

Madhya Pradesh Metro Rail Corporation Limited (MPMRCL)

(A Joint Venture of Government of India and Government of Madhya Pradesh)

CIN: U75100MP2015SGC034434

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Corrigendum – 12

No.: 363/MPMRCL/2022

Date: 14.03.2022

With reference to Tender Notification No.: 1427/MPMRCL/2021/Package BH&IN-02, Date: 02.11.2021, regarding "Design, Manufacture, Supply, Installation, Testing, Commissioning and Training of Standard Gauge Passenger Rolling Stock Cars (with 15 Years Comprehensive Maintenance) – 81 Cars for Bhopal and 75 Cars for Indore, including Signalling & Train Control and Telecommunication Systems (with 7 Years Comprehensive Maintenance)" for Bhopal Metro Rail Project and Indore Metro Rail Project, following corrigendum are issued in pursuant to clause 3.5 of Volume I – ITT. The corrigendum will be part of the said tender document.

Sr. No.	Tender Document Reference	Clause/Sub- Clause/Para (Page No)	Clause Description (relevant portion) as existing in the Tender Documents	Clause Description (relevant portion) as amended now to be read as
1	Volume I, Part 4: LOT		amended "Appendix – 15C.1: Work Experience	Refer Attachment – 2 to Corrigendum – 3 for amended "Appendix – 15C.1: Work Experience (General Experience) and Attachment – 1 to Corrigendum – 12 for Appendix 15C.2: Work Experience (Propulsion Equipment)".



Sr. No.	Tender Document Reference	Clause/Sub- Clause/Para (Page No)	Clause Description (relevant portion) as existing in the Tender Documents	Clause Description (relevant portion) as amended now to be read as
2	VOL IV, Part 1, ERTS-RS	6.12.4 1 st Paragraph (153 of 492)	function including Wheel Slide Protection (WSP) can be taken over by the other redundant control elements even in the case of failure of individual	The EP brake shall be so designed that its control function including Wheel Slide Protection (WSP) can be taken over by the other redundant control elements even in the case of failure of individual electronic or electrical control elements. Bogie level control shall be provided for Brake electronics.
3	VOL IV, Part 1, ERTS-RS	6.1.5 (vi) 1 st Paragraph (153 of 492)		Brake-pipe controlled back-up brake system and Emergency brake during rescue operation. Refer ERTS 6.20.
4	VOL IV Part 2 ERTS-SIG	APPENDIX 12, 5.4.4.2, 2nd sentence (22 of 45)	The minimum design headway is 90 Seconds	Refer Volume V [Tender Drawings], and revised drawing no. BI10-BIG-TRK-08-DWG-LPTR001- 00001 REV1 for modified Track Plan for Bhopal
5	VOL IV, Part 2, ERTS-SIG	1.8.1 (13 of 238) Corrigendum_03, Point no. 90, Corrigendum_10, Point No.19	suitable place for constructing site office and storage facilities for contractor as well as for Engineer in Depot . The Contractor will construct the site office and storage facility within 4 months of	During project phase, contractor has to maintain their own Project office including storage facilities in which they have to provide space to the Engineer as per Appendix 19 of ERGS-S&T, Corrigendum_03, SL. no. 90 and Corrigendum_10, SL. No.19. However, the same can be shifted to the depot in T&C and DLCMP phase once facility at depot is available.



Sr. No.	Tender Document Reference	Clause/Sub- Clause/Para (Page No)	Clause Description (relevant portion) as existing in the Tender Documents	Clause Description (relevant portion) as amended now to be read as
				During DLCMP, the Contractor will be provided with constructed space for setting up of office, maintenance, repair and storage facility at nominated Depots and stations (at Bhopal & Indore). Any change/modifications in handed over facilities shall be got approved from MPMRCL. It will be the responsibility of the Contractor to maintain the space, including any modification, provided to them.
6	VOL IV, Part 2, ERTS-SIG	2.8.6 (21 of 238)	с , , , , , , , , , , , , , , , , , , ,	The Design Headway shall be based on an average travel speed of 28 Kmph or higher with a station dwell time of 30 seconds.
7	VOL IV, Part 2, ERTS-SIG	3.11.1.1 (45 of 238)	and depot entry/exit according to their modes and features as follows:a. At stations with point and crossing for point protection catering for bidirectional working	Line side Signals shall be installed on the Main lines and depot entry/exit according to their modes and features as follows: a. Fixed Signal: At stations with point and crossing for point protection catering for bidirectional working b. Virtual Signal: These are not physical signals but locations on line. These are used as an intermediate entry/exit location also known as virtual signal location or as name given, in the yard / line layout and displayed on interlocking and Automatic Train Supervision monitors. These may be used wherever required for



Sr. No.	Tender Document Reference	Clause/Sub- Clause/Para (Page No)	Clause Description (relevant portion) as existing in the Tender Documents	Clause Description (relevant portion) as amended now to be read as
				dividing routes between two fixed signals. This signal controls trains with Automatic Train Protection to enable shorter movements.
8	VOL IV Part 2 ERTS-SIG	3.25.13 (60 of 238)	technology (Inter-screen gap < 0.3 mm). Screen	The screen should be of almost Zero Gap technology (Inter-screen gap < 0.8 mm). Screen should be of minimum three layers with a Hard backing to prevent bulging.
9	VOL IV Part 2 ERTS-SIG	Appendix A2 5.4 (146 of 238)	required speed through the automatic washing plant. A hold function shall be locally provided for the cleaning personnel at the automatic washing plant line to regulate the Train when it is being cleaned. This hold function shall also be available at every Train location in the stabling and inspection bay lines. Trains shall be capable of moving automatically from the main line, stabling, Inspection Bay line, Automatic washing plant line, etc. to the workshop lines. Trains shall be driven from the workshop/Maintenance line to the workshop/Maintenance transfer tracks manually. The Train shall move automatically from the	Internal depot operation The Train shall be driven automatically, at the required speed through the automatic washing plant. A hold function shall be locally provided for the cleaning personnel at the automatic washing plant line to regulate the Train when it is being cleaned. This hold function shall also be available at every Train location in the stabling and inspection bay lines. There shall be one common transfer track for workshop / Inspection Bay Line. Trains shall be capable of moving automatically from the main line, stabling, Automatic washing plant line to the common transfer track. Trains shall be driven from the workshop line / Inspection Bay line to the common transfer track manually. The Train shall move automatically from the common transfer



Sr. No.	Tender Document Reference	Clause/Sub- Clause/Para (Page No)	Clause Description (relevant portion) as existing in the Tender Documents	Clause Description (relevant portion) as amended now to be read as
			operational self-tests prior to the movement of the	track to the depot destination selected by the OCC. Required safety and other operational self-tests prior to the movement of the Train in UTO inside the depot shall be automatically initiated by the Train. Final operation plan shall be decided during Detailed Design Stage.
10	VOL IV, Part 2, ERTS-SIG	rt 2, (185 of 238) distance generally about 200m in a redundar manner. The main Radio access points and the redundant radio access points shall be general provided on opposite side of the viaduct/tunnel. The Data Communication system shall use spread spectrum radio, and shall employ cryptograph techniques. The system shall employ countermeasures against jamming and should us various techniques viz directional antenna, space	The Radio access points shall be provided at a distance generally about 200m or as per site conditions to fully meet coverage requirement, in a redundant manner. The main Radio access points and the redundant radio access points shall be generally provided on opposite side of the viaduct/tunnel. The Data Communication system shall use spread spectrum radio, and shall employ cryptographic techniques. The system shall employ countermeasures against jamming and should use various techniques viz directional antenna, space diversity of antenna etc. to achieve Performance Requirements as detailed in TS Chapter 2.	
11	VOL IV Part 3 ERTS-TEL	4.3.15 (43 of 279)	• • •	The Contractor shall design the Telephone System with IP addressing and VLAN assignments compatible with the FOTS-IP system. The Contractor shall design the TEL System for IPv4 and IPv6 compatibility



Sr. No.	Tender Document Reference	Clause/Sub- Clause/Para (Page No)	Clause Description (relevant portion) as existing in the Tender Documents	Clause Description (relevant portion) as amended now to be read as
12	VOL IV Part 3 ERTS-TEL	4.3.19.2 (44 of 279)	12 push-button keypads, supporting ISDN BRI (2B+D) signaling	12 push-button keypads
13	VOL IV Part 3 ERTS-TEL	Corrigendum 10 APPENDIX VIII	prepared for easy reference by the bidders. This summary indicated in this appendix is the tentative quantity for the above systems. Being design-built contract, any additional items or enhancement of any quantity to complete the scope of work for all Telecommunication systems including the above systems, in line with practices of other metro and	Note: The summary of equipment has been prepared for easy reference by the bidders. This summary indicated in this appendix is the tentative quantity for the above systems. Being design-built contract, any additional items or enhancement <i>I</i> reduction of any quantity to complete the scope of work for all Telecommunication systems including the above systems, in line with practices of other metro and various tender drawings, shall be borne by the Tenderer without any additional cost.
14				See Attachment 2 for Indore Yellow Line – Gradient information
15				See Attachment 3 for Bhopal Purple Line – Gradient information
16				See Attachment 4 for Bhopal Red Line – Gradient information



Bhopal Metro Rail Project and Indore Metro Rail Project Package BH&IN-02

The other conditions will remain the same.

Further modifications/amendments (if any) regarding aforesaid tender will be uploaded as and when required.

Managing Director Madhya Pradesh Metro Rail Corporation Limited Bhopal



Attachment – 1 to Corrigendum – 12

Volume I, Part 4: LOT, Appendix – 15C

LETTER OF TENDER (LOT)

Appendix – 15C.2

Work Experience (Propulsion Equipment)

Tenderer's legal name: Date:

For works as stipulated under clause no. 10.2.2 (2) of EQC

Work Experie	Work Experience (Propulsion Equipment)					
Contract Number out of required	Information					
Contract Identification						
Description of the similarity in accordance with Clause 10.2.2 (2) of EQC	[Describe the similarity wi	th detailed work activities]				
Name and origin of claiming company (in case of group company)						
Award date:						
Completion date:						
Employer's Name						
Employer's Address:						
Telephone / Fax number:						
E Mail:						
Country of executed works						
Role in Contract (Individual/ Consortium member/ Subcontractor)	Single Entity	JV/Consortium Member/ Subcontractor				
If JV / Consortium member specifies percentage participation in contract & amount (Please refer Note-1)	% participation	In equivalent INR at <i>[Date]</i> * price level				



Number of Cars (including both
powered and non-powered), which
have been supplied and under
revenue operations satisfactorily for
at least five years

Signature of authorized signatory on behalf of Tenderer

Note:

- 1. Refer Note (v) of EQC Para 10.2.2 for qualifying value/quantum of work(s).
- 2. Separate sheet for each work along with Clients Certificate to be submitted by concerned member(s) of JV/ Consortium or Subcontractor.
- 3. All such Client Certificate(s) should be in English language. Any Client Certificate(s) submitted in foreign language should be supported with English translation. All translation(s) shall be authenticated by Embassy or High Commission; however, Member Countries of the Hague Convention may submit this translation(s) with "Apostille" stamp.
- 4. * [Date] Credential Cut-off Date (as confirmed in EQC para 8.1.6)



Attachment – 2 to Corrigendum – 12

GRADIENT ABSTRACT						
Section:	-	,2A&2B and UG ection		MPMRCL		
Ch	ainage: 3669.5 t	o 34824	Gauge: 1435 mm			
IP Chainag	e in meter	Curve length in	Radius in	Gradient in	Rail Level in	
From	То	meter	meter	%age	meter	
14616.382	14804.035	69.819	1600	3.45%		
14804.035	15571.463	25.587	2800	-0.91%	575.75	
15571.463	15876.085	45.959	2000	0.00%	574.035	
15876.085	16126.093	45.959	2000	2.30%	574.035	
16126.093	16581.49	44.357	2000	0.00%	581.035	
16581.49	16859.508	43.543	1600	-2.22%	581.035	
16859.508	17150.908	20.143	4000	0.50%	570.935	
17150.908	17680.745	21.139	2000	0.00%	572.335	
17680.745	18126.649	40.425	2000	-1.06%	572.335	
18126.649	18351.663	19.287	2000	0.96%	566.735	
18351.663	18793.648	21.72	2400	0.00%	571.035	
18793.648	19381.891	35.906	2600	-0.91%	571.035	
19381.891	19622.199	23.8	5000	0.48%	567.035	
19622.199	19999.4	28.499	2500	0.00%	569.835	
19999.4	20400.193	33.809	1600	-1.14%	569.835	
20400.193	20588.706	24.327	2500	0.97%	565.535	
20588.706	21535.961	17.862	1800	0.00%	569.435	
21535.961	21859.674	38.111	3000	-0.99%	569.435	
21859.674	22111.933	27.802	10000	0.28%	560.035	
22111.933	22517.137	29.615	2000	0.00%	560.935	
22517.137	22862.909	29.256	1800	-1.48%	560.935	
22862.909	23122.733			0.15%	554.935	
23122.733	23403.606	25.385	1550	0.00%	555.435	
23403.606	23934.578	27.842	1700	-1.64%	555.435	
23934.578	24152.959	21.797	4000	0.00%	550.835	
24152.959	24381.343	21.797	4000	0.55%	550.835	
24381.343	25415.001	23.503	6000	0.00%	552.025	
25415.001	25588.944			-0.39%	552.025	
25588.944	25926.104	35.95	2500	-0.35%	547.976	
25926.104	26211.198	21.764	2000	1.09%	547.367	
26211.198	26550.671	24.996	2500	0.00%	551.035	
26550.671	26741.426	88.545	2800	-1.00%	551.035	
26741.426	26966.582	34.597	1600	2.16%	547.64	
26966.582	27270.867	25.74	2000	0.00%	551.765	

Indore Red Line Gradient Abstract

Corrigendum – 12, Date: 10.03.2022



GRADIENT ABSTRACT						
Section:	-	2A&2B and UG ction		MPMRCL		
Cha	ainage: 3669.5 to	34824	Gauge: 1435 mm			
27270.867	27537.655	99.289	3000	-1.29%	551.765	
27537.655	27806.726	32.362	1600	2.02%	547.849	
27806.726	28062.436	24	2500	0.00%	553.245	
28062.436	28322.426	42.797	2500	-0.96%	553.245	
28322.426	28963.59	22.556	3000	0.75%	550.79	
28963.59	29237.708	43.775	2500	0.00%	552.745	
29237.708	29434.995	35.019	2000	1.75%	552.745	
29434.995	29601.749	30.089	2000	0.00%	557.545	
29601.749	29825.702	113.372	2800	-1.50%	557.545	
29825.702	30075.976	50.896	2000	2.55%	555.036	
30075.976	30465.932	21.982	10000	0.00%	560.735	
30465.932	30956.991	37.5	3000	-0.22%	560.735	
30956.991	31205.385	25.745	2500	1.03%	559.877	
31205.385	31540.308	25.005	2500	0.00%	564.935	
31540.308	31779.442	85.703	2700	-1.00%	564.935	
31779.442	31989.424	34.787	1600	2.17%	561.586	
31989.424	32444.408	22.858	4000	0.00%	566.785	
32444.408	32825.151	31.653	2000	-0.57%	566.785	
32825.151	33100	20.224	2000	1.01%	564.185	
33100	33370	16.667	2500	0.00%	568.035	
33370	33569.247	16.667	2500	0.67%	568.035	
33569.247	33750	18.567	2000	0.00%	569.835	
33750	34020.439	22.651	3000	0.93%	569.835	
34020.439	34380.396	18.105	4000	0.17%	571.513	
34380.396	34616.794	18.779	3000	0.63%	571.982	
34616.794	34824.911	44.686	2000	0.00%	574.235	
3669.511	3862.3			0.00%	574.235	
3862.3	4107.918	20.52	1800	-1.14%	569.585	
4107.918	4551.763	22.8	2000	0.00%	566.785	
4551.763	4719.642	42.163	1600	-2.64%	566.785	
4719.642	5056.921	73.348	1600	1.95%	562.361	
5056.921	5274.996	30.211	1550	0.00%	568.935	
5274.996	5550	39.798	2000	-1.99%	568.935	
5550	5851.869	61.373	1600	1.85%	563.463	
5851.869	6051.852	36.918	2000	0.00%	569.035	
6051.852	6232.175	28.837	2000	-1.44%	569.035	
6232.175	6744.52	23.07	1600	0.00%	566.435	
6744.52	6878.61	59.952	1600	-3.48%	566.435	
6857.296	6955.807	27.952	1600	-1.88%	562.516	
	2 Date: 10.03.202				age 11 of 16	

Corrigendum - 12, Date: 10.03.2022



GRADIENT ABSTRACT						
Section:	-	,2A&2B and UG ection		MPMRCL		
Ch	ainage: 3669.5 t	o 34824	Gauge: 1435 mm			
6955.807	7175	36		-3.80%	560.667	
7175	7683.855	23.879	2500	-3.60%	552.338	
7683.855	8025	61.965	1600	-2.50%	534.019	
8025	8341.977	25.457	2000	1.02%	525.491	
8341.977	8688.237	40	2000	0.00%	528.735	
8688.237	8819.691	48.615	1600	-2.00%	528.735	
8819.691	9063.237	25.961	2500	1.04%	526.106	
9063.237	9363.237	29.735	2000	0.00%	528.635	
9363.237	9588.237	39.696	2000	-1.49%	528.635	
9588.237	9838.237	24.903	5000	0.50%	525.29	
9838.237	10072.798	29.623	5000	0.00%	526.535	
10072.798	10255.492	53.088	1700	-0.38%	526.535	
10255.492	10650	50.607	2000	2.43%	525.846	
10650	11158.33	28.497	2500	0.00%	535.435	
11158.33	11469.508	55.535	1800	-1.14%	535.435	
11469.508	11888.611	38.908	1700	1.94%	531.888	
11888.611	12207.255			0.00%	540.035	
12207.255	12614.603	29.818	2500	-0.25%	540.035	
12614.603	13574.962	37.89	4000	0.95%	539.035	
13574.962	13868.451	59.432	1600	0.00%	548.135	
13868.451	14616.382			3.65%	564.834	



Attachment – 3 to Corrigendum – 12

		PUR	PLE LINE		
		GRADIE	NT ABSTRACT		
Section:			MPMRCL		
Chainage:			Gauge: 1435 mm		
IP Chainag	ge in meter			Gradient in	Rail Level in
From	То	length in meter	radius in meter	%age	meter
20000.000	20468.530	468.530		0.00	496.27
20468.530	20941.130	472.600	-2583.33	-1.20	496.27
20941.130	21451.000	509.870	3432.88	1.70	490.599
21451.000	21955.000	504.000	-1751.31	0.00	499.335
21955.000	22225.000	270.000	4000	2.50	499.335
22225.000	22700.000	475.000	-2600	0.00	506.085
22700.000	23050.000	350.000	2857.14	1.40	506.085
23050.000	23280.160	230.160	-2857.14	0.00	510.985
23280.160	23524.450	244.290	-2857.14	-1.40	510.985
23524.450	24041.000	516.550	3571.43	0.00	507.565
24041.000	24509.000	468.000	1800.18	2.22	507.565
24509.000	24684.000	175.000	-1800.18	0.00	517.965
24684.000	25079.730	395.730	1696.83	1.77	517.965
25079.730	25400.000	320.270	-2555.14	-1.95	524.96
25400.000	25956.840	556.840	3076.92	0.00	518.7147
25956.840	26243.160	286.320	-2631.58	-1.90	518.715
26243.160	26620.000	376.840	2631.58	0.00	513.275
26620.000	26840.000	220.000	1600	2.50	513.275
26840.000	27096.000	256.000	2178.65	3.88	518.775
27096.000	27300.000	204.000	-1547.58	0.00	528.7
27300.000	27890.000	590.000	-1956.815	-2.95	528.7
27890.000	28090.000	200.000	1686.91	0.00	511.215
28090.000	28620.000	530.000	-1538.46	-3.90	511.215
28620.000	29130.000	510.000	-6000	-3.40	490.545
29130.000	29320.000	190.000	2051.28	0.50	473.205
29320.000	30930.000	1610.000	-5000	0.00	474.155

Bhopal Purple Line Gradient Abstract

Corrigendum – 12, Date: 10.03.2022



PURPLE LINE								
GRADIENT ABSTRACT								
Section:			MPMRCL					
Chainage:			Gauge: 1435 mm					
IP Chainage in meter				Gradient in	Rail Level in			
From	То	length in meter	radius in meter	%age	meter			
30930.000	32038.000	1108.000	2411.818	3.32	474.155			
32038.000	32346.000	308.000	-1567.68	0.00	510.9048			
32346.000	32700.000	354.000	-1600	-2.50	510.9048			
32700.000	32950.000	250.000	1765.225	2.03	502.0548			
32950.000	33390.000	440.000	-1673.228	0.00	507.135			
33390.000	33950.000	560.000	2000	2.00	507.135			
33950.000	34444.000	494.000	-2000	0.00	518.355			
34444.000	35090.000	646.000	-1692.307	-1.30	518.355			
35090.000	35580.000	490.000	2352.94	0.40	509.957			
35580.000	36138.920	558.920	-5000	0.00	511.917			
36138.920					511.917			



Attachment – 4 to Corrigendum – 12

RED LINE								
GRADIENT ABSTRACT								
Section:			MPMRCL					
Chainage:	1	I	Gauge: 1435 mm					
IP Chainage in meter				Gradient in	Rail Level in			
From	То	length in meter	radius in meter	%age	meter			
50+000.000	50448.000	448.000		0.00	529.78			
50+448.000	50730.000	282.000	1600	1.50	529.78			
50+730.000	51550.000	820.000	-4615.385	0.85	534.01			
51+550.000	51775.000	225.000	-3529.412	0.00	540.98			
51+775.000	52260.000	485.000	1571.429	2.80	540.98			
52+260.000	52500.000	240.000	-1571.429	0.00	554.56			
52+500.000	52840.000	340.000	-1538.462	-3.90	554.56			
52+840.000	53270.000	430.000	1551.724	1.90	541.30			
53+270.000	53572.000	302.000	-1578.947	0.00	549.47			
53+572.000	53928.000	356.000	-1527.134	-3.67	549.47			
53+928.000	54320.000	392.000	1527.134	0.000	536.42			
54+320.000	54780.000	460.000	-1569.859	-2.55	536.42			
54+780.000	54980.000	200.000	1569.859	0.00	524.69			
54+980.000	55512.000	532.000	-1818.182	-2.20	524.69			
55+512.000	56080.000	568.000	1621.622	1.50	512.99			
56+080.000	56840.000	760.000	-2000.000	0.00	521.51			
56+840.000	57266.000	426.000	-1515.152	-3.30	521.51			
57+266.000	57410.000	144.000	1519.468	1.97	507.45			
57+410.000	57670.000	260.000	-2035.623	0.00	510.28			
57+670.000	57800.000	130.000	-3385.527	-1.18	510.28			
57+800.000	58020.000	220.000	1785.117	3.30	507.92			
58+020.000	58630.000	610.000	-1515.152	0.00	515.18			
58+630.000	58766.000	136.000	1785.714	2.80	515.18			
58+766.000	59270.000	504.000	-1571.429	0.00	518.99			
59+270.000	59720.000	450.000	-1538.462	-2.60	518.99			
59+720.000	60020.000	300.000	1618.365	0.74	507.29			

Bhopal Red Line Gradient Abstract

Corrigendum – 12, Date: 10.03.2022

RED LINE								
GRADIENT ABSTRACT								
Section:			MPMRCL					
Chainage:			Gauge: 1435 mm					
IP Chainage in meter			.	Gradient in	Rail Level in			
From	То	length in meter	radius in meter	%age	meter			
60+020.000	60270.000	250.000	-4072.214	0.00	509.50			
60+270.000	60870.000	600.000	-12000.000	-0.25	509.50			
60+870.000	61060.000	190.000	12000.000	0.00	508.00			
61+060.000	61550.000	490.000	-3750.000	-0.80	508.00			
61+550.000	61850.000	300.000	3750.000	0.00	504.08			
61+850.000	62170.000	320.000	-2142.857	-1.40	504.08			
62+170.000	62906.888	736.888	2142.857	0.00	499.60			
62906.888					499.60			