Package Title: Construction of Tunneling Works including Testing and Commissioning for Double Line High Speed Railway using Tunnel Boring Machine (TBM) and New Austrian Tunneling 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.

Package No : MAHSR-C-2

Date: 26 - Dec - 2019

Response to Bid Queries - 6

Sl. No	Document	Page no / Clause No.	Provisions as Per-Bidding Documents/Subject/Title/Item as mentioned by the Bidder	Bidder Query	Employer's Reply
1.	Part 2 Section V1-3 Drawings from Tender Documents 6. TRACK BED Drawings		Lack of drawings for Track Bed Rebar and Dowel Anchor	There are 14 types of Track Bed in the bidding document but only 2 types of Track Bed's Rebar arrangement and Dowel Bar drawings are provided in the bidding document. Please provide us the Bar arrangement and Dowel Bar drawing for the remaining 12 types of track bed.	Refer to addendum No 9 Item No 1.
2.	Part 2 Section V1-3 Drawings from Addendum #2 C. SHAFT-2 DRAWINGS TD-JIC-IC1-TDC-B01- UST-NTU- 15010001 (REVISED)	Page 1 of 119	Request additional information on the drawing.	1. Drawing 15010001 / STRUCTURE DETAIL OF SHAFT-2 (1) Drainage Ditch does not stipulate on the drawing whilst similar structure of Shaft-3 stipulated the Drainage Ditch (see below item 2). SECTION 2 No indiation of Drainage Ditch Payment has be secretified by the state of t	Refer to addendum No 9 Item No 1.
	D. SHAFT-3 DRAWINGS TD-JIC-IC1-TDC-B01- UST-NTU- 17010001 (REVISED)	Page 1 of 105		Please confirm no Drainage Ditch at Shaft-2. 2. <u>Drawing 17010001 / STRUCTURE DETAIL OF SHAFT-3 (1)</u> Drainage Ditch stipulated in Sections. However, it does not stipulate in Slab Sections. (see Below typical part copy of drawing.)	

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R	Sl. No g. No. 291002 Document	Page no / Clause No.	Provisions as Per-Bidding Documents/Subject/Title/Item as mentioned by the Bidder	Bidder Query	Employer's Reply
				SECTION 2 No indiation of Drainage Ditch SECTION 5 SECTION 5 SECTION 5 No indiation of Drainage Ditch SECTION 5 No indiation of Drainage Ditch SECTION 5 SEC	
	3. BOQ Items 401 and 405 (c)	Attachment No. 1 of Addendum No. 4 Pages 52 and 60 of 89	Drawing for M-45 infill concrete in steel segment of TBM Tunnel (at location of Equipment Room)	 (1) For Equipment Room (TBM), BOQ Item 405 (c) stipulates that "Erection of all the steel segments in an Equipment Room in accordance with the Specification and the Drawings. a. This item includes: (iii) Infill concrete of grade M-45 in hollow portion of steel segments of equipment rooms as shown in the Drawings." 	Refer Part-2, Section VI-2, Sub-Clause 4.8 (5).
				Part print of typical drawing 10500001 below clearly indicates M45 infill concrete. 8500 MATERIAL STORAGE FLOOR TO BOTTOM OF CABLE PIT Concrete casting shall be done in the steel Segment. (M45) (2) For TBM Tunnel BOO Item 401 stimulates that "Exection of permanent	
				(2) For TBM Tunnel, BOQ Item 401 stipulates that "Erection of permanent lining rings including excavation of tunnel with closed mode TBMs (dual mode included) in accordance with the Specification and the Drawings.	

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Sl. No. 291002	Document	Page no / Clause No.	Provisions as Per-Bidding Documents/Subject/Title/Item as mentioned by the Bidder	Bidder Query	Employer's Reply
				b. This item includes: (vi) Erection of permanent lining rings including temporary works/services such as handling, loading, unloading, delivery from casting yard to work site of the segments, fixing of dowels, primary grouting, secondary grouting (including sealing of grout sockets) ground earth system and infill concrete of grade M-45 in hollow portion of steel segments in accordance with the Drawings.	
				However, part print of typical drawing 10880000 below does not indicate any M45 infill concrete. A TYPE ASSEMBLY - 1 S=1:50 (VIEW FROM SHAFT SIDE) BING SINT SEL ES SECTION 2 (VIEW FROM SHAFT SIDE) SECTION 2 (VIEW FROM SH	
4.	Part 2 Section VI-2 Technical Specifications	Clauses 4.7(3) and 7.3(8) Pages 22 and 141 of 199	Use of fly ash and silica fumes for plain and reinforced concrete	(1) For RC Segments for Main Tunnel, Clause 4.7(3) stipulates the concrete specifications as follows: (a) RC segment shall be M-70 Grade and Minimum values of cement & slump and maximum value of water cement ratio are given below: Minimum cement content: 400kg/m3 Maximum water cement ratio: 0.40 Slump: 40 to 60mm	The condition(s) of Bidding Document shall remain unaltered.

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Sl. No Reg. No. 291002	Document	Page no / Clause No.	Provisions as Per-Bidding Documents/Subject/Title/Item as mentioned by the Bidder	Bidder Query	Employer's Reply
				Fly ash and silica fumes may be used in mix design to improve workability and durability.	
				 (2) For Plain and Reinforced Concrete, Clause 7.3(8) stipulates the concrete specifications as follows: (a) Maximum water cement ratio for design mix shall conform to IRS: CBC (Clause 5.4.3) as follows: 	
				Plain Concrete: 0.45	
				Reinforced Concrete: 0.40	
				(b) Minimum grade of concrete shall conform to IRS: CBC (Clause 5.4.4) as follows:	
				Plain Concrete: M-20	
				Reinforced Concrete: M-35	
				(c) Maximum and minimum permissible cement content shall conform to	
				IRS: CBC (Clause 5.4.5) as follows:	
				Minimum (kg/cum)	
				Plain Concrete: 250	
				Reinforced Concrete: 350	
				Max: 500	
				For Item (2), it is noted that the use of additives such as fly ash and silica is not specified. Therefore, please confirm and allow the Contractor to use fly ash and silica fumes in the mix design, within the maximum cement content of 500kg/cum, in order to improve workability and durability.	
5.	Part 2 Section VI-2	Addendum	Partial payment on completion of site offices	101 Site Offices	Refer Addendum No. 9 Item
	Method of Measurement for Payment	4_ Attachment 3 101 Site Offices		Clause 101 stipulates that "Measurement for payment for this item shall be on lumpsum basis complete in all respects. The payment for the item shall be made on lumpsum basis as per price entered in the Priced Bill of Quantities."	No. 3, Sub-Clause 2.5.8.
		Page 1 of 20		Bidder interprets from the above clause 101 that providing cost of Site Offices for the Engineer / the Employer would be claimed and paid only after their demolition, which is NOT reasonable.	
				Therefore, bidder requests the Employer to consider changing the conditions to allow a partial payment for 80% of the lump sum cost upon completion of the offices.	

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Sl. No. 291002	Document	Page no / Clause No.	Provisions as Per-Bidding Documents/Subject/Title/Item as mentioned by the Bidder	Bidder Query	Employer's Reply
6.	Part 2 Section V1-3 Drawings	Page 4 of 25	Discrepancy of distances between shafts and chainage of Adit Tunnel.	Drawing 00020000 / SCHEMATIC DIAGRAM OF TUNNEL (PACKAGE C2)	Refer Addendum No 9 Item No 1.
	Tender Drawing 1. GENERAL DRAWINGS	and		C2 PACKAGE TOWARDS AHMEDABAD (A)	
	TD-JIC-IC1-TDC-B01- UST-NTU-	Page 2 of 8		ADIT TUNNEL PORTAL CUT & COVER THE STATE OF	
	00020000			SHAFT T2TA T3TM SHAFT N1TM VANCTION OF ROIT TUNNEL PORTAL 1578.000m 1578.000m 1578.000m 1578.000m 3321.000m CUT & COVER	
	And			1574 Wan 1860 000m (1860 000m)	
	Drawings from Addendum No. 2 A. GENERAL			2. drawing 00030001 / SCHEMATIC DIAGRAM OF EQUIPMENT ROOMS	
	DRAWINGS TD-JIC-IC1-TDC-B01-UST-NTU-			DOWN LINE TOWARDS AHEMADABAD DOWN LINE TOWARDS AHEMADABAD OF THE STATE OF THE SECOND	
	00030001			8km230m # # # # # # # # # # # # # # # # # # #	
				From the comparison of drawings 00020000 and 00030001, bidder noted some discrepancies and requests for clarifications in drawing 00030001 as follows;	
				(1) Distance between Shaft-2 and Shaft-3	
				 c. 9660 instead of 9700 (2) Distance between Shaft-3 and Adit Tunnel 1579instead of 1539 (3) Chainage of Adit Tunnel 	
				d. Should be 17km829m as 17km850m shown is chainage of Equipment Room. Please clarify.	
7.	Addendum 4 BOQ Items 501	Page 86 of 89	Precautionary measures for NATM excavation considering utility supports method	(1) Bidder received reference drawings of Utility Support for MIDC Road in Attachment No. 4 of Addendum No. 4 but there is no reference drawing of	Design of temporary support for utility and precautionary measures for NATM

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Sl. No Reg. No. 291002	Document	Page no / Clause No.	Provisions as Per-Bidding Documents/Subject/Title/Item as mentioned by the Bidder	Bidder Query	Employer's Reply
	Bidding Documents - Part 1, Section IV. Bidding Forms			"Precautionary measures for NATM excavation considering utility supports method" Please kindly provide reference drawing of "Precautionary measures for NATM excavation considering utility supports method"	excavation is to be developed by the Contractor.
8.	Part 1, Section II BDS-ITB 7.1 Page 4 of 31 Addendum No. 5, Item 3		Clarification of new/revised documents	The revised clause 7.1 as per Item 3 of Addendum No. 5 dated 27 August stipulates that "The Employer's response will be uploaded on the Employer's webpage no later than 18th October 2019, provided that such request is received no later than 27th September 2019." Bidder takes note of the contents but nevertheless requires an opportunity to clarify the new/revised documents to be issued, if any. The Employer's understanding in this regard would be appreciated. Please also confirm that, given the current status of additional information in forms of query response and/or addendum, the cut-off date for our queries shall be extended.	Refer Addendum No 8.
9.	Part 1 Section IV. Bidding Forms 2.0. Bills of Quantities Clause 2.1.3		Clarification	Please confirm that the labour cess which falls under THE BUILDING AND OTHER CONSTRUCTION WORKERS' WELFARE CESS RULES, 1998 shall be paid by the Employer, and that the Contractor doesn't need to reimburse it to the Employer.	Refer Addendum No. 9 Item No. 3, Sub-Clause 2.1.3.
10.	Part 2 Section VI Specification (General Specifications) Appendix 08000-1: Safety, Occupational Health and Environment Management Manual Section 4.16 Blasting and Drilling Page 57 of 185		Blasting Excavation	With regard to blasting works for the tunnel excavation, we are planning to execute blasting works during day and night to shorten our construction schedule. We understand that blasting works can be executed during day and night if the environmental impacts to surrounding area is controlled under the limits specified in the Bidding Documents. Please confirm.	Refer Item No. 5 of Reply to Bidder's Query-5 th set.
11.	Bidding Documents - Part 2 Section VI-2. Specification (Technical Specifications) Page 134 of 199		Fill Material	 (1) For fill material, Clause 7.2(1) stipulates the fill material specifications as follows: e. The Contractor shall carry out the following initial tests on the proposed material. Thereafter, one set of tests shall be carried out for each 2000m3 of fill, supplied to Site or as noticed by the Engineer. • Wet sieve analysis. • Dry density/moisture content relationship. Please kindly clarify whether cost for RDSO's inspection is necessary or not. Can these tests carried out by ourselves internally, or do they have to be done 	RDSO inspection is not contemplated. The provisions of Sub-Clause 7.2(2) are self-explanatory.

Response to Bid Queries-6

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Sl. No Reg. No. 291002	Document	Page no / Clause No.	Provisions as Per-Bidding Documents/Subject/Title/Item as mentioned by the Bidder	Bidder Query	Employer's Reply
				by RDSO? And does RDSO guideline apply only to fill?	
12.	Section VI-2 Specification (Technical Specification) CL.4.21 Page 55 of 199 and Response to Bid Queries – 1 Item No. 167		Breakthrough of TBM-1 and its removal	We refer to your Response to Bid Queries -1 Item No. 167, dated on 29th July 2019, stating that "(a) & (b) the arrangement of reinforcement for shaft 1 and construction schedule will be provided after award of Contract. (c) refer Addendum no 3 Item no 15 and 16." We would like to request once more the Employer to provide detailed structure and arrangement of reinforcement drawing (Currently, only Information drawings are available). Please provide temporary hand over date and period for Shaft-1 above ground area and Shaft-1 inside. To estimate the cost for temporary structure for demobilization after TBM-1 breakthrough, please provide detail information of Shaft inside structure at the timing of TBM-1 breakthrough.	The condition(s) of Bidding Document shall remain unaltered.
13.	Part 2 Section VI-2. Specification (Technical Specifications) CL. 4.18 (8)(a) Page 49 of 199 and Response to Bid Queries – 1 Item No. 217		Assessment of Impact on Structures	We refer to your Response to Bid Queries -1 Item No. 217, dated on 29 th July 2019, stating that "All available information has been included in Section VI-4" We understand that the contract includes only construction works, and design of TBM tunnel and NATM tunnel is under the Employer's scope. Our understanding that tunnel design has been carried out by client and there should be impact assessment reports regarding existing structures by design consultant. Please provide those assessment reports for estimation cost. Main contents we would like to request are the following: 1. Analysis results (data) of ground subsidence 2. Estimated level (amount) of ground subsidence 3. Results of impact evaluation to existing structures	Refer Part 2, Section VI-2, Technical Specification, Sub-Clause 4.18 (6), (8) and (9).
14.	Part 2 Section VI-2. Specification (Technical Specifications) CL. 4.18 (9) Page 50 of 199 and Response to Bid Queries – 1 Item No. 218		Staged Assessment (d) Stage 3 Assessments	We refer to your Response to Bid Queries -1 Item No. 218, dated on 29 th July 2019, stating that "The Condition(s) of the Bidding Documents shall remain unaltered" It is stipulated as following: - the Contractor shall perform the impact assessment to the existing structures any protective works shall be established and the details of any protective works including designs and method of working determined. The cost of all such protective works is included in the Accepted Contract Amount. No extra payment shall be made to the Contractor on this account. At the tender stage, there are only limited information (such as ATTACHMENT 5 FIELD SURVEY REPORT A. Building Survey Report) available and it is very difficult to evaluate impact to existing building structure and estimate cost of all protective works. We would like to request once more the Employer's support to consider changing those cost relate to protective works of existing building structure to provisional sum.	The condition(s) of Bidding Document shall remain unaltered.

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Sl. No. 291002	Document	Page no / Clause No.	Provisions as Per-Bidding Documents/Subject/Title/Item as mentioned by the Bidder	Bidder Query	Employer's Reply
15.	Part 2, Section VI-2 Sub-Clause 4.24 As amended by Addendum No. 4 Page 52 of 58 and Response to Bid Queries – 4 Item No. 33		General Arrangement of Steel Segment for all type	We refer to your Response to Bid Queries -4 Item No. 33, dated on 9th September 2019, stating that "The box-out areas are to be filled up completely. The Contractor shall submit method statement for the same to the Engineer to obtain approval." It is stipulated that infill concrete shall be casted in steel segments installed at cross-section area of the equipment room. But, in consideration of construction work environment, the infill concrete of the steel segments shall be carried out at the fabrication yard. In this case, there may be some sections which have to be boxed out due to the presence of holes for bolt and grout socket etc., and box-outs shall be filled by concrete after installation. To prevent future accident such as peeling off of concrete, we would like to request the Employer to consider exclude infill concrete from the technical specification.	Refer Addendum No. 9 Item No. 15.
16.	Part 2 Section V1-3 Drawings from Addendum No. 6_Attachment 1 A - LIST OF REVISED DRAWINGS TD-JIC-IC1-TDC-B01- UST-NTU- 13290001, 13340001, 13410001, 13460001, 13510001, 13580001, 13620001, 13660001, 13730001, 13770001, 13810001, 13880001, (Revised) Pages 09, 14, 21, 26, 31, 38, 42, 46, 53, 57, 61 & 68 of 112		Specifications of waterstop packing for M24	Bidder noted that there are no specifications in the tender documents for the water stop packing material for M24 bolt at Steel Segment for Equipment Room as per sketch below.	Refer Addendum No. 9 Item No. 1 and 16.
17.	Part 2 Section V1-3 Drawings from Addendum No. 6_Attachment 1 LIST OF NEW DRAWINGS TD-JIC-IC1-TDC-B01- UST-NTU- 14554000~14578000, (New)		EPDM Gasket, Grout Socket, In-situ fill concrete	Bidder noted that there is no annotation/indication of the following items for joint detail drawing between Main Tunnel Steel Segment and Equipment Rooms Steel Segment. i) EPDM Gasket ii) Grout Socket iii) Casting of concrete Therefore, please clarify whether the bidder needs to consider the above items for the joint segment.	EPDM Gasket and Grout Socket are not required at joint segment. For casting of concrete refer Addendum No. 9 Item No. 1.

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Sl. No Reg. No. 291002	Document	Page no / Clause No.	Provisions as Per-Bidding Documents/Subject/Title/Item as mentioned by the Bidder	Bidder Query	Employer's Reply
	Pages 84~108 of 112				
18.	Part 2 Section VI-3, 2. TBM Drawings, No. TD-JIC-IC1-TDC-B01-USTNTU- 10540000 to 10580000 Page 59 to 63 of 182 and Response to Bid Queries – 2 Item No. 37		Steel Segment for Equipment Room (Type A) (1) to (3), (Type B) (1) & (2)	We refer to your Response to Bid Queries -2 Item No. 37, dated on 29th July 2019, stating that "The method of concrete filling in the steel segment shall be proposed by the Contractor for the approval of Engineer." Same as above clarification item. If infill concrete cannot be omitted, we would like to change the construction method to shotcrete. Please confirm.	Refer Addendum No. 9 Item No. 15.
19.	Part 2 Section V1-3 Drawings from Addendum No. 6_Attachment 1 A. LIST OF REVISED DRAWINGS TD-JIC-IC1-TDC-B01- UST-NTU- 00220001 Page 4 of 112		Clarification for scope of work at Pier P1(A)	Note: Works to be completed before handing over to C3 and P1(A) Contractor. 1. Works of cut & cover tunnel and portal structure 2. Boundary wall around permanent works area 3. Drains in permanent area 4. Backfilling of cut & cover tunnel and dressing of permanent works area 5. Pier P1(A): Size of pier foundation is tentative. f. g. Drawing Note stipulates that "Work to be completed before handing over to C3 and P1(A) Contractor included 5. Pier P1(A): Size of pier foundation is tentative. h. i. Please clarify the following: 1. Is the construction of pier foundation at Pier P1(A) under the bidder's scope?	The Construction of Pier P1(A) is not in the scope of C2 Contractor.

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Sl. No. 291002	Document	Page no / Clause No.	Provisions as Per-Bidding Documents/Subject/Title/Item as mentioned by the Bidder	Bidder Query	Employer's Reply
				 If yes to above, please provide to bidder all the necessary drawings, specifications and BOQ. 	
20.	Part 2 Section V1-3		Discrepancy of drawing numbers.	Bidder noted that there are discrepancies as below:	Drawings Nos. mentioned in
	Drawings from Addendum No. 6				Addendum No. 6 are correct.
	A. LIST OF REVISED			1. Addendum No. 6 Drawing List	
	DRAWINGS				
	DRAWING LIST			77	
	Page 2 of 112			4. Addendum No. 2 Drawing List	
				No. Drawing Name No. Drawing Name No. Drawing No. Remarks No. No.	
				Below Original/Existing Drawing No. of Addendum No. 6 Drawing List are discrepancy against Addendum No. 2.	
				Addendum No. 6 Drawing List	
				TD-JIC-IC1-TDC- B01 -UST-NTU-00400000	
				TD-JIC-IC1-TDC- B01 -UST-NTU-00410000	
	and			TD-JIC-IC1-TDC- B01 -UST-NTU-00420000	
	Part 2 Section V1-3			TD-JIC-IC1-TDC- B01 -UST-NTU-00430000	
	Drawings from Addendum			TD-JIC-IC1-TDC- B01 -UST-NTU-00470000	
	No. 2				
	G. COMMON			Addendum No. 2 Drawing List	
	DRAWINGS DRAWING LIGHT			TD-JIC-IC1-TDC- B07 -UST-NTU-00400000	
	DRAWING LIST			TD-JIC-IC1-TDC- B07 -UST-NTU-00410000 TD-JIC-IC1-TDC- B07 -UST-NTU-00420000	
	Page 15 of 16			TD-JIC-IC1-TDC- B07 -UST-NTU-00420000 TD-JIC-IC1-TDC- B07 -UST-NTU-00430000	
				TD-JIC-IC1-TDC- B07 -UST-NTU-00470000	

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S R SON	Sl. No g. No. 291002 Document	Page no / Clause No.	Provisions as Per-Bidding Documents/Subject/Title/Item as mentioned by the Bidder	Bidder Query	Employer's Reply
				In additions to above discrepancies, revised drawings of Addendum No.6 are as follows. Please confirm correct drawing numbers. Addendum No. 6 Revised Drawings TD-JIC-IC1-TDC-B01-UST-NTU-00400001 TD-JIC-IC1-TDC-B01-UST-NTU-00410001 20TD-JIC-IC1-TDC-B01-UST-NTU-00420001 TDA-JIC-IC1-TDC-B01-UST-NTU-00470001 Typical Discrepancy of Drawing Number between Addendum No. 6 and No. 2 Adopted by: NHSRCL Addendum #6 Title PERMANENT REINSTATEMENT & ASSOCIATED WORKS (DETAIL OF BOUNDARY WALL OVER COOTING) Scale AS MENTIONED @ A1 Drawing No. TD-JIC-IC1-TDC-B01-UST-NTU-00400001 Title PERMANENT REINSTATEMENT & ASSOCIATED WORKS (DETAIL OF BOUNDARY WALL OVER FOOTING)(1) Scale AS MENTIONED @ A1 Drawing No. TD-JIC-IC7-TDC-B07-UST-NTU-00400000	
	21. Part 2 Section V1-3 Drawings from Addendum No. 6_Attachment 1 LIST OF NEW DRAWINGS TD-JIC-IC1-TDC-B01- UST-NTU- 14554000, 14556000 & 14557000 (New)		Discrepancy of rib thickness for sealing strip	There are discrepancies of RIB thickness of Side SEALING STRIP between drawings as stated. Please provide the correct thickness and refer to below sketch.	Refer Addendum No 9 Item No 1.

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Sl. No Reg. No. 291002	Document	Page no / Clause No.	Provisions as Per-Bidding Documents/Subject/Title/Item as mentioned by the Bidder	Bidder Query	Employer's Reply
	14561000 & 14562000 (New) 14566000 & 14567000 (New)			SEALING STRIP BACKING PLATE EB	
	Pages 84, 86 & 87, Pages 91 & 92 and Pages 96 & 97 of 112			RIB i=12 BACKING PLATE BACKING STRIP SEALING STRIP 1=12	
				Detail -A S=1: 10 Detail -B S=1: 10 SEALING STRIP 1-12 Detail -D S=1: 10 Detail -B S=1: 10 Detail -B S=1: 10 SEALING STRIP 1-12 Detail -D S=1: 10	
22.	Part 2 Section V1-3 Drawings from Addendum No. 6_Attachment 1 LIST OF NEW DRAWINGS TD-JIC-IC1-TDC-B01- UST-NTU- 14555000, 14560000, 14565000 & 1457000 (New)		Discrepancy of information for bolt connection at Joint Detail	There are discrepancies of information for bolt connection at Joint Detail of Equipment Room Type A1, A2, B1 & B2 section 4 drawings as stated. Please provide the correct information and refer to below sketch. No information for connection SECTION 4 S=1: 15 SECTION 4 S=1: 15	Refer Addendum No. 9 Item No. 1.
	Pages 85, 90, 95 & 100 of 112				

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Sl. No Reg. No. 291002	Document	Page no / Clause No.	Provisions as Per-Bidding Documents/Subject/Title/Item as mentioned by the Bidder	Bidder Query	Employer's Reply
				Type B1 & B2 SECTION 4 S=1: 15 MAN GIRDER PLATE I-80 SUPPORT PLATE I-80 SUPPORT PLATE I-80 SIMPLATE I-12 SIMPLATE I-12 SIMPLATE I-12 SOUN PLATE I-12 S	
23.	Part 2 Section VI-4,	Attachment 6B Status of As- built drawings and Design Conditions No. 2 Mithi River Revetment	Mithi River Revetment	Please provide the As-Built Drawings related to cast-in-place pilings around Mithi River which may be obstacles to TBM-1. As drawings, "Att. 6B _ Status of As-Built drawings and design conditions_20190409_HS" has been disclosed, and it is stated that "Mithi River Revetment 0km92 Enclosed as Annexure-2", but bottom location of piling is not included as actual As-Built Drawings.	The condition(s) of Bidding Document shall remain unaltered.
24.	Attachment No. 4 of Addendum No. 4 Part 2, VI-4. Works Requirements (Reference Information/Reports) Attachment 4 UTILITY E. Utility Support for MIDC Road		MIDC Road	Based on the design information regarding protection of the existing utilities (ex: water piping and gas piping) which are related to MIDC road provided as Attachment No. 4 of Addendum No. 4, we observed that large structures above ground for support are designed. We believe that the design information provided as Attachment No. 4 of Addendum No. 4 is for reference purpose only and the Contractor is not obliged to execute, and the Contractor can plan and design such temporary structures above ground or underground separately from above design information provided. Please confirm.	Attachment No 4 of Addendum No 4 is for reference only. The Contractor can provide the alternate support system.
25.	Part 3 Section VIII Particular Conditions, Part A Contract Data CL 14.5 Page 7 of 33 and Response to Bid Queries – 4 Item No. 42		Plant and Materials Alternative Proposal for a separate BOQ Item for the "Completion of Tunnel Segment Factory."	We refer to your Response to Bid Queries -4 Item No. 42, dated on 9th September 2019, stating that "The condition (s) of Bidding Documents shall remain unaltered." In consideration to relieve the issue of the anticipated Contractor's negative cashflow, we would like to request once more for the Employer's support to consider our below alternative to the provision stated in current Bidding Documents: Please add separated BOQ item for payment as per "Completion of Tunnel Segment Factory" The Employer's acceptance on the above request will help to ease the above problem, as even if we receive the 15% of Accepted Contract Amount, this will not dissolve the expected negative cashflow.	The condition(s) of Bidding Document remains unaltered.
26.	Part 3 Section VIII		Payment	We refer to your Response to Bid Queries -4 Item No. 44, dated on 9th September 2019, stating that "The condition (s) of Bidding Documents shall remain unaltered." In consideration to relieve the issue of the anticipated Contractor's cashflow, we	The condition(s) of Bidding Document remains unaltered.

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Sl. No Rag. No. 291002	Document	Page no / Clause No.	Provisions as Per-Bidding Documents/Subject/Title/Item as mentioned by the Bidder	Bidder Query	Employer's Reply
	Particular Conditions, Part A Contract Data CL 14.2 Page 6 of 33 and Response to Bid Queries – 4 Item No. 44		Alternative Proposal for separate BOQ Items for each of three (3) TBMs.	would like to request once more the Employer's support to consider our below alternative to the provision stated in current Bidding Documents: The procurement of three (3) TBM's to be separate BOQ items with payment to be progressively measured for each TBM in accordance with the progress of procurement as follows; 1) 30% upon submission of proof of placement of order, 2) 60% upon successful factory inspection, 3) 5% upon arrival at Site, and 4) 5% upon successful launch. As an alternative, the Contractor could provide a Bank Guarantee to the payment for the above TBM procurement until arrival of three (3) TBMs at Site to prove our financial capability and ensure our commitment on our above request. The Employer's acceptance on the above request will help to ease the above problem, as even if we receive the 15% of Accepted Contract Amount, this will not	
27.	Drawing No. TD-JIC-C16-TDC-B01-TRW-NTU-3030000 to 30350000		Dowel Bar Drawing for track bed	dissolve the expected negative cashflow. According to tender drawing No. TD-JIC-C16-TDC-B01-TRW-NTU-30300000 to 3050000, the dowel bar for track bed is designed by C-shape and round shape into the backfill concrete. However, the dowel bar for track bed is designed by straight shape into the backfill concrete in Japanese Shinkansen Tunnel as shown in below. Considering workability of both Backfill concrete and Track bed concrete, it is very cumbersome to set these dowel bar during backfill concrete, consequently it may increase the cost of construction. Hence please change the design of the dowel bar shape for track bed as following to Japanese Shinkansen Tunnel in order to reduce construction cost.	The condition(s) of Bidding Document remains unaltered.

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Sional High	Sl. No	Document	Page no / Clause No.	Provisions as Per-Bidding Documents/Subject/Title/Item as mentioned by the Bidder	Bidder Query	Employer's Reply
					75 520 1200 520 75 TRACK CENTER 20% 520 75 520 100 520 100 520 520 520 520 520 520 520 520 520 5	
					Japanese Shinkansen Tunnel 234 126 (296) 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202 202	
	28.	Response to Bid Queries - 4 Item Nos. 9 and 18 3. NATM Drawings	TD-JIC-IC1- TDC-B01- UST-NTU- 20100000	Re-instatement of BOQ item for "Grouted forepoling φ27.2 x 3.0m at NATM Tunnel"	 Bidder would like to draw the Employer's attention to the following responses / clarifications regarding "grouted forepoling φ27.2 x 3.0m at NATM Tunnel": 1. The Employer's Response to Bid Queries – 4, Item No. 9 states that "Item 502 (d) (ii) has been delated." 2. The Employer's Response to Bid Queries – 4, Item No. 18 states that "Cost of auxiliary supports including forepoling are included in BOQ Item no. 501. Nothing extra shall be payable for auxiliary supports including forepoling." 3. The bidder's query in Clarification No. 13, Item 2, dated 21 Aug 2019 is "Bidder noted that forepoling was deleted from BOQ 502 & 510 in Addendum No. 4 Attachment 1. Please kindly delete details of fore poling in corresponding Drawing 20100000.". From the above items, bidder notes the Employer's intentions are: a. Forepoling at NATM is still required for the works and b. Payment for such work shall be included in BOQ Item No. 501 under auxiliary supports. However, bidder considers that the work for forepoling at NATM work should be paid as a re-measurable item and bidder is unable to price for this item in BOQ 	The condition(s) of Bidding Document remains unaltered.

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Sl. No Reg. No. 291002	Document	Page no / Clause No.	Provisions as Per-Bidding Documents/Subject/Title/Item as mentioned by the Bidder	Bidder Query	Employer's Reply
				Item No. 501 as there are no details like location of application and nos. required. Therefore, in order to apportion the fair share of risks among the parties involved and thus reduce the total project cost by eliminating unnecessary additional cost for contingency, the bidder would like to request the Employer to consider reinstating an item in the BOQ for "Grouted fore poling $\phi 27.2 \times 3.0 \text{m}$ at NATM Tunnel".	
29.	Bidding Documents for Procurement of Works, PART 1 – BIDDING PROCEDURES, Section IV. Bidding Forms,	2.0 Bills of Quantities, Bill No. 2.0: Permanent Reinstatement and Associated Works at Portals Bill No. 2.1: At Main Tunnel Portal Item No. 201	Blasting for Excavation	It is stipulated that "Excavation in all kinds of strata as directed by the Engineer including site clearance and muck disposal in accordance with the Specification and the Drawings. Note: Blasting shall not be permitted for excavation at this site." Bidder understands that the above stated BOQ item expresses that "Blasting shall not be permitted for excavation at this site" but wants to discern the following: (1) This limitation is only for the Main Tunnel Portal (2) If the Contractor is given permission by the Indian government, it will then be permitted to use blasting for excavation Please confirm.	Refer Addendum No 9 Item No 3.
30.	Response to Bid Queries 5 – 09102019	Page 20/159 For Item 7 of CL9 Drawings from Tender Documents 6. TRACK BED Drawings	Outstanding Items 7 and 10 of Clarification 9 dated 25 July 2019 For Item 7 of CL9 Lack of drawings for Track Bed Rebar and Dowel Anchor 2019	Bidder acknowledges that the Employer's Response to Bid Queries 5 has covered all items up to Clarification 14 dated 02 Sep 2019 except 2 items of Clarification 9 as listed below (without drawings): 1. Item 7 of CL9 j. There are 14 types of Track Bed in the bidding document but only 2 types of Track Bed's Rebar arrangement and Dowel Bar drawings are provided in the bidding document.	Refer Addendum No 9 Item No 1.
		For Item 10 of CL9 Drawings from Addendum #2 C. SHAFT-2 DRAWINGS	For Item 10 of CL9 Request additional information on the drawing.	Please provide us the Bar arrangement and Dowel Bar drawing for the remaining 12 types of track bed. 2. Item 10 of CL9 (1) Drawing 15010001 / STRUCTURE DETAIL OF SHAFT-2 (1) k. Drainage Ditch does not stipulate on the drawing whilst similar structure of Shaft-3 stipulated the Drainage Ditch (see below item 2). 1. Please confirm no Drainage Ditch at Shaft-2.	

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		TD-JIC-IC1- TDC-B01- UST-NTU-			Slab Se	ge Ditch stipulated in provide detailed inf	typical pa	art copy o	f drawing.)		
		15010001 (REVISED)				e.g. discharge pipe)			J	J		
		and		D1	• 1	11 4 1 2	٠.		•1 1			
		D. SHAFT-3 DRAWINGS		Pleas	e provide re	plies to the above 2	items soc	onest poss	ible.			
		TD-JIC-IC1- TDC-B01- UST-NTU-										
		17010001 (REVISED)										
31.	Part 1 Section IV	Pages 8 & 9	(\overline{P})Schedule of Adjustment Data	Refe	rence is mad	le to Table A below	:				The condition(s) of	Ridding
31.		of 159	Table A. Local Currency				Local Curre				Document shall	remain
	Bidding Form			(1) Inde	x Index	Source of index	Base Value and Date	Bidder's related currency Amount (INR)	Bidder's Proposed Weightage	(6) Prescribed Weightage by Employer	unaltered.	Temam
				A	Non-Adjustab		-	**	0.15	A: 0.15		
				В	Labour	All India Consumer Price Index for Industrial Workers – CPI (IW) by the Labour Bureau, Ministry of Labour, Government of India. (Base Year 2001 = 100)	Bidder to specify			B: 0.26-0.30		
				С	Steel (1.3.14.4) #		Bidder to specify Bidder	**	*	C: 0.22-0.26		
				D	Cement (1.3.13.5)#	All India Wholesale Price Index by the	to specify	**		D: 0.08-0.12		
				Е	Fuel & Power (1.2)#	Reserve Bank of India. (Base Year 2011-12 = 100)	Bidder to specify Bidder	**	*	E: 0.08-0.12		
				F	Plant & Equipment (1.3.18)#		to specify	**		F: 0.10-0.12		
					Total			**	1.00	Space Rail		
				"# Fo	r "Material"	f Notes: (a) that stip : Commodities inderve Bank of India.	x numbe			Vholesale Price		
				Howe i)	Total : Shall l calcul) Total :	re a few items to sel 5 items for Index co bidder use 13140400 ation? 8 items for Index co bidder use 13130500	de C suc 00 comm de D suc	h as 13140 odity code h as 13130	040000 ~ : e for coeff 050000 ~	1314040004. icient 1313050007.		

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				calculation? iii) Total 23 items for Index code E such as 1200000000 ~ 1203000001. Shall bidder use 1200000000 commodity code for the coefficient calculation? iv) Total 77 items for Index code F such as 1318000000 ~ 1318150002. Shall bidder use 1318000000 for the coefficient calculation? Please clarify the exact commodities code for the above 4 items so that bidder can input the appropriate Bidder Proposed Weightage in Column 5.	

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32. Part 2 Section V1-3	Drawings from Addendum No. 6_Attachment 1 A. LIST OF REVISED DRAWINGS TD-JIC-IC1-TDC-B01-UST-NTU-00220001	Main tunnel portal permanent reinstatement as associated works	Drawing 00220001 / PLAN FOR HANDING OVER OF MAIN TUNNEL PORTAL LAND TO C3 AND P1(A) CONTRACTOR (MILESTONE No-4) Drawing Note stipulates that "Work to be completed before handing over to C3 and P1(A) Contractor" are as follows; 1. Works of cut & cover tunnel and portal structure, 2. Boundary wall around permanent works area, 3. Drains in permanent area, 4. Backfilling of cut & cover tunnel and dressing of permanent works area and 5. Pier P1(A): Size of pier foundation is tentative. Bidder notes that the works listed in above Notes Nos.1 to 4 are located outside of handing over area and, therefore, considers that reinstatement works here such as drain, boundary wall, backfilling as well as turfing may be able to continue without affecting the handing over to C3 and P1(A) Contractor (950 days). Please confirm. This area may be able to continue to construct without disturbing C3 and P1(A) contractor	Refer Addendum No 9 Item No 1.
33. Part 2 Section V1-3	Drawings from Addendum No.	Discrepancy on the drawing.	5. <u>DRAWING 20490004 / MAIN TUNNEL PORTAL-PERMANENT REINSTATEMENT AND ASSOCIATED WORKS (GENERAL ARRANGEMENT DRAWING)</u>	Refer Addendum No 9 Item No 1.

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		7_Attachment 1 A. LIST OF REVISED DRAWINGS		n. There are in Table a	and POINT ID as stip	en PERMANENT AR pulated on the drawing	REA COORDIN	NATES	
		TD-JIC-IC1- TDC-B01-			PERMANENT AR	EA COORDINATES			
		UST-NTU-		ID	EASTING	NORTHING	NGL		
		20490004		B10	281329.9580	2112129.4960	25.50		
		Page 3 of 9		B6A	281361.0960	2112065.2100	32.00		
				B6	294357.4960	2117626.1450	42.00		
				В7	294263.4220	2117603.3470	41.50		
				B8A	294340.9950	2117716.2850	31.50		
					201202 7000	2112121 0170	20.50		
				B9	281362.7960	2112134.9470	32.50		
				B9 38 5 38 5 38 5 38 5 38 5 38 5 38 5 38	96.80M ROND	On Printing Controlled And Andrews And	32.50		

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Sl. No. 291002	Document	Page no / Clause No.	Provisions as Per-Bidding Documents/Subject/Title/Item as mentioned by the Bidder	Bidder Query	Employer's Reply
34.	Part 3, Section VIII, Part-B Specific Provisions,	Sub-Clause 4.2, Performance Security, Page 12 of 33 Addendum 3_Item 100 Page 41 of 58 and Addendum 7_Item 5 Page 2 of 10	Discrepancy for Performance Security between Addendum 3 and Addendum	Addendum 3_Item 100 stipulated that: In the event the Contractor fails to provide the Performance Security within 28 days from the date of issue of the LOA, it may seek an extension of time for providing the performance security for a period not exceeding a further 15 days on payment of damages for such extended period in a sum calculated at the rate of 0.005% of the Accepted Contract Amount less Provisional Sums for each day until the Performance Security is provided. Addendum 7_Item 5 stipulated that: In the event the Contractor fails to provide the Performance Security within 28 days from the date of <i>receiving</i> of the LOA, it may seek an extension of time for providing the performance security for a period not exceeding a further 15 days on payment of damages for such extended period in a sum calculated at the rate of 0.005% of the Contract price for each day until the Performance Security is provided. Please confirm that Addendum 7 supersedes Addendum 3.	Refer Addendum No 9 Item No 30.
35.	Part 2 Section V1-3	Drawings from Addendum No. 7_Attachment 1 A. LIST OF REVISED DRAWINGS TD-JIC-IC1-TDC-B01-UST-NTU-23510001 Page 5 of 9	Pitching on Slope - No detailed information on the drawing and no BOQ items provided.	6. Drawing 23510001 / ADIT TUNNEL PORTAL-PERMANENT REINSTATEMENT AND ASSOCIATED WORKS (CULVERT DETAILS) (1) There is no detailed information stipulated on the drawing for "Pitching to be done on these slope" and no BOQ items provided.	Refer Addendum No. 9 Item No. 1 and Item No 3.

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Sl. No Reg. No. 291002	Document	Page no / Clause No.	Provisions as Per-Bidding Documents/Subject/Title/Item as mentioned by the Bidder	Bidder Query	Employer's Reply
36.	Addendum No. 6 Attachment 2 Part 2 Section VI-1 Works Requirement (General	Clauses 6.9.1 & 6.9.2 Page 93 of 159	Maximum permissible noise limits.	Please provide detailed information and BOQ items. It is stipulated on the following Clauses: Clause 6.9.1 "The Contractor is responsible for complying with the Noise Pollution (Regulation and Control) Rules (2000), particularly residential area and silence zone as per the rule." Clause 6.9.2 "The Contractor shall ensure that noise generated by work carried out by the Contractor and his subcontractors during daytime and night time shall not	The provisions of Sub-Clause 6.9.1 and 6.9.2 are self-explanatory.
	Requirement (General Specifications)			exceed the stipulated maximum permissible noise limits, whether continuously or intermittently. In the event of a breach of this requirement, the Contractor shall immediately re-deploy or adjust the relevant equipment or take other appropriate measures to reduce the noise levels and thereafter maintain them at levels which do not exceed the said limits. Such measures may include without limitation the temporary or permanent cessation of use of certain items of equipment." We have verified the Noise Pollution (Regulation and Control) Rules (2000) and it is in our understanding that as indicated on the Precaution in Construction Activities, Item (b) "The maximum noise levels near the construction site should be limited to 75 dB (A) Leg (5 min) for industrial areas and 65 dB (A) Leg (5 min) in other areas" should be considered as the maximum permissible noise limits being required by the above Clause 6.9.2. Please see the excerpt below from page 20/33 of the abovementioned document:	

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				In the era of fast urbanization of buildings and roads, the demolition and the repair activities along with the huge machines used for the purposes create a great deal of noise to the annoyance of the people living near the sites of construction. Hence such works are also a potential source of noise pollution. Precautions in Construction Activities (a) Acoustic barriers should be placed near construction sites. (b) The maximum noise levels near the construction site should be limited to 75 dB (A) Leg (5 min) in industrial areas and to 65 dB (A) Leg (5 min) in other areas. (c) There should be fencing around the construction site to prevent people coming near the site. (d) Materials need to be stockpiled and unused equipment to be placed between noisy operating equipments and other areas. (c) Constructing temporary earth and around the site using soil etc., which normally is hauled away from the construction site. Please confirm if our understanding is correct.	
37.	Addendum No. 6 Part 2 Attachment 2 Section VI-1 Works Requirement (General Specifications)	Clause 6.9.3 Page 93 of 159	Definition of "Significant" noise	It is stipulated that "The Contractor shall cease any activity likely to produce "Significant" noise at all locations that are less than 150 m from residential area and silence zone as per the Noise Pollution (Regulation and Control) Rules (2000), between the hours of 10.00 pm and 6.00 am, and on Sundays and public holidays. The Site near sensitive zone as per the Noise Pollution (Regulation and Control) Rules (2000) shall be surrounded by the temporary noise barriers if adjacent work is necessary." Please clarify the definition of the term "Significant" on the above paragraph.	Refer Addendum No 9 Item No 7.
38.	Part 2, Section VI-2 Specification (Technical Specification)	Cl.4.10 Page 41 of 199	Backfill Concrete	Bidder acknowledges the Employer's Response to Queries No. 1 Item 166 and revised Sub-Clause 4.10 (3) which stipulates that "Wriggle survey shall be carried out after breakthrough of each TBM to check the intrados of built tunnel with respect to design tunnel alignment. Based on the report of wriggle survey the Contractor shall propose final horizontal and vertical alignment of the tunnel ensuring no infringement to SOD to obtain approval from the Engineer." The revised Sub-Clause 4.10(3) does not require the backfill concrete to await the results of wriggle survey. Please confirm that the Contractor can place back fill concrete before breakthrough of TBMs in order to shorten the construction period. We would like to note that such arrangement is essential to shorten the period required for post-tunneling works.	Bidder's understanding is correct. However, the responsibility of achieving the final vertical and horizontal alignment lies with the Contractor.
39.	Part 2, Section VI-2, Addendum 3_ Item No. 54 Page 20 of 58 and DRAWINGS 5. NATM MAIN TUNNEL	Sub-Clause 5.15, Page 100 of 199	Standard Value of Pull Out Strength Test	It is stipulated in Item No. 54 that "(7) Pull out test for anchor bolts in tunnel lining Anchor bolts shall conform to specifications as shown in the Drawings. The Contractor shall submit test certificate for material and physical properties of anchor bolts. Pull out strength test shall be carried out at every 500m length of the tunnel at 3 locations (on one anchor bolt at each location). All the anchor bolts within the stretch of 500m shall be deemed to	Refer to Drawings of support pattern of NATM tunnel. TD-JIC-IC1-TDC-B01-UST-NTU-20060000 to TD-JIC-IC1-TDC-B01-UST-NTU-20091000, TD-JIC-IC1-TDC-B01-UST-NTU-20140000 and TD-JIC-IC1-TDC-B01-UST-NTU-23080001 to TD-JIC-

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Page 49	-54 of 59			have passed the test if none of the three anchor bolt fails in pull out test. If any	IC1-TDC-B01-UST-NTU- 23110001.
				anchor bolt fails, the complete group of anchor bolts at location of failed test	
				shall be reconstructed as directed by the Engineer. In addition, tests shall be	
				carried out at 3 more locations within the stretch of 500m. None of the three	
				additional anchor bolts shall fail the test."	
				We understand that the Contractor will have to carry out a pull out strength	
				test as stated in the above highlighted excerpt but there are no information	
				regarding the standard value of pull out strength test to be found in the	
				following NATM MAIN TUNNEL drawings:	
				"TF-JIC-IC1-TDC-B01-UST-NTU – 20430001"	
				"TF-JIC-IC1-TDC-B01-UST-NTU – 20440002"	
				"TF-JIC-IC1-TDC-B01-UST-NTU – 20450001"	
				"TF-JIC-IC1-TDC-B01-UST-NTU – 20460001"	
				"TF-JIC-IC1-TDC-B01-UST-NTU – 20470001"	
				"TF-JIC-IC1-TDC-B01-UST-NTU – 20480000"	
				Please provide the standard value/s for the pull out strength test.	

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