



NATIONAL HIGH SPEED RAIL CORPORATION LIMITED (NHSRCL)

(A Joint Sector Company of Govt. of India and Participating State Government)

2nd Floor, Asia Bhawan, Road No.205, Sector-9, Dwarka, New Delhi-110077, India

Addendum No. 4

Country: INDIA

Name of Work: *Construction of Tunnelling Works including Testing and Commissioning for Double Line High Speed Railway using Tunnel Boring Machine (TBM) and New Austrian Tunnelling Method (NATM) between Mumbai Underground Station at Bandra-Kurla Complex (MAHSR Km. 0.773) and Shilphata (MAHSR Km. 21.150) in the State of Maharashtra for the Project for Construction of Mumbai-Ahmedabad High Speed Rail*

Date: 07.08.2019

Loan Agreement No.: ID-P277 & ID-P279

IFB Number: Package No. MAHSR-C-2

Following are to be considered -

Item No.	Refer Para No.	Original	Revised
1.	Part 1, Section IV, Clause 2.0, Page 13 of 159 – 97 of 159	2.0 Bills of Quantities	2.0 Bills of Quantities <Revised > Refer Attachment No 1 of this Addendum.
2.	Part 2, Section VI-3, Drawings	<Following drawings have been revised> 1. TD-JIC-IC1-TDC-B01-UST-NTU-00170001 2. TD-JIC-IC1-TDC-B01-UST-NTU-10490001 3. TD-JIC-IC1-TDC-B01-UST-NTU-15010001 4. TD-JIC-IC1-TDC-B01-UST-NTU-16300000 5. TD-JIC-IC1-TDC-B01-UST-NTU-17010001	<Following are the revised drawing> 1. TD-JIC-IC1-TDC-B01-UST-NTU-00170002 2. TD-JIC-IC1-TDC-B01-UST-NTU-10490002 3. TD-JIC-IC1-TDC-B01-UST-NTU-15010002 4. TD-JIC-IC1-TDC-B01-UST-NTU-16300001 5. TD-JIC-IC1-TDC-B01-UST-NTU-17010002

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		6. TD-JIC-IC1-TDC-B01-UST-NTU-17380002 7. TD-JIC-IC1-TDC-B01-UST-NTU-20240001 8. TD-JIC-IC1-TDC-B01-UST-NTU-20310002 9. TD-JIC-IC1-TDC-B01-UST-NTU-20423000 10. TD-JIC-IC1-TDC-B01-UST-NTU-20440001 11. TD-JIC-IC1-TDC-B01-UST-NTU-20460000 12. TD-JIC-IC1-TDC-B01-UST-NTU-20470000 13. TD-JIC-IC1-TDC-B01-UST-NTU-20490002 14. TD-JIC-IC1-TDC-B01-UST-NTU-20500001 15. TD-JIC-IC1-TDC-B01-UST-NTU-20510000 16. TD-JIC-IC2-TDC-B01-UST-NTU-23070000 17. TD-JIC-IC2-TDC-B01-UST-NTU-23080000 18. TD-JIC-IC2-TDC-B01-UST-NTU-23090000 19. TD-JIC-IC2-TDC-B01-UST-NTU-23100000 20. TD-JIC-IC2-TDC-B01-UST-NTU-23110000 21. TD-JIC-IC1-TDC-B01-UST-NTU-23220001 22. TD-JIC-IC1-TDC-B01-UST-NTU-23230001 23. TD-JIC-IC1-TDC-B01-UST-NTU-23351000	6. TD-JIC-IC1-TDC-B01-UST-NTU-17380003 7. TD-JIC-IC1-TDC-B01-UST-NTU-20240002 8. TD-JIC-IC1-TDC-B01-UST-NTU-20310003 9. TD-JIC-IC1-TDC-B01-UST-NTU-20423001 10. TD-JIC-IC1-TDC-B01-UST-NTU-20440002 11. TD-JIC-IC1-TDC-B01-UST-NTU-20460001 12. TD-JIC-IC1-TDC-B01-UST-NTU-20470001 13. TD-JIC-IC1-TDC-B01-UST-NTU-20490003 14. TD-JIC-IC1-TDC-B01-UST-NTU-20500002 15. TD-JIC-IC1-TDC-B01-UST-NTU-20510001 16. TD-JIC-IC2-TDC-B01-UST-NTU-23070001 17. TD-JIC-IC2-TDC-B01-UST-NTU-23080001 18. TD-JIC-IC2-TDC-B01-UST-NTU-23090001 19. TD-JIC-IC2-TDC-B01-UST-NTU-23100001 20. TD-JIC-IC2-TDC-B01-UST-NTU-23110001 21. TD-JIC-IC1-TDC-B01-UST-NTU-23220002 22. TD-JIC-IC1-TDC-B01-UST-NTU-23230002 23. TD-JIC-IC1-TDC-B01-UST-NTU-23351001 Refer Attachment No 2 of this Addendum.
3.	Part 2, Section VI-3, Drawings		<Following drawings have been added> 1. TD-JIC-IC1-TDC-B01-UST-NTU-16290000 Refer Attachment No. 2 of this Addendum.
4.	Part 2, Section VI-2, Sub-Clause 4.2,		<Add new paragraph after existing paragraph (xxv)> (xxvi) In case of dual mode TBMs, excavation in open mode shall be permitted only for fair rock conditions. It shall not be permitted

*Item No.	Refer Para No.	Original					Revised				
	Page 18 of 199						under following conditions: a) Under the sea; b) At locations where primary grout material enters the face in substantial quantity; c) Where there is heavy water inflow at the cutter face;				
5.	Part 2, Section VI-2, Sub-Clause 4.6, Page 19 of 199						<Add new paragraph after paragraph 25 of sub-clause 4.6> 26) In case of dual mode TBM, the Contractor shall provide details of proposed location for open or close mode along the tunnel alignment. The Contractor shall also provide pumping scheme of water in tunnel, face and shafts until discharging into public zone; water treatment facility scheme on the surface before discharging the water into public zone.				
6.	Part 2, Section VI-2, Sub-Clause 7.8 (c), Table 58, item no 7 & 8, Page 170 of 199	S.No.	Steel Materials	Coating	Specification	Volume	S.No.	Steel Materials	Coating	Specification	Volume
		7	MS gates, doors & louveres	Enamel, Synthetic, Exterior	IS 2932		7	MS gates, doors	Hot dip galvanized	IS4759 / ISO1461	500 g/m2 ISO1460
		8	MS angles for boundary wall and chain link fencing	Enamel, Synthetic, Exterior	IS 2932		8	MS angles for boundary wall and chain link fencing	Hot dip galvanized	IS4759 / ISO1461	500 g/m2 ISO1460

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7.	Part 2, Section VI-2, Sub-Clause 6.3.6, Page 113 of 199	6.3.6. Galvanised Steel Pipe Fencing / Railing The Contractor shall fabricate and fix the <i>railings</i> around the openings in various slabs of Shaft-2 and Shaft-3. The details of railing has been provided in the Drawings and the Contractor shall fabricate and fix the railing as per the Drawings. The fabrication and fixing of railing shall be carried out as per Clause 7.7 of these Specifications. Protective coating shall be provided to staircase and railing as per Clause 7.8 of these Specifications.	6.3.6. <i>Protection Fence around openings</i> The Contractor shall fabricate and fix the <i>protection fence</i> around the openings in various slabs of Shaft-2 and Shaft-3. <i>The details of railing shall be same as for the staircase railing.</i> The fabrication and fixing of railing shall be carried out as per Clause 7.7 of these Specifications. Protective coating shall be provided to staircase and railing as per Clause 7.8 of these Specifications.
8.	Part 2, Section VI-2, Sub-Clause 4.7, Page 20 of 199	RC Segments for Main Tunnel	RC Segments <i>and RC Adjustment Segments</i> for Main Tunnel
9.	Part 2, Section VI-2, Sub-Clause 4.7 (6), Page 23 of 199	Casting of RC segments	Casting of RC segments and RC adjustment segments
10.	Part 2, Section VI-2, Clause 8.0, Page 175 to 192 of 199	8.0 METHOD OF MEASUREMENT FOR PAYMENT	8.0 METHOD OF MEASUREMENT FOR PAYMENT <Revised> Refer Attachment No. 3 of this Addendum.

*Item No.	Refer Para No.	Original	Revised
11.	Part 2, Section VI-1, Division 06000, Sub-Division 06010, Sub-Clause 3.1, Page 5 of 51	The Contractor shall be solely responsible for acquiring any additional land (land in addition to the Site) required by him for his Temporary Works areas outside the ROW, at his own expense, including maintaining and reinstating the same on completion of the Works to the entire satisfaction of the land owner and the Engineer.	The Contractor shall be solely responsible for acquiring any additional land (land in addition to the Site) required by him for his Temporary Works areas outside the ROW, at his own expense, including maintaining and reinstating the same on completion of the Works to the entire satisfaction of the land owner and the Engineer. <i>Employer has obtained permission to use 1.36 ha land on temporary basis adjacent to Shaft-3 ROW. The Contractor can utilise this land for temporary works on payment to MIDC.</i>
12.	Part 2, Section VI-4, Attachment 4: UTILITY		<Add the following item after existing item D. Trial Pit Reports: Main Tunnel Portal> “E. Utility Support for MIDC Road” Refer Attachment No. 4 of this Addendum.
13.	Part 2, Section VI-2, Sub-Clause 2.5, Page 8 of 199, & Addendum No. 3, Item No. 75	The Contractor is required to design complete scheme of support of utilities at MIDC road including steel decking and road diversion to enable safe construction of tunnel below the MIDC road. The Contractor shall carry out geotechnical investigation required for the purpose. Complete design of the scheme shall be provided by the contractor. Data required for design of the scheme shall be collected by the Contractor from the relevant utility authorities/ road authorities. The design shall conform to specifications as decided by the utility owners.	2.5.1. The Employer has already appointed a consultant for planning and design of support system including steel decking to support gas pipeline, two (2) water pipelines of MIDC and MIDC road at HSR Chainage 21.032 km. The General Arrangement Drawing (GAD) of the support system suggested by the consultant is enclosed as Attachment 4E (Utility Support for MIDC Road) in Reference Information/Repot. The Contractor shall be free to adopt this arrangement or may suggest alternative arrangement and design duly proof checked. The final arrangement and design for support system shall be submitted by the Contractor to the Engineer and shall be adopted for execution only after approval.

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			<p>2.5.2. The Contractor shall be required to take following factors into account while executing tunneling work below these pipelines and road-</p> <p>a) The concerned authorities of gas pipeline and water pipelines i.e., GAIL and MIDC respectively shall not close gas supply and water supply during execution of tunneling work. The Contractor will have to take all precautionary measures to prevent any damage to pipelines.</p> <p>b) MIDC has already issued NOC for preliminary support system proposed by consultant engaged by the Employer.</p> <p>c) The Contractor will have to take necessary permissions from concerned utility owners i.e. GAIL and MIDC before actual commencement of work.</p> <p>d) The Contractor will have to take necessary permission for closing of Road from State Authorities during erection of support system.</p>
14.	Part 2, Section VI-2, Sub-Clause 4.7 (12) d) (ii), Page 29 of 199	All the pieces shall be checked for dimensions including corner part as well as cross section. The tolerance for dimensions shall be as follows- Length - Width - Thickness –	All the pieces shall be checked for dimensions including corner part as well as cross section. The tolerance for dimensions shall be as follows- Length - $\pm 1 \text{ mm}$ Width - $\pm 1 \text{ mm}$ Thickness – $\pm 0.5 \text{ mm}$
15.	Part 2, Section VI-2, Sub-Clause 7.14 Page 173 of 199	7.14 Metalled Access Road	7.14 Metalled Access Road/ <i>Access Road/Road</i>