

**GOVERNMENT OF INDIA  
MINISTRY OF RAILWAYS  
(RAILWAY BOARD)**

2019/Proj./MEGA/PSS/30/4

New Delhi, dated 08.02.2019

**Managing Director,**

Metro Link Express for Gandhinagar and Ahmadabad,  
(MEGA) Company, Limited,  
5<sup>TH</sup> Floor, Nirman Bhawan,  
Opp. Sachivalaya Gate No.4,  
Sector-10-A, Gandhi Nagar,  
Gujarat -382010

**Sub: Traction installation and power supply system (3rd Rail Current Collection- 750 V DC) - Annexure D2 for Ahmedabad Metro Rail Project Phase-I.**

Ref: MEGA Company Limited's letter No. MEGA/SYSTEM/RDSO-PS&T/2017/01 dated 26.12.2018, 13.12.2018 and 14.08.2018

Metro Link Express for Gandhinagar and Ahmadabad (MEGA) Company Limited's request for technical approval for traction installation and power supply system (3<sup>rd</sup> Rail Current Collection- 750 V DC) - Annexure D2 for East-West and North-South Corridor of Ahmedabad Metro Rail Project Phase-I has been examined in Board's office in consultation with RDSO and approval of the competent authority is hereby conveyed with the condition that MEGA Company Limited/Metro Rail Administration (MRA) shall closely monitor new items/designs that are not in use in Indian Railways.

MEGA Company Limited/MRA shall also ensure that Operation and Maintenance (O&M) Manual approved by RDSO is in place before commercial operations.

A copy of the approved Annexure D2 for the project is enclosed.

Encl: As above

  
08-02-2019  
**(Ruth Changsan)**  
Director/MTP  
Railway Board  
☎ 011- 47845480

Copy to: (i) **Executive Director/UTHS**, RDSO, Manak Nagar Lucknow w.r.t letter No. UTHS/81/Elect. dated 02.01.2019 for information please.

(ii) **OSD/UT & Ex-Officio Joint Secretary**, Ministry of Housing & Urban Affairs (MoHUA), Nirman Bhavan, New Delhi-110001

Annexure to RDSO's letter UTHS/81/Elect.Dated: 02.01.2019

TRACTION & POWER SUPPLY SYSTEM (3rd Rail Current Collection - 750 V DC) of "Mega - Link Express for Gandhinagar and Ahmedabad (MEGA) Company Ltd" Mega EW-NS Metro Line Phase-1			
S No.	SYSTEM	MEGA METRO's FEATURES	STANDARDS/DRAWINGS
1.0	POWER SUPPLY		
1.1	Receiving Sub-Station (RSS)	132 kV (AC)	MEGA-EP1-ARPD-RSS-S-102
1.1.1	Earth Resistance at RSS	<1.0 $\Omega$	IEEE 80
1.2	Traction Sub-Station (TSS)	33 kV (ac)/750V (DC)	MEGA-EP1-NS-GSPD-ASS-L207
1.2.1	Earth Resistance of TSS	<1.0 $\Omega$	IEEE 80
1.2.2	Transformer – Rectifier unit at TSS	Capacity 2850 KVA (02 nos. per substation) Secondary Voltage-630V Vector -Dd0y11, Dry type	IEC-60076-11
1.3	Auxiliary Sub-station (ASS)	33 kV (ac)/415 V (ac)	MEGA-EP1-EW-ARPK-ASS-L207
1.3.1	Earth Resistance of ASS	<1.0 $\Omega$	IEEE 80
1.3.2	Auxiliary Transformer	Capacity: 2000 KVA, 800 KVA, 500 KVA & 200 KVA(Dry Type)	IEC-60076-11
2.0	750 V DC Traction System		
2.1	Conductor Rail (Third rail )	Steel & Aluminium (Co-extruded)	Drawingno. IND-AHM-18-001
2.1.1	Type of current collection	Bottom Collection	
2.1.2	Nominal Current at 40 ° C ambient	4500 A	Drawingno. IND-AHM-18-001
2.1.3	Electrical Resistance	7.0 $\mu\Omega$ /meter (at 20° C)	
2.1.4	Linear Mass	17.2 kg/m (approx.)	
2.2	Thickness of Stainless Strip	6.0 mm	
2.2.1	Stainless Steel Strip	Cr=16.8% (approx.)	
3.0	Horizontal & Vertical Clearances of Third Rail	MEGA's SOD approved by Railway Board	MEGA's SOD approved by Railway Board





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S No.	SYSTEM	MEGA METRO's FEATURES	STANDARDS/DRAWINGS
4.0	Stay Current Mitigation System	Mega Metro has followed EN 50122 for Stray Current Mitigation.	EN 50122-2-2010 (or Latest)
5.0	SCADA (IEC 60870-5-104) (IEC 61850)	<ul style="list-style-type: none"> <li>• Redundant- -Data Base Server and process server , Media, Port</li> <li>• Dedicated Historical database archive terminal.</li> <li>• IEC 61850 protocol Communication between station IEDs and RTU.</li> <li>• IEC 60870-5-104 protocol communication between RTU and SCADA</li> <li>• RTU with Ethernet OFC Ports to communicate with SCADA System</li> </ul>	IEC 60870-5-104, IEC 61850

**Note:** Any dilution in the stipulations/Compliances as submitted as well as detailed above Suo-moto by MEGA Metro shall automatically invalidated the technical clearnces.

