

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. 01

Country: INDIA

Name of Work: *Design and Construction of Civil and Buildings Works including Testing and Commissioning on Design-Build Lump Sum Price basis for Double Line High Speed Railway for Mumbai Underground Station, Cut & Cover Tunnel and Shaft -1 from MAHSR Km. -0.255 to Km. 0.775 at Bandra-Kurla Complex in the State of Maharashtra for the Project for Construction of Mumbai-Ahmedabad High Speed Rail*

Date: 07.02.2020

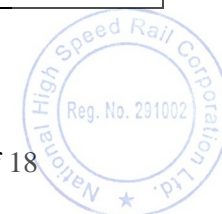
Loan Agreement No.: ID-P277 & ID-P279

IFB Number: Package No. MAHSR-C-1

Following are to be considered:



Item No.	Refer Para No.	Original/As Existing	Revised																																							
1.	Part 1, Section III – Evaluation and Qualification Criteria, Sub-Clause 4.2.5, Page 31 of 33	<p>The adequacy and appropriateness of the Contractor’s Equipment included in the Bidder’s Technical Proposal as compared with key work volumes and the Bid Programme. The minimum criteria are listed below.</p> <table border="1" data-bbox="551 435 1252 783"> <thead> <tr> <th colspan="4">Major Plant and Equipment</th> </tr> <tr> <th>Sr. No.</th> <th>Equipment Type and Characteristics</th> <th>Minimum number required to assess the Bidder’s capability</th> <th>Bidder’s Proposal</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Batching plant (90 cum/hour)</td> <td>3</td> <td></td> </tr> <tr> <td>2</td> <td>Transit Mixer</td> <td>60</td> <td></td> </tr> <tr> <td>3</td> <td>JCB/Excavator/Breaker</td> <td>30</td> <td></td> </tr> <tr> <td>4</td> <td>Shotcreting machine</td> <td>2</td> <td></td> </tr> </tbody> </table>	Major Plant and Equipment				Sr. No.	Equipment Type and Characteristics	Minimum number required to assess the Bidder’s capability	Bidder’s Proposal	1	Batching plant (90 cum/hour)	3		2	Transit Mixer	60		3	JCB/Excavator/Breaker	30		4	Shotcreting machine	2		<p>The adequacy and appropriateness of the Contractor’s Equipment included in the Bidder’s Technical Proposal as compared with key work volumes and the Bid Programme. The minimum criteria are listed below.</p> <table border="1" data-bbox="1397 435 2119 871"> <thead> <tr> <th>Sr. No.</th> <th>Equipment Type and Characteristics</th> <th>Number required to assess the Bidder’s capability</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Batching plant (90 cum/hour)</td> <td>3</td> </tr> <tr> <td>2</td> <td>Transit Mixer</td> <td>60</td> </tr> <tr> <td>3</td> <td>JCB/Excavator/Breaker</td> <td>30</td> </tr> <tr> <td>4</td> <td>Shotcreting machine</td> <td>2</td> </tr> </tbody> </table>	Sr. No.	Equipment Type and Characteristics	Number required to assess the Bidder’s capability	1	Batching plant (90 cum/hour)	3	2	Transit Mixer	60	3	JCB/Excavator/Breaker	30	4	Shotcreting machine	2
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2.	Part 2, Section VI-1, Division 03000, Sub-Division 03010, Clause 1, Page 7 of 30	“Maintenance Manuals” means the manuals providing detailed instructions for the maintenance of infrastructure and maintenance facilities included under the Contract as set forth in Clause 13, Sub-Division 04110 of the General Specifications	“Maintenance Manuals” means the manuals providing detailed instructions for the maintenance of infrastructure and maintenance facilities included under the Contract.																																							
3.	Part 2, Section VI-1, Division 03000, Sub-Division 03010, Clause 1, Page 9 of 30	“Right of Way” means the total land width/area, which is required and legally owned by the Employer for the Project, to accommodate the track, viaduct, tunnel, station, depot, facility, property, etc. of the Employer. This land may be owned by the Employer or the Employer has the permission of the Owner.	<i>“Right of Way” means the land area of the Project, either acquired by the Employer or for which the Employer has the permission of the Stakeholder to construct works in their area. The Right of Way has been shown in ROW Ortho Map.</i>																																							



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4.	Part 2, Section VI-1, Division 03000, Sub-Division 03020, Sub-Clause 5.1, 1 st and 2 nd Paragraph, Page 24 of 30	<p>In addition to the Contractor's submittals referenced in Sub-Division 03020 Sub-Clause 2.0 [Submission Procedure], the Contractor shall implement a secure document control system such that all documents generated by the Contractor can be transmitted to the Engineer by electronic means (and vice versa) and that all documents generated by either party are electronically captured at the point of origin and can be reproduced later, electronically and in hard copy.</p> <p>The Engineer shall provide one user facility from his system to the Contractor for communication and for storing the documents.</p>	<p><i>Employer is in the process of implementing a document control system such that all drawings/documents related to the construction phase are well documented and archived, etc. The Contractor shall utilize the document control system being setup by the Employer such that all documents generated by the Contractor can be transmitted to the Engineer by electronic means (and vice versa) and that all documents generated by either party are electronically captured at the point of origin and can be reproduced later, electronically and in hard copy. In addition to the Contractor's submittals referenced in Sub-Division 03020 Sub-Clause 2.0 [Submission Procedure], Contractor shall also transmit all documents through Document Control system provided by the Employer. Employer shall provide three (3) user license(s) from its system to the Contractor for communication and for storing the documents. Employer may consider Contractor's request for additional license(s) on case by case basis and Contractor shall bear the cost of additional license(s). All the licenses provided to the Contractor shall be continued up to the Completion of the Contract. The Contractor shall be responsible to maintain periodical backup of data/documents for his record.</i></p>



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5.	Part 2, Section VI-1, Division 05000, Design Segment Table, Page 30 of 36	Temporary Works	<ul style="list-style-type: none"> • Geotechnical interpretation and design • Temporary structures, decking for roads (if any), roads • Fabrication, Transport, Erection and Removal Procedures • Interaction with Permanent Works 	<ul style="list-style-type: none"> • Temporary Works shall be packaged into one or more Design Segments related to different structures. • 3PVC is required for all Temporary Works at the Construction Design stage 	Temporary Works	<ul style="list-style-type: none"> • Geotechnical interpretation and design • Temporary structures, decking for roads (if any), roads • Fabrication, Transport, Erection and Removal Procedures • Interaction with Permanent Works 	<ul style="list-style-type: none"> • Temporary Works shall be packaged into one or more Design Segments related to different structures. • 3PVC is required for all Temporary Works at the Construction Design stage <i>and Interaction with Permanent Works</i>
6.	Part 2, Section VI-1, Division 08000, Appendix 08000-1, Sub-Clause 4.2.2, Page 26 of 149	Full height fence, barriers, barricades etc. shall be erected around the Site to prevent the surrounding from excavated soil, rubbish etc., which may cause inconvenience to and endanger the public. The barricade especially those exposed to public shall be aesthetically maintained by regular cleaning and painting as directed by the Engineer. These shall be maintained in one line and level.			Full height <i>steel barricading</i> shall be erected around the Site to prevent the surrounding from excavated soil, rubbish etc., which may cause inconvenience to <i>public and/or may</i> endanger the <i>safety of</i> the public. The barricading shall be aesthetically maintained by regular cleaning and painting as directed by the Engineer. These shall be maintained in one line and level.		



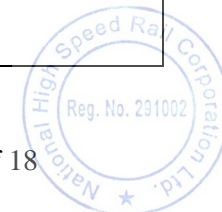
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7.	Part 2, Section VI-1, Division 8000, Appendix 08000-1, Sub-Clause 6.3.4, Item 1, Page 76 of 149	1) The Contractor shall be responsible for clearing of Site including cutting and removal of shrubs, vegetation and trees wherever required for execution of the work after obtaining necessary approval from the Engineer. The studs and roots as existing at site shall also be removed by the Contractor. The cut material is to be disposed of by the Contractor outside the ROW at his own cost. The permission for cutting the trees within the ROW shall be arranged by the Employer.	<i>(1) The Employer shall cut the trees, existing in the ROW before award of the Contract. The Contractor shall be responsible for clearing of site including cutting and removal of shrubs, vegetation. The studs and roots as existing shall also be removed by the Contractor. The cut material shall be the property of the Contractor and shall be disposed of by the Contractor outside the ROW, at his own cost.</i>																													
8.	Part 2, Section VI-2, Division 05000, Sub-Division 05010, Sub-Clause 2.3.2, Item b) iii), Page 16 of 43	iii) Toilets The Station shall provide separate toilets for male, female and differently abled passengers. Toilets shall be provided in the paid concourse, unpaid concourse and business class lounge. The toilets shall be designed based on the number of passengers. The minimum number of sanitary fixtures shall be as per the Drawings. Fixtures and sample pictures in Annexure 1 shall be used as a reference.	iii) Toilets The Station shall provide separate toilets for male, female and differently abled passengers. Toilets shall be provided in the paid concourse, unpaid concourse and business class lounge. The toilets shall be designed based on the number of passengers. <i>The minimum number of sanitary fixtures in toilets for passengers shall be as per Table-3A and sample pictures in Annexure 1 shall be used as a reference. Number of sanitary fixtures for staff toilets shall be as per Drawings.</i> <i>Table-3A: Minimum Number of Sanitary Fixtures</i> <table border="1" data-bbox="1386 932 2116 1214"> <thead> <tr> <th colspan="2" data-bbox="1386 932 1749 1002">Area</th> <th data-bbox="1749 932 1935 1002">Unpaid Concourse</th> <th data-bbox="1935 932 2116 1002">Paid Concourse</th> </tr> </thead> <tbody> <tr> <td colspan="4" data-bbox="1386 1002 2116 1038" style="text-align: center;"><i>Station</i></td> </tr> <tr> <td colspan="4" data-bbox="1386 1038 2116 1075" style="text-align: center;"><i>Mumbai Station</i></td> </tr> <tr> <td data-bbox="1386 1075 1543 1145" rowspan="3"><i>Male Toilet</i></td> <td data-bbox="1543 1075 1749 1112"><i>Urinal</i></td> <td data-bbox="1749 1075 1935 1112">12</td> <td data-bbox="1935 1075 2116 1112">8</td> </tr> <tr> <td data-bbox="1543 1112 1749 1149"><i>Water Closet</i></td> <td data-bbox="1749 1112 1935 1149">8</td> <td data-bbox="1935 1112 2116 1149">4</td> </tr> <tr> <td data-bbox="1543 1149 1749 1185"><i>Wash Basin</i></td> <td data-bbox="1749 1149 1935 1185">12</td> <td data-bbox="1935 1149 2116 1185">8</td> </tr> <tr> <td data-bbox="1386 1185 1543 1214" rowspan="2"><i>Female Toilet</i></td> <td data-bbox="1543 1185 1749 1214"><i>Water Closet</i></td> <td data-bbox="1749 1185 1935 1214">20</td> <td data-bbox="1935 1185 2116 1214">10</td> </tr> <tr> <td data-bbox="1543 1214 1749 1214"><i>Wash Basin</i></td> <td data-bbox="1749 1214 1935 1214">20</td> <td data-bbox="1935 1214 2116 1214">10</td> </tr> </tbody> </table>	Area		Unpaid Concourse	Paid Concourse	<i>Station</i>				<i>Mumbai Station</i>				<i>Male Toilet</i>	<i>Urinal</i>	12	8	<i>Water Closet</i>	8	4	<i>Wash Basin</i>	12	8	<i>Female Toilet</i>	<i>Water Closet</i>	20	10	<i>Wash Basin</i>	20	10
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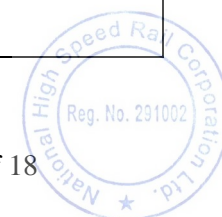
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9.	Part 2, Section VI-2, Division 05000, Sub-Division 05010, Sub- Clause 3.12.5, Item c), Page 41 of 43 (C6, A5, 3)	c) Finishes All concrete wall, MU and solid brick wall surfaces shall be rendered by cement plastering finish on both sides from the floor slab to the underside of the floor construction above, and cement plastering thickness shall be 30 mm for exterior applications, and 20 mm for interior applications, unless otherwise indicated on the drawings or after obtaining approval from the Engineer.	c) Finishes All concrete wall, MU and solid brick wall surfaces shall be rendered by cement plastering finish on both sides from the floor slab to the underside of the floor construction above, and cement plastering thickness shall be 30 mm for exterior applications, and 15 mm for interior applications, unless otherwise indicated on the drawings or after obtaining approval from the Engineer.
10.	Part 2, Section VI-2, Division 05000, Sub-Division 05030, 2.1.c), i), Page 20 of 77	i) SER shall be fed through AHU installed outside the room. SA and RA plenums with fire dampers shall be terminated on SER wall and further distribution inside the SER is not covered in this scope of work.	i) SER shall be fed through AHU installed outside the room. SA and RA <i>ducts</i> shall be terminated on SER wall and further distribution inside the SER is not covered in the scope of Works.
11.	Part 2, Section VI-2, Division 05000, Sub-Division 05030 2.1.c) ii), Page 20 and 21 of 77	ii)DSS, Rail ER, Battery room, Auxiliary Equipment Room and Wiring Room shall be fed through floor mounted AHU inside the room with air supply plenum and fire dampers.	ii) DSS, Rail ER, Battery room, Auxiliary Equipment Room and Wiring Room shall be fed through floor mounted AHU inside the room.
12.	Part 2, Section VI-2, Division 05000, Sub-Division 05030, Sub-Clause 2.1, Item d), Page 21 of 77	Air conditioning plant major equipment, such as water and air-cooled chillers, condenser and chilled water pumps, make-up water pumps and cooling towers shall have redundancy with N+1 capacity to be run in cyclic order to optimise their operation time. AHUs shall be equipped with standby drive motor for automatic switch over in case of malfunctioning of one motor.	Air conditioning plant major equipment, such as water and air-cooled chillers, condenser and chilled water pumps, make-up water pumps and cooling towers shall have redundancy with N+1 capacity to be run in cyclic order to optimize their operation time.



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13.	Part 2, Section VI-2, Division 05000, Sub-Division 05030, Sub-Clause 2.2.9, Item e), Page 30 of 77	Considering 24 x 7 operation requirement, all AHUs shall be equipped with a standby drive motor for fans. Provision in the AHU control panel shall be made for both motors to operate in cyclic manner to balance their operating hours. In the event of malfunctioning of any motor, automatically other drive should commence operation. Faulty motor shall be out of circuit and indication of the same shall be transmitted to the BMS. Redundancy of N+1 shall be provided for AHUs feeding critical areas as per para 1.4.1.B. Provision shall be made for mode of operation of AHUs and associated equipment through BMS.	Redundancy of N+1 shall be provided for AHUs <i>which feed</i> critical areas as per <i>Sub-Clause 1.4.1 b)</i> . Provision shall be made for mode of operation of AHUs and associated equipment through BMS.
14.	Part 2, Section VI-2, Division 05000, Sub-Division 05030-2.2.10 e), Page 31 of 77	Considering 24 x 7 operation requirement, FAHUs shall be equipped with a standby drive motor for cool supply air fans. Provision in control panel shall be made for both motors to operate in cyclic manner to balance their operating hours. In the event of malfunctioning of any motor, automatically other drive should commence operation. Faulty motor shall be out of circuit and indication of the same shall be transmitted to the BMS. Provision shall be made for mode of operation of FAHUs through BMS.	Faulty drive motor shall be out of circuit and indication of the same shall be transmitted to the BMS. Provision shall be made for mode of operation of FAHUs through BMS.
15.	Part 2, Section VI-2, Division 05000, Sub-Division 05030 Sub-Clause 2.2.9, Item m), Page 31 of 77 and Sub-Clause 2.2.10, Item l), Page 32 of 77		<p><Insert the following points under Item m) of Sub-Clause 2.2.9 and Item l) of Sub-Clause 2.2.10></p> <p>i) An interlock switch shall be provided on each access door to the UVC emitters or Ultraviolet Germicidal Irradiation (UVGI) lamps to switch off the lights when the access door is opened. Also, manual switch shall be provided to switch-off the UV lights during closure of access door for maintenance purpose.</p> <p>ii) Proper caution labels shall be installed on all access points to the Emitters when installed.</p>



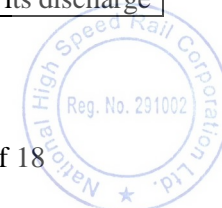
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16.	Part 2, Section VI-2, Division 05000, Sub-Division 05030, Sub-Clause 4.1.2, Item a), Page 35 and 36 of 77	Smoke exhaust system shall be designed to ensure safe evacuation of passengers within emergency evacuation time as per architectural planning (i.e. minimum six minutes or as approved) from the remotest end of platform to the point of safety in the event of fire.	Smoke exhaust system shall be designed to ensure safe evacuation of passengers within emergency evacuation time as per architectural planning <i>and NBC 2016</i> (i.e. <i>within</i> six minutes or as approved) from the remotest end of platform to the point of safety in the event of fire.								
17.	Part 2, Section VI-2, Sub-Division 05030 Sub-Clause 6.4.24, Item j), Page 58 of 77	j) Internet Protocol (IP) video cameras shall be provided in the car. IP video cameras display and record the passenger condition to station staff. The Contractor shall integrate the IP Video, Intercom and the CCTV system provided in Station office room.	j) Video cameras shall be provided in the car. Video cameras display and record the passenger condition to station staff. <i>The Contractor shall connect video cameras to CCTV display & recorder that are provided in the Station Office Room. The CCTV display & recorder have been included in the scope of E-1 Package.</i>								
18.	Part 2, Section VI-2, Division 05000, Sub-Division 05040, Sub-Clause 6.10.2, Page 11 of 58		<p><Add the following Item m) after existing Item l)></p> <p>m) Essential power load for Platform Screen Doors (to be provided in future) shall be included in the design @ 48kVA/Track side with PSD as below:</p> <table border="1"> <thead> <tr> <th>S. No.</th> <th>Station Name</th> <th>No. of Track sides with PSD</th> <th>Indicative PSD Electrical Load @ 48kVA/Track</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>UG Station</td> <td>06</td> <td>288</td> </tr> </tbody> </table>	S. No.	Station Name	No. of Track sides with PSD	Indicative PSD Electrical Load @ 48kVA/Track	1.	UG Station	06	288
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19.	Part 2, Section VI-2, Division 05000, Sub-Division 05050, Sub-Clause 2.1, 2 nd Para, Page 13 of 22	Municipal water received from Municipal Corporation/local authorities shall be fed into raw water storage tanks from which it will be transferred by filter feed pumps for suitable treatment as per IS: 10500. Post treatment, the water shall be allowed into fire water static storage	<i>The water is to be received from two sources of Municipal Corporation/local authorities, i.e., one from domestic supply source and the other from treated wastewater supply source and shall be stored in various tanks as indicated in the Drawings.</i>								



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		tanks. The overflow from the tanks shall be fed into domestic water storage tanks.	<p>The <i>domestic water supply</i> shall be fed into raw <i>and domestic</i> water storage tanks from which it will be transferred by filter feed pumps for suitable treatment as per IS: 10500. Post treatment, the <i>domestic</i> water shall be allowed into fire water static storage tanks. The overflow from the <i>fire</i> tanks shall be fed into <i>treated</i> domestic water storage tanks.</p> <p><i>The treated wastewater supply received from the Municipal Corporation/local authorities shall be fed into soft water storage tanks after necessary treatment and then supplied via pumps to the ECS cooling towers.</i></p>
20.	Part 2, Section VI-2, Division 05000, Sub-Division 05050, Sub-Clause 2.1, Item d), Page 20 of 22 and Part-2, Section VI-2, Division 05050, Sub-Clause 2.1, Item f), Page 21 of 22	<p>d) Water shall be drawn from fire reserve tanks by electrically operated Fire Mist pumps for water mist system (sprinkler pump and fire pump shall have a stand by electrical or diesel operated power supply). If multiple pumps are used, 1 No. stand by pump shall be provided.</p> <p>f) The firefighting system shall have a standalone diesel driven pump. The system shall be operable even in case of total electrical power or electrical pump failure.</p>	<p>d) Water shall be drawn from fire tanks by electrically operated Fire Mist pumps for water mist system (sprinkler pump and fire pump shall have a standby electrical pump and/or diesel <i>driven pump, as approved by the local Fire Authority</i>). If multiple pumps are used, 1 No. stand by pump shall be provided.</p> <p>f) The firefighting system shall have a standalone diesel driven pump <i>if required</i>. The system shall be operable even in case of total electrical power or electrical pump failure.</p>
21.	Part 2, Section VI-2, Division 05000, Sub-Division 05050, Clause 10, 3 rd Para, Page 20 of 22	The train filling system shall be capable of filling the water storage in a train in 5 minutes.	<i>The train filling system has to be capable of filling 8 tanks per train, each of 700 litres (approximately) capacity, in 5 minutes.</i>



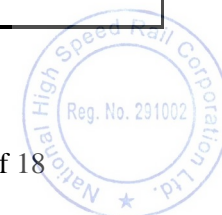
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22.	Part 2, Section VI-2, Division 05000, Sub-Division 05050, Clause 12, Page 22 of 22		<p><Add the following Sub-Clause after Sub-Clause 12.6></p> <p>12.7 Medium Velocity Open Nozzle Pump</p> <p>a) A Medium velocity system pump shall be installed for automatic/manual operation. A standby pump of same capacity shall be provided by electrical pump and/or diesel driven pump, as approved by the local Fire Authority.</p> <p>b) The pump pressure and its discharge rate shall be as per approved detailed design scheme from local fire authority.</p> <p>c) Pump shall be provided with soft starter or variable frequency drive starters or star delta starter for reducing the starting current.</p> <p>d) The Contractor shall submit design calculations and details regarding suitable capacity for obtaining the Engineer's approval.</p>
23.	Part 2, Section VI-3, Division 02000, 1. Sub-Clause 4.10.1, Item b), Page 30 of 72 2. Sub-Clause 4.10.3, Item f), Page 32 of 72	<p>4.10.1 Transporting</p> <p>b) Transportation of concrete shall conform to IRS: CBC (CL. 8.1, 5.7), if not in contravention to the following provisions.</p> <p>4.10.3 Placing</p> <p>f) Concrete when delivered shall be maintained at a temperature of not more than 40°C as far as possible. It shall be compacted in its final position within 30 minutes of its discharge from the mixer or agitating transit mixer, unless carried in properly designed agitators, operating continuously, in which case this time may be within one hour of its discharge from the <i>mixer or</i> agitating transit mixers, subject to the Contractor's demonstration of adequate workability of such concrete.</p>	<p>4.10.1 Transporting</p> <p>b) Transportation of concrete shall conform to <i>IS 4926 (CL. 5.2) for Ready Mix Concrete and IRS: CBC (CL 8.1) for other than Ready Mix Concrete</i>, if not in contravention to the following provisions.</p> <p>4.10.3 Placing</p> <p>f) Concrete when delivered shall be maintained at a temperature of not more than 40°C as far as possible. It shall be compacted in its final position within 30 minutes of its discharge from the mixer or agitating transit mixer, unless carried in properly designed agitators, operating continuously, in which case this time may be within one hour of its discharge</p>



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			from such designed agitators, subject to the Contractor's demonstration of adequate workability of such concrete.
24.	Part 2, Section VI-3, Division 02000, Sub-Clause 4.15.8, Item g) to i) Page 38 of 72	<p>g) If cracks develop in concrete construction, which in the opinion of the Engineer may be detrimental to the strength of the construction, the Contractor, at his own cost, shall dismantle the construction, carry away the debris, replace the construction and carry out all consequential work thereto.</p> <p>h) If any cracks develop in the concrete construction, which in the opinion of the Engineer, are not detrimental to the stability of the construction, the Contractor shall rectify the work at his own risk and cost. The Contractor shall grout the cracks with polymer cement grout of approved quality, to the satisfaction of the Engineer.</p> <p>i) External crack width shall be restricted to 0.2 mm or less on all concrete structures, unless otherwise specified in the drawings.</p>	<p>g) If cracks develop in concrete construction, which in the opinion of the Engineer, <i>are</i> detrimental to the strength/<i>stability</i> of the construction, the Contractor, at his own cost, shall dismantle the construction, carry away the debris, replace the construction and carry out all consequential work thereto.</p> <p>h) If any cracks develop in the concrete construction, which in the opinion of the Engineer, are not detrimental to the <i>strength/stability</i> of the construction, the Contractor, at his own risk and cost shall rectify the work. <i>The Contractor shall repair the cracks 0.2mm or more by grouting or other methods. The approval of the Engineer shall be obtained for the method prior to repairing of the cracks.</i></p> <p>i) <Deleted></p>
25.	Part 2, Section VI-3, Division 05000, Sub-Division 05010, Sub-Clause 1.1, Page 03 of 60		<p><Add the following item m) after existing item l)></p> <p>m) The Contractor shall submit a list of proposed brand names for all Architectural finishes to be used in the project as per best industrial practices, at the Detailed Design Phase after the award of contract. The proposed brands in the list must have been used in projects such as Metro Rail, Airports, 5-star hotels etc.</p>



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26.	Part 2, Section VI-3. Division 05000, Sub-Division 05010, Sub-Clause 5.1.2, Item 1), Page 12 of 60	1) Hardtop Non-Metallic Monolith surface hardening compound (<i>Nitoflor or equivalent make</i>) shall be used. Execution shall be carried out as per manufacturer's Specifications.	1) Hardtop Non-Metallic Monolith surface hardening compound shall be used. Execution shall be carried out as per manufacturer's specifications.											
27.	Part 2, Section VI-3, Division 05000, Sub-Division 05010, Sub-Clause 5.2, Page 14 of 60		<p data-bbox="1386 534 2056 595"><Add the following Sub-Clause 5.2.3 after existing Sub-Clause 5.2.2></p> <p data-bbox="1386 635 1697 663">5.2.3. Selection of Granite</p> <p data-bbox="1386 703 2119 898">The quantity of Granite to be used in station shall be of 4 categories based on the colour selection, quality and mine location of granites as mentioned in the table below. Commonly used industry names of different Granites along with application percentage has been mentioned in the table below.</p> <table border="1" data-bbox="1386 903 2130 1335"> <thead> <tr> <th data-bbox="1386 903 1585 959">Category 1 - 65%</th> <th data-bbox="1585 903 1771 959">Category 2 - 15%</th> <th data-bbox="1771 903 1944 959">Category 3 - 15%</th> <th data-bbox="1944 903 2130 959">Category 4 - 5%</th> </tr> </thead> <tbody> <tr> <td data-bbox="1386 959 1585 1335"> Grey Granite (Karnataka/ Andhra) <ul style="list-style-type: none"> • Sadar Ali • Commando Grey • Premium Grey • Grey - Viscent White, </td> <td data-bbox="1585 959 1771 1335"> Red Granite (Karnataka) <ul style="list-style-type: none"> • Sindoori Red • Imperial Red </td> <td data-bbox="1771 959 1944 1335"> Jet Black/Black Galaxy (Tamil Nadu/ Karnataka) </td> <td data-bbox="1944 959 2130 1335"> Black Pearl </td> </tr> </tbody> </table>				Category 1 - 65%	Category 2 - 15%	Category 3 - 15%	Category 4 - 5%	Grey Granite (Karnataka/ Andhra) <ul style="list-style-type: none"> • Sadar Ali • Commando Grey • Premium Grey • Grey - Viscent White, 	Red Granite (Karnataka) <ul style="list-style-type: none"> • Sindoori Red • Imperial Red 	Jet Black/Black Galaxy (Tamil Nadu/ Karnataka)	Black Pearl
Category 1 - 65%	Category 2 - 15%	Category 3 - 15%	Category 4 - 5%											
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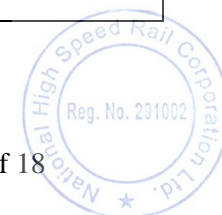
Item No.	Refer Para No.	Original/As Existing	Revised			
			Kuppam White			
			Raw Silk (Tamil Nadu)	Hassan Green (Karnataka)	Blue Lavender (Orissa)	Blue Pearl
				Colonial White (Rajasthan)	Lakha Red (Karnataka)	
			Note: The percentage quantity of each category mentioned in the table are approximate and is subject to change with the approval of the Engineer.			
28.	Part 2, Section VI-3, Division 05000, Sub-Division 05010, Sub-Clause 5.4, Page 15 of 60	5.4 Vitrified Tile 5.4.1 Requirements 2) Thickness: 8 mm to 16 mm (as per drawing).	5.4 Vitrified Tile 5.4.1 Requirements 2) <i>Tile thickness shall vary from 10mm to 16mm depending on the size of the tile to be used as per the approval of the Engineer. For all large spaces such as office lounges, toilets, nursery, lobbies and for wall cladding applications, bigger tile size of 800mm x 1600mm (approx.) shall be used.</i>			



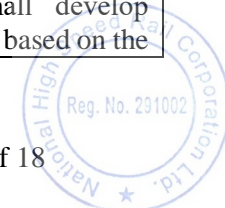
Item No.	Refer Para No.	Original/As Existing	Revised
29.	Part 2, Section VI-3, Division 05000, Sub-Division 05010, Sub-Clause 10.1.2, Item 5) Bullet points, Page 28 of 60	<p>5) Fixing: Sheets shall be fixed to roof purlins and side runners at crest as per manufacturer's recommendation and water tightness provisions using polymer coated galvanized hexa head self-drilling self-tapping (SDST) screws with sealing tapes and screw fasteners with the following properties:</p> <ul style="list-style-type: none"> a) Case Hardener Carbon steel AISI11018/10B21 b) Screw diameter 5.5 mm (In case of Stitching 4.8 mm) c) Metal Bonded EPDM Washer 2-3 mm width 16MM Diameter (In case of stitching 14mm diameter) d) Organic/Geomet/Dorken/Xylin coating insuring 1000-hour salt spray life e) EOTA approved. <p>The sheets shall be bent to required curved profile and fixed with <i>Trimdek or equivalent</i> rib & flute.</p>	<p>5) Fixing: Sheets shall be fixed to roof purlins and side runners at crest as per manufacturer's recommendation and water tightness provisions using polymer coated galvanized hexa head self-drilling self-tapping (SDST) screws with sealing tapes and screw fasteners with the following properties:</p> <ul style="list-style-type: none"> a) Case Hardener Carbon steel AISI11018/10B21 b) Screw diameter 5.5 mm (In case of Stitching 4.8 mm) c) Metal Bonded EPDM Washer 2-3 mm width 16mm Diameter (In case of stitching 14mm diameter) d) Organic coating ensuring 1000-hour salt spray life e) EOTA approved. <p>The sheets shall be bent to required curved profile and fixed with rib & flute.</p>
30.	Part 2, Section VI-3, Division 05000, Sub-Division 05010, Sub-Clause 17.1.2, Page 52 of 60	<p>17.1.2 Technical Data</p> <p>2) Compliance to PSA MOB PF2 PS/SPU and CISCA standard</p>	<p>17.1.2 Technical Data</p> <p>2) <i>Panel shall be as per IS 2046 or BS EN 438, whichever is the most stringent.</i></p>
31.	Part 2, Section VI-3, Division 05000, Sub-Division 05030, Sub-Clause 2.2.9.16, Item c), Page 33 of 57	<p>A standby motor shall be provided to take on the load in case of failure of one drive motor. Both motors shall run in cyclic order periodically.</p>	<Deleted>



Item No.	Refer Para No.	Original/As Existing	Revised
32.	Part 2, Section VI-3, Division 05000, Sub-Division 05030 2.2.14.2, Page 37 of 57		<Insert the following points after Item b)> c) Mounting plate shall be of steel, square shaped with streamlined venturi inlet coated with baked enamel paint. d) Fan blades and hub assembly shall be statically and dynamically balanced at the manufacturer's works. Motor shall be totally enclosed, standard permanent split capacitor type or shaded pole type (for small sizes), having pre-lubricated sleeve or ball bearings.
33.	Part 2, Section VI-3, Division 05000, Sub-Division 05040, Sub-Clause 9.17, Item b) vii), Page 15 of 74	Labels shall not be less than 45mm high. Lettering shall be of not less than mmm high. All labels shall be securely fixed to the panels by bolts and nuts.	Labels shall not be less than 45mm high. Lettering shall be of not less than <i>10mm</i> high. All labels shall be securely fixed to the panels by bolts and nuts.
34.	Part 2, Section VI-3, Division 05000, Sub-Division 05040, Sub-Clause 12.2.1(b), Page 26 of 74	Noise emanating from the UPS during operation shall not exceed 55 dBA at 1.5 m from the enclosure, over a load range of 10% to 100% of the rated full load, as per the standards ISO 3746.	Noise emanating from the UPS during operation from the enclosure shall <i>be as per OEM</i> , over a load range of 10% to 100% of the rated full load, as per the standards ISO 3746. <i>The Contractor shall submit details for approval of the Engineer.</i>
35.	Part 2, Section VI-3, Division 05000, Sub-Division 05040, Sub-Clause 12.8.2(k), Page 32 of 74	Frequency slew rate: 2 Hz/second minimum maximum.	<Deleted>



























Item No.	Refer Para No.	Original/As Existing	Revised
36.	Part 2, Section VI-3, Division 05000, Sub-Division 05040, Clause 22, Item b), Page 74 of 74	The Contractor shall propose at least three reputed manufacturer / makes having minimum 3 years successful operation in related service of metro, railway or airport projects for approval of the Engineer. Each equipment technical details and experience credentials shall be submitted along with proposed quantities for Station.	The Contractor shall propose at least three reputed manufacturers/makes having a minimum of 3 years of successful operation in related service <i>in Metro Rail</i> or Airport projects for approval of the Engineer. <i>Each type of equipment, together with their technical details and operational performance</i> , shall be submitted along with proposed quantities for Station.
37.	Part-2, Section VI-3, Division 05000, Sub-Division 05050, Sub-Clause 5.9, Item a), Page 29 of 32	A low pressure water mist sprinkler system pump shall be installed with an electric pressure switch for automatic operation. A standby pump of same capacity shall be provided by alternative power source, i.e., backup diesel generator.	A low-pressure water mist sprinkler system pump shall be installed with an electric pressure switch for automatic operation. A standby <i>electrical pump and/or diesel driven pump of same capacity shall be provided as approved by the local Fire Authority.</i>
38.	Part-2, Section VI-4, Drawings		<p><The following notes shall be read in conjunction with all the drawings></p> <p>Note 1: Rebar weight tables given in the Structural Design drawings are for reference only. No claim and/or variation in the Accepted Contract Amount shall be admissible on account of incorrect rebar weights in the tables. The Contractor shall follow the bar arrangement shown in the reinforcement drawings and provide the same at his own cost.</p> <p>Note 2: The dimensions of breakthrough in TBM temporary wall are indicative and the exact dimensions shall be ascertained from C-2 contractor by necessary interface.</p> <p>Note 3: Wherever there is a mismatch between Basic Design Drawings and Structural Design Drawings included in the Employer's Requirements, the Contractor shall develop detailed Architectural and MEP Design Drawings based on the</p>



Item No.	Refer Para No.	Original/As Existing	Revised
			<p>Structural Design Drawings (except for the cut-outs, which shall be modified as per Sub-Clause 1.3.3 of GS 05010.), maintaining the basic intent of the Architectural Design Drawings. No claim whatsoever shall be payable to the Contractor on account of such mismatches, which include, but are not limited to the following:</p> <ul style="list-style-type: none"> a) Dimensions and/or locations of various items such as: <ul style="list-style-type: none"> i) Floor-to-floor heights; ii) Structural elements like beams, columns, slabs etc.; and iii) Skylight. b) The size of the skylight between grids X17 to X21 shall be read as 50m x 20.4m instead of 50m x 41.04m in all the Drawings. c) West Entry/Exit structure has been designed as RCC framed structure as shown in the Structural Drawings. The detailed design of the architectural works in the West Entry/Exit structure shall be designed maintaining the basic intent of the Architectural Design Drawings as of East Entry/Exit structure (which is to be designed as steel structure frame by the Contractor).
39.	Part 2, Section VI-4, 03_Architectural, Structural and Signage, Dwg. No. BD-JIC-C14-DRW-S01-STA-NTU-02213-000		<p><Add the following point in "Note"> <i>The capacity of water tanks shall be as given in DRC 05050.</i></p>



Item No.	Refer Para No.	Original/As Existing	Revised						
40.	Part 2, Section VI-5, Attachment 5 – ROW Ortho Map		<The ROW Ortho Map has been revised> Refer Attachment No. 01.						
41.	Part 2, Section VI-4, Drawings		Replaced with “New List of Drawings” issued in Attachment No. 02. In these lists, the original drawings which have not been revised are shown in ‘Black’, drawings which have been revised are shown in ‘Blue’ and drawings which have been newly added are shown in ‘Red’. Note that only those drawings that have been revised or newly added are enclosed in Attachment. Attachment may be downloaded by the Bidders, who have purchased the Bid Document, through the link provided to the respective Bidders.						
42.	Part 2, Section VI-4, Drawings, Template	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%; text-align: center; vertical-align: top;"> <small>Project</small> Mumbai-Ahmedabad High Speed Rail Project (Package No. MAHSR-C-1) </td> <td style="width: 33%; text-align: center; vertical-align: top;"> <small>OWNER</small>  NATIONAL HIGH SPEED RAIL CORPORATION LTD. </td> <td style="width: 33%; text-align: center; vertical-align: top;"> <small>JICA Study Team</small>  Japan International Consultants for Transportation  NIPPON KOEI  ORIENTAL CONSULTANTS GLOBAL </td> </tr> </table>	<small>Project</small> Mumbai-Ahmedabad High Speed Rail Project (Package No. MAHSR-C-1)	<small>OWNER</small>  NATIONAL HIGH SPEED RAIL CORPORATION LTD.	<small>JICA Study Team</small>  Japan International Consultants for Transportation  NIPPON KOEI  ORIENTAL CONSULTANTS GLOBAL	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%; text-align: center; vertical-align: top;"> <small>Project</small> Mumbai-Ahmedabad High Speed Rail Project (Package No. MAHSR-C-1) </td> <td style="width: 33%; text-align: center; vertical-align: top;"> <small>Owner</small>  NATIONAL HIGH SPEED RAIL CORPORATION LTD. </td> <td style="width: 33%; text-align: center; vertical-align: top;"> <small>Consultant</small>  Japan International Consultants for Transportation  NIPPON KOEI  ORIENTAL CONSULTANTS GLOBAL </td> </tr> </table>	<small>Project</small> Mumbai-Ahmedabad High Speed Rail Project (Package No. MAHSR-C-1)	<small>Owner</small>  NATIONAL HIGH SPEED RAIL CORPORATION LTD.	<small>Consultant</small>  Japan International Consultants for Transportation  NIPPON KOEI  ORIENTAL CONSULTANTS GLOBAL
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43.	Part-3, Section VIII, Part-B, PC, Sub-Clause 4.25, 3 rd Para, Page 21 of 67	The Contractor shall apply, by notice to the Engineer, for a Milestone Certificate not earlier than 14 days before the works of a Milestone will, in the Contractor’s opinion, be complete. The Engineer shall within 28 after receiving the Contractor’s notice:	The Contractor shall apply, by notice to the Engineer, for a Milestone Certificate not earlier than 14 days before the works of a Milestone will, in the Contractor’s opinion, be complete. The Engineer shall within 28 <i>days</i> after receiving the Contractor’s notice:						

