.7.4 Within 14 days of the installation of any software into the Permanent Works by the Contractor, the Contractor shall submit to the PM for retention by the Employer and the PM, two backup copies of the software, which shall include, without limitation: a) All licenses in favour of the Employer for their use. b) all source and executable codes; c) all design documentation relating to the software; and any specified development tools required for maintenance of the software, including, but not limited to, editors, compilers and linkers	Please note that all source, executable code and design documents related to software are manufacturers intellectual property which cannot be shared in any case.  Hence, we request you to delete this requirement.	These clauses are applicable for maintenance software developed specifically for this project. <b>Bid conditions prevail.</b>
49	Part 1, Bidding Procedure, Section IV-B, Pricing Documents, Schedule No.6	Schedule No. 6	13 of 19	Notes: Payments shall be made in the currencies quoted in the above Price Schedule.	We would like to quote our basic machine in Euros and Re-railing and Rescue equipment in Indian Rupees, please let us know how you will make the payment of Indian Rupees to us .Please note that we do not have any Indian Bank account or alternatively please let us know if the Indian component payment can be paid to our Indian agent.	The Payment of the amount in INR would be made by the purchaser to your regular Bank account in your country. <b>Bid conditions prevail.</b>
50	Part 1, Bidding Procedure, Section II, Bid Data Sheet, ITB 24.1	ITB 24.1	6 of 6	The deadline for Bid submission is: Date: 24/10/2019 Time: 3:00 PM	Also we would like to inform you that we are preparing the bid, but however we need some more time for preparation of bid and Bid security, hence it is requested to kindly extend the tender for another 30 days from the date of bid submission to enable us to participate in the tender.	Please refer Sr No 12 of Addendum no 1.



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# Kinematic Envelope

MMRC-1



CO-ORDINATES OF K.E		
	X	Y
1	0	5018
2	880	5018
3	1220	4833
4	1220	4115
5	880	4048
6	1220	3863
7	1285	3736
8	1725	3300
9	1788	1130
10	1763	1095
11	1749	880
12	1685	165
13	1480	d

**NOTES:**

1. ALL DIMENSION ARE IN mm UNLESS OTHERWISE STATED.
2. HORIZONTAL CLEARANCE DUE TO CURVES SHALL BE ADDED IF PLATFORM IN CURVE.
3. THE KINEMATIC ENVELOPE IS VALID FOR VEHICLES WITH SEALED WINDOWS AND DOORS CLOSED WHILE IN MOTION.
4. CONDUCTOR HEIGHT ABOVE RAIL LEVEL SHALL ALSO TAKE INTO CONSIDERATION PRESCRIBED ELECTRICAL CLEARANCES BETWEEN ALL LIVE OVERHEAD EQUIPMENT AND PANTOGRAPH / VEHICLE AND PARTS THEREOF.
5. A TYRE OR AN ATTACHMENT OF A WHEEL MAY PROJECT BELOW THE MINIMUM HEIGHT IS OF KINEMATIC ENVELOPE FOR DISTANCE OF 51 mm INSIDE AND 216 mm OUT SIDE THE WHEEL GAUGE FACE.
6. DIMENSION 'd' SHALL BE 75 mm (MINIMUM) FOR BOGIE MOUNTED EQUIPMENT FOR FULLY LOADED STATIC VEHICLE AND 102 mm (MINIMUM) IN FULLY LOADED CONDITION FOR BODY MOUNTED EQUIPMENT EXCEPT AS LAID DOWN AT ITEM 6 ABOVE, AND 50mm UNDER DYNAMIC CONDITION. REFERENCE : SOD PARA 1.5 AND SOD PARA 3.1.3 (II)
7. KINEMATIC ENVELOPE IS VALID FOR SPEED UPTO 95KMPH DESIGN SPEED AND UPTO 85KMPH OPERATING SPEED MAXIMUM

FIG. MMRC-1  
Ref. SOD Para 1.5 (a) & 3.1.3 (II)



GENERAL CONSULTANCY SERVICES  
FOR MUMBAI METRO RAIL PROJECT, LINE 3  
COLABA - BANDRA-SEEPZ

REV.	DATE	PREP.	APPR.	DESCRIPTION	NAME	SIGN	DATE
C	16-01-2018	NKV	RJM	COMMENT RDSO 08.12.17 INCORPORATED	DRAWN BY	NKV	16-01-2018
B	02-06-2017	HRM	RJM	COMMENT RDSO 23.05.17 INCORPORATED	FOR RS	ISAO	
A	11-01-2017	KCB	RJM	FIRST ISSUE	APPROVED BY	RJM	

PROJECT	MUMBAI METRO LINE 3 COLABA-BANDRA-SEEPZ
DRAWING TITLE	KINEMATIC ENVELOPE: AT - GRADE AND ELEVATED SECTION ON LEVEL OR CONSTANT GRADE TANGENT TRACK
DRAWING NO	MM3-GC-SOD-GD-0161001

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