

NAGPUR METRO RAIL CORPORATION LIMITED

Date: 25.06.2016

Tender No. N1TR01/2016

Name of the work: Design, Supply, Installation, Testing & Commissioning of Switching Substation, Receiving Cum Auxiliary Main Cum Traction Sub Stations Including High Voltage Cabling from Grid Substation, 33kV Cable Network, ASS & SCADA System for Nagpur Metro Rail Project

Corrigendum-II

Part A: Reply to Pre-bid queries

Part B: Addendum



General Manager
(Procurement)
NMRCL, Nagpur

Corrigendum - II, Part A: Reply to Pre-bid queries

Overall SN	SN	Vol No.	Clause no.	Bid Condition	Bidder's Queries	NMRCL's Response
1	1	Part 1, Annex IV-A (Pricing Document) & Part 2, Section VII B, Chapter 3	Cl. No. 9, Page 6 of 155 & Cl. No. 3.2.2.8.2, Page 28 of 219	For cable laying, fees deposited by the Contractor to Government Agencies for obtaining permission for laying of EHV cables shall be reimbursed by NMRCL on submission of documentary evidence of payment. Only road restoration charges paid by the Contractor to the civic agencies will be reimbursed by NMRCL on submission of documentary evidence of payment. If for some stretch, road restoration is to be done by the Contractor, the price shall be included in the Price Schedule.	<p>We would like to bring to your kind notice that in addition to the fees deposited by the Contractor to Govt Agencies for obtaining permission, road restoration charges paid by Contractor to the civic agencies should also be reimbursed by NMRCL. However in the clause referred it is stipulated that only restoration charges will be reimbursed by NMRCL.</p> <p>We presume that its a typographical error request you to correct the same as follows. "Only road restoration charges paid by the Contractor to the civic agencies will also be reimbursed by NMRCL on submission of documentary evidence of payment.</p>	<p>Clause 9 of Pricing Document and Clause 3.2.2.8.2 (b) of PS amended</p> <p>Refer to addendum</p>
2	2	Part-1, Anx IV-A (Pricing Document) & Part-2, Sec-VII B, Chapter-3	Cl. No. 9, Page 6 of 155 & Cl. No. 3.2.2.8.2 Page 28 of 219	e4	<p>In the last sentence of clause under reference it is stipulated that "If for some stretch, road restoration is to be done by the Contractor, the price shall be included in the Price Schedule."</p> <p>Our understanding is that road restoration in land/areas not owned by NMRCL i.e., land / areas owned by PWD, NIT, BSNL, Municipal Corporation, other civi agencies, etc will be carried out by respective civic agencies against payment by Contractor. This payment will be reimbursed by NMRCL upon submission of documentary evidence.</p> <p>Apart from this road restoration coming under NMRCL owned land/area viz., RSS/GSS only to be included in the Price Schedule. Please confirm that our understanding is correct.</p>	Refer to SN 1 above
3	3	Part-1, Anx IV-A (Pricing Document) & Part-2, Sec-VII B, Chapter-3	Cl. No. 9, Page 6 of 155 & Cl. No. 3.2.2.8.2 Page 28 of 219	For cable laying, fees deposited by the Contractor to Government Agencies for obtaining permission for laying of EHV cables shall be reimbursed by NMRCL on submission of documentary evidence of payment. Only road restoration charges paid by the Contractor to the civic agencies will be reimbursed by NMRCL on submission of documentary evidence of payment. If for some stretch, road restoration is to be done by the Contractor, the price shall be included in the Price Schedule.	<p>Please confirm that the price quoted by the bidder will be excluding the following ROW (Right of Way) charges and shall not be considered for price bid evaluation,</p> <p>i) The fees deposited by contractor to government agencies for obtaining permission for laying of EHV cables.</p> <p>ii) Road restoration charges paid by the contractor to the civic agencies</p> <p>The same will be paid to the bidder by NMRCL extra at actuals against documentary evidence over and above the contract price.</p> <p>Please note that without the above clarity some bidders may include ROW & road restoration charges in the price bid and some others may not, which will lead to major disparity amongst bidders for commercial evaluation. In order to bring all Bidders at par, we request to confirm the above.</p>	Refer to SN 1 above

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4	4	Part-1, Anx IV-A (Pricing Document) & Part-2, Sec-VII B, Chapter-3	Cl. No. 9, Page 6 of 155 & Cl. No. 3.2.2.8.2 Page 28 of 219	For cable laying, fees deposited by the Contractor to Government Agencies for obtaining permission for laying of EHV cables shall be reimbursed by NMRCL on submission of documentary evidence of payment. Only road restoration charges paid by the Contractor to the civic agencies will be reimbursed by NMRCL on submission of documentary evidence of payment. If for some stretch, road restoration is to be done by the Contractor, the price shall be included in the Price Schedule.	We would like to bring to your kind notice that the time duration taken for reimbursement ROW / statutory charges / fees deposited / road restoration charges paid to Civil Agencies is not specified. We request you to kindly stipulate the time duration taken for reimbursement of the same or kindly confirm that it shall be reimbursed within 28 days from the date of submission of documentary evidence of payment.	The general terms for IPC and payment release time shall apply here No further explanation foreseen and no changes foreseen
5	5	Part-2, Sec-VIII, GC & Sec-IX, PS	Cl. No. 4.13, Pg 35 & Cl. No. 30, Pg 127	Unless otherwise specified in the Contract the Employer shall provide effective access to and possession of the Site including special and/or temporary rights-of-way which are necessary for the Works. The Contractor shall obtain, at his risk and cost, any additional rights of way or facilities outside the Site which he may require for the purposes of the Works	Delay on account of obtaining ROW (Rights of Way) approval not attributable to Contractor shall not be liable to levy Liquidated Damages, please confirm.	The clauses are self-explanatory
6	6	Part-2, Sec-VII B, Chapter-7	Cl. No. 7.1.3.1.10, Page 125 of 219	The transformer losses shall not exceed specified maximum values as per Appendix B Technical Sheets (Expected Values).	As per the clause under reference it is said that "The transformer losses shall not exceed specified maximum values as per Appendix B , however maximum permitted Iron & Cu losses for Auxiliary Power Transformer & Traction transformer & for 200kVA Transformer are not available in Appendix B Technical Sheets. Hence we request you to kindly stipulate the maximum permitted Iron & Cu losses for each transformers.	These values for AMS Transformer, Traction Transformer and 200kVA Aux Transformer now provided in Appendix B to PS (Section VII-B) Refer to Addendum
7	7	Part-1, Sec-III, QCR, Apndx-4.4-E	Appendix 4.4-E, Proforma for submitting No-load iron loss and full load copper loss figure		We would like to bring to your kind notice that Auxiliary Transformers of 200kVA rating required at RSS (Receiving substation) are included in the Proforma for submitting No-load iron loss and full load copper loss figure. We request you to add the same i.e., 33kV/415V, 200 kVA - 4 Nos (2 Nos each at RSS-1 & 2).	200kVA transformers added in Table under Appendix 4.4-E Refer to Addendum
8	8	Part-2, Sec-IX, Part- B, PS & Part-2, Sec-IX, Part- B, PS	Cl. No. 48, Sub-CI 14.7, Pg 176 & Cl. No. 51, Sub-CI 14.7, Pg 176	If and to the extent that the Pricing Document expressly specifies in relation to a Cost Centre that the Contractor is entitled to payment in a currency other than Indian Rupees, or the Engineer makes a determination of Cost in a currency other than Indian Rupees, all such payments shall be made in the relevant foreign currency.... All payments to the contractor for the foreign currency portion shall be through a Letter of Credit. & In item no. (e) of Sub-Clause 14.15 the "Central Bank of the country" would mean the State Bank of India and the Base Date would be the date 28 days before the latest date of submission of Bid.	We would like to bring to your kind notice that there is a discrepancy in the clauses referred here with respect to payment of foreign currency. While Cl. No. 48 stipulated that "Cost in a currency other than Indian shall be made in the relevant foreign currency." But Cl. No. 50 stipulates that "For foreign currency portion, Rate of exchange to be used for calculating payments shall be those prevailing as on 28 days before the latest date of submission of Bid as per State Bank of India". Since above referred clauses are contradictory, we presume that only for the purpose of price bid comparison and evaluation Foreign Currency portion of the Bid will be converted to Indian Rupees by using the Exchange (Selling) Rates at the close of business of the State Bank of India 28 (twenty eight) days before the latest date of Bid submittal. For payment of Foreign Currency portion Cl. No. 48 will prevail over Cl. No. 51. Kindly confirm	Confirmed
9	9	Part-2, Sec-IX, Part- B, PS	Cl. No. 46, Pg 170 & 171		Please clarify whether imported equipment under this project can be shipped on High Sea Sales basis? If yes, then various documentary requirements viz., High Sea Sale Agreement, Declaration, Endorsement requirement etc. will be done by NMRCL. Please clarify.	Tender conditions prevail
10	10	Part-2, Sec-IX, Part- B, PS	Cl. No. 46, Pg 170 & 171		Please clarify whether NMRCL shall issue 'C' form for obtaining Concessional Sales Tax for inter-state transaction on sale in transit basis.	Confirmed

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11	11	Part-2, Sec-IX, Part- B, PS	Cl. No. 46, Pg 170 & 171		Please clarify whether Bidder's are required to include BOCW Cess (Building & Other Workers Welfare) in the price bid.	Yes (refer to Attachment to Bid Total i.e. tax breakup sheet of Pricing Document - there is a column for 'any other levy / tax / cess')
12	12	Part-2, Sec-IX, Part- B, PS	Cl. No. 69, Pg 187	The Contractor shall submit a Safe Custody Bank Guarantee in the format given in Section X. Contract Forms against payments made for Plant and Equipment dispatched from manufacturer's works. The amount of safe custody Bank Guarantee shall be equal to 95% percent of the amount due as per relevant clause wherever applicable. The value of the Safe Custody Bank Guarantee would be adjusted for the equipments already commissioned.	We would like to bring to your kind notice that as already Performance Security of 10% of Contract Value is stipulated in the tender which is a sufficient deterrent for performance of the Contractor. Over and above this the requirement of "Safe Custody Bank Guarantee for 95% of the amount due as per relevant clause wherever applicable" adds to heavy financial burden on the Contractors. This will make all the Bidders to load high amount of BG finance charges in the price bid and will make the whole process of tendering uncompetetive. Hence we request you to kindly waive/delete the requirement of <u>Safe Custody Bank Guarantee</u> .	Tender conditions prevail
13	13	Part 1, Sec-II BDS & Part 1, Annex IV-A Pricing Document	ITB 32.1, Pg 60 & Notes (k), Pg 9 of 155	Bids will be compared in Indian Rupees only. This will be achieved by conversion of the Foreign Currency portion of the Bid into Indian Rupees by using the Exchange (Selling) Rates at the close of business of the State Bank of India 28 (twenty eight) days before the latest date of Bid submittal, and then adding the same to the Indian Rupee portion of the Bid. In case this particular day happens to be a holiday, the exchange rate at the opening of the business of the State Bank of India on the next working day will be considered. & The amount mentioned other than INR for the purpose of comparison of the applicable taxes and levies, the exchange rate prevailing on the date of submission of the Tender would be considered.	We would like to bring to your kind notice that there is a discrepancy in the clauses referred. As per ITB 32.1 "Foreign Currency portion of the Bid into Indian Rupees by using the Exchange (Selling) Rates at the close of business of the State Bank of India 28 (twenty eight) days before the latest date of Bid submittal." But as per exchange rate prevailing on the date of submission of the Tender would be considered for conversion". Since the above clauses are contradictory, we presume that ITB 32.1 will prevail over Notes (k) stipulated under Anx IV-A, Price Document. Please confirm.	Note (k) of Attachment to Bid Total (Pricing Document) amended Refer to Addendum
14	14	Part-1, Sec-III, QCR, 4.4 Bidder's Technical Submissions & Part-1, Appendix-P	Cl. No. F2 (Proposal for equipment / systems) & Vendor approval procedure, Cl. No.	The System, including all Sub-systems and Equipment shall be of proven design practice. Sub-systems and Equipment of similar design philosophy shall have been in use and have established their performance reliability on at least one Mass Rapid Transit System or Suburban Railway System in Revenue Service over a period of at least two years. & Proposed Systems/ sub-systems shall have been in use and have established their satisfactory performance and reliability on at least Two mass rapid transit systems (including Railway or Airports) in revenue service over a period of three years or more either outside the country of origin at an average in two different countries or in Indian metros.	The requirement of Proven Design of Systems & Sub-systems are contradictory in clauses referred here. Kindly check. This being an International Competitive Bidding, in order to encourage more competition and make the bid competitive, we request you to consider our below suggestion & request to modify the clause as follows, "The System, including all Sub-systems and Equipment shall be of proven design practice. Sub-systems and Equipment of similar design philosophy shall have been in use and have established their performance reliability on at least one Mass Rapid Transit System or Suburban Railway System or Main Line Railway Or Mono Rail or any Power Utilities Project in Revenue Service over a period of at least two years."	Para F.2 of Form no. 4.4 (Tech Proposal) and relevant Para of Appendix P (Pricing Doc) amended Refer to Addendum
15	15	Part-1, Sec-II, BDS	ITB 2.1	The Employer has applied for financing the funds with KfW Germany & the process is in advance stage.	During the execution of the project, in case funding has been withdrawn by KfW due to reasons not attributable to Contractor, then the payment shall be made by NMRCL including taxes and duties as per existing terms & conditions given under Part-1, 2 & 3 of the tender documents. Please confirm.	No response necessary, it is understandable

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16	16	Part-1, Sec-IV, Anx- IV A Pricing Document	Cl. No. 2, Pg 4 of 155	Price Variation	In view of volatility in raw material prices and the long project duration of 40.6 months, we request you to kindly consider IEEMA/LME Price Variation clause for the following major equipment with the base date as on 28 days prior to date of bid submission. (i) 33kV Cable (ii) 33kV Auxiliary transformer <u>Kindly accept and confirm</u>	Para 2.1 and 2.2 of Pricing Document amended to include 33kV aux transformers and 33kV cables under PVC. Refer to Addendum
17	17	Part 1, Sec-IV, Ann IV-A Pricing Document	Cl. No. 2.2, Pg 4 of 155	Price Variation in EHV Cables (132kV)	We would like to bring to your kind notice that IEEMA PV formula is not available for EHV Cable i.e., >33kV. In fact IEEMA formula issued by you currently in the tender document under Appendix-R, Anx-2 is for 1.1kV to 33kV only. Hence we request you to please consider the Price Variation formula as follows, 	The IEEMA formula (33kV cable) shall be applicable to 132kV cables No changes foreseen
18	18	Part-1, Sec-IV, Anx- IV A Pricing Document	Cl. No. 2.1, Pg 4 of 155	Price Variation: The variation in Transformers (AMS Transformers and Traction transformers in the RSS) prices will be governed by IEEMA formula. Copy of the relevant formula is enclosed as Appendix R: Annexure 1 to this Pricing Document. Latest date of delivery for considering price variation shall not be later than 180 days before the relevant Key Date for commissioning of RSS/ASS (extended Key Date if extension of time is permitted by the Employer). If transformer delivery is delayed, then the variation shall be paid as on above benchmark of 180 days or on as actual date (for early delivery) whichever is earlier.	In case of delays not attributable to Contractor, latest date of delivery for considering price variation shall not be later than 180 days before the actual date of commissioning of RSS/ASS (extended Key Date if extension of time is permitted by the Employer). It shall be the original date Key Date for commissioning. Please confirm.	Tender conditions prevail
19	19	Part-1, Sec-IV, Anx- IV A Pricing Document	Cl. No. 2.4, Pg 4 of 155	Total admissible price variation amount shall be subject to a ceiling of \pm 5% (five only) of the Contract Price	Considering the high value of Transformers & 132kV cable, we request you the price variation shall be at actuals without ceiling. Please confirm.	Tender conditions prevail
20	20	Part-1, Sec-IV, Anx- IV A Pricing Document	Cl. No. 2.4, Pg 4 of 155	Further, the above price variation shall only be applicable for items quoted in Indian Rupees.	This being an International Competitive Bid, and also being funded by KfW, we request you to consider price variation for items quoted in Foreign Currencies also.	Tender conditions prevail
21	21	Part-1, Sec-IV, Anx- IV A Pricing Document	Cl. No. 4.3 & 4.4, Pg 5 of 155	The prices shall not be unbalanced, therefore, the price apportioned in the Cost Center C (Installation and Site Testing) and Cost Center D (System Acceptance Tests, Integrated Testing & Commissioning) shall not be less than 12% and 8% respectively of the total price apportioned to a Section except for Section MS. The price apportioned in the Cost Center A (Detailed Design) shall not be more than 7.5% of the total price apportioned to a Section (except for Section MS).	Kindly reduce the minimum % indicated, with which the prices for Cost Centers C & D to be quoted to avoid the unbalanced bid, as given below. Cost Center - C (Installation and Site Testing) - 10% of the price quoted in the Cost Center - B (Manufacture and Delivery) & Cost Center - D (System Acceptance Tests, Integrated Testing and Commissioning) - 3% of the price quoted in the Cost Center - B (Manufacture and Delivery)	Tender conditions prevail

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22	22	Part-1, Sec-IV, Anx- IV A Pricing Document	Cl. No. 7.1, Pg 6 of 155	Cost Centres under each Section are fixed and shall not be changed by the Bidder. The Bidder, however, may add additional Milestones in a Cost Centre provided such Milestones genuinely relate to that Cost Centre activity. The Cost Centres represent the major items of the Works for which the Employer will pay the Contractor, and the Bidder shall ensure that he has allowed for all his costs he requires for the Contract to meet the Works Requirements.	We request you to allow the Bidders to quote by splitting each Milestone into some Major Sub-Milestones broken into Major items of supply & installation. Kindly confirm. This shall help in improving the Cash flow of the Contractor.	Additional milestones / Splitting milestones is not precluded. Infact Para 7.1 states bidder can add additional milestones within a cost centre. No change foreseen
23	23	Part-1, Sec-IV, Anx- IV A Pricing Document & Part 2, Chapter 9	Section MS, Cost Centre C: Training & Cl. No. 9.6.9, Pg 201 of 219	Training requirement	We would like to bring to your kind notice that there is discrepancy in the no. of man weeks of training between the clauses under reference. Also training listed under Cl.No. 9.6.9.4 is in man months (Total of 24 man months) which is exorbitantly high. We presume that training asked in Price Schedule Cost Centre C will supercede Cl. No. 9.6.9.4 of Particular Specification, please confirm.	Clause 9.6.9.4 of PS amended Refer to Addendum
24	24	Part-1, Sec-1, ITB	Cl. No. 4.2 (e), Pg 8	(e) participates in more than one bid in this bidding process. Participation by a Bidder in more than one Bid will result in the disqualification of all Bids in which such Bidder is involved. However, this does not limit the inclusion of the same subcontractor in more than one bid;	We request you to kindly confirm that vendors which will be proposed by the Bidders for the equipment / systems / sub-systems under Appendix-4.4 C will not be treated as subcontractors.	Clause is self-explanatory and no changes foreseen
25	25	Part-1, Sec-II, BDS	ITB 14.13, Pg 51	The Employer may get, from the Government, partial or complete waiver of taxes, royalties, duties, Labour cess, octroi, and other levies payable to various authorities. The successful Bidder (the Contractor) shall maintain meticulous records of all the taxes and duties paid and provide the same with each running bill. In case the waiver becomes effective, the Contractor will be advised on the process to be followed to obtain the refund from the concerned authority. The Contractor shall arrange for the remit of the refund to the Employer. In case of failure by the Contractor to remit such amounts, the same shall be recovered from amounts due for payment to the Contractor. The performa of undertaking is provided in Section IV: Bidding Form (Form 21).	If in spite of maintaining meticulous records and producing necessary documents to the Statutory Authorities. If they refuse to refund the Taxes & Duties paid, the same should not be recovered from Contractor. Kindly confirm.	The clause is self-explanatory and tender conditions prevail
26	26	Part-2, Part-B, Chapter-3	Cl. No. 3.2.1.6.3, Page 25 of 219	(d) Gas flooding system	(i) We request you to kindly clarify, whether Gas flooding system shall be of "Firetrace type" i.e., Linear Heat Sensing Tube (LHST) Switchgear? (ii) Whether Co2 based / Novec Gas based? (iii) Please provide the specification for the gas flooding system?	Contractor to perform study for necessary requirement, propose design for approval of Engineer. No changes foreseen
27	27	Part-2, Part-B, Chapter-3	Cl. No. 3.2.1.6.3, Page 25 of 219	(d) Gas flooding system	Gas flooding system shall be provided for only equipment being supplied as part of this Contract i.e., AMS, ASS -33kV Switchgear, 33kV Aux Transformer, ACDB, DCDB, Battery & Charger Panels only. Please confirm.	Contractor to perform study for necessary requirement, propose design for approval of Engineer. No changes foreseen
28	28	Part-2, Part-B, Chapter-3	Cl. No. 3.6.11, Page 35 of 219	The Contractor shall install mock-up equipment for system and any such facility(s) considered necessary for the training of Employer's staff in the Mihan / Higna Depot training centre.	(i) We request you to kindly specify the list of mock-up equipment to be supplied & installed, in order to bring all the bidders at par. (ii) Also please let us know whether SCADA training simulator is to be supplied & installed as part of this Contract. If yes, please furnish the technical specification for the same.	Clause 3.6.11 amended Refer to Addendum

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29	29	Part-2, Sec-III, QCR	Sl. No. 3, Appendix 4.4 D	Appendix 4.4 D: Proposals for Construction Machinery	<p>(i) We would like to bring to your kind notice that Sl. No. 3 Rail cum Road, Vehicle / Tower Wagon / Wiring Train will not be required as OCS (Overhead Catenary System) is not in the scope of this Contract. Kindly delete the same.</p> <p>(ii) Further Sl. No. 2. 20 Ton Crane - 5 Nos. & Sl. No. Generator (>25kVA) - 5 Nos. are on higher side. We request you to please reduce the same to 2 Nos. each.</p> <p>(iii) Further as the work will be progressively carried out in Priority section, individual reach (R1 to R4) based on work front availability. Contractor is required to deploy Plant & Machinery as and when required to maintain the work progress with in the Key Dates stipulated in the tender. Please confirm.</p>	<p>Quantity of items 2, 3 and 9 amended</p> <p>Refer to Addendum</p>
30	30	Part-2, Sec-III, QCR	Sl. No. 3, 4.1	Staffing Schedule and Organisation Chart	<p>We would like to bring to your notice that the staffing requirements stipulated are on the higher side. We request you to reduce the same as below,</p> <p>2. Project Manager - 2 Nos. 3. Deputy Manager - 2 Nos. 4. Design Engineer PSI - 1 Nos. 6. Installation Engineer (PSI, ASS) - 3 Teams 7. Civil & Structural Engineer - 1 Nos. 8. SCADA Engineer - 1 Nos.</p>	Tender conditions prevail
31	31	Part-2, Sec-VII B, Chapter-6	Cl. No. 6.1.3, Page 89 of 219	For Validation of design of complete system, the Contractor shall arrange auditing of design of works within the scope of work which primarily covers Receiving cum Auxiliary cum Traction Substation, 33 kV Power Supply system as per IEC and other relevant Standards from reputed Independent Agency (Auditor), who have already undertaken similar job in past for other Metro system.	As per Cl. No. ITB 11.4.2.1, Page No. 48 " The design of the Works can be undertaken by the design wing of the Bidder (the Designer) who has experience in the design / design checking of similar works respectively as in scope of Bid." Is it still mandatory to carry out Validation of design from Independent Agency (Auditor)?	Tender conditions prevail
32	32	Part-2, Sec-VII A, PS	Appendix-7, Page 165 of 167	Noise Monitoring (Not used for this contract)	We would like to bring to your kind notice that it is stipulated that Noise Monitoring is not used for this contract. We request you to reconfirm, whether equipment listed under Appendix-7 to be provided as part of the contract or not.	<p>Note under Heading 7.0 under the Appendix 7 (GS) has been suitably amended.</p> <p>Refer to Addendum</p>
33	33	Part-2, Sec-VII B, PS	Cl. No. 3.2.2.8.3, Page 29 of 219	Deal and resolve in co-ordination with the Employer the interface with Local Authorities like NIT, BSNL, IGL, Power Supply Authorities, PWD, Municipal Corporation and other state government authorities etc. to ensure progressing of the field works as per schedule	<p>(i) We presume that NIT here means Nagpur Improvement Trust. Please confirm.</p> <p>(ii) We request you to please let us know the abbreviation of IGL.</p>	<p>Clause 3.2.2.8.3 (n) of PS amended.</p> <p>Refer to Addendum</p>
34	34	Part-2, Sec-VII B, PS	Cl. No. 3.2.7.3, Page 32 of 219, & Cl. No. 7.3.7.5.1 (c), Page 165 of 219, Cl. No. 7.4.3.2.1, Page 173 of 219, Cl. No. 7.4.3.2.3, Page 174 of 219	The 33kV network shall mainly comprise 33kV Switchgear, 33kV Cable and protection for 33kV Switchgear and all cable path and cable trench where required. 33kV Cable conductive material to be of copper or aluminium in the whole 33kV network and from 33kV bus to Auxiliary Transformer	We request you to please clarify whether 33kV cable will be with Cu or Al conductor. If this option is open, this may lead to disparity in considerations by different Bidders. Hence we request you to limit the option to either Cu or Al, thereby bringing all the Bidders at par.	<p>Clauses 7.3.7.5.1, 7.3.7.6.1, 7.4.3.2.1 and 7.4.3.2.3 of PS amended</p> <p>Refer to Addendum</p>

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35	35	Part-2, Sec-VIII, GC	Cl. No. 1.5 Page 16	Priority of documents	We would like to bring to your kind notice that the priority of documents listed under (d) to (h) are not in line with this Tender volumes. We request you to please update the priority of documents in context of this Tender.	Tender conditions prevail
36	36	Part-2, Sec VII-B, PS, Chapter-6 & Part-2, Sec VII-B, PS, Appendix B Technical Sheets	Cl. No. 6.3.2.6.1, Page 93 of 219 & Sl. No. 24, Page 11 of 75	To limit the short-circuit symmetrical current to an allowable value, the impedance voltage shall never be less than twelve percent (12%). At rated power and frequency on the main tapping, the impedance voltage shall be equal to about twelve point five percent (12.5%).	There is a discrepancy in the impedance voltage value. As per Cl. No.6.3.2.6.1, it is 12.5%. However as per Technical Data Sheet Sl. No. it is 13.8%. We request you to please clarify which one to be considered.	Clause 6.3.2.6.1 of PS amended Refer to Addendum
37	37	Part-2, Sec-VII B, PS	Cl. No. 5.5.3.2.13, Page 65 of 219	The GPS time synchronizing signal as per IEC61850 standard SNTP (Simple network time protocol) for the synchronization of the entire system shall be provided.	We presume that GPS synchronisation clock shall be supplied by Singalling & Telecom contractor. Kindly confirm.	Confirmed
38	38	Part-2, Sec-VII B, PS	Cl. No. 5.6.9, Page 85 of 219	The Emergency Trip Switches will be used for switching off the Traction Power Supply of corridor 1, corridor 2 or depot in case of emergency. The ETS switches are installed in OCC/BCC and at each RSS.	(i) Please clarify whether ETS (Emergency Trip Switch) to be supplied as part of this Contract? (ii) If yes to (i) above, please let us know the quantity at each Station, Depot, OCC/BCC? (iii) If yes to (i) above, please provide the technical specification of ETS? (iv) Please let us know	Contractor to propose design No changes foreseen
39	39	Part-2, SEC VII-A, GS, Chapter-1	Cl. No. 1.12.2, Pg 15 of 167	Design ambient temperature	What is the design ambient temperature to be considered for design of equipment / systems.	The GS clause 1.12 and it subclauses are self-explanatory No changes foreseen
40	40	Part-2, Sec-VII B, PS, Chapter-7	Cl. No. 7.1.3.2.2, Page 132 of 219 & Cl. No. 7.3.5.2, Page 162 of 219	33kV/415V Auxiliary Transformers: Winding - Copper or aluminium	We request you to kindly reconfirm whether 33KV auxiliary transformer winding should be of Aluminium. We would like to inform you that 33kV auxiliary transformers with Al winding is being used in almost all the metros i.e., DMRC, JMRC, KMRC, LMRC, etc and the performance of the same is found satisfactory. We request you to please limit the winding type either Cu or Al, any one. If this option is open, this may lead to disparity in considerations by different Bidders.	Both permitted No changes foreseen
41	41	Part-2, Sec VII-B, PS, Chapter-7	Cl. No. 7.4.2.4.1, Page 171 of 219	The conductor shall be made of copper with a minimum cross section of 240 sqmm aluminium	We would like to bring to your kind notice that in the clause under reference for 132kV cable conductor type is specified as both Cu & Al. We presume it's a typographical error. We request you to please correct the same. If this option is open, this may lead to disparity in considerations by different Bidders.	Clause 7.4.2.4.1 of PS amended Refer to Addendum

Overall SN	SN	Vol No.	Clause no.	Bid Condition	Bidder's Queries	NMRCL's Response
42	42	Part-2, Sec VII-B, PS, Chapter-7	Cl. No. 7.1.2.3.11, Page 120 of 219	The conductors / busbars shall be of copper / Aluminium and enclosure shall be made of Aluminium Alloy.	We would like to bring to your kind notice that as per clause under reference the option of bus bar for 132kV GIS is either Cu / Al. We request you to please limit it to either Cu or Al, any one of it. If this option is open, this may lead to disparity in considerations by different Bidders. Hence we request you to please limit it to either Cu or Al any one which will bring all the Bidders at par.	Tender conditions prevail
43	43	Part-2, Sec VII-B, PS, Chapter-7	Cl. No. 7.4.3.2.3, Page 174 of 219	From SWGR Transformer Secondary to the 33kV Switchgear in the SWGR Room 400 sqmm copper (or as per detailed design)	As per the clause under reference 33kV cable size between SWGR to Transformer is specified as 400 sq.mm Cu. However as per Dwg No. NMRP/LIPL/EL/004 it is specified as 150 sq.mm Al. As there is a contradiction as explained above, request you to please clarify.	Clause 7.4.3.2.3 of PS amended Refer to Addendum
44	44	Part-2, Sec VII-B, PS, Chapter-8	Cl. No. 8.3.1.1, Page 192 of 219	Each connection from the transformer to the circuit breaker shall be made with 2 XLPE cables, two sets of 3 single cores, 400 mm2 Aluminium (subject to detailed design approved by Engineer).	As per the clause under reference 33kV cable size is specified as 400 sq.mm Cu. However as per Dwg No. NMRP/LIPL/EL/004 it is specified as 150 sq.mm Al. As there is a contradiction as explained above, request you to please clarify.	Clause 8.3.1.1 of PS amended Refer to Addendum
45	45	Part-2, Sec VII-C, PS8	Dwg No. NMRP/LIPL/EL/004	33kV cable sizing & conductor type	It specified under the referred drawing that 33kV cable shall be of 240 sq.mm & 150 sq.mm size (depending on From-To) with Al conductor. Kindly confirm that this shall supercede Sec-VII B in case discrepancies. Please confirm.	Refer to response against items at SN 34 and 44 above
46	46	Part 2, Sec VII-A, GS, Chapter 6	Cl. No. 6.9, Page 61 of 167	All test software, with the exclusion of built-in test software, shall be produced inAny test software that is to be delivered to the Employer (for long term testing use) shall be fully documented including source code listings to allow the Employer to maintain the software for the life of the supported system.	Project specific application programme can only be issued for backup and restoration of system purpose. Software development source code is the proprietary of the manufacturer and applies copyright regulation for it's distribution. Source code can't be generated project specific.	Clause 6.9 of GS amended Refer to Addendum
47	47	Part-2, Sec VII-B, PS, Chapter-3	Cl. No. 3.2.2.1, Page 26 of 219 & Cl. No. 7.1.2.2, Page 118 of 219	The scope of work comprises of design, manufacture, shop testing, supply, delivery at site, installation, inspection, testing and commissioning of 3-phase, 132 kV (Rated voltage 145 kV), 1500A, 31.5kA Gas insulated (indoor type) receiving sub-stations at Sitabuldi and 3-phase including EHV cabling works. & The scope of work comprises of design, manufacture, shop testing, supply, delivery at site, installation, testing and commissioning of 3-phase, 132 kV (Rated voltage 145kV), 2000A, 31.5kA Gas insulated indoor type receiving sub-station.	There is discrepancy in the current rating of 132KV GIS as per referred clause, Technical Data Sheets and SLD. Request you to please clarify for 132kV GIS current rating shall be 2000A or 1500 A.	Clause 7.1.2.2 of PS amended Refer to Amendment
48	48	Part-2, Sec VII-B, PS,	Appendix-C Test Sheets	Sl. No. 1. 132/33kV Auxiliary Main Transformer - Sl. No. 5 Short circuit withstand test Sl. No. 3. 132/25kV Traction Transformer - Sl. No. 5 Short circuit withstand test	We request you to please confirm that repetition of short circuit withstand test on Auxiliary Main Transformer, Traction Transformer will not be required in case proposed manufacturer has carried out short circuit withstand test on similar transformer in past and submit the necessary test reports. It is allowed as per IEC 60076-5 (Annexure-A). For purpose of identification of similar transformer same IEC can be followed. We are attaching the relevant IEC for your ready reference. As per the key dates for commissioning of RSS-1&2, Contractor would have time period of 14 to 15 months only. Within this duration it is difficult to carry out short circuit withstand test as it is subject to laboratory slot availability, lead time for manufacturing the transformer, etc. Also reputed manufacturers who possess valid short circuit test report do not intend to repeat the short circuit test.	Refer to Clause 9.2.6 of GS, which is self explanatory No changes foreseen

Overall SN	SN	Vol No.	Clause no.	Bid Condition	Bidder's Queries	NMRCL's Response
49	49	Part-2, Sec VII-A, PS	Cl. No. 9.2.6.1, Page 69 of 167	Type tests will not be required in those cases where the Contractor can produce certified evidence that the required type tests have been performed successfully on identical equipment or equipment which is, for practical test purposes, similar and produced in the factory where the equipment offered is to be manufactured.	We understand from the referred clause that Type Testing is not required in case type tests have already conducted on identical equipment. Hence we presume that Type Test listed under Appendix-C (Test Sheets), Part-2, Sec- VII Page 1 to 14 for various equipment need not be repeated in case it is already carried out on identical equipment. Please confirm.	Confirmed
50	50	Part-2, Sec VII-B, PS	Appendix-B Technical Sheets, Sl. No. 8, Page 69 of 75, Cl. No. 7.2.3.3, Page 152 of 219, Cl. No. 7.2.3.6.6, Page 156 of 219	Rated lightning-peak withstand voltage - 250 kV	<p>Only one OEM satisfies the requirement of 250kV Impulse Withstand Voltage (BIL) with insulation at 52kV which is the requirement of this tender, which will lead to monopoly.</p> <p>During execution of the Contract, Contractor can prove with traction simulation studies that 200kV Impulse Withstand Voltage (BIL) with insulation at 36kV shall be sufficient for this project.</p> <p>Further this project being International Competitive Bid, in order to encourage competition and make the bidding process more competitive.</p> <p>We request you to relax the Impulse Withstand Voltage (BIL) level to 200kV & Rated Insulation Voltage to 36kV as this requirement shall be met by a No. of suppliers. Further this shall help bringing all the competitors to a level playing ground.</p>	<p>Clauses 7.2.3.3 and 7.2.3.6.6 of PS amended; Relevant items of 25kV GIS Switchgear Para 10.9 of Appendix B (Technical Sheets) also amended</p> <p>Refer to Addendum</p>
51	51	Part-2, Sec VII-B, PS, Chapter-6	Cl. No. 5.6.1.3, Page 78 of 219	The SCADA software shall be designed with necessary process display screen to provide a graphical depiction of the power supply network for the NS & EW Corridors.	Whether Large Video Screen (LVS) to be provided at either OCC/BCC as part of this Contract. If yes please let us know the no. of LVS cubes, technical specification, etc	<p>Large Video Screen shall be under the scope of S&T Contractor.</p> <p>Refer to amended item 4 of Table 3.8 of Annexure A (to PS Section VII-B)</p> <p>Refer to Addendum</p>
52	52			33kV switchgear busbar type	We would like to bring to your notice that the type of bus bar for 33kV switchgear is not specified. We request you to please limit the same to Cu. If this option is open, this may lead to disparity in considerations by different Bidders.	Tender conditions prevail
53	53			General	We request you to please let us know the status of viaduct/at-grade civil works, station building works . i.e., whether it is in Tender / Project progress / Award of contract stage for NSPS, NSR1, NSR2, EWR3 & EWR4 corridors.	Civil construction work of Reach 1 and Mihan depot is in progress. Contractors are being appointed for other reaches.
54	54			General	We request you to please let us know the distance between RSS-1&2 to Sitabuldi metro station. This would be required for estimation of 33kV cable length.	<p>Refer to RSS land plan in the Tender Drawing volume (CAD also will be shared with the Bidders)</p> <p>No changes foreseen</p>
55	55			33kV switchgear type	We would like to bring to your kind notice that the option of 33kV Switchgear either SF6 GIS type or VCB Metal Clad type is open. If this option is open, this may lead to disparity in considerations by different Bidders & further lead to disparity in the Price Bid. Hence we request you to please limit the option to either SF6 GIS type or VCB Metal Clad type any one.	Tender conditions prevail

Overall SN	SN	Vol No.	Clause no.	Bid Condition	Bidder's Queries	NMRCL's Response
56	56			25kV switchgear type	We would like to bring to your kind notice that the option of 25kV Switchgear either SF6 GIS type or outdoor type is open. If this option is open, this may lead to disparity in considerations by different Bidders & further lead to disparity in the Price Bid. Hence we request you to please limit the option to either SF6 GIS type or outdoor type any one.	It is only GIS for TSS (in RSS premises); no other 25kV switchgear foreseen in this tender. Tender conditions prevail
57	57	Part-2, Sec-VII B, Appendix-F	Cl. No. 4, Page 3 of 3	The Contractor (or their Designer) is obligated to develop the simulation software (traction power and EMC/EMI simulations) in association with an Indian design-engineering firm and an Indian educational institution. The IPR for the software shall vest with NMRCL, Indian design engineering firm and Indian educational institution jointly. The design firm shall be in business of rendering metro / railway system consultancy for minimum 5 years in India.	As there no. of reputed software companies who are capable of developing simulation software with varied customer exposures but not necessarily metros. We request you please delete sentence "The design firm shall be in business of rendering metro / railway system consultancy for minimum 5 years in India." Contractors should be allowed to chose any reputed software developers for this purpose. Please confirm.	Tender conditions prevail
58	58	Part -2 - Works Requirements - Particular Specification	7.1.3.1.19 Page No. 134 of 219	SWGR & Control Room	We presume that FDA system (Addressable type) for GIS Hall, battery room, Swith gear room, control room only to be considered as part of this Contract. We presume that there is no requirement of interfacing with other panels. Please confirm.	The refered clause appears to be 7.1.4.2 Contractor to propose appropriate design Tender conditions prevail
59	59	Part -2 - Works Requirements - General Specification	18.7.4.4 Page No. 120 of 167	Adequate and suitable fire extinguishers are to be provided at all hot work locations.	We presume that Extinguishers system for GIS Hall, Switch gear room, Battery room, control room only to be considered as part of this Contract. Please confirm.	Contractor to propose design No changes foreseen
60	60	Part -2 - Works Requirements - Particular Specification	7.1.3.1.19 Page No. 130 of 219	Fire Protection & Suppression system	We presume that there is no requirement of HVWS system (High Velocity Water Splinkler) for Transformer in this Contract. Please confirm.	Contractor to propose design No changes foreseen and tender conditions prevail
61	61			General	We presume that there is no requirement of Hydrant system for substation buildings. Please confirm.	Contractor to develop design and assess the requirement No changes foreseen
62	62			General	Please provide detail HVAC & Fire Fighting system specification along with make list.	Contractor to propose design and follow the vendor approval process for equipment / make approval at appropriate time. No changes foreseen
63	63			General	Please confirm the type of Air Conditioning system to be used. Whether Hiwall, Cassette, PAC (Precision Air Condition), AHU (Air Handling Unit) with ducting, VRV (Variable Refrigerent Volume) to be considered for this Contract.	Contractor to propose design No changes foreseen and tender conditions prevail
64	64			General	Kindly provide the number of air changes to be considered for ventilation areas.	Contractor to propose design No changes foreseen
65	65			General	Please confirm the standby units to be considered for AC & ventilation equipments.	Contractor to propose design No changes foreseen

Overall SN	SN	Vol No.	Clause no.	Bid Condition	Bidder's Queries	NMRCL's Response
66	66			General	We presume that there is no requirement of considering any BMS interface for HVAC & FF system. Please confirm.	Contractor to propose design. Such interface shall be assessed by contractor. No changes foreseen
67	67	Part 2, Works Requirement - PS	2.1.4	Rolling Stock maintenance Depot for North South Corridor and East West Corridor will be at Mihan and Higna Respectively	From the tender drawings we understand that the Depot for NMRCL one is at Mihan Nagar and the other at Lokmanya Nagar, where as in the clause under reference it is written as Higna depot. Kindly clarify.	Lokmanya and Higna refer to same place
68	68	Part 2, Works Requirement - PS	2.2.6	Each of the twin RSSs will feed (33kV as well as 25kV) one of the corridors in normal scenario. Interconnections of 33kV and 25kV supplies shall be provided at RSS level itself for feeding power in emergency scenarios.	Kindly clarify whether both the RSS will be in a separate buildings or can be accommodated in a single building. If separate buildings are required, NMRC to ensure the area and space provision for the same.	Separate building - Clause 2.2.3 of PS suitable amended Refer to Addendum
69	69	Part 2, Works Requirement - PS	2.2.7	(a) The Operation Control Centre (OCC) catering to both the corridors will be located at Sitabuldi station area. (b) The Backup Control Centre (BCC) for will be located at NMRCL's Head Office building.	Kindly provide us with the exact locations of OCC and BCC as the same is not clear in the tender drawings.	(a) The OCC shall be in Sitabuldi station building - refer tender drawings for Sitabuldi station location (b) BCC is planned at NMRCL Head office building. The location of BCC has no bearing on scope of PS Contractor. No changes foreseen
70	70	Part 2	Tender Drawings	Drawing Title: 1. OVERALL AUXILIARY POWER FEEDING SCHEMATIC 2. MANKAPUR SWITCHING SUBSTATION SCHEMATIC DIAGRAM	The 132kV SSS at Mankapur is shown as Single Bus System in the referred drawings whereas in single line diagram of 132kV switching station of Mankapur drawing it is been envisaged as double bus system. Kindly clarify the bus bar scheme at Mankapur SSS.	Double bus system - refer Clause 7.1.2.2.5 of PS No changes foreseen
71	71	Part 2	Tender Drawings	Drawing Title: 1. OVERALL AUXILIARY POWER FEEDING SCHEMATIC	132kV RSS-1 and RSS-2 at Sitabuldi is shown as Single Bus System whereas in single line diagram of 132kV RSS, the same is shown as Double Bus System. Kindly Clarify.	Double bus system - refer Clause 7.1.2.2.5 of PS No changes foreseen
72	72	Part 2	Tender Drawings	Drawing Title: 1. MANKAPUR GSS LAYOUT	1. Kindly clarify the space and area available for 132kV SSS at Mankapur GSS Premises. 2. From the tender drawing, we presume that 132kV Mankapur GSS is Air Insulated Substaion. Kindly confirm.	Site visit was organized by NMRCL for Bidders for their appreciation. The SSS will be located within the GSS premises. No changes foreseen
73	73	Part 2	Tender Drawings	Drawing Title: 1. TYPICAL CABLE TRENCH FOR 132KV CABLE LAYING	From the section drawing provided, we presume that this section is for two of the circuits from SSS to RSS. Other two circuits shall be laid based on this typical in same route with different trench. NMRC to clarify.	Your understanding is correct

Overall SN	SN	Vol No.	Clause no.	Bid Condition	Bidder's Queries	NMRCL's Response
74	74	Part 2	1.1.1	Table 1.2 & Note: For the Priority Section (of Reach 1), a separate 5MVA (33kV/25kV) traction substation is being planned by NMRCL through a separate tender. The scope of work of that tender shall include 5MVA traction substation and OCS for Priority Section (including Mihan Depot). Also refer to overall feeding schematic & sectioning schematic drawings and interface specifications (Appendix A) for further comprehension.	We understand that the priority Section shall be two Underground Stations, New Airport and Khapari. 25kV Supply for the Priority section shall be fed from a separate 5MVA TSS through a Separate Tender. Kindly Clarify as to from where the 33kV Aux. Supply for the Stations under Priority is fed from. Kindly furnish the details and scope of work under this package. Also, Share the exact location of this 5MVA TSS.	Priority Section is at grade (2 stations) The LV supply at these two station shall be obtained at 415V level from Discom. The overall feeding diagram provides the schematic arrangement of 5MVA TSS. No changes foreseen
75	75	Part 2	Tender Drawings	Drawing Title: 1.OVERALLAUXILIARYPOWERFEEDINGSCHMATIC-SPECIAL NOTE No. 4: This 5MVA TSS and Priority Section OHE (including Mihan Depot OHE) are not in the scope of Power Supply Contractor and NMRCL shall appoint a separate contractor for these works. However, the SCADA work for 5MVA TSS as well as Priority Section OHE (including depot OHE) along with all SSP's, SS's shall be under the scope of Power Supply Contractor	Kindly clarify the SCADA work at the 5MVA TSS station. 5MVA TSS must be on IEC-61850 based SAS or IEC-60870-5-103 based RTU System.	The SCADA specifications elaborated in the PS applies. However, it is choice of Contractor as per their design. No changes foreseen
76	76	Part 2	Works Requirements & Tender Drawings	General	In Works Requirements it is mentioned Sitabuldi and in Tender Drawings it is mentioned Sitaburdi.	Both names are used interchangeably
77	77	Part 2	Appendix A Clause 1.3	Table 3.1: Interfacing with PSA, Item 4: Shall provide necessary metering equipment at Switching Substation in coordination with PSA and provide check meters for measurement of voltage, current, pf, kVA, kVARh, kWh, at the NMRCL RSSs.	1. Kindly clarify whether feeder protection panels are already available at MSETCL station for retrofitting the energy meters and 132kV feeder protection relays. 2. In case these panels needs to be supplied, please clarify whether suitable space provision is available in MSETCL station for accomodating this panels.	Site visit was organized by NMRCL for Bidders for their appreciation. No changes foreseen
78	78	Part 2	3.2.2.1	The scope of work comprises of design, manufacture, shop testing, supply, delivery at site, installation, inspection, testing and commissioning of 3-phase, 132 kV (Rated voltage 145 kV), 1500A, 31.5kA Gas insulated (indoor type) receiving sub-stations at Sitabuldi and 3-phase including EHV cabling works.	According to clause 7.1.2.2, 7.1.2.10 the current rating for 132kV System is mentioned as 2000A. Kindly Clarify.	Refer to SN 47 above
79	79	Part 2	General	Fault level of 33kV and 25kV System.	Kindly clarify the fault level of 33kV and 25kV system.	Contractor to propose system design downstream of 132kV No changes foreseen
80	80	Part 2	3.2.7.1 c	Interconnections of the 33kV busbars of AMS-1 with AMS-2 through cables, which is normally kept open	NMRC to confirm that Interconnection of AMS-1 and AMS-2 system will happen only when any one of the two AMS system fails. And similarly for TSS- 1 and TSS-2.	Contractor to propose a suitable operation philosophy. No changes foreseen
81	81	Part 2	3.2.7.4	It is envisaged to provide one ASS (in elevated / at-grade) at every passenger station and one ASS at each depot. The above Transformers capacities are based on the preliminary design. The PST Contractor have to do the detailed design and arrive at the transformers capacities.	1. Based on our previous experience, at-grade stations shall have Two ASS. Kindly confirm. 2. Auxillary Transformer capacities can't be finalized by PST Contractor as station load details are not available with us. Kindly confirm the rating or share the load list for the arrived sizing indicated in tender specifications.	1. One ASS with two transformers (effectively two ASSs in one room) 2. Contractor to interface with E&M Contractors for obtaining necessary data. For bidding, the Bidders may consider the capacities as per PS.
82	82	Part 2	3.2.2.6.3 c	All other equipments in the SWGR Room, such as Low Voltage distribution board (LVSB) complete with Incoming and outgoing breakers and feeders, DC- UPS including Batteries, Battery chargers and DC Distribution Boards	Kindly clarify the configuration of battery and battery charger at RSS-1 and RSS-2. i.e. 1x100% or 2x100%	Minimum 2x100%; Contractor to propose designs No changes foreseen

Overall SN	SN	Vol No.	Clause no.	Bid Condition	Bidder's Queries	NMRCL's Response
83	83	Part 2	3.2.7.6	DC Power supply source and charging system equipments shall be provided in the ASS-LV switch gear room for Control (supply) purpose.	Kindly clarify the configuration of battery and battery charger at ASS and AMS with switching station is 1x100% or 2x100%.	Refer to SN 82 above
84	84	Part 2	5.5.4.1.5	The Contractor shall provide the redundant switched optical Ethernet communication infrastructure for SAS. The Contractor shall keep provision of 100% spare capacity for Employer use.	Kindly clarify on the 100% spare requirement as it is very much on higher side.	Tender conditions prevail
85	85	Part 2	5.5.7.2	Technical Requirements for Uninterrupted Power Supplies	Kindly clarify the requirement UPS battery back up period.	Refer to Clause 7.1.4 (8 hours) No changes foreseen
86	86	Part 2	6.5.2.4.4	Auxiliary services	Based on previous metro experience, confirm whether solar panel at the roof top of control building is required or not.	Solar panel is not in the scope of this package
87	87	Part 2	6.5.2.5.5	In battery rooms, the following additional precautions have to be taken: c) Ventilation by means of induced draught is preferred. An air change rate of 5 times the room volume per hour is recommended.	According to Clause 6.5.2.4.3.3(f), Airconditioning is asked for ventilation. Kindly Confirm.	Clause 6.5.2.4.3.3 (f) of PS amended Refer to Addendum
88	88	Part 2	7.1.3.2.4	Transformer Values (d) Efficiency at different load conditions: a. 1/4 – load i. power factor = 1 (Minimum: 98.25%) ii. Power factor = 0.8 (Minimum: 97.85%) b. 1/2 – load i. power factor = 1 (Minimum: 98.1%) ii. power factor = 0.8 (Minimum: 97.65%) c. 3/4 - load i. power factor = 1 (Minimum: 97.8%) ii. power factor = 0,8 (Minimum: 97.25%) d. full load i. power factor = 1 (Minimum: 97.35%) ii. power factor = 0.8 (Minimum: 96.7%)	In Appendix-B Technical Sheets, loss figures for LT transformer is provided. We presume that, according to Cl. 1.5.4 of Part 2 - Works Requirement- PS, Loss Figure will supercede the efficiency values. Kindly clarify since based on Loss Figure, the efficiency will change.	The loss values refer to max loss values. The efficiency values shall be complied. No changes foreseen
89	89	Part 2	7.1.3.1.3	Rated Power: RSS-1 at Sitabuldi ONAN / ONAF 10/12.5 RSS-2 at Sitabuldi ONAN / ONAF 10/12.5	NMRCL shall confirm on the size of Aux. main transformer as 10MVA/12.5 MVA for ONAN/ONAF respectively.	The clause is self-explanatory
90	90	Part 2	7.4.2.2	The 132kV cables shall be able to withstand a short circuit current of 22 kA, for 3 sec	As per clause no.7.4.2.4.1, minimum cross section indicated is 240 sq.mm which will be sufficient to meet the required short circuit current for only 1 sec duration but for 3 sec duration sizing required shall be 405 sq.mm as per calculation. However 500 sq.mm is the standard size available i	Tender conditions prevail
91	91	Part 2	7.3.8.1.1 & 7.3.8.3.1	This specification is made to define the characteristics of low voltage cables used for distribution, control and monitoring. They shall be supplied either in AC or in DC. They shall be used for electrical connection between apparatuses of RSS, TSS, SSP, AMS and ASS. Conductors supplied for low voltage or remote control lines shall have a bare or tinned copper core. Semi flexible conductors shall be used; rigid conductors shall be prohibited. All cables shall comply with IEC Standards	Kindly clarify on the standard of LT cables . Whether need to follow IEC or BS. Also clarify on the insulation whether it is PVC insulation or XLPE insulation.	Contractor may propose appropriate solutions duly complying with the PS requirements and as per their own designs. No changes foreseen

Overall SN	SN	Vol No.	Clause no.	Bid Condition	Bidder's Queries	NMRCL's Response
92	92	Part 2	5.5.2.8 5.5.2.9 5.5.2.10	<p>Each of the IED/BCU/BPU provided shall be provided with its similar backup IED/BCU/BPU to ensure redundancy. This means for each IED/BCU/BPU the second hot standby IED/BCU/BPU should be provided which should automatically take over the system in the event of failure of main IED/BCU/BPU.</p> <p>Redundancy i.e Back up BCU/BPU/IED are to be quoted separately in Pricing Document as a separate item from main BCU/BPU/IED and provision to be kept for addition at a later stage, if required.</p> <p>For GIS Substations, the Local Control Cubicles shall be integrated with the GIS and should house IEC 61850 compliant Bay Control Unit (BCU) which should be SCADA compatible. Free standing LCC with conventional system for monitoring and indication shall not be accepted.</p>	We shall Consider the redundancy of BCU/BCPU for backup. Based on previous experiences, we shall consider One BCU in the Control and Protection Panels and Another BCU in Local Control Cubicle. NMRC to Confirm.	The clauses are self-explanatory
93	93	Part 2	5.5.3.2.7	The data exchange between the electronic devices on bay and station level shall take place via the communication infrastructure. This shall be realized using fiber-optic cables, thereby guaranteeing disturbance free communication. The fiber optic cables shall be run in GI conduit pipes. Data exchange is to be realized using IEC 61850 Communication standard with a redundant managed switched Ethernet communication infrastructure.	Since the Fiber Optic Cables used for SAS purpose is Armored Fiber Cable, GI pipes will not be required for the same. Kindly Confirm.	Tender conditions prevail
94	94	Part 2	Tender Drawings		NMRC to confirm the requirement of 33kV VT in ASS and AMS.	<p>Designs to be proposed by Contractor for approval by the Engineer.</p> <p>No changes foreseen.</p>
95	95	Part 2	General		Kindly Provide Detailed Specification for SCADA and RTU requirements.	<p>The clauses are self-explanatory and adequate.</p> <p>No changes foreseen</p>
96	96	Part 2	5.5.2.6	Redundant Gateway for remote control and monitoring via industrial grade hardware (to OCC and Backup Control centre). The gateway should be able to communicate with OCC protocol. Each gateway shall have two communication ports for simultaneously reporting to two masters. The SAS system shall be connected to two control centers on a fiber optic network using two separate channels and will not be multidropped with other RTUs. The gateway shall have one spare port for connecting to a third master if required in future. The specific protocol to be implemented shall be advised to the successful bidder	Kindly clarify on the scope of RSS to OCC/BCC Connectivity	<p>The scope is elaborated with clarity. Refer to PS and drawings.</p> <p>No changes foreseen</p>
97	97	Part 1	Section NSR1 Section EWR1	Sitabuldi ASS has been included in both the sections. Kindly clarify		<p>Sitabuldi is twin station - one above other for the two corridors.</p> <p>No changes foreseen</p>
98	98	Part 2	3.2.7.4	(a) 250kVA - 2 Nos. for typical Elevated / at-grade Stations (b) 1600kVA - 2 Nos. for ASS at depots	According to Appendix-B Technical sheets, 400kVA Station Auxiliary Transformer is Envisaged. Kindly Clarify.	400kVA transformers not envisaged for NMRCL project at this stage.

Overall SN	SN	Vol No.	Clause no.	Bid Condition	Bidder's Queries	NMRCL's Response
99	99		3.2.1.4 & 3.2.2.4 b	All Civil Works in the SSS, including but not limited to land preparation , drainage, access roads, design and construction of the Switchgear room and control room building complete in all respects and cable paths and cable trenches. Contractor shall also execute all utility works like fire detection, fire alarm, fire fighting, water supply, sanitary & sewage, storm water drainage works, etc.	As per referred clause, Land development will be in bidder scope. Please furnish the proposed FGL (Finished Ground Level) and contour map (If available) for RSSs and SSS, In order to assess the levelling quantity and depth of foundations.	Bidders to assess the same themselves. NMRCL organized site visit for Bidders' appreciation. No changes foreseen
100	100		3.2.8.3	The Contractor will be required to provide suitable access road to the Substation site, from the nearest main road , which shall have necessary width and strength to carry the Power Supply equipments.	As per referred clause approach road from main road to substation is in bidder scope. We considering that the road (Abhyankar marg) passing near to the proposed site boundary is as a main road. Please confirm.	A site visit was arranged by NMRCL. Further assessment to be performed by the Bidders. No changes foreseen
101	101		3		Please furnish the layout of RSSs and SSS indicating the location of building, transformer etc. with showing the boundary of the plot.	Contractor to propose designs for approval by NMRCL No changes foreseen
102	102		Typical cable trench for 132kV Cable laying (Drg No: NMRP/LIPL/EL/0 21- Rev-R0)		As per referred drawing, mile stone/route markers to be laid on the cable route. Please clarify the interval of mile stone to be provided.	Contractor to propose design as per prevalent standards
103	103		3.2.1.2	The scope will include substation buildings, supporting structures, auxiliary equipments, mechanical linkages, hydraulic piping for control devices with pumps...	We propose to provide lattice type structure for equipment support with galvanization thk. of 610g/sq.m, as the same is not mentioned in the tech spec. Please confirm.	Detailed design stage matter No changes foreseen
104	104		6.5.2.5.8.2	The building shall have only ground floor cellar with all partition walls, openings, and all facilities, designed to receive power supply installations.	As per referred clause, we trust that the cellar to be provided only below the switchgear room(GIS). Please confirm.	Contractor to propose design No changes foreseen
105	105		1.4		As per the referred clauses of technical specifications, both BS codes and Indian standard codes are to be referred. We presume that in case Indian standards are available for respective works or materials, the same shall prevail over overseas standards. Please confirm.	Refer to Clause 1.5.6 of PS No changes foreseen
106	106	Part 2 Work Requirement - PS, Chapter 3, Page 33 of 219	3.2.8.7	Along the periphery of the Substation site, Contractor will provide a boundary wall matching with the finish of the RSS building and furnish with appropriate suitable MS gates of approved design. Boundary wall shall be Precast RCC Panels.	Kindly indicate the height of boundary wall to be provided for proposed substations.	A typical boundary wall drawing is attached for reference of Bidders. No changes foreseen
107	107	Part 2 Work Requirement - PS, Chapter 3, Page 24 of 219	3.2.1.3	The term Switching Substation (SSS) includes the various facilities inside the SSS premises, which itself will be located in the Mankapur GSS premises . The works include, but not limited to:	As per scope of work boundary wall is in bidder scope. We understand from the referred clause that, the proposed SSS is to be located within the existing Mankapur GSS. Please clarify, boundary wall need to be provided for SSS.	Boundary wall for SSS is not foreseen as the same is planned within the GSS premises.
108	108	Part 2 work requirement - Section VII-C:Tender drawing			Kindly furnish standard drawings of EHV cable trenches, fence, boundary wall, drains, cable trenches and roads if available.	Contractor to propose designs for approval by NMRCL No changes foreseen
109	109	Part 2 Work Requirement - PS, Chapter 3, Page 23 of 219	3		We propose to provide the grade of RCC as M25, PCC as M7.5 and Reinforcement as FE 500 as the same is not mentioned in the tech spec.	Contractor to propose designs for approval by NMRCL No changes foreseen

Overall SN	SN	Vol No.	Clause no.	Bid Condition	Bidder's Queries	NMRCL's Response
110	110	Part 2 Work Requirement - PS, Chapter 12, Page 218 of	12.2	Offices shall be accessible only from a corridor within the building. The corridor and reception area shall be provided with an external double door.	As per referred clause, Building for employer site representative to be provided under present scope. We trust that the above building will be RCC structure.	Contractor to propose designs for approval by NMRCL No changes foreseen
111	111	Part 2, Annexure VI-A	Page 141, 142 of 155	APPENDIX M: ADJ (ADDITIONAL / UNIT PRICES)	Bidder is being asked to provide unit prices for additional quantities. Please confirm that in case of quantity variation the rates quoted in Appendix M will be used till the total contract value variation remains within 15% of the original Contract Value. Also, a new rate should be mutually agreed if variation in quantity of any item exceeds 15% of the tender quantity. Please confirm	Tender conditions prevail
112	112			General	We understand that the excise duty charged by the vendor shall be reimbursed based on vendor invoice.	Tender conditions prevail
113	113			General	We presume that the Payment for all EHV, HV & LV cables will be made against the quantity supplied. Please confirm.	Tender conditions prevail
114	114			General	Contractor shall be compensated for any price escalation during extension/delay period for the reasons not attributable to Contractor.	Tender conditions prevail
115	115			EHV cable laying	Kindly clarify the following, (i) EHV cable to be laid in trefoil or flat formation, (ii) Both the feeders i.e., 6 cables to be laid in a single trench on one side of the road or each feeder to be laid in either side of the road.	(i) Yes, however, Contractor to propose designs (ii) Total 4 feeders (each with 3 single core cables) shall be laid in two trenches (i.e. 2 feeders in one trench) on either side of the road.
116	116	Part 2, Sec VII-B, Chapter 3	Cl. No. 3.2.1.6.1, Page 25 of 219	All Civil works in the switchgear room, including, but not limited to Design and Construction of the room building complete with lighting (indoor / outdoor), fans, false ceiling, false flooring and air-conditioning (wherever required), power sockets, fire-alarm and detection system, Fire fighting system, water supply, sanitary and sewage disposal and all other facilities needed to make the building functionally and operationally satisfactory	We request you kindly provide the technical specification, employer's requirement, etc more in detail for fire detection, alarm, fire fighting, water supply, sanitary & sewage, storm wate drainage works, etc	Tender conditions prevail
117	1	Part 1, Section I, ITB	14.3 & 14.4; Page no. 14	14.3 The price shall be quoted in the Letter of Bid shall be the total price of the Bid, excluding any discounts offered. 14.4 The Bidder shall quote any discounts and the methodology for their application in the Letter of Bid	Clause 14.3 & 14.4 are contradictory. Kindly confirm that instructions as per Letter of Bid are to be followed.	The clauses are self-explanatory and non-contradictory. No changes foreseen
118	2	Part 1, Section I, ITB	19.8 Page no. 18	19.8 The bid security or a Bid-Securing Declaration of a JV shall be in the name of the JV that submits the bid. If the JV has not been legally constituted into a legally enforceable JV at the time of bidding, the bid security or the Bid-Securing Declaration shall be in the name of all future members as named in the letter of intent referred to in ITB 4.1 and ITB 11.2.	As per Part 1, Section I. Instructions to Bidders; Clause no. 4.13 (e) page no. 33; The Lead member shall be authorized to incur liabilities, receive payment (if provided for in MOU / Consortium Agreement) and receive instructions for and on behalf of any or all Members of the Consortium / Joint Venture. Above clause in effect; you are requested to accept bid security in the name of the Lead Member / JV.	Tender conditions prevail

Overall SN	SN	Vol No.	Clause no.	Bid Condition	Bidder's Queries	NMRCL's Response
119	3	Part 1, Section I, ITB	20.1 Page no. 18 & 21.1, Page no. 20	20.1 The Bidder shall prepare one original of the documents comprising the bid as described in ITB 11 and clearly mark it "ORIGINAL". Alternative bids, if permitted in accordance with ITB 13, shall be clearly marked "ALTERNATIVE". In addition, the Bidder shall submit one set of copies of the bid, in the number specified in the BDS and clearly mark them "COPY". in the event of any discrepancies between the original and the copies, the original shall prevail.	This being an E-tender; there shall be no hard copy submission of "ORIGINAL" and "COPY". Kindly confirm.	Refer to BDS ITB 20.1 and 21.1 No changes foreseen
120	4	Part 1, Section I, ITB	35.5 Page no. 26	35.5 If the bid, which results in the lowest Evaluated Bid Price, is significantly lower than the Employer's estimate or seriously unbalanced or front loaded in the opinion of the Employer, the Employer may require the Bidder to produce detailed price analyses for any or all items of the Schedules, to demonstrate the internal consistency of those prices with the construction methods and schedule proposed. if it turns out that the bid price is abnormally low, the bid may be declared non-compliant and rejected. After evaluation of the price analyses, taking into consideration the schedule of estimated security be increased at the expense of the Bidder to a level sufficient to protect the Employer against financial loss in the event of default of the successful Bidder under the Contract.	Employers estimate is not provided in the tender document. Requesting to provide Employers estimate with respect to the price bid.	Bidders to work out their pricing as per their own assessment and tender requirements No changes foreseen
121	5	Part 1, Section II, BDS	4.13 (f), Page no. 33	In case of the Bidder being successful, the JV / Consortium Agreement shall be registered at any place in India so as to be legally valid and binding on all partners members.	In case of applicant being a Joint Venture or Consortium; Forming a new legal entity / Special Purpose Vehicle (SPV) shall not be binding on the applicant. Kindly confirm.	Tender conditions prevail, which are self-explanatory
122	6	Part 1, Section II, BDS	11.4.1 Page no. 40	The Bidder shall submit / upload (through digital signature of authorized person in e-tender portal of NMRCL) in the Technical Package of its Bid the following documents, duly completed, which in the event of acceptance of the Bid, shall form part of the Contract. i. Complete bid documents along with addendum / corrigendum / clarifications & reply of queries issued online to be down loaded by bidder using DSC of authorized signatory of bidders or JV / Consortium only and entire document to be uploaded by bidder on E-tender portal of NMRCL through the same digital signature of the Bidder.	We request that DSC of Bidder (other than authorized signatory) can be used for E-Tendering as we already have a DSC and having multiple DSC are discouraged by organization and provider.	(a) A firm, who has purchased the Bid Document in his name shall submit the Bid in his own name by using his DSC. (b) In case of JV / Consortium the power of attorney holder of lead member is authorized to sign all legal documents, bid documents and other enclosures. However the digital signature (DSC) of any member of JV/Consortium may be used for accessing /downloading/uploading & submitting the tender documents. (c) Such digital signature (DSC) holders who is submitting the bid / or whose DSC is being used for accessing / submitting the bid, shall be authorized by POA (Lead Partner) of JV/Consortium & a notarized authority letter should be enclosed with the bid

Overall SN	SN	Vol No.	Clause no.	Bid Condition	Bidder's Queries	NMRCL's Response
123	7	Part 1, Section III, Qualification Criteria	Letter of Bid	(e) The total price of our Bid, excluding any discounts offered in item (f) below is: In case of only one lot, total price of the Bid In case of multiple lots, total price of each lot In case of multiple lots, total price of all lots (sum of all lots) (f) The discounts offered and the methodology for thier application are: i) The discounts offered are: ii) The exact method of calculations to determine the net price after application of discounts is shown below:	Since the bid invited is a single bid (LOT) discount if any shall be applicable to quoted price as mentioned in (e) Bidder shall mention calculation for application of discounts stating whether discounts is applicable for specific part of the price bid or on complete price bid to determine the net price.	Query not clear
124	8	Part 1, Annexure IV-A, Pricing Document	NA	Reference BOQ for each substation	Requesting to provide reference BOQ for each substation	Bidder to work out themselves No changes foreseen
125	9	Part 2, PS Appendix F; List of Deliverables	4 page no. 3	Eligibility Criteria for Designer	Kindly confirm that documentary evidence of the Designer's eligibility need not be submitted at bidding stage.	Confirmed
126	10	Part II, Section VII-C; Tender Drawings	NA	SLD and Layout for RSS / AMS / TSS	Requesting to provide SLD & Layout for RSS / AMS / TSS	Refer to Tender Drawings for SLD. Layout to be developed by Contractor. No changes foreseen
127	11	Part 2, Section VII-B, PS	2.2.3 Page no. 20	Distance between RSS and MSETCL SS	Requesting to provide distance between RSS and MSETCL SS	It is 6.1km mentioned in Appendix K2, Section HVC of Pricing Document No changes foreseen
128	12	Part 2, Section VII-B, PS	2.2.3 Page no. 20	SLD of MSETCL SS	Kindly provide SLD of MSETCL SS for details of incoming feeder for RSS	Refer to Tender Drawings for SLD. No changes foreseen
129	13	Part 2, Section VII-B, PS	2.2.6 Page no. 20	Interconnections of 33kV and 25kV supply	Please provide SLD for Interconnections of 33kV and 25kV supply	Refer to Tender Drawings for SLD. No changes foreseen
130	14	Part 2, Section VII-B, PS	2.2.7 Page no. 21	"NMRCL's administrative building (Head Office) will be located as per the relevant drawing"	Requesting to provide relevant drawing	The scope of work under this package is not dependent on the location of the NMRCL's administrative building. No changes foreseen
131	15	Part 2, Section VII-B, PS	2.2.8 Page no. 21	Power supply diagram - Overall power feeding schematic - 25kV OHE Sectioning Arrangement	Requesting to provide diagram	Refer to Tender Drawings. No changes foreseen
132	16	Part 2, Section VII-B, PS	2.3.1 Page no. 21	SCADA architectural diagram	Requesting to provide diagram SCADA architectural diagram	Refer to Tender Drawings. No changes foreseen
133	17	Part 2, Section VII-B, PS	2.3.1 c, Page no. 21	SCADA room layout	Requesting to provide SCADA room layout	Detailed design stage matter No changes foreseen

Overall SN	SN	Vol No.	Clause no.	Bid Condition	Bidder's Queries	NMRCL's Response
134	18	Part 2, Section VII-B, PS	3.2.1, 5.2.2 Page no. 24	"Gas insulated (indoor type)" - Provide GIS room layout	Requesting to provide GIS room layout	Layout to be developed by Contractor during design development. No changes foreseen
135	19	Part 2, Section VII-B, PS	3.2.1.6.3 Page no. 25	"132kV switchgear panel"	We understand that 132kV switchgear panel is module" - Kindly confirm	The clause is self-explanatory
136	20	Part 2, Section VII-B, PS	3.2.1.3 f Page no. 24	Distance between GSS and SSS	Kindly provide distance between GSS & SSS	Refer to Mankapur GSS layout drawing provided in the Tender Drawing volume
137	21	Part 2, Section VII-B, PS	3.2.2.3 Page no. 26	Layout drawing for Switchgear room and control room building	Kindly provide layout drawing for switchgear room and control room building	Layout to be developed by Contractor during design development. No changes foreseen
138	22	Part 2, Section VII-B, PS	3.2.2.6.3 a Page no. 27	33kV Indoor Switchgear panels	Kindly confirm 33kV Indoor Switchgear panels are GIS panel or AIS	Refer to detailed specs in Chapter 6 and 7 The clauses are self-explanatory
139	23	Part 2, Section VII-B, PS	3.2.2.6.3 c Page no. 27	LT Distribution drawings	Kindly provide LT distribution drawings	Designs to be proposed by Contractor for approval by the Engineer. No changes foreseen.
140	24	Part 2, Section VII-B, PS	3.2.2.8.4 Page no. 30	RSS HT cabling distance between GSS to PSA / AMS / TSS	Kindly provide distance between GSS to PSA / AMS / TSS for RSS HT cabling	Refer to SN 127 above
141	25	Part 3, Section IX PC	4.1 Page no. 125	Goods and services from countries under embargo from France, Germany, the European Union or the United Nations are not eligible	Kindly provide list of countries under embargo	Bidders to find out themselves as such information are available in public domain
142	26	Part 3, Section IX PC	4.2 Page no. 126	The performance security amount will be progressively decreased and finally released as under: - The balance 40% shall be released as provided for in PC Clause 4.2	Details regarding release of balance 40% release of performance security is missing. Please provide.	Refer PC 4.2 Part B (SN 2) No changes foreseen
143	27	Part 3, Section IX PC	8.1 Page no. 127	The Commencement Date shall be: Date given in LOA or Employer's Notice to Proceed	Site mobilization period is not given in the tender document. Key dates shall be applicable from date of commencement of work. As there is high penalty under LD clause. We request that sufficient mobilization period of 30-45 days shall be given for commencement of work after LOA. We request that site mobilization period should form a part of tender document.	Tender conditions prevail
144	28	Part 3, Section IX PC	14.3 Page no. 130	The aggregate amount of the Performance Security and the Retention Money shall not exceed 10% (ten percent) of the Accepted Contract Amount.	As per Part III: Section IX. Particular Condition: Clause no. 14.3 Page no. 129 retention is not applicable. Kindly confirm that Part III: Section IX. Particular Condition, Clause no. 14.3 no. 130 refers to and is limited to Performance Security only.	Retention Money is already indicated as 0% No changes foreseen
145	29	Part 3, Section IX PC	4.19 Page no. 143	The Contractor shall be allowed, free of charge, traction power.	Requesting to confirm that traction power 25kV shall be provided free of cost at all work locations / site.	Confirmed The clause is already self-explanatory.

Overall SN	SN	Vol No.	Clause no.	Bid Condition	Bidder's Queries	NMRCL's Response
146	30	Part 3, Section IX PC	5A.1 Page no. 146 & 9.5 Page no. 166	The Design and Construction Standards shall be in conformity with the requirements of "Rules for Opening of a Railway or a Section of a Railway for Public Carriage of Passengers" and "Rules for Introduction of New Type of Rolling Stock" and to the satisfaction of the Commissioner of Railway Safety whose sanction is mandatory for commissioning of the System.	Bidders scope is limited to assisting and providing documentation to Employer for obtaining sanction / NOC from Commissioner of Railway Safety. Obtaining sanction / NOC from Commissioner of Railway Safety is not in the scope of Bidder. Kindly confirm.	Tender conditions prevail
147	31	Part 3, Section IX PC & Section VIII GC	5A.4 Page no. 152 & 2.1 Page no. 20, 8.9 Page no. 56 (GC)	(b) payment of any such Cost plus profit, which shall be included in the Contract Price	We understand that the Contractor shall submit cost analysis towards claims which shall be approved by the Engineer and paid as an extra item / amendment to the contract. Kindly confirm.	The clauses are self-explanatory
148	32	Part 3, Section IX PC	11 Page no. 166	During the Defects Liability Period the Contractor shall provide, free of cost, competent and skilled personnel and maintain adequate stock of spares so as to promptly fulfil his obligations during the Defects Liability Period as laid down in GC and Works Requirements.	We understand that the maintenance shall be non-comprehensive as contractors scope is limited to providing manpower and maintaining spares. Kindly confirm.	The clause is self-explanatory
149	33	Part 3, Section IX PC	11 Page no. 166	During the Defects Liability Period the Contractor shall provide, free of cost, competent and skilled personnel and maintain adequate stock of spares so as to promptly fulfil his obligations during the Defects Liability Period as laid down in GC and Works Requirements.	Kindly confirm that Contractor scope is limited to maintaining mandatory and recommended (OEM) spares only. Replenishment of spares at the end of DLP shall not be contractors scope. All consumable and normal wear and tear items shall be provided by Employer.	The clause is self-explanatory
150	34	Part 3, Section IX PC	14.2 (b) Page no. 129 & 14.2 Page no. 175	The repayment amortization rate (%) shall be as under: The recovery of the above Advance Payment shall be done in respective currencies and shall commence when 20% of the original contract value of the work has been paid in respective currencies (in addition to the Mobilization advance) and shall be recovered by deduction of 25% of the amount of each Interim Payment, until the total of the mobilization advance is recovered. & deductions shall commence in the next interim Payment Certificate following that in which the total of all certified interim payments (excluding the advance payment and deductions and repayments of retention) exceeds 30 percent (30%) of the Accepted Contract Amount; and	Clause 14.2 (b) Page No. 129 & 14.2 Page no. 175 are contradictory. We understand that advance payment shall be recovered in equal amounts from Interim Payment when all certified interim payments (excluding the advance payment and deductions and repayments of retention) exceeds 30 percent (30%) of the Accepted Contract Amount provided that the advance payment shall be completely repaid prior to the time when 90 percent (90%) of the Accepted Contract Amount less Provisional Sums has been certified for payment.	SN 39 of PC Part A (14.2 (b)) amended Refer to Addendum
151	35	Part 3, Section IX PC	14.7 Page no. 177	c) Stage Payment shall be made as under: For all items where Supply, Erection, Testing and Commissioning, all are combined in one item and rates are not identified separately, the following percentages shall apply: - Delivery of material - 75% - Payment after erection - 15% - Payment after successful testing, commissioning and handing over - 10% The maximum payment against the supply will be limited to 85% of the cost of item incurred by the Contractor	We understand that the 90% of item rates shall be paid after erection i.e. the difference in payment due to maximum payment against the supply limited to 85% of the cost of item incurred by the Contractor shall be paid on erection.	This subclause of PC Part B is amended to remove ambiguity Refer to Addendum

Overall SN	SN	Vol No.	Clause no.	Bid Condition	Bidder's Queries	NMRCL's Response
152	36	Part 3, Section IX PC	14.9 Page no. 178	When the Taking-Over Certificate has been issued for the Works, the first half of the Retention Money shall be certified by the Engineer for payment to the Contractor. If a Taking-Over Certificate is issued for a Section or part of the Works, a proportion of the Retention Money shall be certified and paid. This proportion shall be half (50%) of the proportion calculated by dividing the estimated contract value of the Section or part, by the estimated final Contract Price.	As per Clause Part III: Section IX. Particular Condition: Clause no. 14.3 Page no. 129 retention is not applicable. Kindly confirm if this clause refers to performance security and not retention money. If clause 14.9 refers to performance security; it contradicts with % release of performance security mentioned in Part III: Section IX. Particular Conditions clause no. 4.2 Page no. 126	The clause is self-explanatory
153	37	Part 3, Section IX PC	57 Page no. 183			
154	38	Part 3, Section IX PC	18.5 (PC) Pahe no. 131	AOA (any one accident) limit equal to 6% of the Contract value with AOY (any one year) limit of 2 incidents in a year. In the Professional Indemnity insurance Policy the deductible amount shall not be more than 5% AOA limit. All Policy shall be obtained within four weeks from 'date of commencement' and shall be valid for five years after date of issue of "Performance Certificate" or 3 years after commencement of commercial train operations whichever is later. Wherever the Contractor submits policy for shorter period / annual renewable policy, the same shall be retained till required validity period. The Contractor's submission of such shorter period / renewable policy shall be construed as their irrevocable consent for retention of the performance guarantee.	We request that Professional Indemnity Insurance Policy to be valid upto DLP period only.	Tender conditions prevail
155	39	Part 2	GIS make / Country of Origin	GIS make / country of origin	List of Approved / acceptable makes is not provided in the tender document. Kindly confirm that the bidder is free to consider make at their discretion complying to the technical requirement.	Refer Appendix P of Pricing Document for vendor approval process No changes foreseen
156	40	Part 2	List of Approved / applicable Makes	List of Approved / acceptable makes	List of Approved / acceptable makes is not provided in the tender document. Kindly confirm that the bidder is free to consider make at their discretion complying to the technical requirement.	Refer SN 155 above
157	41	Part 1	E-tender notice	Last date of submission of queries for pre-bid by the Bidder	This being DSITC tender, Bidder may come across queries at a later date. We request you accept bidders queries upto 7 days prior to bid submission.	The date of submission of queries was extended by one week after the pre-bid meeting on 20.05.2016.
158	42	Part 1	E-tender notice	Online submission upto 1600 hrs on 28th June 2016 at NMRCL's e-tender portal	We request bid submission extension by 30 days i.e. on 28th July 2016.	Refer to Addendum
159	1	Part 2 Works Requirements02 Section VII-B PST PS	1.1.5	The Power Supply system consists of: (a) 132 kV Switching (c) 33 kV cable rings and the equipment of all the stations andMihan & Higna depots, Substations (Gas Insulated Sub-stations) (b) Two 132/33 kV & 132/25 kV AC Receiving Substations (Gas Insulated Sub-stations), related Auxiliary Main Substations (2), Traction Substations (2), and civil worksincluding 33kV/415V transformers; (d) SCADA, control and monitoring of the complete 132kV, 33 kV,25 kV and 415 Volts,power supply system.	Please confirm whether the lighting on viaduct is included or not	Viaduct lighting is included in the scope of work No changes foreseen
160	2	Part 1 bidding procedure, pricing document	cost center A, page 17 of 155	This Cost Centre A comprises of all activities relating to the detailed design of Khapari to New Airport (incl.) Section: (c) viaduct lighting		
161	3	Part 3 Conditions of Contract	page 43, 6.5	No work shall be carried out on the Site on locally recognised days of rest	What are locally recognized days of rest? How many such days are there in one year? Shall the bidder taken these recognized days into consideration when making the constructin programme?	Refer to PC 6.5 (SN 26 of Part B, Section IX) No changes foreseen

Overall SN	SN	Vol No.	Clause no.	Bid Condition	Bidder's Queries	NMRCL's Response
162	4	Part 3 Conditions of Contract	page 46, 6.12	The Contractor may bring in to the Country any foreign personnel who are necessary for the execution of the Works	What are the applicable law? Could the name of the law be given to the bidders?	Bidders to find out themselves as such information are available in public domain
163	5	Part 2 Works Requirements\03 Section VII-C	Tender Drawings	OVERALL AUXILIARY POWER FEEDING SCHEMATIC	Could it be possible to define the Distance from SSS to RSS? Could it be possible to define the Distance from RSS-NS/EW to SITABURDI	Refer to SN 127 above for distance between SSS and RSS Refer to tender drawings for distance between RSS to Sitabuldi
164	6	01 PS Part 1	Page 106, 4.3 Works Programme and Design Submission Programme	10, a. 33 kV cabling works b. 25kV ac Positive and Negative Cabling c. 132kV HT cabling and RSSs d. 132kV Switching Substation e. ASSs at stations / depots f. Earthing, bonding and stray current mitigation works g. SCADA h. Other Activities	Does Earthing, bonding and stray current mitigation works included in this package? What can be as reference for the design work?	Refer to General and Technical specifications No changes foreseen
165	7	Part 2, Works Requirements, 01 Section VII-A PST GS	Page 50, 5.2.3.2	Transformer Differential Protection shall be based on Numerical relay technology, conforming to IEC 61850 standard and shall be suitable for protection and monitoring of 3-phase SWR Transformers and single phase traction transformers.	please explain What is SWR ?	It refers to 33kV system in context of RSS (SWR denotes Switchroom) No changes foreseen
166	8	Part 1, pricing document	Page 142 of 155	APPENDIX M: ADJ (ADDITIONAL / UNIT PRICES) Line 49 of the table. Automatic Tensioning Device	What is the performance and parameters of Automatic switched short neutral section? Where this device will be installed. Do the bidder of this package need to cover this kind of OCS equipment?	Traction Equipment (25kV) i.e. Items from SN 41 to 50 removed from this package Refer to addendum
167	9	Part 2 Works Requirements/01 PS Part 2	Chapter 3 3.0 scope of work/3.2 DETAILED DESCRIPTION/3.2.7 Auxiliary Network and Auxiliary Sub-Stations	Auxiliary Sub-Stations (ASS) are required to be set up for feeding power to all passenger station Auxiliary load. 33 kV/ 415 Volts Dry type transformers will transform power from 33kV to 415 Volts and distributed through Main LT Panels and up to the final distribution.	What is the scope of work in the Auxiliary Substation(ASS) in the station? Do the cubicles and switchgear of 415 Volts are in the scope of this package?	The 415V LT switchgears are not in scope of this package. Refer to tender drawings for clarity in this regard. No changes foreseen
168	10	Part 2 Works Requirements/02 Section VII-B PST PS/01 Section VII-A PST PS	3.2.12	The scope will include substation buildings, supporting structures, auxiliary equipments.....	Please advise what are the scope of the buildings, should all the facilities such as lighting, HVAC, water supply and drainage be included in this package? If yes, then where will be the demarcation between this package and municipal authorities?	Refer to other relevant parts of the PS and tender drawings for further clarity. No changes foreseen
169	11	Part 2 Works Requirements / 02 Section VII-B PST PS/02 Appendix A Interfaces Power Supply	Table 3.8: Interfacing with Train Control and Telecom Contractor /A Telecom	2. Cable support on viaduct, PST Contractor shall provide cable support on viaduct for signaling and telecom cables	Please confirm this is in the scope of this package.	Confirmed
170	12	Part 2 / 02 Section VII-B PST PS-01/ Section VII-A PST PS	P112	6.5.3.8 Fire detection system	Is the fire alarming system included in the work of scope of this package	Yes, for SSS and RSS buildings. The scope of defined with clarity in the PS. No changes foreseen

Overall SN	SN	Vol No.	Clause no.	Bid Condition	Bidder's Queries	NMRCL's Response
171	13	Part 2 / 02 Section VII-B PST PS-01 Section VII-A PST PS	P30	3.2.6 SCADA	Should the 400V equipment be integrated into the scope of SCADA system? Should the electrical equipment in stations be integrated into SCADA?	Refer to Appendix A Interfaces (to PS, Section VII-B). No changes foreseen
172	1	Section III. Qualification Criteria	Specific Construction & Contract Management Experience - 4.2 (a)	Minimum of Design, Detail Engineering, Supply, Installation, Testing and Commissioning of at least two (2) nos. of 25kV Traction Substation for elevated / at-grade / underground sections of Metro Rail or Suburban rail or mainline railway or depot	Change requested Minimum of Design, Detail Engineering, Supply, Installation, Testing and commissioning of at least two (2) nos. of 25kV Traction Substation for elevated / at-grade / underground sections of Metro rail or suburban rail or mainline railway or depot OR Minimum of Supply, Installation, Testing and commissioning of at least two (2) nos. electrical substation of 110kV or higher voltage. <i>Note: In case the Bidder or a member of the JV / Consortium does not have experience of Supply, Erection, Supervision, Testing and Commissioning of Gas Insulated Substations (GIS), it will be required by the Bidder to engage suitable experienced subcontractor / OEMs having experience in supply, erection, supervision, testing and commissioning of 66kV or above GIS substations of at least 10 nos. with at least two such substations being outside the country of origin of OEM or in India. The credentials, work experience of the proposed GIS subcontractor / OEM and thier MOU with Bidder to participate in this Bid should be submitted with this prequalification package, failing which the prequalification application may be rejected.</i> Remarks: Supportings of other major Railway EPC Clients like CORE Allahabad, DFCCIL & Rail Vikas Nigam Limited are enclosed, who have similar qualification criteria for TSS as requested by us. This will also facilitate increase in participation and more competition.	Tender conditions prevail
173	2	Section III. Qualification Criteria	Specific Construction & Contract Management Experience - 4.2 (b)	Minimum of Design, Detail Engineering, Supply, Installation, Testing and commissioning of 11kV and above indoor Auxiliary Substations One contract of 10 Auxiliary Substations or more OR Two contracts of 14 Auxiliary Substations in total or more OR Three contracts of 17 Auxiliary Substations in total or more	Change requested This will also facilitate increase in participation and more competition. Minimum of Design, Detail Engineering, Supply, Installation, Testing and commissioning of 11kV and above indoor Auxiliary Substations One contract of 7 Auxiliary Substations or more OR Two contracts of 12 Auxiliary Substations in total or more OR Three contracts of 16 Auxiliary Substations in total or more	This qualification requirements is permitted to be met through specialized subcontractor. Refer to Addendum

Overall SN	SN	Vol No.	Clause no.	Bid Condition	Bidder's Queries	NMRCL's Response
174	3	Section III. Qualification Criteria	Specific Construction & Contract Management Experience - 4.2 (c)	<p>Minimum of Supply, Installation, Testing and Commissioning of 110kV and above Substation Systems</p> <p>One contract of at least 2 (two) Substations OR Three contracts of at least 3 Substations in total</p> <p><i>Note: In case the Bidder or a member of the JV / Consortium does not have experience of Supply, Erection, Supervision, Testing and Commissioning of Gas Insulated Substations (GIS), it will be required by the Bidder to engage suitable experienced subcontractor / OEMs having experience in supply, erection, supervision, testing and commissioning of 66kV or above GIS substations of at least 10 nos. with at least ...</i></p>	To be deleted, as already included in 4.2 (a) above	<p>The experience of no. of GIS substations reduced to 2 (from 10 earlier) with one (earlier 2) being outside the country of origin or in India.</p> <p>Refer to Addendum</p>
175	4	Section II. BDS	ITB 22.1	<p>The deadline for bid submission is: Date: 28th June 2016 Time: upto 1600 hrs</p>	<p>The deadline for bid submission is: Date: 28th July 2016 Time: upto 1600 hrs</p>	Refer to Addendum
176	1	Part-1, Sec-II BDS & Sec-IV Bidding Forms	ITB 11.4.1.30, Page 48 & ITB 11.4.1, Page 40 & Sl. No. 19, Page 176	<p>One set of complete Bid Documents (including all addenda) un-tampered, signed and stamped on right hand bottom corner of each page and reference documents signed and stamped.</p> <p>& Physical Sign & seal of bidder on each page of bid documents available online is not required.</p>	<p>There is discrepancy between the referred clauses. Request you to please clarify whether Physical Sign & seal of bidder on each page of bid documents (including all addenda) is required or not?</p>	<p>Signature and stamp is required on all pages of bid documents and the same shall be uploaded through e-tender portal.</p> <p>No changes foreseen</p>
177	2	Part-3, Sec-IX, PC	Page 132 to 135	Summary of Sections (Key Dates / Access Dates)	<p>We would like to bring to your kind notice that Access Dates for ASS rooms & 33kV cabling works is too short. As per the Tender Documents currently the duration for commissioning of ASS & 33kV cabling from Access Dates is between 10 to 25 weeks which is too short. Hence we request you to kindly advance the Access Dates for ASS rooms & 33kV cabling works by 20 to 25 weeks.</p>	Tender conditions prevail
178	3	Part-3, Sec-IX, PC	Sl. No. 39, Page 129 & Sl. No. 47, Page 175	<p>The repayment amortization rate (%) shall be as under: The recovery of the above Advance Payment shall be done in respective currencies and shall commence when 20% of the original contract value of the work has been paid in respective currencies (in addition to the Mobilization advance) and shall be recovered by deduction of 25% of the amount of each Interim Payment, until the total of the mobilization advance is recovered.</p> <p>& deductions shall commence in the next interim Payment Certificate following that in which the total of all certified interim payments (excluding the advance payment and deductions and repayments of retention) exceeds 30 percent (30%) of the Accepted Contract Amount; and</p>	<p>There is discrepancy between the referred clauses with respect to when deduction/recovery of advance shall be started. Please clarify whether deduction/recovery of advance will commence when, (i) 20% of the original contract value of the work has been paid in respective currencies (or) (ii) total of all certified interim payments (excluding the advance payment and deductions and repayments of retention) exceeds 30 percent (30%) of the Accepted Contract Amount.</p>	Refer to SN 150 above
179	4	Part-3, Sec-IX, PC	Sl. No. 40, Page 129 & Sl. No. 41, Page 141	<p>Percentage of Retention Cl. No. 14.3 : 0% (Zero percentage) & Limit of Retention Money Cl. No. 14.3 : The aggregate amount of the Performance Security and the Retention Money shall not exceed 10% (ten percent) of the Accepted Contract Amount</p>	<p>We understand from the referred clauses that there is no Retention in this contract. Only Performance Security of 10% (ten percent) of the Accepted Contract Amount needs to be submitted by the Contractor. Please confirm.</p>	Confirmed

Overall SN	SN	Vol No.	Clause no.	Bid Condition	Bidder's Queries	NMRCL's Response
180	5	Part-3, Sec-IX, PC	Sl. No. 40, Page 129 & Sl. No. 50, Page 178	Percentage of Retention Cl. No. 14.3 : 0% (Zero percentage) & Sub-clause 14.9	Sl. No. 40, Page 129 stipulates that Percentage of Retention is 0% (Zero). As the retention is nil there is should not be any provision to recover the same. Hence please delete Sl. No. 50 of Sec-IX PC.	Tender conditions prevail
181	6	Part-1, Sec-II BDS & Part-3, Sec-IX, PC	Cl. No. ITB 14.16, Page 52 & Cl. No. 46, Page 172	NMRCL project is covered under Project Import chapter 98.01 of Custom Tariff Act according to which only concessional custom duty is payable. The Bidder should avail this benefit and pass on the benefit of the same to NMRCL. & The Contractor shall be solely responsible to find out and ascertain whether their supplies for Nagpur Metro Rail Project will qualify and be eligible for the concession duty benefits under Chapter 98.01 of custom Tariff Act for project Imports & shall manage the Custom Duty and Excise duty applicability and inclusion in their quoted price accordingly.	There is a discrepancy between the clauses under reference. Kindly clarify whether NMRCL project is covered under Project Import Chapter 98.01 of Custom Tariff Act or not?	NMRCL project is covered under Project Import Chapter 98.01 of Custom Tariff Act No changes foreseen
182	7	Part-3, Sec- IX PC	Sl. No. 41, Page 167	The Contractor shall provide Expert team for Maintenance and operation till the end of DLP. The deployment of these Experts and team shall be continuous. These Experts and team shall work under the administrative control of the Employer. These Experts and team shall also ensure that the Client's maintenance staff acquire necessary skills and follow correct procedures and practices in the maintenance, overhaul and repair of various components for the system as well as for the maintenance of the related software (if any) after the DLP. The qualification and experience of the Experts to be deployed by the Contractor shall be as prescribed in the Employer's Requirements. Prior approval of the Employer shall be necessary before the Experts are deployed for maintenance and operation. The Contractor shall replace promptly, Contractor's experts who are not considered suitable by the Engineer.	Regarding Operation, the deliverables and requirements in carrying out operation are largely different from Construction. Operation necessitates the EPC Contractors to mobilize staff with different set of skills and demobilize the unit after completion. The Employer is well equipped to carry out operation as compared to the EPC Contractors. Hence, we suggest that the Operation may be excluded from EPC Contractor's scope. Kindly confirm.	Tender conditions prevail
183	8	Part-2, GS, Appendix-9	Appendix-9 Work areas, Page 167 of 167	(a) Temporary occupation of land is governed by Part VI of Land Acquisition Act 1894 (as amended) which limits occupation to 3 years. (b) An area in Mihan / Higna Depot or some other suitable site shall be provided free of charge for setting up of Contractor's Site Office.	We would like to bring to your kind notice that project duration stipulated in tender is 174 weeks i.e., 40.6 months including extensions if any. We presume that suitable site of sufficient size free of charge will be provided by NMRCL for the entire duration of the project for setting up of Contractor's Site office.	Your understanding is correct
184	9	Part-2, Sec-VII C	--	Tender Drawings	We request you to kindly issue the CAD drawings. This will enable the Bidder's in estimating cable route lengths, cable tray, viaduct lighting, etc.	CAD drawings will be shared with Bidders
185	10	Part-2, Sec-VII C	Dwg No. NMRP/LIPL/EL/0 07	SLD for 132KV SSS at Mankapur	Please double check the line side isolator at the bay connected to RSS, its position shall be the same as incomer bay. Please check and confirm.	The tender drawings are indicative and design shall be the responsibility of the Contractor. No changes foreseen
186	11	Part-2, Sec-VII C	Dwg No. NMRP/LIPL/EL/0 07	SLD for 132KV SSS at Mankapur	Please double check the Bus PT connection point, it shall be connected to the concerned section bus but not the Bus coupler bay, please check and confirm.	The tender drawings are indicative and design shall be the responsibility of the Contractor. No changes foreseen

Overall SN	SN	Vol No.	Clause no.	Bid Condition	Bidder's Queries	NMRCL's Response
187	12	Part-2, Sec-VII B, Chapter-7	7.1.1.52, Page 117 of 219	The voltage transformers shall be of capacitive type	NMRC has asked for capacitive type VT, however in GIS it is not possible to supply capacitive type VT. The relative permittivity of SF6 is quite low when compared to oil and the size of the capacitor in CVT depends upon the relative permittivity of the medium. As the insulating medium is SF6 gas, it is not feasible to design a CVT in GIS. Therefore type of VT is inductive only. NMRC to confirm.	Clause 7.1.1.52 amended Refer to Addendum
188	13	Part-2, Sec-VII B, Chapter-7	7.1.2.3.15, Page 120 of 219	Burden capacity of instrument transformer.	Please note that CT & PT burden shall be designed as per the connected load and requirement as well as the GIS shell size. During detailed engineering detailed burden calculation shall be provided. Please confirm.	Confirmed The clause is already self-explanatory.
189	14	Part-1, Anx IV-A, Pricing Document	B1.3, B1.4, C1.3, C1.4, Page 109 & 111 of 155	132kV outdoor termination for RSS-1 & RSS-2.	We would like to bring to your kind notice both GSS & RSS end being Indoor GIS. 132kV cable end termination shall be of Indoor type only and not outdoor type. Please confirm that this understanding is correct.	Confirmed Refer to Addendum
190	15	--	General	Trefoil clamps for 132KV cable & 33KV cable	(i) Please clarify whether trefoil clamps should be of Aluminium die-cast type or Nylon type? (ii) What should be the spacing between two clamps (every 1m or 2m)?	Contractor to propose design No changes foreseen
191	16	Part-2, Sec VII B, Appnedix C	Cl. No. 1.9, Page 6 of 14	Auxiliary Transformer Test Sheet	We would like to bring to your kind notice that Sl. No. 3 Separate source voltage withstand test can not be conducted at site due to non availability of test equipment. However the same can be carried out at manufacturer's factory premises as a routine test. Hence we request you to please delete Sl. No. 3 test requirement at site.	Tender conditions prevail
192	17	Part-1, Sec-NSD, Pricing Document	Cost Centre B, Section NSD Page 79 of 155, & Section EWD Page 89 of 155	--	We have notice that there is no line item for (i) guideway lighting, socket fixtures, etc, (ii) cable support on guideway The above items would be required between Depot to the nearest station. Request you to add Cost Centres for the same appropriately.	These are covered in NSR1 and EWR3 Sections No changes foreseen
193	18	Part-2, Sec-VII B, Chapter-7	Cl. No. 7.1.2.2.6, Page 119 of 219	New Gas charging equipment with gas cylinders for each set of the newly constructed GIS substation covered in the scope of work; After commissioning this will become property of Employer.	During the prebid meeting on 20th May 2016 it was communicated to the Bidders that RSS-1 & 2 shall be in two separate buildings at Morris College Ground. Further GSS also will be in separate building at Mankapur MSETCL SS. (i) Please clarify whether new gas charging equipment to be provided each set for each GIS substation. If yes, then 3 Sets of gas charging equipment would be required for this project. Please confirm. (ii) Alternatively, we suggest that as RSS - 1 & 2 buildings will be located very close by, it is sufficient to have 1 Set of gas charging equipment for both RSS-1&2. Please confirm if 1 set is sufficient at RSS-1&2 and 1 set at GSS.	Gas charging equipment for each site shall be provided i.e. total 3 sets under this package No changes foreseen
194	19	Part-2, Sec-VII B, Chapter-7	Cl. No. 7.1.2.2.6, Page 119 of 219	The Contractor would be required to hand over them in proper working condition with enough gas for one charging of complete system.	Based on our past experience we suggest that 10% SF6 gas for each GIS substation should be sufficient which will be utilised in case of minor gas leakages. There may not be sufficient space in the GIS building to store 100% Gas (filled in cylinders) required for each GIS substation. Please confirm whether 10% of SF6 Gas for each GIS substation is acceptable to you.	These are detailed design stage matters and shall be dealt with at appropriate time No changes foreseen

Overall SN	SN	Vol No.	Clause no.	Bid Condition	Bidder's Queries	NMRCL's Response
195	20	Part-3, Sec-IX, PC	Sl. No. 6, Page 123	24 months from the date of issue of Taking Over Certificate for the whole of the Works. During the Defects Liability Period the Contractor shall provide, free of cost, competent and skilled personnel and maintain adequate stock of spares so as to promptly fulfill his obligations during the Defects Liability Period as laid down in GC and Works Requirements.	We request you to please confirm that Taking Over Certificate will be issued separately for NSPS, NSR1, NSR2, EWR3, EWR4, NSD, EWD, SSS, HVC, RSS as and when works are completed. Further please confirm that Defects Liability Period for each section will commence from the date of Taking Over Certificate.	Tender conditions prevail, which are self-explanatory
196	21	Part-1, Appendix-M, Pricing Document	Page 140-142 of 155	Appendix-M: Adjustment/ Unit Prices	This contract being Lump Sum & Design Built, we understand Appendix-M shall be applicable only in case of Quantity Variation due to change in scope or Employer's Variation. Hence we request you to confirm that Appendix-M shall not be considered for Price / Financial Evaluation and the same shall be submitted by successful bidder during award of contract.	Refer to notes below table under Appendix M No changes foreseen in this regard
197	22	Part-2, Sec VIIA, Chapter 22 & Part-3, Sec IX, PC	Cl. No. 22.18, Page 145 of 167 & Sl. No. 10, Page 143	Inability to Supply Wherever, the Project Civil Works Contractor is not in a position to supply construction power and water supply to the systemwide contractor, he (the systemwide contractor) shall arrange for his own separate construction power and water supply. & The Contractor shall be allowed, free of charge, traction power.	We request you to please clarify whether Power & Water supply will be provided by NMRCL free of charge or Contractor is supposed to make his own arrangement?	The clauses are self-explanatory Only traction power is free is charge and not other utilities
198	23	Part-2, Sec VII B	Cl. No. 12.2, Page 218 of 219	Site accommodation for the Employer's Representative	(i) We presume that space (250 sq.m area) shall be provided by NMRCL free of charge, (ii) We presume that graded land at required FGL will be made available to successful bidder and that the same shall be free from any encumbrances or uncontrolled fill or Garbage dump. (iii) We presume that the land shall be free from existing utilities – both above and below ground at the time of handing over the site to successful bidder. Please confirm the above.	(i) Your understanding is correct (ii) Bidders shall undertake site survey to assess the same; though generally your understanding is correct in regard to any infringement and encumbrances (iii) Same as for (ii) above <u>No changes foreseen</u>
199	24	Part-2, Sec VII B	Cl. No. 12.2.1.12, Page 219 of 219	The Contractor shall provide an adjacent shaded parking area for 10 cars.	(i) We presume that space required for car parking area shall be provided by NMRCL free of charge, (ii) We presume that graded land at required FGL will be made available to successful bidder and that the same shall be free from any encumbrances or uncontrolled fill or Garbage dump. (iii) We feel parking area for 10 cars is on higher side. We request you to please relook into the same and confirm.	Refer to SN 198 in respect of (i) and (ii) (iii) Tender conditions prevail
200	25	Part-2, Sec-VII A, Chapter 13	Cl. No. 13.3, Page 92 of 167	Notwithstanding the quantities defined in the PS the quantity of Spare Parts shall be sufficient for the full operation of the Permanent Works for the first 5 years following the expiry of the Defects Liability Period for the works ("Contract Spares").	We would like to bring to your kind notice that there is no provision in the Pricing Document/Cost Centre to include the prices pertaining to Spares for 5 years following expiry of the Defects Liability Period. We request you to please introduce a Cost Centre appropriately.	Refer to Appendix L (MS, Cost Center D) and Appendix M (ADJ) Bidders to make further assessment
201	26	Part-1, Sec-IV, Annexure-Pricing Document	Note 1, Page 128 of 155	Appendix-L, MS - Cost Centre No. A: SHE and IT Requirements: The minimum amount to be apportioned under Milestones A1 and A2 above shall be 1% and 1.25% respectively of the Bid Total cost.	We would like to bring to your kind notice that manpower, No. of software licenses, IT requirements are clearly specified in the relevant pages of Tender Documents. Based on the same Contractor's can estimate the costing. However stipulating the amount as 1% and 1.25% of the Bid Total Cost respectively for A1 & A2, is not appropriate. We feel 1% and 1.25% of the Bid Cost is exorbitantly high. This may only lead to unbalanced pricing. Request you to please delete Note 1 and allow the Contractors to quote as per the quantities specified in Tender Documents.	Tender conditions prevail

Overall SN	SN	Vol No.	Clause no.	Bid Condition	Bidder's Queries	NMRCL's Response
202	27	Part-2, Appendix-A Interfaces	Sl. No. 4, Table 3.8 Interface with Train Control & Telecom Contractor	PST Contractor: Shall interface with Train Control Contractor to ensure visual and functional compatibility of the proposed Visual Control Panel (VCP) of OCC SCADA has to be provided by PST Contractor with VCP being installed in the OCC by Train Control Contractor.	We would like to bring to your kind notice that during the prebid meeting on 20th May 2016, it was conveyed that Large Video Screen (LVS) will in Singalling & Telecom package contractor scope. However as per the clause under reference it is in PST package contractor scope. We request you to please clarify whether Large Video Screen (LVS) is included in PST package?	Refer to SN 51 above
203	28	Part-2, Sec VII C	Dwg No. NMRP/LIPL/EL/0 21	Typical cable trench for 132KV cable laying	During the prebid meeting on 20th May 2016 it was communicated to the Bidders that all 4 circuits of 132KV cable shall be laid on one side of the road. However as per the Dwg under reference only 2 circuits are shown. We request you to please revise cable trench drawing considering 4 circuits in a single trench.	Tender conditions prevail (it was discussed that two trenches shall be dug for 4 circuits)
204	29	Part-2, Sec VII B Chapter 7	Cl. No. 7.2.4.8, Page 157 of 219	Power factor improvement	Whether any capacitor bank required to be provided in TSS. As we need to improve the P.F of Transformer, what are the protections need to offer in capacitor which is not mentioned in specifications.	Contractor to perform studies and propose appropriate designs No changes foreseen
205	30	Part-2, Sec VII B Chapter 5	Cl. No. 5.3.2.11.1, Page 55 of 219	Bus bar The protection shall consist of : - F 50: Instantaneous over current protection - F 51: Time delayed over current protection - F50 N: Instantaneous earth fault protection (homopolar) - F51 N: Time delayed earth fault protection (homopolar)	Bus Bar protection on with o/c and e/f for single bus is ok, with two bus system is always difficult, can be given built in feature of o/c and e/f relay.	Contractor to perform studies and propose appropriate designs No changes foreseen
206	31	Part-1, Sec- II BDS	Cl. No. ITB 11.4.2.1, Page 48	The design/Design validation of the Works shall be undertaken by a designer or the design wing of the tenderer (the Designer) who has experience in the design of similar works as in scope of tender. Approval of the proposed Designer intended to be engaged shall be obtained from NMRCL before engaging the Designer by the contractor.	In case the contractor proposes to undertake the design by its own design wing/department, Whether it is mandatory to take approval from NMRCL? Kindly clarify.	The clause is self-explanatory
207	32	Part-1, Anx IV-A, Pricing Document	B1.1, B1.2, C1.1, C1.2, Page 109 & 111 of 155	132kV cables - double circuit to RSS-1 & RSS-2 (route length 6.1 km).	We request you to please confirm that in case of change in the route length 6.1km i.e., either increase or decrease. The payment shall be proportionately made with respect to actual quantities or actual route length. Please confirm.	Note under Appendix C of Pricing Document expanded to address the concern. Refer to Addendum
208	33	Part-2, Sec-VII B, Chapter-7 & Sec VII-C: Tender drawings	Cl. No. 7.1.2.2.1 Page 119 of 219 & SLD (NMRP/LIPL/EL/0 07 & 8)	Each Incomer Bay (2 Nos.) consisting of: (f) Voltage Transformer with motor operated isolation device of rated insulation	There is a discrepancy between the SLD and the specification since there is no isolation device for voltage transformer mentioned in SLD. Please clarify the same.	SLDs are tentative / indicative (as also mentioned therein). Contractor to perform designs. No changes foreseen
209	34	Sec VII-C: Tender drawings	NMRP/LIPL/EL/0 19	Proposed 220 kV extension and 132 kV conversion work	We presume that the current project scope includes only 132kV substation & tapping power from existing Mankapur MSETCL SS through 132KV cable. There is no 220KV extension/conversion as part of the project scope. Please confirm.	Confirmed
210	35	General		Pilot wire protection for HV cables	Kindly clarify the scope of work for the pilot wire protection for cables.	Contractor to perform studies and propose appropriate designs No changes foreseen

Overall SN	SN	Vol No.	Clause no.	Bid Condition	Bidder's Queries	NMRCL's Response
211	36	Part-2, Sec-VII B, Chapter-5	Cl. No. 5.5 Page 62 of 219	Substation Automation System	Kindly clarify whether we have to give a new SAS system for Switching Substation (SSS) in Mankapur or interface with the existing system of MSETCL. If we have to interface please kindly give the details regarding the existing SAS.	A new SAS / SCADA system which shall be interfaced with MSETCL existing system. NMRCL organized site visit to Mankapur GSS for Bidders to get on site appreciation of the work involved. No changes foreseen.
212	37	Part 2 work requirement - particular specification, Chapter 3, Page 106 of 219	6.5.2.4.3.2	The internal finishes and façade finish of the RSS building shall be similar to Depot building and station buildings....	It is mentioned in the referred clause that, The internal finishes and façade finish of the RSS building shall be similar to Depot building and station buildings. However in the tech spec, finishing details for the proposed RSS building is given from clause no: 6.5.2.4.3.3 to 6.5.2.4.3.7. Please clarify, whether the finishing details for RSS building is as per tech spec or it is to be matched with depot and station building. If, the same to be matched with depot and station building. Please furnish the architectural drawing of depot and station building, in order to estimate the finishing quantity.	Follow technical specification and depot / station building designs shall be shared as these are developed. No changes foreseen
213	38	Part 2 work requirement - particular specification, Chapter 3, Page 24 of 219	3.2.1.4 b & 3.2.2.4 b	All Civil Works in the SSS, including but not limited to land preparation, drainage, access roads, design and construction of the Switchgear room and control room building complete in all respects and cable paths and cable trenches. Contractor shall also execute all utility works like fire detection, fire alarm, fire fighting, water supply, sanitary & sewage, storm water drainage works, etc.	As per referred clause, land development work for the proposed RSS is in bidder scope. The proposed RSS location is shown in the drg. no: NMRP/LIPL/EL/018-R0(RSS land plan). If the proposed RSS location will change after award of contract, then the site leveling and foundation works quantity also change accordingly. We trust that, the additional quantity due to location change shall be paid on mutually agreed basis. Please confirm.	The clauses are self-explanatory
214	39	Part-2, Sec-VII B, Chapter-6	Cl. No. 6.1.3, Page 89 of 219	For Validation of design of complete system, the Contractor shall arrange auditing of design of works within the scope of work which primarily covers Receiving cum Auxiliary cum Traction Substation, 33kV Power Supply system as per IEC and other relevant Standards from reputed Independent Agency (Auditor), who have already undertaken similar job in past for other Metro system.	We would like to bring to your kind notice that there is no provision in the Pricing Document/Cost Centre to include the prices pertaining to Independent Agency (Auditor). We request you to please introduce a Cost Centre appropriately.	Bidders to appropriately factor in these costs in Cost Center MS. No changes foreseen
215	40	--	--	General	Kindly clarify our scope for the supply of metering system. As the incomer are coming from MSETCL Mankapur S/s which uses ABT meters (Apex 300 type) please provide the details and make of ABT meters for interface purposes.	Bidders to assess themselves. NMRCL organized site visit to Mankapur GSS for Bidders' appreciation of work involved. No changes foreseen

Overall SN	SN	Vol No.	Clause no.	Bid Condition	Bidder's Queries	NMRCL's Response
216	41	Part-2, Sec-VII C	Dwg No. NMRP/LIPL/EL/025	Typical viaduct cross section with cable arrangement	We would like to bring to your kind notice that Cable Arrangement in the drawing seems to be like a concrete duct. However in Works Requirements & Pricing Document it is specified that 33kV cable, Singalling & Telecom cable to be laid in cable trays. Kindly clarify, whether concrete duct as per Dwg to be followed or cable tray to be provided for 33kV cable, Singalling & Telecom cable.	Bidders to factor in provision of cable trays / brackets. Any changes shall be dealt with at subsequent stage appropriately. No changes foreseen.
217	1	Part 2	Chapter-5, Clause:5.5.2.8, Page No:63	For GIS Substations, the Local Control Cubicles shall be integrated with the GIS and should house IEC 61850 compliant Bay Control Unit (BCU) which should be SCADA compatible. Free standing LCC with conventional system for monitoring and indication shall not be accepted.	As contract requires for Main and backup protection IEDs. We understand that conventional type LCC along with GIS bays will have size limitations to mount both Main and Standby BCU/ IED/BPU. Please confirm if protection IEDs can be provided in the CRP located at control room.	Tender conditions prevail
218	2	Part 2	Chapter-3, Clause-3.2.2.3, Page No:26	The term RSS includes the various facilities inside the RSS premises, bound by a fencing or boundary wall.	Please confirm whether fencing or boundary wall is to be considered.	Refer to detailing in Chapter 6 and 7 (boundary wall) No changes foreseen
219	3	Part 2	Clause- 3.2.2.8.2 Page-28	Only road restoration charges paid by the Contractor to the civic agencies will be reimbursed by NMRCL on submission of documentary evidence of payment.	All charges paid by the contractor to the civic agencies will be reimbursed by NMRCL on submission of documentary evidence of payment. Please confirm.	Refer to SN 1 above
220	4					
221	5	Part 2	Ch-7, Clause-7.1.2.2.7 Page-119	EOT crane with VVVF drive for continuous operation for GIS equipment handling during installation, commissioning and maintenance etc. Crane lifting capacity shall be adequate to handle the heaviest package of GIS but shall not be less than 5 tonnes.	Normally smaller rating (5 Ton) EOT cranes are not supplied with VVVF drive. We propose EOT crane without VVVF drive. Kindly confirm.	Tender conditions prevail
222	6	Part 2	Chapter-6, Clause-6.3.2.4.3 Page-92	The on-load tap changer shall be single-phase enclosure type, installed in a separate oil tank, offering 16 steps (+6step, normal and -9 step), each representing 1.667% of the nominal voltage.	We understand that OLTC is with 16 positions and 15 steps. Please confirm.	Confirmed
223	7	Part 2	Chapter-4 Clause- 4.1.10 Page-37	For all transformers, the transformers losses (iron/copper/load) shall not exceed the expected values specified in Appendix B Technical Sheets.	<ul style="list-style-type: none"> Loss values for all ratings of transformers are not mentioned in Appendix-B, Kindly provide the same. Please confirm whether losses to be quoted at 75deg C or at 95 deg C. 	Refer to SN 6 above Losses values shall be quoted at 75 degree C. Clause 4.1.10 amended Refer to Addendum
224	8	Section III	Appendix-4.4E	Performa to submit No load iron loss and copper losses of transformer for AMT, TT, Auxiliary Transformers.	Kindly confirm if transformers to be designed with minimum loss values along with loss capitalization values as per Appendix-4.4E or Appendix-B shall be followed wherever possible.	Appendix B defines the max (worst case) values. The proposed values shall be within the max defined in Appendix B. The proposed values shall be used for loss capitalization. No changes foreseen
225	9	Part 2	Ch-6, Clause-6.3.2.14.3 Page-98	Metal work & Paint-work: The shade of paint shall be gray shade 631 as per IS: 5.	We propose gray shade "RAL 7032" as paint shade for transformer and accessories. Please confirm.	Detailed design stage matter No changes foreseen
226	10	Part 2	Ch-6, Clause-6.3.2.15.1 Page-98	Transport	We propose transformer to be transported with oil up to winding top and then with Dry pressurized air upto the tank top for safety concerns, as Nitrogen is not safe for humans. Please confirm.	Contractor may propose appropriate method in line with recommended industry practice for approval of Engineer. No changes foreseen

Overall SN	SN	Vol No.	Clause no.	Bid Condition	Bidder's Queries	NMRCL's Response
227	11	Part 2	Ch-7, Clause-7.1.3.1.20.C, Page-131	Fiber Optic Winding Hot spot temperature Monitor: Probes shall have certified Weidman testing for electrical parameters per ASTM D-3426 and ASTM D-149 that is current (no more than 1 year old)	Please note that Wiedman laboratory is country specific, suppliers from different countries comply with different testing laboratories. Test certificates of a laboratory as applicable for the manufacturer of Fiber Optic Winding Hot spot temperature Monitor shall be provided. Please confirm.	Clause 7.1.3.1.20 c amended Refer to Addendum
228	12	Part 2	Chapter-2, Clause-2.1.7.7 Page-48	Efficiency at 1/4 load for 33/0.415kV, 100kVA/200kVA Station Transformer	As per our past experience Vendors are not able to design efficiency mentioned at 1/4 load for 33/0.415kV, 100kVA/200kVA Station Transformer. Also efficiency shall be governed by agreed loss values. Kindly confirm that loss values are final irrespective of efficiencies mentioned in specifications.	Confirmed
229	13	Part 2	Chapter-7, Clause-7.3.5.5, Page-162	Efficiency at 1/4 load conditions for 250kVA and 1600kVA auxiliary transformers	As per our past experience Vendors are not able to design efficiency mentioned at 1/4 load for 33/0.415kV for 250kVA and 1600kVA Station Transformer. Also efficiency shall be governed by agreed loss values. Kindly confirm that loss values are final irrespective of efficiencies mentioned in specifications.	Confirmed
230	14	Part 2	Chapter-2 Clause-6.5.2.5.5	Battery Rooms	As Batteries are of Ni-Cd type, No separate room is required for Ni-Cd battery. Also as per other metro projects Batteries are kept inside the substation along with other equipments. Kindly confirm the same.	Proposal with due risk assessment and complete details may be furnished at detailed design stage by the Contractor for examination by Engineer. No changes foreseen.
231	15	Part 2	Chapter-2 Appendix-B Clause-12.1-5	Battery Type: Maintenance free	Battery Type: Ultra Low Maintenance free Ni-Cd as per IEC 623, Please confirm.	Tender conditions prevail
232	16	Part 2	Chapter-5, Clause-5.5.2.8 & 5.5.2.9 Page-63	Each of the IED/BCU/BPU provided shall be provided with its similar backup IED/BCU/BPU to ensure redundancy. This means for each IED/BCU/BPU the second hot standby IED/BCU/BPU should be provided which should automatically take over the system in the event of failure of main IED/BCU/BPU. Redundancy i.e Back up BCU/BPU/IED are to be quoted separately in Pricing Document as a separate item from main BCU/BPU/IED and provision to be kept for addition at a later stage, if required	As per the clause we understand that backup IED/BCU/BPU which will act as hot standby in case of failure of main IED/BCU/BPU shall be quoted separately. Backup protection functions can be integrated in main IED. Please confirm.	The backup IED/BCU/BPU is included in the scope. Bidders may wish to create appropriate sub-milestones (within the relevant Cost Center) for quoting separately for this item. Tender conditions prevail
233	17	Part 2	Chapter-7, Clause: 7.4.2.5.3 Page-171	The electric resistivity of the conductor screen shall not be more than 5000 Ω cm at 20°C and not more than 25000 Ω cm at the working rated temperature.	Electric resistivity of the conductor screen shall be as per IEC - 60840, Please confirm.	Tender conditions prevail
234	18	Part 2	Chapter-7, Clause:7.4.2.4.1 Page-171	The conductor shall be made of copper with a minimum cross section of 240 sqmm aluminum.	We understand from specifications that EHV cable is of Aluminium. However from referred clause this is not clear. Please confirm Cable shall be of copper or Aluminum conductor.	Refer to SN 41 above
235	19	Part 2	Chapter-7, Clause-7.4.2.6.2 Page-172	The voltage gradient in the cable rated working conditions, at the Uo voltage condition (132 kV) shall be: (a) less or maximum equal to 6 kV/mm at the level of the internal semiconductor (b) less or maximum equal to 3 kV/mm at the level of the external semiconductor	Values shall be in line with IEC 60840. Please confirm.	Tender conditions prevail

Overall SN	SN	Vol No.	Clause no.	Bid Condition	Bidder's Queries	NMRCL's Response
236	20	Part 2	Chapter-3, Clause-3.2.2.8.3.h	Single bonding or Cross-bonding as necessary with SVLs and earthing as per approved design.	Bonding type and SVL's shall be provided in line with the Sheath voltage calculation as per latest applicable standard i.e. IEEE-575. Please confirm.	Confirmed Tender conditions prevail
237	21	Part 2	Chapter-7 Clause-7.1.6.1.7.11 And 7.1.6.1.1 Page-150	Traction return current connecting strip shall be earthed through 240mm ² loop	As per clause 7.1.6.1.1 The Main Earth mesh has to be linked, by means of twin copper bonded Steel connections (equivalent to 120 sq mm copper cables) for the buried rail/connecting strip for traction return current. However, as per clause 7.1.6.1.7.11 connecting strip size shall be 240 sqmm loop. Please confirm whether equivalent to 120sqmm cu cable or 240 sqmm cross section of strip to be considered	Clause 7.1.6.1.1 refers (in the context) refers to buried rail to earthmat connection. Clause 7.1.6.1.7.11 refers to transformer to buried rail. Both are different connections. No changes foreseen
238	22	Part 2	Chapter-6 Clause: 6.5.2.5.6 Page-108	Building shall be supplied with continuous (24 hour) running potable cold water to the pantry and wash rooms	Please confirm the requirement of supplying potable cold water to the wash rooms.	Clause is self-explanatory and no changes foreseen
239	23	Part 2	Chapter-6 Clause-6.5.3.5.1 Page-111	Lighting Equipment: LED Type	Please confirm whether for outdoor areas LED type lighting fixtures to be considered.	Confirmed
240	24	Part 2	Appendix-B, Clause:4.1	GTP- Traction Transformer Percentage Impedance	The percentage impedance is mentioned as 13.8% in the GTP whereas in the specification it is mentioned as 12.5%. Please confirm the requirement.	Refer to SN 36 above
241	25	Part 2	Appendix-B, Clause:4.1	GTP - Traction Transformer Transformer No Load & Copper Loss	Please confirm that losses to be quoted at 95 deg C or at 75 deg C as per IEC.	Refer to SN 223 above
242	26	Part 2	Appendix-B, Clause: 2.2-6	GTP - Auxiliary Main Transformer OLTC	As OLTC is connected in transformer Neutral side. BIL of OLTC shall be same as that of transformer primary neutral. Kindly confirm.	Tender conditions prevail
243	27	Part 2	Appendix-B, Clause: 3.1	GTP - Auxiliary Transformer	In GTP rating of auxiliary transformer is mentioned as 200kVA and in specifications rating of auxiliary transformer is open and can be 100/200kVA. Please confirm the minimum rating of auxiliary transformer.	Para of Clause 7.1.3.2.1 and 7.1.4.1.1 (b) amended Refer to Addendum
244	28	Part 2	Appendix-B, Clause: 5.3.4	GTP-132kV Current Transformer – Coupling Bay	There are CTs on both sides of bus coupler as per SLD. However, GTPs are given for one CT only. Please provide GTP of both CTs of Buscoupler as application of both CTs are different (one is used for protection and other for metering)	The detailed design is Contractor's responsibility. No changes foreseen
245	29	Part 2	Appendix-B, Clause: 5.4.1	GTP - 132kV Voltage Transformer	Capacitive type VT is mentioned in the GTP. However, in GIS it is not possible to supply capacitive type VT. We propose inductive type VT instead of Capacitive VT.	Refer to SN 187 above
246	30	Part 2	Appendix-B, Clause:5.5.1	GTP -132kV LA	Please provide the GTP of 132kV LA to be used in incomer as well as on HV side of transformer.	The detailed design is Contractor's responsibility. No changes foreseen
247	31	Part 2	Clause: 1.12.4	Ambient Temperature - 30 Degree C Maximum Temperature - 47.8 degree C	We understand that in Class 'B' environment, the average ambient temperature shall be 30 Degrees and the maximum temperature for a short duration can be 47.8 Deg. C. Therefore, We understand equipments to be design suitable for an average ambient temperature of 30 Deg C. Kindly confirm.	Clause is self-explanatory and no changes foreseen

Overall SN	SN	Vol No.	Clause no.	Bid Condition	Bidder's Queries	NMRCL's Response
248	32	Part 2	Chapter-7 Clause-7.1.4.4.1 Page-136	GIS supplier should have minimum experience of 05 years for manufacturing of similar GIS substations. The type of GIS offered should have been in satisfactory operation for atleast three years.	We understand that the type of GIS offered should have been in satisfactory operation for atleast 3 years in Metro System. Please confirm.	The clause is self-explanatory
249	33	Part 2	Chapter-7 Clause-7.1.4.4.2 Page-136	The 33kV equipment shall be built according to the SF6 gas insulation technology.	We understand that 33 kV GIS shall be built according to SF6 gas insulation technology. All active parts including the busbars shall be completely encapsulated in SF6 gas. The hybrid solutions wherein the busbars are partly insulated through SF6 gas and partly through other means, shall not be acceptable. Please confirm.	Confirmed
250	34	Part 2	Chapter-7 Clause :7.1.4.4.5 Page-136	In the event of arcing in a compartment, the arches should not extend to the neighbouring compartment. Any failure to the enclosure of the compartment shall not lead to damages in the neighbouring compartments	We understand that arcing in one phase should not get extended to the other phases for the purpose of high reliability and minimizing the damages. Please confirm.	The clause is self-explanatory
251	35	Part 2	Chapter-6 Clause-6.3.3.3 Clause-6.3.3.4 Page-99	27.5kV Switcgear: All circuit-breakers shall follow the same electrical and mechanical characteristics and must be in accordance with IEC standards 62271-100 or RDSO's standard ETS/PSI/116 (4/88) with latest modifications. All isolators shall follow the same electrical and mechanical characteristics and must be in accordance with IEC 62271-102 or RDSO's specification ETI/PSI/122 (with latest modifications).	We understand that mentioned clauses and standards are applicable for AIS type 27.5kV switchgear. Mentioned RDSO standards are not applicable for 27.5kV GIS. Kindly confirm.	No AIS type 25kV switchgear foreseen in this package.
252	36	Part 2	Chapter-7 Clause: 7.2.3.6.2.1 Page-154	The 27.5kV equipment shall be built according to the relevant IEC/EN standards.	Please clarify the relevant IEC/EN standard to be followed for 27.5 kV single pole switchgear.	The standard is IEC 62271 (also refer to Appendix B Data Sheet) No changes foreseen
253	37	Part 2	Chapter-7 Clause-7.2.3.2.1 Page- 152	The current rupturing part consists of a vacuum bottle embedded in silicon rubber to prevent water condensation. Bottle is fastened on hard porcelain brown glazed insulated at 52 kV (according to the IEC 273), and the moving contact is connected by mean of flexible copper braid.	The requirement to have insulation at 52 kV level for 27.5 kV switchgear is not understood. Please confirm the relevant standard.	Refer EN 50124-1 No changes foreseen
254	38	Part 2	Chapter-7 Clause: 7.2.3.3 Page- 152	Impulse withstand (1.2/50 microsecond) in kV (peak): 250 kV for 25 kV,	Please clarify the relevant standard for requirement of Impulse withstand in kVP: 250kV for 25 kV single phase switchgear	Refer SN 50 above
255	39	Part 2	Appendix-B Clause-10.4-12 S.No. 10,11,13 GTP Page-64	30.25kV CT Maximum service voltage (permanent):27.5kV Rated insulation voltage: 40kV Rated Impulse withstand (1.2/50 micro second): 250 kVP	In GIS CTs are located outside enclosure and not at HV potential, these values are not applicable. CT shall be designed as per IEC 61869-1 /-2 suitable for 25kV GIS. Kindly confirm.	Tender conditions prevail

Overall SN	SN	Vol No.	Clause no.	Bid Condition	Bidder's Queries	NMRCL's Response
256	40	Part 2	Appendix-B GTP 33kV Cables Clause:6.2 Page-31	GTP: 33kV Cable GTP:25 kV Cable	Please confirm if cables are armoured or unarmoured.	These are armored cables for RSS/TSS (refer Clause 7.4.1.2). Ring 33kV cables laid on viaduct can be unarmoured depending on the design / risk assessment by the Contractor. Refer to new clause 7.4.1.3. Refer to Addendum
257	41	Part 2	General		Please provide specifications of 3.3kV cables.	Query not clear (not referenced to any clause)
258	42	Part 2	General		Please provide GTP of 3.3kV Cables.	Query not clear (not referenced to any clause)
259	43	Part 2	Chapter-10 Clause-10.1.1	Spare list	Please provide list of spares to be considered.	Refer Clause 10.2.7 of PS No changes foreseen
260	44	Part 2	Appendix-B Clause:5.3.3	132kV Current Transformer Burden	Burden shall be decided during detailed design and may change from defined values as per design feasibility to meet system functional requirement. Kindly confirm.	Confirmed
261	45	Part 2	Appendix-B Clause 8.2,8.3 and 8.4	33kV CTs for Incomers and Outgoing feeder	Burden shall be decided during detailed design and may change from defined values as per design feasibility to meet system functional requirement. Kindly confirm.	Confirmed
262	46	Part 2	Appendix-B Clause 10.4 S.No. 16 and 17	25kV CT	Burden shall be decided during detailed design and may change from defined values as per design feasibility to meet system functional requirement. Kindly confirm.	Confirmed
263	47	Part 2	Clause 4.2.8.4 Page:41	Service Life (a) All components, materials, software and other support required to repair and service all Power Supply system shall be available for at least 30 years from the Employer's Taking over of the Works or Section.	Service life for software shall be 10 years	Tender conditions prevail
264	48	Part 1	Clause 9.2.6.1	Type tests will not be required in those cases where the Contractor can produce certified evidence that the required type tests have been performed successfully on identical equipment or equipment which is, for practical test purposes, similar and produced in the factory where the equipment offered is to be manufactured	Please define "similar", would higher rating type test reports be acceptable for transformers and cables.	The clause is self-explanatory
265	49	Part 2, Section VII-B	Clause 1.1.1	Note – For the Priority Section, (of Reach 1), a separate 5 MVA (33kV /25 KV Traction substation is being planned by NMRCL through a separate tender.	Please furnish the detail of substation/ transformers to be commissioned to cater Traction and Auxiliary power supply requirement for the Priority Section (Section 1)	Refer tender drawings No changes foreseen
266	50	Part 2, Section VII-B	Clause 2.1.3	The Contractor shall, therefore , engage a consultant of International repute having Knowledge , background of 25 kV Traction System and CBTC to study the International Procedures and practices for adopting Communication Based Train Control (CBTC) on various type of electrical Traction System and recommended measures to be adopted on 25 kV Electric Traction System for smooth running of Trains.	Please specify the tenure of Consultant, its selection criteria , its detail role Similar expert is also required in Signaling group to provide all the necessary information on CBTC system for optimum utilization time of consultant.	The clause is self-explanatory and Bidders to assess appropriately

Overall SN	SN	Vol No.	Clause no.	Bid Condition	Bidder's Queries	NMRCL's Response
267	51	Part 2, Section VII-B	Clause 2.2.2	The alignment GADs are provided in the Tender Drawings with this RFP. However, the alignment of the above corridors, number of stations and revenue opening date may change during design and construction stage.	As indicated, if alignment and number of stations may change during design and construction stage, it will have corresponding impact on Technical and commercial part of the bid quoted, same needs to be compensated financially accordingly. Kindly confirm.	The clause is self-explanatory
268	52	Part 2, Section VII-B	Clause 3.2.1.4 (a)	In general the Contractor is responsible for all works within the SSS premises and related to HV cabling from Grid substations bays to SSS. Civil works including the following : Geotechnical Investigations to determine the safe bearing capacity of the soil and other design parameters including Soil conductivity	As Switching Substations (SSS) is within located in Mankapur GSS premises therefore its Geotechnical investigation (including soil bearing capacity and soil resistivity data is expected to be already available . It is therefore requested to furnish the same to the bidders	Bidders to assess themselves; NMRCL organized site visits No changes foreseen
269	53	Part 2, Section VII-B	Clause 3.2.2.6.3 (e)	Supply and erection of all equipments in SWFR room including : Gas Flooding System	In the RSS , there has been a use of 132 kV and 33 kV GIS switchgear which is more safe from the operational point of view as compared to air insulated switchgears , therefore use of Gas flooding system in the SWGR room is redundant requirement . It is therefore requested to delete the Gas Flooding system.	Contractor to perform study for necessary requirement, propose design for approval of Engineer. No changes foreseen
270	54					
271	55	Part 2, Section VII-B	Clause 3.2.7.4	The following Transformers capacities are proposed for the different stations and Depots (a) 250 KVA – 2 Nos For typical Elevated /at grade Stations (b) 1600 kVA – 2 Nos for ASS at Depots It is further indicated that "the above Transformers capacities are based upon the preliminary design .PST Contractor have to do the detailed design and arrive at the transformers capacities"	If In accordance to clause 3.2.7.4 , PST Contractor have to do the detailed design of the Auxiliary Transformer capacities then various station and depot loads are to be provided at this stage which can met the requirement of load capacity for the year 2041	Refer to SN 81 above
272	56	Part 2, Section VII-B	Clause 4.2.7.3	The availability of the Power Supply system shall be greater than 99.99%.	It is requested to please amend the sentence as the availability of the Power Supply system shall be not less than 99.99%.	Clause 4.2.7.3 amended as per Bidder's suggestion. Refer to Addendum
273	57	Part 2, Section VII-B	Clause 4.2.7.6	It specifies – In all availability calculations the following access times shall be assumed: (a) 60 minutes for equipment located in equipment rooms at the platform level that are accessible during traffic hours; and (b) 10 hours for equipment that is only accessible during non-traffic hours. As per clause 4.2.7.5 For the purposes of availability calculations, the Contractor shall assume that the service operating hours are 19 hours per day (05:00 am to 12:00 pm), for 365 days a year.	Since the maintenance hours commence from 12.00 pm to 5.00 am i.e. 5 hours in others words it is also the time for access of equipment that are only accessible during non traffic hours Therefore, clause 4.2.7.6 b i.e. 10 hours for equipment that is only accessible during non-traffic hours is not understood. Please clarify.	It is for the purpose of Availability calculation (mid point of the traffic hours in time window) No changes foreseen

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274	58	Part 2, Section VII-B	Clause 5.1.4 and 5.2.1.3	<p>As per clause 5.1.4, The High Voltage Protections (except for transformers) for Receiving Substation shall generally be applicable, as relevant, to the Switching Substation at MSETCL premises.</p> <p>As per Clause 5.2.1.3 A backup high speed full scheme distance protection with at least three zones should be possible to include in order to get fault clearance in case of communication failure, it shall be possible to have the distance protection continuously in operation or only released for operation at communication failure</p>	<p>Since Switching station is in the same premises as of Grid Substation of Power supply authorities therefore due to very short distance between them, the requirement of line distance protection between Switching Station and Grid Substation is redundant and practically not feasible to provide the three zonal protections.</p> <p>Further , we understand that no communication is required between Switching substation and Grid Substation of Power supply authorities.</p> <p>Kindly confirm.</p>	<p>Yes, distance protection between GSS and SSS is not feasible. The clause 5.1.4 mentions "... as applicable, as relevant ..." already.</p> <p>No changes foreseen</p>
275	59	Part 2, Section VII-B	General	Fault Level at different Voltage levels	Please provide system Fault level at 132 kV, 33 kV and 25 kV .	<p>Refer Clause 7.4.2.1 (e) for fault level at 132kV. Downstream fault levels shall be as per designs to be developed by Contractor.</p> <p>No changes foreseen</p>
276	60	Part 2, Section VII-A General Specification	Clause 6.2	As defined in EN50128, all software produced or supplied for the project shall be subject to a defined quality framework. The Contractor shall use a Quality Assurance System which is compliant with CENELEC specifications, with EN29000 series and others and meet the requirements as stipulated in the PS. ISO 9000-3 is considered appropriate for Safety Integrity Level 0 or 1 software.	As specified in EN50128, this standard is applicable only for railway control and protection applications. Therefore EN50128 shall be applicable only for traction SCADA software only not for Substation automation system (SAS). SO requested to exclude SAS from this standard as SAS system is General power SCADA. Please clarify.	Your understanding is correct
277	61	Part 2, Section VII-A General Specification	Clause 6.9	All test software, with the exclusion of built-in test software, shall be produced in accordance with a quality system controlled under the requirements of ISO 9000-3. Test software shall be developed and documented using structured techniques and shall be designed to be maintainable throughout the term of the Contract. All test software shall be documented to be supportive of maintenance. Any test software that is to be delivered to the Employer (for long term testing use) shall be fully documented including source code listings to allow the Employer to maintain the software for the life of the supported system.	Source codes of software are confidential information of Company only original software package shall be provided. Hence source code of Software can't be provided. Requested to please modify tender specification accordingly.	Refer to SN 46 above
278	62	Part 2, Section VII-B Particular Specification	Clause 3.2.1.7.1	Supply, installation and putting into operation of Digital Protection Equipment / Bay Controllers for 132kV, Work stations and PC's and linking with the HV equipments in the yard.	Specification for Workstation and PC's is not clear for Switching substation. Please clarify if specifications are similar to RSS SAS.	<p>Refer clauses 5.1.4, 6.1.4 and Note under 7.1.</p> <p>No changes foreseen</p>
279	63	Part 2, Section VII-B Particular Specification	Clause 3.2.1.7.2	Providing a 'Gateway' to support control and monitoring of all 132kV system from the MSETCL Control Room. The gateway shall be Ethernet compliant.	Specification for gateway is not clear for Switching substation. Please clarify if specifications are similar to RSS gateway.	Refer SN 278 above
280	64	Part 2, Section VII-B Particular Specification	Clause 3.2.6.4	Operation Control Centre Equipment shall be provided at the OCC/BCC to permit the remote monitoring of high level status and fault alarm messages from other Railway Systems at Universal Workstations located in the Operation Control Centre.	Other railway system and universal workstation requirement is not clear. Please clarify.	<p>The clause is drafted in a generic manner. In the instant case, there is no "other Railway Systems" at the moment. In future, with subsequent phases of NMRCL, this will become relevant.</p> <p>No changes foreseen</p>

Overall SN	SN	Vol No.	Clause no.	Bid Condition	Bidder's Queries	NMRCL's Response
281	65	Part 2, Section VII-B Particular Specification	Clause 5.5.2.10	For GIS Substations, the Local Control Cubicles shall be integrated with the GIS and should house IEC 61850 compliant Bay Control Unit (BCU) which should be SCADA Compatible. Free standing LCC with conventional system for monitoring and indication shall not be accepted.	We are considering Main and Standby BCU for all Bays under control and protection panel (CRP), however as per clause 5.5.2.10 one more BCU is asked at LCC of GIS. As per our understanding main BCU shall be installed at LCC and standby BCP shall be installed CRP panels to make system control and functionality simple and easy to implement. Third BCP at LCC make system more complex in terms control transfer. Please clarify.	The clause is self-explanatory
282	66	Part 2, Section VII-B Particular Specification	Clause 5.5.3.10.1	It shall be possible to illustrate all types of process data as trends - input and output data, Binary and analogue data. The trends shall be displayed in graphical form as column or curve diagrams with a maximum of 10 trends per screen. Adjustable time span and scaling ranges must be provided.	Generally 5-6 tags per trend window are easy to operator to correlate the values. 10 Tags in single window makes trend display more crowded. So requested to amend the requirement to 6 tags per trend display.	Tender conditions prevail
283	67	Part 2, Section VII-B Particular Specification	Clause 5.5.3.15.2	The communication protocol between IED's and station HMI shall be on the global Automation standard IEC 61850 at inter bay level and shall be on IEC 870-5-104 protocol for communication from local RSS to the OCC	As per our understanding communication protocol between RSS to OCC shall be IEC 60870-5-104. Please clarify.	Your understanding is correct
284	68	Part 2, Section VII-B Particular Specification	Clause 5.6.2	All operator consoles shall be web-enabled. It shall work through the web browser and be able to host a full graphic user interface. The web clients can connect to the SCADA services at the OCC/BCC through LAN, WAN or through the internet.	Web enable operator console shall be used only for remote viewing of process data with limited rights due to security reason. Web Operator terminal does not provides all featured required by Traction power controller (TPC). Hence for betterment of SCADA system, it is requested to have normal SCADA workstation at Central control Room (CCR) with additional feature of web server and client on office network with firewall (for intruder prevention & network Security). Requested to include necessary changes.	Tender conditions prevail
285	69	Part 2, Section VII-B Particular Specification	Clause 5.6.6.1	The function though is forming a part of the remote monitoring function. Leakage and return current monitoring contains of two functions: (a) Supervision of status of connecting strips at all TSSs and giving an alarm if the device has been removed of if there is a brake in the conductor continuity. (b) The permanent supervision of leakage current along the line, which is realised by an Independent computerized system. In case of earth failure and the caused increase of Leakage current, this system will provide alarms to SCADA to be displayed at the MMI.	Based on our experience Leakage and Return Current Monitoring is not required for AC traction System. Please clarify the requirement.	Clause 5.6.6.1 is deleted Refer to Addendum
286	70	Part 2, Section VII-B Particular Specification	Clause 7.5.3	Data communication between the Intelligent Electronic Devices, the Remote Terminal Units, the Programmable Logic Controllers and the SCADA Local Concentration Device shall be via the communications network, using open standard protocol IEC 61850. Proprietary standards are not allowed.	As per our understanding data communication at RSS level between IED and SAS shall be as per IEC 61850 and data communication at Auxiliary substation (ASS) level between protection relays and RTU shall be IEC-60870-5-103, which is standard practice in all metro system. Please clarify the requirement.	Refer to Clause 5.5.3.15.2 No changes foreseen
287	71	Part 2, Section VII-B Particular Specification; Appendix A Interfaces	Table 3.8 (Item A.4)	Visual control panel	As per interface matrix table no 3.8, item no A.4 visual control panel shall be provided by train control/telecom contractor. For SCADA Interface we need One Interface workstation for loading SCADA software. Please clarify if same shall be provided by telecom contractor or Traction contractor need to be consider	Refer to SN 51 above Any interface workstation will obviously be in scope of PST Contractor.

Overall SN	SN	Vol No.	Clause no.	Bid Condition	Bidder's Queries	NMRCL's Response
288	72	Part 2, Section VII-B Particular Specification; Appendix A Interfaces	Table 3.8 (Item A.5)	Centralized UPS in OCC	As per interface matrix table no 3.8, item A.5 centralized UPS shall be provided by Train Control /Telecom contractors at OCC. UPS power also required at BCC for SCADA system for which scope is not clear. Please clarify the Scope of UPS at BCC.	Same provisions apply to BCC as well Refer to Addendum
289	73	Part 2, Section VII-B Particular Specification	7.5.4.2	RTU shall be able to work in standalone mode for minimum 8h, and store locally the data it produces.	As per our understanding RTU shall be powered from Battery charger at ASS level. Hence standalone working of RTU shall be depending on backup time of Power source. Secondly during communication failure with SCADA system maximum numbers of events shall be stored in RTU buffer memory is 1024, as per IEC 104 standard. Please clarify the requirement.	Your understanding is correct (no internal battery backup within RTU is foreseen) No changes foreseen
290	74			Traction SCADA Communication Network Scope	Scope for Traction SCADA Communication Network to OCC and BCC from station and RSS is not clear. Please clarify.	Fiber network under Telecom Contractor scope. Refer to interface matrix in Appendix A to PS. No changes foreseen
291	75			RTU Technical and functional requirement	RTU Technical and functional requirements are not specified in tender document. Please clarify.	Refer to Chapter 7 of PS No changes foreseen
292	76			RTU panel Technical requirement	RTU panel Technical requirements are not specified in tender document. Please clarify.	Refer to Chapter 7 of PS No changes foreseen
293	77	Part 2 - Section VII-C Tender Drawings	Drg. No NMRP/LIPL/EL/0 24	SCADA Schematic Diagram	In SCADA Schematic Diagram at central control room, 2 nos engineering controller are shown. As per our understanding these workstations are operator workstation for traction power Controller (TPC) for operation of 33KV & 25KV control and monitoring.	Your understanding is correct Further deliberation at design stage No changes foreseen
294	78	TD	GC 4.13	Rights of Way	Please confirm if there are any additional rights of way to be procured by the Contractor.	Site visit was organized by NMRCL. Any further query shall be specific. No changes foreseen
295	79	TD	GC 15.4	Termination	Please include that the Contractor would be paid for the works completed till the date of termination	Tender conditions prevail
296	80	TD	GC 17.6	Limitation of liability	Request deletion of all the exceptions from the liability cap and from indirect & consequential losses	Tender conditions prevail
297	81	TD	PC 4.10	Site Data	Please include that in case of error in site data, necessary EoT with cost compensation to the Contractor will be allowed.	The clauses are self-explanatory
298	82	TD	PC 17.1	Indemnities	Please delete the requirement for indemnity for loss arising of carriage of plant, materials and rolling stock	Tender conditions prevail
299	83	TD	General		Are there any interfacing obligations that Contractor needs to do?	Query is vague and merits no response
300	84	TD	General	Bid Submission date	Being a design and build tender, the size of the document is huge and contains massive data that needs to be analyzed and necessitates sufficient time to scrutinize all the requirements and conditions and come up with queries. In view of the above, we request you extend the last date of submission of pre-bid queries by 2 weeks and last date of bid submission by 6-8 weeks.	Refer to Addendum

Overall SN	SN	Vol No.	Clause no.	Bid Condition	Bidder's Queries	NMRCL's Response
301	85	TD	Subclause 4.2A (new sub-clause)	PCU & PCG	We understand that Parent company undertaking & guarantee are not mandatory if the bidder is a registered firm under Indian Company Act 1956. A comfort letter may be allowed to be provided by parent company.	Tender conditions prevail
302	86	TD	Pricing Document S. no. 2 & PC part B, S.No. 45	Price Variation	It is understood that price variation is applicable on 132 kV cables, AMS Transformer & Traction Transformer. It is also mention in PC that, at the bidder option, PV is applicable on all steel, Aluminium & Copper items. Kindly clarify whether PVC is applicable on All steel, Aluminum & Copper items to make all bidders At Par.	Refer to SN 16 above PC Part B Clause 45 amended Refer to Addendum
303	87	TD	Pricing Document Section MS: Cost centre D	Supply of spares for overall earthing system	Kindly provide the list of spares to be provided under Cost centre D of Section MS.	Bidders to assess the requirements as per the PS/GS No changes foreseen
304	88	TD	Pricing Document S. no. 4.4	Amount for Cost Center A	Please remove the mandate of maximum 7.5% apportioned amount in cost centre A for proper apportionment of prices b/w Cost Centers and for an improved cash flow.	Tender conditions prevail
305	89	TD	Pricing Document	Foreign Currency	Option available only for putting one foreign currency. Please add 2 more foreign currency options.	Refer to BDS ITB 15.1 No changes foreseen
306	90	TD	Pricing Document	Cost Centre B Delivery of Earthing & Bonding Equipment including conductor	As per Appendix A - Interface, BEC is in Other contractor scope. Kindly clarify the items to be supplied under this Milestone.	Bidders to assess the requirements as per the PS/GS No changes foreseen
307	91	TD	Particular Condition Part A : contract Data	Defect Liability Period: 24 months from the date of issue of Taking Over Certificate for the whole of the Works.	24 months period of DLP should be commenced from TOC of the Parts of works/Section and not from the TOC of whole of the works. Kindly Clarify	Tender conditions prevail
308	1	Part 2 – Section VII-B	Cl. 6.5.2.2	The Access Road shall be Black topped and Transformer area shall be either Concrete or RCC. The approach Road should, at the minimum, be 7.0 m wide and shall be able to support 100-T trailers.	Kindly confirm whether the internal roads other than in Transformer area shall be Black Topped or RCC.	Clause 6.5.2.2 amended Refer to Addendum
309	2	Part 2 – Section VII-B	Cl. 6.5.2.3.1	Suitably designed drains and sumps shall be provided and if the water table inside the sump rises above pre-determined level, the sump water shall be arranged to be evacuated by means of suitable electric pumps fixed in the sump.	Please elaborate the termination point of water pumped from sump for final disposed off.	Bidders to assess themselves No changes foreseen
310	3	Part 2 – Section VII-B	Cl. 6.5.2.3.4	Contractor shall provide with water supply system fully functional for toilets and maintenance room, where ever required he may construct sump, Over Head Tank, pump rooms, supply of pump etc. Contractor will have to identify the suitable source for supply of water.	Please confirm the tentative sources for supply of water (Under Ground/Municipal Supply) and their distances from the sites.	Bidders to assess themselves No changes foreseen
311	4	Part 2 – Section VII-B	Cl. 6.5.2.4.2	d.) Drainage (Covered Type)	Please clarify whether Drainage with Covered type is only in Control Room area or in the whole switchyard area.	Contractor to propose design for approval of Engineer. No changes foreseen

Overall SN	SN	Vol No.	Clause no.	Bid Condition	Bidder's Queries	NMRCL's Response
312	5	Part 2 – Section VII-B	Clause 5.3.2.11.3	Track Feeder Protection Each track feeder circuit-breaker is actuated by: (a) Minimum impedance protection, (fn 21) (b) Over current protection (fn 50-51). (c) F87: Differential Current Protection for TSS feeder CB's which are directly connected to switching posts. All other necessary provisions, space, CT cores, wiring etc. to be provided by the RSS contractor. Relay shall be provided by Traction contractor	Please clarify the scope of supply Relays as it is understood that Distance protection and over current protection is in the scope of this contract whereas the supply of Differential protection relay is under the scope of this tender It is requested that scope of supply of relay please kept in one tender only	Tender conditions prevail
313	6	Part 2 – Section VII-B	Clause 5.6.1.2	The operator shall receive alarms relating to different events and alarms on equipment, e.g. low level or loss of voltage on 25kV AC System, 33kV cables and 415V low voltage boards etc.	It is requested to please clarify the scope of SCADA for 415 V voltage level i.e. up to what stage SCADA is involved in 415 V	Refer to Para 1.6 of Appendix A Interfaces to PS. The scope of SCADA is upto incomer 415V switches in MDB. No changes foreseen
314	7	Part 2 – Section VII-B	Clause 5.6.9.1	The Emergency Trip Switches will be used for switching off the Traction Power Supply of corridor 1, corridor 2 or depot in case of emergency. The ETS switches are installed in OCC/BCC and at each RSS	Please confirm ETS is not required at every station and TSS.	Confirmed The clause is self-explanatory
315	8	Part 2 – Section VII-B	Clause 5.6.9.2	After activating an ETS an individual signal is sent to SCADA. Accordingly to a trip matrix proposed by the Contractor, SCADA macro switches off relevant circuit breakers and send signal to indicate the electrical section de-energized	Please confirm, operation of ETS is through SCADA.	The design shall be proposed by Contractor for approval of Engineer. ETS operation through SCADA shall be acceptable if specified requirements are met. No changes foreseen.
316	9	Part 2 – Section VII-B	Clause 5.6.11.3	General Comment	Please confirm energy measurement for calculation of energy bill based upon the tariff will be done at Grid substation of Power supply authority.	Relevance of query not understandable. No changes foreseen
317	10	Part 2 – Section VII-B	Clause 6.5.2.3.4	Contract shall design the water supply and drainage system as per applicable standards;	Please confirm installation of Borewell is permitted in the RSS premises or for arranging water supply local water supply authority has to be contacted.	Bidders to assess themselves No changes foreseen
318	11	Part 2 – Section VII-B	Clause 7.1.6.1.3 Clause 7.1.2.10 (6) & Clause 7.4.1.2	The maximum short circuit power (Isc), considered for the whole substation area, for different voltage levels, are as follow: For 132 kV 5000 MVA Accordingly, the short circuit current to be taken into consideration, for the Earth mesh design at Substations, shall be as follows: For 132 kV 22kA For 132 KV Cables – Short circuit Power – 5GVA	As per Clause stated, short circuit current is 22 kA and short circuit power is 5000 MVA at 132 KV level . However, based upon the specification of 132 kV GIS switchgear, 132 kV , 31.5 KA (Rated short circuit current for 3 sec) , short circuit Power is 7200 MVA. In view of above , please resolve the ambiguity what short circuit level is to be considered	Specified requirements to be met for 132kV GIS irrespective of fault level / current specified for 132kV level.
319	12	Part 2 – Section VII-B	Clause 7.2.1.4	The Contractor shall examine the voltage drop and ensure permissible level of voltage drop of the catenary system of traction network for varying load current drawn by the metro car.	Stated requirement of the clause needs to be the part of OCS Contract.	This clause shall be seen in the context of simulation study only. No changes foreseen
320	13	Part 2 – Section VII-B	Clause 7.3.4.3.3	33 kV Motorized Interrupter Breaking capacity – minimum 400 A	Some error appears to be in the value of Breaking Capacity, (It may be 12.5 kA) . Please amend as per your cal calculations.	Clause 7.3.4.3.3 amended Refer to Addendum

Overall SN	SN	Vol No.	Clause no.	Bid Condition	Bidder's Queries	NMRCL's Response
321	14	Part 2 – Section VII-B	Clause 7.4.2.4.1	Conductor of 132 kV Cable The conductor shall be made of copper with a minimum cross section of 240 sq mm aluminum.	It is requested to please confirm the material of 240 sq mm cross section, 132 kV cable considered as there is some ambiguity in the Clause 7.4.2.4.1. Also indicate the material of conductor of 33 kV and 25 kV cables	Refer to SN 34 & 41 above
322	15	Part 2 – Section VII-B	Appendix A, Interface - Cable support arrangement for BEC in the mainline	In the Interface with OCS Contractor and PST Contractor in Table 3.2 at Point No -7 – It is specified that PST Contractor shall provide the cable support brackets or, other appropriate arrangement For OCS contractor it is indicated that they shall coordinate and provide requisite details	BEC supply and laying is the responsibility of OCS contractor , it is therefore requested that scope of work o providing the cable support may please be omitted from the scope of PST contractor as it is not relevant to their scope of work	Tender conditons prevail
323	16	Part 2 – Section VII-B	33kV and 25kV cables		It is comprehended that supply and lying of 33 kV cable is in the scope of this contract but 25 kV cable is not in the ambit of this contract. please confirm	Confirmed; however 25kV cables, if any, within RSS premises is under the scope. No changes foreseen'
324	17	Particular Specification, Appendix F	4. Eligibility Criteria for Designer	The Contractor (or their Designer) is obligated to develop the simulation software (traction power and EMC/EMI simulations) in association with an Indian design-engineering firm and an Indian educational institution. The IPR for the software shall vest with NMRCL, Indian design-engineering firm and Indian educational institution jointly. The design firm shall be in business of rendering metro / railway system consultancy for minimum 5 years in India	It is paramount to mention that for any software developed, its proprietary solely rests with the firm or company developed it. Its IPR right is not transferrable to any third party Designer is required to submit the Designer's Warranty (Professional Indemnity insurance) for the design works, which includes the simulation study and its software also. In view of above, We request to amend the clause accordingly	Tender conditons prevail
325	18	Particular Conditions Section IX	Part B Specific Provisions Subclause 4.4 Subcontractor	Sub–contracting, excluding design work shall be generally limited to 50% of the lump sum price. The terms and conditions of subcontracts and the payments that have to be made to the Subcontractors shall be the sole responsibility of the Contractor. For sub-contracts exceeding Rs 5 million, it will be obligatory for the Contractor to obtain a “Notice of No-Objection” from the Engineer, to the identity of the Sub-contractor and Vendor. The Contractor shall certify that the cumulative value of the subcontracts (including those up to Rs 5 million each) awarded is within the aforesaid 50% limit. Any proposals by the Bidders in their offer shall not be construed as an approval of the vendor	Please confirm limit of Rs 5 million is also applicable for vendors in order to obviate seeking approval for small value items	Refer Appendix P of Pricing Document for vendor approval process. No changes foreseen.

Overall SN	SN	Vol No.	Clause no.	Bid Condition	Bidder's Queries	NMRCL's Response
326	1	Part 2 – Section VII-B- Annexure A	Interface PST Contract and PSA Table 3.1 Item No 8 and Item 6	<p>In Item No 8 , In the Scope of PST contractor , It is indicated that <i>“PST Contractor shall terminate the cables at the appropriate EHV switchgear in the PSA Premises.....”</i></p> <p><i>In the Item No 6, it is specified that “Shall provide necessary protection arrangements (line differential, distance, over current etc.) as per design, for the incoming HT cables.</i></p> <p><i>The relays required to be provided at the PSA end, shall be supplied and installed, at the PSA premises (i.e. at Switching Substation), by the PST Contractor.</i></p> <p><i>If any pilot wire is required to be provided, for protection and SCADA, the same shall be supplied and installed by the PST Contractor. The pilot wire shall be armoured type.</i></p>	<p>No arrangement of Termination of 132 KV cable with protection arrangement is indicated in the Tender drawings</p> <p>We understand that if protection system (line differential, O/C, etc) is to be provided for the 132 kV cables then CT , PT , 132 CB , etc are also required before the bus bar and merely terminating 132 kV cables on the 132 kV bus bar will not serve the purpose</p> <p><i>It is therefore; requested to please clarify the complete scope of work for the Incoming 132 KV cable termination at EHV Switchgear in the PSA premises in detail.</i></p>	<p>Item 6 of Table 3.1 of Appendix A to PS amended</p> <p>Refer to Addendum</p>
327	2	Part 2 – Section VII-B- Annexure A	Interface PST Contract and PSA Table 3.1 and Item 6	As per Item 6.0 , it is indicated that <i>If any pilot wire is required to be provided, for protection and SCADA, the same shall be supplied and installed by the PST Contractor. The pilot wire shall be armoured type.</i>	Please confirm Pilot wires are of armored type or unarmored as generally these are not armoured.	Tender conditions prevail
328	3	Part 2 – Section VII-B- Annexure A	Interface PST Contract and PSA Table 3.1 and Item 11	Jumper Connection – It is specified that PST contractor shall provide Jumper connection from termination box bushing to HT Bus bar	Please specify the type, size and material of Jumper connection.	<p>Bidders to assess the requirements; site visit was organized by NMRCL</p> <p>No changes foreseen</p>
329	4	Part 2 – Section VII-B- Annexure A	Interface PST Contract and TRW Table 3.3 and Item 1	It is mentioned thatPST Contractor shall supply and provide the pipes over the viaduct and pipes over parapet walls and Interface with TRW Contractor for the correct location of Pipes	Since scope of PST contractor is limited to laying of 33 kV cable in viaduct, therefore it is requested to please limit the supply and providing the pipes for 33 kV cables only, if required	Tender conditions prevail
330	5	Part 2 – Section VII-B- Annexure A	Interface PST Contract and Station E & M Table 3.4 and Item 11	Viaduct Lighting and Socket Outlets – In terms of clause 11 , PST contractor shall design and provide the viaduct lighting and socket arrangement as per specifications	Since the scope of works of this tender pertains to Switching Station , cable laying , RSSs and ASS i.e. most of the work restricts to RSS level , <i>it is therefore requested to delete the scope of work of design and providing viaduct lighting and Socket from this tender package</i>	Tender conditions prevail
331	6	Part 2 – Section VII-B- Annexure A	Interface PST Contract and Station E & M Table 3.4 and Item 2	PST Contactor scope - Cable laying from designated LV panel to ACDB at ASS	As our scope is basically to deal with MV and EHV cables, it is therefore requested to delete the scope of work of providing suitable LT cable from designated LT Panel (May or may not be in ASS) to ACDB. It is generally done by station E & M contractor. Loading of ACDB will be provided by PST contractor	Tender conditions prevail
332	7	Part 2 – Section VII-B- Annexure A	Interface PST Contract and Station Civil Table 3.4 and Item 5 Table 3.5 , Item 2	<p>ITEM NO 5 Earthing and Bonding arrangement at stations</p> <ul style="list-style-type: none"> • Station Earth Mat to Earth Cable through 300 sq mm • Structure Earth to Earth Cable with 70 sq mm cable • Various structure at station to earth cable <p>ITEM No 2</p> <p>PST Contractor shall provide designs / drawings showing arrangement of Earth terminals required to be provided on piers, pedestals, segments, parapet etc. and the extent of we welding required to be done on Reinforcement bars-----</p>	<p>At Station level, scope of PST contractor is to provide 33 kV Panels only , therefore earthing of panel to ASS earth Mat is the responsibility of PST contractor . Since other earth works as depicted in the Item No 5 are in NO way pertains to PST contractor, it is therefore requested to delete the same from PST contractor's scope of work and same may be included in the scope of say OCS /E & M , etc</p> <p>In accordance to justification given above, It is also requested to delete the scope of earthing and Bonding as stipulated in the Item No 2 of Table 3.5</p>	<p>Item 5 of Table 3.4 and Item 2 of Table 3.5 of Appendix A to PS modified</p> <p>Refer to Addendum</p>

Overall SN	SN	Vol No.	Clause no.	Bid Condition	Bidder's Queries	NMRCL's Response
333	8	Part 2 – Section VII-B- Annexure A	Interface PST Contract and Viaduct Contractor Table 3.5 and Item 5 ITEM 4 and item 6	<u>Buried pipes for cables crossing tracks</u>The pipes over the viaduct / parapet shall be supplied and installed by the PST Contractor	Since scope of PST contractor is limited to laying of 33 kV cable in viaduct, therefore it is requested to please limit the supply and providing the pipes for 33 kV cables only, if required	Tender conditions prevail
334	9	Part 2 – Section VII-B- Annexure A	Interface PST Contract and Viaduct Contractor Table 3.5 and Item 5 ITEM 4 and item 6	<u>Earthing connection for handrails</u>PST Contractor shall provide earth cable connection and connect the hand rail (with 35 mm2 copper or equivalent connection)	Since PST contractor is primarily responsible for EHV, MV works. In Viaduct, Scope is restricted to supply and laying 33 kV cable , only. Therefore other miscellaneous works like earthing of Hand Rail has <u>no correlation with general scope of work of PST contractor i.e. EHV and MV works (of RSS)</u> <i>It is therefore requested to delete the scope of work of earthing connection of Handrail.</i>	Item 6 of Table 3.5 of Appendix A to PS amended Refer to Addendum
335	10	Part 2 – Section VII-B- Annexure A	Interface PST Contract and Viaduct Contractor Table 3.6 and Item 8	LV Power Supply to ACDB at ASS Cable laying from designated LV panel to ACDB at ASS	Since PST Contractor is not dealing with the LT Cables, it is therefore requested to delete the scope of work of providing suitable LT cable from designated LT Panel (May or may not be in ASS) to ACDB. It is generally done by DEPOT E & M contractor. Loading of ACDB will be provided by PST contractor	Tender conditions prevail
336	11	Part 2 – Section VII-B- Annexure A	Interface PST Contract and Viaduct Contractor Table 3.2 and Item 4	Scope of PST contractor is specified as "Shall coordinate with cooperate with OCS Contractor and make appropriate arrangement of cable termination arrangement at FP (GIS type) end to enable OCS contractor to connect cables at 25kV GIS switchgears"	We understand that Scope of the work of PST Contractor is limited to 25 kV TSS (GIS Type) only and does not include the supply and laying of 25 kV cable from 25 kV TSS to 25 kV Feeding Post (supposed to be at Viaduct) <u>Please confirm the above and clarify the item No 4 of Table 3.2</u>	Confirmed The clause is self-explanatory
337	12	Part 2 – Section VII-B		The scope of work broadly includes design, supply, installation, inspection, testing and commissioning of: (a) Feeding arrangements to the overhead contact system with suitable protection at feeding post (b) Interlocking and protection coordination of various equipment at TSS, FP	We understand that supply of equipment for 25 kV Feeding post is not within the ambit of the PST contractor Please confirm above and elaborate the scope of work of PST contractor with respect to 25 kV Feeding Post , if any	The requirements are well elaborated in PS. The PST Contractor scope ends at TSS regarding 25kV system. No changes foreseen
338	13	Part 2 – Section VII-B- Annexure B – Technical Sheets Page 6 of 75	2.1 AMS Transformer & 4.1 Traction Transformer Data sheet E Noise level	Noise Level - At rated voltage at No Load 70 db	Please provide the distance at which 70 db Noise is to be measured	The measuring distance is 1.5m - refer clauses 6.3.2.2 (j) and 7.1.3.1.2 (j) of PS. Refer to Addendum (for TT noise value in Table 4.1 of Appendix B to PS)
339	14	Part 2 – Section VII-B- And Annexure B – Technical Sheets Page 31 of 75	Clause 7.4.3 33 kV Cables Item 6.2 , Cable 33 KV Data sheet	33 kV Cable Specifications	Please confirm whether 33 kV cable required is with or without armoring as it is indicated in the specifications	Refer to SN 256 above

Overall SN	SN	Vol No.	Clause no.	Bid Condition	Bidder's Queries	NMRCL's Response
340	15	Part 2 – Section VII-B Annexure B – Technical Sheets Page 33 of 75	Item 6.3 25 kV Cables Data sheet	In the data sheet of 25 kV Cable , at S. No 2 , Cable size is indicated as 400/240 sq mm . In the tender drawing , size of 25 kV cable is indicated as 240 sq mm , 25 kV , Cu/XLPE cable	Please indicate the purpose of two different cross section area of 25 kV cable i.e 400 / 240 sq mm as indicated in the data sheet 6.3 Please confirm the size and material of conductor of 25 kV cable as 240 sq mm with copper conductor	Copper conductor of 240mm ² generally. No changes foreseen
341	16	Part 2 – Section VII-B Annexure B – Technical Sheets Page 33 of 75	Item 6.3 25 kV Cables Data sheet	In the data sheet of 25 kV Cable , at S. No 16 , Insulation screen specifications are mentioned Non-metallic part of semi- conducting material plus metallic part consisting of standard wire and copper tape, rated to carry a short circuit current of 14kA	Please indicate the time of carrying the short circuit current of 14 kA i.e. whether it is 1 sec or 3 sec	One second Refer to Addendum
342	17					
343	18					
344	19	Part 2 – Section VII-B Annexure B – Technical Sheets Page 38 of 75	Item 7.6	Primary Neutral Surge Arrester for 132kV / 33kV Transformer At S .No 5 , Voltage rating is 84 kV	Please confirm the voltage rating of Primary Neutral Surge Arrester for 132kV / 33kV Transformer id 84 kV.	Contractor to verify the requirement during system study / design stage and submit proposal for approval of Engineer. No changes foreseen
345	20	Part 2 – Section VII-B Annexure B – Technical Sheets Page 35 of 75	Item 7.2	Primary Neutral Isolator for 132kV / 33kV Transformer	Please confirm rated insulation voltage of Primary Neutral Isolator for 132kV / 33kV Transformer is 72.5 kV.	Contractor to verify the requirement during system study / design stage and submit proposal for approval of Engineer. No changes foreseen
346	21	Part 2 – Section VII-B Annexure B – Technical Sheets Page 42 of 75	Item 8.2	33kV Current Transformer for Line Outgoing Feeders, Spare Feeders	We request to change the specification of 33kV Current Transformer Actual Transformation Ratio from 800-400-200/5/5 to 800-400- 200/1/1 to reduce the burden on secondary equipments.	Contractor to verify the requirement during system study / design stage and submit proposal for approval of Engineer. No changes foreseen
347	22	Part 2 – Section VII-B Annexure B – Technical Sheets Page 43, 44 of 75	Item 8.4	33kV Current Transformer for Station Auxiliary Transformer Feeder	We request to change the specification of 33kV Current Transformer for Station Auxiliary Transformer Feeder Actual Transformation Ratio from 20-10/5/5 to 20-10/1/1 to reduce the burden on secondary equipments.	Contractor to verify the requirement during system study / design stage and submit proposal for approval of Engineer. No changes foreseen
348	23	Part 2 – Section VII-B Annexure B – Technical Sheets Page 40 & 52 of 75	Item 8.1 Item 9.1	33kV Circuit Breaker Cubicles (RSSs) 33KV GIS CIRCUIT BREAKER at AMS	We understand in 132 KV/33 KV RSS, 33 kV Switchgear (GIS type) are used for feeding 33 kV supply in the AMS. Specification of 33 kV GIS type for AMS are given in Item 9.0... Use and role of specifications of 33 kV Circuit Breaker Cubicle in RSS as indicated in Item 8.1 is not understood. Please clarify	AIS and GIS both are acceptable No changes foreseen

Overall SN	SN	Vol No.	Clause no.	Bid Condition	Bidder's Queries	NMRCL's Response
349	24	Part 2 – Section VII-B Annexure B – Technical Sheets Page 46 of 75	Item 8.6	33kV Circuit Breaker (ASSs)	Please confirm that 33kV Circuit Breaker at ASSs are of Air Insulated Type (AIS)	AIS and GIS both are acceptable No changes foreseen
350	25	Part 2, Section VII-B	Clause 7.2.4.8.1	It is indicated that <i>Contractor has to provide a dynamic reactive compensation system in each TSS for total load of 15 MVA to be shared by two transformers (132/25kV).</i> <i>The power factor of the load at TSS may be taken as 0.8 and the dynamic compensation shall improve the power factor to more than 0.95.</i>	It is requested to please provide the GTP of Dynamic Reactive Compensation System to improve the power factor to more than 0.85	Contractor to verify the requirement during system study / design stage and submit proposal for approval of Engineer. No changes foreseen
351	26	Part 2	Chapter-7, Clause:7.1.4.1.1(a), Page No:133	33kV, Indoor type, with drawable switchgear cubicles including 33kV Circuit Breakers / interrupters 33kV bus bars, 33kV potential and current transformers as required, earth switches, protection relays, meters and all other components required for satisfactory operation of the switchgear	<ul style="list-style-type: none"> We understand that in RSS 33kV GIS shall be provided. Kindly confirm. For GIS withdrawable switchgear cubicles are not applicable. Kindly confirm. 	Refer to SN 348 above
352	27	Part 2	Chapter-7, Clause:7.1.4.3.1, Page No:134	This 33kV configuration shall be in line with proposal for Auxiliary network.	<ul style="list-style-type: none"> We understand that for auxiliary network 33kV AIS to be provided. Kindly confirm. We understand from the referred clause that 33kV switchgear outgoings of RSS should be suitable to feed the ring network. Kindly confirm the understanding. Please clarify the requirement of the clause. 	Both AIS and GIS are acceptable The clause is self-explanatory
353	28	Part 2	Chapter-7, Clause:7.1.4.3.3, Page No:134	It must be of metal-clad switchgear type, closed by a door forming the facade, equipped with riveted marking plates and single-wire diagram also fitted with the display lamps indicating the presence of 33kV voltage.	This clause is valid for 33kV AIS type switchgear. For GIS type switchgear presence of voltage is detected by capacitor voltage divider principle and voltage is detected by plugged in LRM system.	Refer to SN 348 above
354	29	Part 2	Chapter-7, 7.1.4.3.7.1.2 Page No. 135	Self Interlock requirements: Circuit-breaker can be plugged-in or out only if tripped-out. All access to the fixed plug-in parts is prevented when the circuit breaker is withdrawn.	All these interlocks are applicable for 33kV AIS type switchgear as in 33kV GIS breaker is not withdrawable type. Please modify the same.	Refer to SN 348 above
355	30	Part 2	Chapter-7, 7.1.4.3.7.2 Page No. 136	Current transformers Each Current transformer will be installed in the cable end compartment between the downstream pole and the cable connector.	For GIS CTs can be mounted over circuit breaker housing, over the panel connection or at the panel connection. Kindly modify suitably.	Refer to SN 348 above
356	31	Part 2	Chapter-7, 7.1.4.3.7.3 Page No. 136	Voltage Transformer Each Voltage transformer shall be installed in the cable end compartment, connected between the downstream pole and the cable connector through HRC fuses	This arrangement is applicable for 33kV AIS type switchgear. For 33kV GIS VT can be installed at the busbar or at the panel connection. Kindly modify suitably.	Refer to SN 348 above
357	32	Part 2	Appendix-B Clause 8.1, S.no-B, S.No C	B Cubicle (Fixed Part) C Circuit Breaker (Movable Part)	No fixed and moving part is applicable in case of 33kV GIS. Please modify suitably.	Refer to SN 348 above
358	33	Part 2	Appendix-B Clause 8.1, S.No 10	Busbar set rated current A 2000	10/12.5MVA Auxiliary transformer cannot feed 2000A current in 33kV system even with paralleling (Paralleling is not allowed). Busbar rated current can be optimized to 1250A. Please confirm.	1250A acceptable Refer to Addendum

Overall SN	SN	Vol No.	Clause no.	Bid Condition	Bidder's Queries	NMRCL's Response
359	34	Part 2, Section VII-B	Clause 7.4.2 , 7.4.3 data sheet at 6.3	132 kV Cable , 33 kV cable, 25 kV cable	Please confirm the size and material of conductor of 132 kV, 33 kV and 25 kV cable.	Refer bid documents in totality for these info.
360	35	Part 2	Appendix-B Clause 8.1-8.12 and Clause 9.1 to 9.6	GTPS of 33kV Switchgear	<ul style="list-style-type: none"> • Please clarify which GTPS to consider for switchgear at RSS and which one for switchgear at ASS. • From Clause 8 of GTP it seems that all switchgear are of AIS type and from S.No 9 it seems that all switchgear are of GIS type. Please confirm.	Refer to SN 348 & 349 above
361	36	N1TR-01/2016	Pg 7-Clasue 4	A Bidder may be a firm that is a private entity, a government-owned entity—subject to ITB 4.3—or any combination of such entities in the form of a joint venture (JV) under an existing agreement or with the intent to enter Section I. Instructions to Bidders 8 Tender No. N1TR-01/2016 into such an agreement supported by a letter of intent. In the case of a joint venture, all members shall be jointly and severally liable for the execution of the Contract in accordance with the Contract terms. The JV shall nominate a Representative who shall have the authority to conduct all business for and on behalf of any and all the members of the JV during the bidding process and, in the event the JV is awarded the Contract, during contract execution. Unless specified in the BDS, there is no limit on the number of members in a JV.	We understand that Bidders are allowed to make unincorporated JV i.e. Consortium which need not to be incorporated. Kindly Clarify. All major Metro Organizations allow Unincorporated JV.	Your understanding is correct
362	37	N1TR-01/2016	Pg 20-GC 2.1	(b) Payment of any such Cost plus profit, which shall be included in the Contract Price.	Need clarification of cost plus profit model for determination of Contractors calim	The clause is self-explanatory
363	38	N1TR-01/2016		Bid Currency	How many currencies can be used for bidding in the project	Refer to BDS
364	39	N1TR-01/2016		The project of Nagpur Metro Rail is to be funded with equity from Government of India (GoI) & Government of State of Maharashtra (GoM) as per sanctioned DPR. The external funds for the project (NMRCL) are almost at the stage of finalization from KFW Germany & AFD France. The proposed work for this bid is invited shall be funded by KFW Germany.	Wish to clarify whether complete cost would be funded by KFW or is there any other funding partners	The information provided is considered sufficient.
365	40	Part-2 Section VII-B	Clause 2.3.1 f Page 21 of 219	Clause 2.3.1 f states that The Contractor shall carry out Simulation study to ascertain the load requirement of the system to verify the sizes of the equipments and submit report for approval by the Employer.	Tender specifies the rating and sizes of the equipment which would have arrived on the basis of simulation study or mathematical calculation carried out. Since bid time is very limited, it is requested to share the study done for calculating the sizing done for different equipment to avert the bidder to go for simulation study at the bidding stage. In case above is not agreed to, we request to accord Extension of Time for submission of tender bid by 25 days.	Tender conditions prevail Refer Addendum for bid extension date
366	1	Part 1	E tender notice	Online submission upto 1600 hrs on 28th June 2016 at NMRCL's etender portal On 30th June 2016 at 1600 hrs or as decided by the authority at Metro House, 28/2, Anand Nagar, Civil Lines, Nagpur 440001	Would NMRCL consider the date of opening of the tender on the same day as the submission deadline, right after the online submission ends at 1600 hrs, since only technical offer is being opened.	Submission & opening of bid cannot be done on the same day. Re- Encryption & control transfer of bid required 2 days after submission.

Overall SN	SN	Vol No.	Clause no.	Bid Condition	Bidder's Queries	NMRCL's Response
367	2	Part 1	Tendering procedure 1. Enrolment and empanelment of contractors on electronic tendering system	The contractors interested in participating in the tenders of NMRCL processed using the Electronic Tendering System shall be required to enroll on the Electronic Tendering System to obtain User ID.	Please confirm that in case of a joint venture / consortium it is not mandatory that all member need to register / enrol with the Electronic Tendering System and purchase the Bid Documents and that only one of the members must be registered on Electronic Tendering System of NMRCL in order to submit the bid in a Joint Venture / Consortium	Any one member of JV/Consortium can registered in the name of JV.
368	3	Part 1	Section II BDS ITB 7.5	The bidder may send such queries either by post to the address mentioned in the bid documents or by email: md.nmrcl.tenders@gmail.com upto 20th May 2016	In order to properly read and appreciate the tender documents and in view of the inputs from the scheduled prebid meeting, we request you to please allow another round of queries / clarifications to be submitted after Pre-Bid meeting.	Date of submitting queries was extended upto 27.5.16 as decided in the pre-bid meeting on 20.5.16.
369	4	Part 1	ITB 25.1	The Bid Security will be checked and details will be read out for the information of representative of Bidders, present at the time of opening of Bid. Pre-qualification and Technical package of those Bidders who have not submitted Bid Security shall not be opened. Bid which is accompanied by an unacceptable or fraudulent Bid Security shall be considered as non-compliant.	In case representative of Bidders are not present at the mentioned location at the time of opening of Bid, will the details of the participants etc. as read out, be provided through the e-tendering portal or by a notification to the email ID registered with thier user account at e-tendering portal?	Tender conditions prevail
370	5	Part 1	Section II BDS ITB 43.1	The Bidder shall submit full details of the identity of the proposed parties who would respectively provide or issue: - the Performance Security in accordance with Subclause 4.2 of the GC - parent company undertakings in accordance with Clause 3 of the PC - parent company guarantees in accordance with clause 3 of the PC	We request for the waiver of requirement of the PCG / PCU. We propose to submit a comfort letter from our Parent Company, as submitted in earlier other projects in Metro Rail Projects in India and that this is acceptable	Tender conditions prevail
371	6	Section 1 ITB	19.8	Bid Security	Whether all the member of the consortium has to provide the bid securing declaration	The clause is self-explanatory
372	7	ITB	40	Notification of Award	Whether the obligation of the Bidder shall start from the date of NOA or there will be a separate date from which the obligation will start i.e. notice to proceed	Refer the BDS corresponding Paras. These are self-explanatory and changes foreseen.
373	8	Section VIII GC; Section IX PC	1.15	Inspection and Audit by Bank	The contractor's books of accounts should not be made available to the bankers of the Employer. It is an internal documents and the Contractor does not have any privity of contract with the Banks.	Tender conditions prevail
374	9	GC	4.22	Security of Site	The Contractor shall be responsible for only its portion of works and equipments	The clause is self-explanatory
375	10	GC & PC	Clause 13.3 and PC Clause 13.2.1 (c)	Variation Procedure	The Contractor shall not act until and unless there is prior instruction from the Employer or Employer's Engineer in writing regarding the variation.	The clause is self-explanatory
376	11	Section IX PC	(21) 2.1	Contractor's General Obligation	Please clarify, in case one of the consortium members is foreign company, then whether it is eligible for bidding.	It is ICB An unnecessary query
377	12	PC	(33) 13.1	Right to Vary	Please clarify what is the additional work. The same is addition to the scope of work and should be treated as variation order.	The clause is self-explanatory
378	13	PC	(38) 14.2	Total advance payment	Please provide the correct % of the advance payable along with the % of the security BG, to be payable against the same.	The clause is self-explanatory
379	14	PC	(41) 14.3	Limit of Retention Money	Please clarify whether 2 securities have to be given of 10% each for performance and retention or there will be only one security of 10% for performance and retention.	The clause is self-explanatory
380	15	PC	(57) 20.6 (a)	Rules of Arbitration	The Arbitration and Conciliation Act 1996 has been amended with the Arbitration and Conciliation (Amendment) Act 2015, which should be an applicable Act.	The clause amended for this updation Refer to Addendum

Overall SN	SN	Vol No.	Clause no.	Bid Condition	Bidder's Queries	NMRCL's Response
381	16	Part B PC	9	Protection of the Environment	Environment clearance is the obligation of the Employer. The Contractor cannot provide any policies for the same. However, the Contractor shall have its own SHE policies which shall be adhered to during the execution of the Contract.	The clause is self-explanatory
382	17	Part B PC	10	Electricity, water and gas	Please clarify is it only applicable for power or it includes water and gas as well	The clause is self-explanatory
383	18	Part B PC	25	Intellectual Property Rights and Royalties	The proprietary right of the software developed by the Contractor for the Owner should continue to vest in the name of the Contractor.	Tender conditions prevail
384	19	Part B PC	26	Rates of wages and condition of labour	The changes in the labour rates payable as per the Minimum Wages Act is a statutory change and shall be payable by the Employer.	Tender conditions prevail
385	20	Part B PC	38	Consequence of Suspension	The Contractor shall be entitled for the reasonable cost compensation for the reason mentioned in Clause d, e and g.	Tender conditions prevail
386	21	Part B PC	41	Defect Liability Period	Please clarify there cannot be double charging LD for delay provision is already there so there should not be any additional provision. Consider deletion.	Tender conditions prevail
387	22	Part B PC	44	Adjustment for changes in Legislation	The change in laws clause should not only be restricted to tax laws only and shall include other laws as well.	Tender conditions prevail
388	23	Part B PC	46 (14.1 (d))	The Contract Price	The obligation to take tax exemption shall be the obligation of the Employer.	Tender conditions prevail
389	24	Part B PC	52	Addition to clause 15.2 Termination by Employer	As mentioned in the terms LD is the only remedy for the delays. The said condition is contrary to the LD term.	Tender conditions prevail
390	25	Part B PC	53	Contractor's Entitlement to suspend work	Please clarify in case there is a delayed payment by the Employer, the Contractor cannot suspend the work with issuing the payment certificate. How can a payment certificate be issued for the non-payment.	Tender conditions prevail
391	26	Part B PC	54	Termination by Contractor	Please insert the deleted clause. As the proof of the Employer taking necessary steps for rectification of the defects is very necessary.	Tender conditions prevail
392	27	Part B PC	55	Indemnities	Please clarify the term 'damage proceedings'. Please note the consequential loss to be excluded from the indemnity obligation. The right of indemnification shall be reciprocal. It is proposed to reinsert the indemnity provision as mentioned in the GC.	Tender conditions prevail
393	28	Part B PC	59	Consequences of Force Majeure	War, ionizing, explosive material usage etc. should also be considered as a force majeure event as mentioned in 19.1 (iv) of GC and shall be include in subclause (d).	PC 59 deleted (i.e. GC 19.4 is unchanged) Refer to Addendum
394	29	Part B PC	60	Optional termination, payment and release	The time duration proposed is too long to hold, kindly reduce.	Tender conditions prevail
395	30	Part B PC	63	Confidential Information	Please clarify, the person to whom the Employer will share the confidential information of the contractor shall also be bound by the terms of the confidentiality.	The clause is self-explanatory
396	31	Part B PC	66	Additional clause spares	Please note that the Employer is not allowed to copy the drawing, designs, patterns etc of the contractor and manufacture the replacement spare parts. In case the Employer is sourcing the spares on its own, the contractor shall not be liable to make any reimbursement of the said amount to the employer.	Tender conditions prevail
397	32	Part B PC	67	Additional clause - deployment of personnel by the employer	Please clarify what all facilities are required from the Contractor under the said contract	The clause is self-explanatory

Overall SN	SN	Vol No.	Clause no.	Bid Condition	Bidder's Queries	NMRCL's Response
398	33	Part B PC	70	Additional Clause - Interface Requirement	The liaison shall applicable as per the code of conduct of the contractor. The alteration in design etc. shall be with the prior permission of the Contractor.	Tender conditions prevail
399	34	Part B PC	71	Additional Clause - Part Termination	The said clause is already covered in Clause 15.2 of the GC	Tender conditions prevail
400	35	Part 2, Section VII-B	PS 4.2.1.1	Operability	Refer to the clause 4.2.1.1, could you please elaborate the Operability Requirements / Approach / Activities etc. under RAM implications.	The clause is self-explanatory
401	36	Part 2, Section VII-B	PS 4.2.2.3 (c)	The Operation Plan	As per the NMRCL Contract no. N1TR-01/2016, operation is under the control of Employer. Thus, could you please elaborate what are the implications of Operational Plan in RAM performance from Contractor side. Further, refer to the clause 4.4.4.1, also stating about "The Operation Plan (Para 4.1.7 above)"; if the Operation Plan already available in Para 4.1.7 of PS, then what is expecting under Clause 4.2.2.3, please elaborate?	The clause is self-explanatory
402	37	Part 2, Section VII-B	PS 4.2.2.7	The Contractor shall perform a RAM assessment and report that shall demonstrate the achievement of the RAM requirements of the System	Please elaborate in detail the definition of system here	The clause is self-explanatory
403	38	Part 2, Section VII-B	PS 4.2.4	Maintenance Plan	We are pre-assuming that, the requirement under the subclauses 4.2.4 will be covered under Maintenance Manual of every equipment supplied under the Contract.	The clause is self-explanatory
404	39	Part 2, Section VII-B	PS 4.2.5.1	The achievement of the RAM requirements is measured during the whole performance checking period.	Please confirm the performance checking period?	Upto end of DLP No changes foreseen
405	40	Part 2, Section VII-B	PS 4.2.5.2	RAM requirements need to achieve during warranty period	Please confirm the warranty period?	DLP
406	41	Part 2, Section VII-B	PS 4.2.6.2	The Reliability measure for the Power Supply system shall be the Mean Time Between Maintenance Action (MTBMA)	What is the definition of MTBMA? And what type of Maintenance Action shall be considered into it?	The clause is self-explanatory
407	42	Part 2, Section VII-B	PS 4.2.7.7 PS 4.2.8.2 (f)	The availability of the Power Supply system shall be demonstrated by the Contractor in accordance with the processes defined in the Specification. The maintainability requirements of the Power Supply shall be demonstrated by the Contractor in accordance with the peocesess defined in the Specification.	Does the Specification refer to the Particular Specification?	GS and PS
408	43	Part 2, Section VII-B	PS 4.2.8.1 (c)	The Contractor shall specify, for each Line Replaceable Unit (LRU), the mean time needed to recover to a normal operation configuration. 90% of these recovery times shall be lower than the estimated value.	Contractor would like to request, to explain the stated statement with example.	The clause is self-explanatory
409	44	Part 2, Section VII-B	PS 4.2.8.1 (a)	The System shall be designed to maximize Availability during traffic hours, to minimize the amount of maintenance required to maintain the System and to ensure that any maintenance can be carried out with the minimum amount of time, the minimum amount of skill and at a minimum cost.	Contractor would like to request, to explain the stated statement. As bold point (a) and point (g) are contradicting each other. Please explain.	The clause is self-explanatory and there is no contradiction
410	45	Part 2, Section VII-B	PS 4.2.8.1 (g)	The Contractor shall design the System in order to allow most of the maintenance workload to take place during Business Hours	Please explain duration of the business hours? Contractor would like to request, to provide details of maintenance workload; which the Employer would like to consider in business hours?	Bidder shall refer the GS/PS on totality to assess the requirements No changes foreseen

Overall SN	SN	Vol No.	Clause no.	Bid Condition	Bidder's Queries	NMRCL's Response
411	46	Part 2, Section VII-B	PS 4.2.8.2	(b) The required MTTR shall be achieved for failures of the whole System or any part of the System, whether service affecting or not (c) The following MTTR shall be achieved: a. 15 minutes for ASS equipment b. 15 minutes for low voltage equipment c. 30 minutes for RSS equipment; and d. 15 minutes for equipment located in equipment rooms or control rooms or on the platform	Here the point (b) and point (c) are contradicting each other. Contractor would like to request, to explain the stated statement	The clause is self-explanatory and there is no contradiction
412	47	Part 2, Section VII-B	PS 4.2.8.5	The unavailability and maintainability times of each failure of the transportation system	Contractor would like to request, to explain the stated statement	The clause is self-explanatory
413	48	Part 2, Section VII-B	PS 4.2.8.5	The Contractor shall perform all tests that the Employer shall require before and after the revenue service, in order to control the times defined by the Contractor.	Employer need to define the required Test before and After the revenue service. How can Employer be able to "Control" the times by performing tests before and after the revenue service? During which "Period" of time the test shall be performed?	The clause is self-explanatory
414	49	Part 2, Section VII-B	PS 4.2.8.5	In case of abnormal situation, if the time needed by the O&M Operator to recover is higher than the one defined in the prediction studies and the Contractor demonstrates that the required recovery time should have been lower, then the responsibility of the Contractor is limited to the part of unavailability corresponding to the demonstrated necessary time to recover.	Contractor would like to request, to explain the stated statement with example.	Bidder shall refer the GS/PS on totality to assess the requirements No changes foreseen
415	50	Part 2, Section VII-B	Section IX (PC)	Summary of Sections (Key Dates / Access Dates)	NTP Date as per ROD requirement / schedule of key date is coming as 30 June 16 which is not viable date. NTP date has to be confirmed again and impact on ROD to be assessed	Please consider the 'weeks' stated in the KD/AD tables and not firm dates for the purpose of bidding. The same shall be converted into dates at the time of Contract Agreement execution. No changes foreseen at this stage.
416	1	Part 2, Sec VII-B	Cl. No. 4, Appendix F; List of deliverables	The Contractor (or their Designer) is obligated to develop the simulation software (traction power and EMC/EMI simulation) in association with an Indian design-engineering firm and an Indian educational institution. The IPR for the software shall vest with NMRCL, Indian design-engineering firm and Indian educational institution jointly. The design firm shall be in business of rendering metro / railway system consultancy for minimum 5 years in India.	Software development is a specialized job. Especially for railway / metro simulation software there are very few entities around the globe (no Indian party) who own this software. Further, as this particular tender is for Power Supply Traction & SCADA, the Bidders will not have necessary skillset either to develop or engage / monitor a party who can develop new simulation software. We request you to float separate package for participation from qualified software developers from and kindly delete the requirement from this project scope.	NMRCL shall proactively facilitate fruition of this endeavour. The intent is to develop intellectual capital in the country through all possible means. Development of such tools is actually a joint effort of domain knowledge agencies, software professionals and educational / research institutes. No changes foreseen.

Overall SN	SN	Vol No.	Clause no.	Bid Condition	Bidder's Queries	NMRCL's Response
417	1	Part 1, Section III	4.2 (b) Specific Construction & Contract Management Experience	<p>Minimum of Design, Detail Engineering, Supply, Installation, Testing and Commissioning of 11kV and above indoor Auxiliary Sub stations</p> <p>One contract of 10 Auxiliary Substations or more</p> <p>OR</p> <p>Two contracts of 14 Auxiliary Substations in total or more</p> <p>OR</p> <p>Three contracts of 17 Auxiliary Substations in total or more</p>	<p>Since as per clause no. 4.2 (c) of Pre-qualification Contractor Experience of 110KV and above voltage class sub-station has been asked, and therefore the experience under this clause no. 4.2 (c)</p> <p>Hence, we request you to please this clause (No. 2 (b) to be deleted.</p>	Refer to SN 173 above
418	2	Part 1, Section III	4.2 (c) Specific Construction & Contract Management Experience	<p>Minimum of Supply, Installation, Testing and Commissioning of 110kV and above Substation Systems</p> <p>One contract of at least 2 (two) Substations</p> <p>OR</p> <p>Three contracts of at least 3 Substations in total</p> <p><i>Note: In case the Bidder or a member of the JV/Consortium does not have experience of Supply, Erection, Supervision, Testing and Commissioning of Gas Insulated Substations (GIS), it will be required by the Bidder to engage suitable experienced subcontractor / OEMs having experience in supply, erection, supervision, testing and Commissioning of 66kV or above GIS substations of at least 10 nos. with at least two such substations being outside the country of origin of OEM or in India. The credentials, work experience of the proposed GIS subcontractor / OEM and their MOU with Bidder to participate in this Bid should be submitted with this prequalification package, failing which the prequalification application may be rejected.</i></p>	<p>Minimum of Supply, Installation, Testing and Commissioning of 110kV and above Substation Systems</p> <p>One contract of at least 2 (two) Substations</p> <p>OR</p> <p>Three contracts of at least 3 Substations in total</p> <p><i>Note: In case the Bidder or a member of the JV/Consortium does not have above experience of Supply, Erection, Supervision, Testing and Commissioning of 110 KV & above voltage class sub-station system, it will be required by the Bidder to engage suitable experienced subcontractor / OEMs having experience in supply, erection, supervision, testing and Commissioning of 66kV or above voltage class GIS bays of at least 10 nos. with at least Six (6) Nos such bays being outside the country of origin of OEM or in India. The credentials, work experience of the proposed GIS subcontractor / OEM and their MOU with Bidder to participate in this Bid should be submitted with this prequalification package, failing which the prequalification application may be rejected.</i></p>	Refer to SN 174 above
419	3	Part 2:Works Requirements Section VII-B (PS); Appendix B: Technical Sheets	7.4.1.1 & 7.4.1.2 (General)	All the cables including HV and LV required for works in RSS shall be FRLS (Fire retardant Low smoke) anti-rodent and anti-termite type.	<p>Please confirm that the 33kV, 25 kV & LT cables shall have FRLS sheath.</p> <p>132KV cables shall have HDPE sheath as per clause no. 7.4.2.7.3 page no. 173 of 219. HDPE Sheath shall have no FRLS Properties.</p> <p>Please confirm that 132 KV cables shall be non FRLS.</p>	<p>Confirmed</p> <p>Tender conditions prevail</p>
420	4	Part 2:Works Requirements Section VII-B (PS); Appendix B: Technical Sheets	7.4.2.4.1 (132kV cables)	The conductor shall be made of copper with minimum cross section of 240 sq mm aluminium.	<p>Please confirm conductor material is copper or aluminium for 132kV cables.</p> <p>Please also provide the cross sectional area of the cables.</p>	Refer to SN 41 above

Overall SN	SN	Vol No.	Clause no.	Bid Condition	Bidder's Queries	NMRCL's Response
421	5	Part 2:Works Requirements Section VII-B (PS); Appendix B: Technical Sheets	7.4.2.6.4 (132kV cables)	For XLPE insulation the after ageing duration mentioned is 240 h at 135 deg c	As per Table No. 6 of IEC: 60840, for aging test- duration shall be 168 hrs instead of 240 hrs mentioned in the specs. Please confirm that aging test shall be done as per IEC: 60840.	Tender conditions prevail
422	6	Part 2:Works Requirements Section VII-B (PS); Appendix B: Technical Sheets	7.4.2.7.7 (132kV cables)	The straight through joints and sealing ends wherever required shall be heat shrink type (or alternate type subject to provenness)	For 132 KV and above grade, premoulded joints and terminations shall be used for the better performance of the cable system instead of heat shrinkable. Because these type of joints and terminations are already pre tested 100 % as per IEC: 60840 in the lab. Please confirm that the straight though joints and sealing ends wherever required shall be premoulded type.	Alternate proven type already mentioned No changes foreseen
423	7	Part 2:Works Requirements Section VII-B (PS); Appendix B: Technical Sheets	7.4.3.2.3 (33kV cables)	The conducting core shall be made of bare annealed copper, according to class 2 as per publication IEC: 60228 or aluminium	Please confirm the conductor material of copper or aluminium. Please also provide the cross sectional area of the cable.	Refer to SN 34 above
424	8	Part 2:Works Requirements Section VII-B (PS); Appendix B: Technical Sheets	7.4.3.2.3 (33kV cables)	a) From SWGR Transformer secondary to the 33KV Switchgear in the SWGR Room 400 sq mm copper (or as per detailed design) b) From 33KV Switchgear in the SWGR room to the 33KV / 415 V Auxillary station transformer in the SWGR Room Aluminium of appropriate size.	Please confirm the conductor material (Aluminum or copper), the cross sectional area and quantity of 33KV cable from SWGR Transformer secondary to the 33 KV Switchgear in the SWGR Room. Please confirm the conductor material (Aluminum or copper), the cross sectional area and quantity of 33KV cable from 33 KV Switchgear in the SWGR Room to Auxiliary station transformer	Refer to SN 34 above Quantity to be worked out by Bidders based on information provided in Bid Documents
425	9	Part 2:Works Requirements Section VII-B (PS); Appendix B: Technical Sheets	SN 16 (25kV cables)	Non metallic part of semiconducting material plus metallic part consisting of standard wire and copper tape , rated to carry a short circuit current of 14kA	Please provide the duration (Time) of the short circuit current.	Refer to SN 341 above
426	10	Part 2:Works Requirements Section VII-B (PS); Appendix B: Technical Sheets	6.2 (33kV Cables)	Earth fault current requirement of 33kv cable not mentioned in the GTP	Please provide the earth fault current requirement for 33kv cables	Contractor to propose as their design for approval by Engineer No changes foreseen


Overall SN	SN	Vol No.	Clause no.	Bid Condition	Bidder's Queries	NMRCL's Response
427	11	Part 2:Works Requirements Section VII-B (PS); Appendix B: Technical Sheets	7.4.3 & 7.4.4 (33kV Cable)	<p>Clause 7.4.3.1 -The 33KV cable shall confirm to IEC 502/1 and shall be of 19/33(36) KV. The cables shall be of dry insulated radial field cable , unearthed type based on proven technology</p> <p>Clause 7.4.3.2.1- Operating voltage: 33kv rms between phases</p> <p>Specified voltage 18KV rms (According to IEC: 502-1)</p>	<p>1. For 33 KV Cables, IEC specification IEC:60502-2 will be applicable. Please amend the same</p> <p>Since the cables required is 19/33 KV grade . these are earthed grade cables . so please amend the clause of earthed type instead of unearthed type.</p> <p>2. As per IEC:60502-2 The voltage grade specified is 18/30(36). So please amend the same .</p> <p>3. The cable required are as per IEC:60502-2 where as the cable grade required as per IS: 7098(P-2) . As per IS : 7098 (P-2) the insulation thickness shall be 8.8 mm where as , as per IEC: 60502 , The insulation thickness is 8.0 mm . So, please confirm the voltage grade and the insulation thickness required for 33KV cables</p>	<p>IEC corrected (60502-2) in the clause 7.4.3.1</p> <p>Refer to Addendum</p>
428	12	Part 2:Works Requirements Section VII-B (PS); Appendix B: Technical Sheets	7.4.3.2.6 7.4.3.2.7 (33kV Cable)	<p>The metallic part applied over the semiconducting part shall consist of stranded wire with copper tape. This metallic screen shall be capable of routing the network zero sequence short circuit , in the event of parallel operation of two HV/MV transformer.</p> <p>Clause 7.4.3.2.7-Outer The nominal thickness of this sheath shall be determined according to the requirements set forth in standard IEC: 502-1.</p>	<p>Please confirm the area of copper screen and earth fault current requirement to be considered. For both Copper and Aluminium cables.</p> <p>Please correct the specification to IEC: 502-2</p>	<p>Fault level shall be as per Contractor's proposed design and approval by Engineer.</p> <p>Clause 7.4.3.2.7 amended</p> <p>Refer to Addendum</p>
429	13	Part 2:Works Requirements Section VII-B (PS); Appendix B: Technical Sheets	7.4.3.2.2 (33kV Cable)	<p>Fire retardant low smoke (FRLS)</p> <p>All cables shall be non fire propagating , non-toxic and low smoke producing and confirm and confirm with UTE standard 32 700 test no. 2 . IEC 502-1 or equivalent.</p>	<p>As per IEC 502-1 Table no. 23 the properties mentioned is for FRLSOH (Zero Halogen).</p> <p>Please confirm the outer sheath material required is FRLS or FRLSOH & also incorporate all the properties of FRLS/FRLSOH and also incorporate the testing standard IEC-754 & ASTM-D2843 & ASTM-D2863</p>	<p>Clause 7.4.3.2.2 amended</p> <p>Refer to Addendum</p>
430	1	Part 1, Section II	BDS ITB 7.5	The bidder may send such queries either by post to the address mentioned in the bid documents or by email: md.nmrcl.tenders@gmail.com upto 20th May 2016	Request to extend the date of submission of queries by 10 days	The date of submission of queries was extended by one week after the pre-bid meeting on 20.05.2016.
431	2	Part 1, Section III	4.2 (b) (Eligibility & Qualification Criteria)	<p>Minimum of Design, Detail Engineering, Supply, Installation, Testing and commissioning of 11KV and above indoor Auxiliary Substations</p> <p>One contract of 10 Auxiliary Substations or more OR Two contracts of 14 Auxiliary Substations in total or more OR Three contracts of 17 Auxiliary Substations in total or more</p>	We request to NMRCL to delete the word "indoor" in the said criteria	Refer to SN 173 above
432	3	Part 1, Section III	4.2 (b) (Eligibility & Qualification Criteria)	<p>Minimum of Design, Detail Engineering, Supply, Installation, Testing and commissioning of 11KV and above indoor Auxiliary Substations</p> <p>One contract of 10 Auxiliary Substations or more OR Two contracts of 14 Auxiliary Substations in total or more OR Three contracts of 17 Auxiliary Substations in total or more</p>	We request you to revise criteria in one contract of 5 auxiliary substations or more OR two contracts of 7 auxiliary substations or more OR three contracts of 8 auxiliary substations or more	Refer to SN 173 above

Overall SN	SN	Vol No.	Clause no.	Bid Condition	Bidder's Queries	NMRCL's Response
433	4	Part 1, Section III	4.2 (b) (Eligibility & Qualification Criteria)	Minimum of Design, Detail Engineering, Supply, Installation, Testing and commissioning of 11kV and above indoor Auxiliary Substations One contract of 10 Auxiliary Substations or more OR Two contracts of 14 Auxiliary Substations in total or more OR Three contracts of 17 Auxiliary Substations in total or more	We request to NMRCL to allow the said criteria to be met by specialized subcontractor	Refer to SN 173 above
434	1	Part 1, Section II	BDS ITB 7.5	The bidder may send such queries either by post to the address mentioned in the bid documents or by email: md.nmrcl.tenders@gmail.com upto 20th May 2016	Request to extend the date of submission of queries by 10 days	The date of submission of queries was extended by one week after the pre-bid meeting on 20.05.2016.
435	2	Part 1, Section III	Eligibility and qualification criteria - 4.2 (b)	Minimum of Design, Detail Engineering, Supply, Installation, Testing and Commissioning of 11kV and above indoor Auxiliary Substations One contract of 10 Auxiliary Substations or more OR Two contracts of 14 Auxiliary Substations in total or more OR Three contracts of 17 Auxiliary Substations in total or more	We request NMRCL to delete the word "indoor" in the said criteria	Refer to SN 173 above
436	3	Part 1, Section III	Eligibility and qualification criteria - 4.2 (b)	Minimum of Design, Detail Engineering, Supply, Installation, Testing and Commissioning of 11kV and above indoor Auxiliary Substations One contract of 10 Auxiliary Substations or more OR Two contracts of 14 Auxiliary Substations in total or more OR Three contracts of 17 Auxiliary Substations in total or more	We request you to revise criteria in: One contract of 5 Auxiliary Substations or more OR Two contracts of 7 Auxiliary Substations in total or more OR Three contracts of 8 Auxiliary Substations in total or more	Refer to SN 173 above
437	4	Part 1, Section III	Eligibility and qualification criteria - 4.2 (b)	Minimum of Design, Detail Engineering, Supply, Installation, Testing and Commissioning of 11kV and above indoor Auxiliary Substations One contract of 10 Auxiliary Substations or more OR Two contracts of 14 Auxiliary Substations in total or more OR Three contracts of 17 Auxiliary Substations in total or more	We request to NMRCL to allow the said criteria to be met by specialized subcontractor	Refer to SN 173 above
438	5	Part 3	Subclause 4.11: Sufficiency of Contract Price	The Contractor shall be deemed to: (a) have satisfied himself as to the correctness and sufficiency of the Accepted Contract Amount, and (b) Have based the Accepted Contract Amount on the data, interpretations, necessary information, inspections, examinations and satisfaction as to all relevant matters referred to in subclause 4.10 [Site Data] ...	The bidder understands from this subclause that the Contract Price as stipulated in this subclause only includes foreseeable events and as agreed between the parties for entering the Contract. Hence, the Contract Price should be adjusted for all the delay events, unforeseeable events, scope change, variations etc., which are not at all attributable to the Contractor as listed in the subclauses 2.1, 4.2, 4.13, 8, 13, 14.1. Please confirm	Tender conditions prevail

Overall SN	SN	Vol No.	Clause no.	Bid Condition	Bidder's Queries	NMRCL's Response
439	6	Part 3	Subclause 4.15: Access Routes	<p>(a) the Contractor shall (as between the Parties) be responsible for any maintenance which may be required for his use of access routes;</p> <p>(b) the Contractor shall provide all necessary signs or directions along access routes, and shall obtain any permission which may be required from the relevant authorities for his use of routes, signs and directions.</p> <p>(c) the Employer shall not be responsible for any claims which may arise from the use or otherwise of any access route;</p> <p>(d) the Employer does not guarantee the suitability or availability of particular access routes; and</p> <p>(e) Costs due to non-suitability or non-availability, for the use required by the Contractor, of access routes shall be borne by the Contractor ...</p>	<p>The bidder understands that he has to maintain the access routes and he is only responsible for any claims arising out of access routes. The Bidder would like to request NMRCL to pay cost for maintenance of access routes or any other expenditure expended by the Bidder caused due to the default of any third party, EMPloyer and/or other governing agencies.</p> <p>Also, the Bidder requests NMRCL to delete subclause 4.15(e).</p> <p>Please confirm</p>	Tender conditions prevail
440	7	Part 3	Subclause 8.9 Consequences of Suspension	<p>The Contractor shall not be entitled to extra cost (if any), incurred by him, during the period of suspension of Work, if such suspension is:</p> <p>a. provided for in the Contract, or</p> <p>b. necessary for proper execution of Works or by reasons of weather condition or by some default on the part of the Contractor, or</p> <p>c. necessary for the safety of Works or any part thereof, or</p> <p>d. necessary for the safety of adjoining public or other property or safety of the public or workmen or those who have to be at the site or</p> <p>e. to ensure safety and to avoid disruption of traffic and utilities, as also to permit fast repairs and restoration of any damaged utilities, or</p> <p>f. on account of work carried out by the Contractor not in accordance with the directions of the Engineer; or</p> <p>g. on account of any other reason which is not attributable to the Employer.</p>	<p>The bidder requests NMRCL to provide cap for no. of days of delay period for suspension of works as longer periods would result in idling charges etc., thereby causing extra cost to the bidder. Please confirm.</p>	Tender conditions prevail
441	8	Part 3, Section IX	Subclause 8.4: Extension of time for completion	<p>(d) any delay, impediment or prevention caused by or attributable to the Employer, the Employer's Personnel, or the Employer's other contractors.</p>	<p>The Bidder requests NMRCL to modify subclause 8.4 (d) as under:</p> <p>(d) any delay, impediment or prevention caused by or attributable to the Employer, the Employer's personnel or the Employer's other contractors, any other governing agency or third party</p>	Tender conditions prevail
442	9	Part 3, Section IX	Subclause 14.2: advance payment, page 174 Particular Condition	<p>Unless stated otherwise in the Contract Data, the advance payment shall be repaid through percentage deductions from the interim payments determined by the Engineer in accordance with subclause 14.6 (issue of Interim Payment Certificates), as follows:</p> <p>(a) deductions shall commence in the next interim Payment Certificate following that in which the total of all certified interim payments (excluding the advance payment and deductions and repayments of retention) exceeds 30 percent (30%) of the Accepted Contract Amount; and</p>	<p>There is a contradiction as to when the advance payment will be recovered from payment, i.e. after 20% completion of the work or 30% completion of the work. Please confirm</p>	

Overall SN	SN	Vol No.	Clause no.	Bid Condition	Bidder's Queries	NMRCL's Response
		Part 3, Section IX. PC Part A Contract Data	SN 39 Repayment amortization rate of advance payment 14.2 (b), Page 129	The repayment amortization rate (%) shall be as under: The recovery of the above Advance Payment shall be done in respective currencies and shall commence when 20% of the original contract value of the work has been paid in respective currencies (in addition to the Mobilization advance) and shall be recovered by deduction of 25% of the amount of each Interim Payment, until the total of the mobilization advance is recovered.		
443	10	Part 3, Section IX. PC Part A Contract Data	SN 30 Delay damages for the works	(c) There is no maximum limit in levy of LD for delays in individual Key Dates. However, maximum limit for cumulative LD for complete Contract shall not exceed 10% of the original Contract Price.	The Bidder requests NMRCL to modify the sub-clause by deleting certain portion as there is no cap for levying damages for individual key dates. The modified sub-clause is as under: (c) Maximum limit for cumulative LD for complete contract shall not exceed 10% of the original Contract Price.	Tender conditions prevail
444	11	NIT		Online submission upto 1600 hrs on 28th June 2016 at NMRCL's e-tender portal	Keeping in view the vastness of the work and short time available, we request NMRCL to extend bid submission date by 2 months for us to submit most economical bid.	Refer to Addendum
445	1	TD	Sub-clause 4.2A (new sub-clause)	PCU & PCG	Our understanding is, that Parent company undertaking & guarantee are a requirement when the bidder (Regional Unit / Sister concern) draws upon the credentials of Parent company for qualification, and not required if the bidder is a registered firm under Indian Company Act 1956 and meets the qualification requirement on their own credentials. We request your confirmation.	Tender conditions prevail
446	2	TD	Section IX, Particular Conditions SN 40 Sub Clause 14.3	Percentage of Retention Money: 0% (Zero Percentage)	Our understanding towards Retention Money as per this clause is that there won't be any deduction towards retention money from the Interim Payment of the Bidder during the course of execution. Kindly Clarify.	Your understanding is correct
447	3	TD	Section IX, Particular Conditions SN 41 Sub Clause 14.3	Limit of Retention Money. The aggregate amount of the Performance Security and the Retention Money shall not exceed 10% (ten percent) of the Accepted Contract Amount	As per sub-clause 14.3 and SN 40 of PC the % of Retention Money is 0%. Therefore we request you to modify the clause suitably duly deleting the details related to Performance security since Retention Money and Performance Security are two different contract conditions.	Tender conditions prevail
448	4	TD	Section X Contract Forms	Retention Money Security Demand Guaranty	Considering the queries in SI No 2 & 3 above and also the Percentage of Retention Money is 0%, our understand is that this Retention Money security is not required. Hence we request you to delete this Form.	Refer to SN 446 above

Overall SN	SN	Vol No.	Clause no.	Bid Condition	Bidder's Queries	NMRCL's Response
449	5	TD	Section IX, Particular Conditions SN 48 Sub Clause 14.7 (c)	<p>c) Stage Payment shall be made as under:</p> <p>For all items where Supply, Erection, Testing and Commissioning, all are combined in one item and rates are not identified separately, the following percentages shall apply:</p> <ul style="list-style-type: none"> - Delivery of material - 75% - Payment after erection - 15% - Payment after successful testing, commissioning and handing over - 10% <p>The maximum payment against the supply will be limited to 85% of the <u>cost of item incurred by the Contractor.</u></p>	<p>It will be difficult to establish the cost incurred by the Contractor during execution towards supply of a particular item in design and build contract. Therefore we request you to modify the last paragraph as under:</p> <p>The maximum payment against the supply will be limited to 85% of the price of item quoted by the Contractor.</p>	Refer to SN 151 above
450	6	Vol-1	Section III	<p>Appendix 4.4D Proposal for construction machinery ...</p> <ul style="list-style-type: none"> 2. 20Ton Crane - 5 3. Rail Cum Road Vehicle / Tower Wagon / Wiring Train - 3 7. Trucks - 5 8. Welding Plant - 10 9. Generator (>25kVA) - 5 	<p>The requirements stipulated under SN 2, 3, 7, 8 & 9 are either more than the actual requirement for this size of project or not required at all. In view of the above we request you to modify the requirements for the following items as under:</p> <ul style="list-style-type: none"> 2. 20Ton Crane - 2 3. Rail Cum Road Vehicle / Tower Wagon / Wiring Train - 0 7. Trucks - 2 8. Welding Plant - 2 9. Generator (>25kVA) - 2 	Refer to SN 29 above
451	7	TD Vol-2	Section VII GC, Part 2 Works Requirements - PS	<p>1.5 Priority of Documents</p> <p>1.5.6 The Priority of Documents</p>	<p>The priority of documents indicated in the two volumes is different from each other. It is requested to review and modify the same</p>	Tender conditions prevail
452	8	Vol-2	Part-2 Works Requirements - PS	<p>17.11 Contractors own Rolling Stock</p> <p>17.11.1 to 17.11.6</p>	<p>Since proving of Rolling Stock during installation and testing of the works are envisaged in within the scope of work of this tender it is requested to delete these conditions.</p>	Tender conditions prevail


General Manager
Procurement
NMRCL, Nagpur

Part B: Addendum

SN	Part No.	Section	Clause ref.	Existing description	Replaced with
1.	Part 1	Section III. Eligibility and Qualification Criteria	4.1 General Construction Experience Column 'Requirement'	Experience under construction contracts in the role of prime contractor, JV member, sub-contractor, or management contractor for at least the last 5 [five] years, starting 1 st January 2011.	Experience under railway (metro, railway, suburban, monorail, high speed rail etc.) system construction contracts in the role of prime contractor, JV member, sub-contractor, or management contractor for at least the last 5 [five] years, starting 1 st January 2011.
2.	Part 1	Section III. Eligibility and Qualification Criteria	4.2 Specific Construction Experience (c)	<p>Minimum of Supply, Installation, Testing and Commissioning of 110kV and above Substation Systems</p> <p>One contract of at least 2 (two) Substations OR Three contracts of at least 3 Substations in total</p> <p><i>Note: In case the Bidder or a member of the JV/Consortium does not have experience of Supply, Erection, Supervision, Testing and Commissioning of Gas Insulated Substations (GIS), it will be required by the Bidder to engage suitable experienced subcontractor / OEMs having experience in supply, erection, supervision, testing and Commissioning of 66kV or above GIS substations of at least 10 nos. with at least two such substations being outside the country of origin of OEM or in India. The credentials, work experience of the proposed GIS subcontractor / OEM and their MOU with Bidder to participate in this Bid should be submitted with this prequalification package, failing which the prequalification application may be rejected.</i></p>	<p>Minimum of Supply, Installation, Testing and Commissioning of 110kV and above Substation Systems</p> <p>One contract of at least 2 (two) Substations OR Three contracts of at least 3 Substations in total</p> <p><i>Note: In case the Bidder or a member of the JV/Consortium does not have experience of Supply, Erection, Supervision, Testing and Commissioning of Gas Insulated Substations (GIS), it will be required by the Bidder to engage suitable experienced subcontractor / OEMs having experience in supply, erection, supervision, testing and Commissioning of 66kV or above GIS substations of at least 02 nos. with at least one such substation being outside the country of origin of OEM or in India. The credentials, work experience of the proposed GIS subcontractor / OEM and their MOU with Bidder to participate in this Bid should be submitted with this prequalification package, failing which the prequalification application may be rejected.</i></p>
3.	Part 1	Section III. Eligibility and Qualification Criteria	4.2 Specific Construction Experience (a), (b), (c) & (d) – Column 'Compliance Requirements'	<p>Item (b) – Requirements to be met by JV Item (d) – Requirements permitted to be met by specialized subcontractor</p> <p>Item (a) & (c) – Individual cells blank</p>	<p>Item (b) – Requirements permitted to be met by specialized subcontractor Item (d) – Requirements to be met by JV</p> <p>Item (a) & (c) – Individual cells filled in for clarity</p> <p>Refer to attachment at the end of this document</p>
4.	Part 1	Section IV. Bidding Forms	Form 4.4 Bidder's Technical	The System, including all Sub-systems and Equipment shall be of proven design practice. Sub-systems and Equipment of similar design philosophy shall have been	The System, including all Sub-systems and Equipment shall be of proven design practice. Sub-systems and Equipment of similar design philosophy shall have been

SN	Part No.	Section	Clause ref.	Existing description	Replaced with
			Proposal; Para F.2	in use and have established their performance reliability on at least one Mass Rapid Transit System or Suburban Railway System in Revenue Service over a period of at least two years. Bidders are required to submit Performance certificates from users in support of the above performance requirements.	in use and have established their performance reliability on at least one Mass Rapid Transit System or Suburban Railway System in Revenue Service over a period of at least two years (either in India or in minimum two other countries) . Bidders are required to submit Performance certificates from users in support of the above performance requirements.
5.	Part 1	Section IV. Bidding Forms (Form 4.4)	Appendix 4.4-D (Proposals for Construction Machinery)	<u>Changes in some items as under</u> Item 3: Rail Cum Road Vehicle / Tower Wagon / Wiring Train ... 3 nos. Item 2: 20 Tone Crane ... 5 nos. Item 9: Generator (>25kVA) ... 5 nos.	Item 3: Rail Cum Road Vehicle / Tower Wagon / Wiring Train ... Not Applicable Item 2: 20 Ton Crane ... 2 nos. Item 9: Generator (>25kVA) ... 2 nos.
6.	Part 1	Section IV. Bidding Forms	Appendix 4.4-C (Proposals for Equipment / Systems)	New Item 26 added	Item 26: Neutral Grounding Resistors
7.	Part 1	Section IV. Bidding Forms	Appendix 4.4-E (Proforma for ...)	New item 5 added in the table	Item 5: 33kV/415V, 200 kVA Transformer Quantity: 4 nos.
8.	Part 1	Section IV; Annexure IV-A Pricing Document	Para 2.1	Price Variation in Transformers The variation in Transformers (AMS Transformers and Traction transformers in the RSS) prices will be governed by IEEMA formula. Copy of the relevant formula is enclosed as Appendix R: Annexure 1 to this Pricing Document. Latest date of delivery for considering price variation shall not be later than 180 days before the relevant Key Date for commissioning of RSS/ASS (extended Key Date if extension of time is permitted by the Employer). If transformer delivery is delayed, then the variation shall be paid as on above benchmark of 180 days or on as actual date (for early	Price Variation in Transformers The variation in Transformers (Auxiliary Transformers, AMS Transformers and Traction transformers in the RSS/ASS) prices will be governed by IEEMA formula. Copy of the relevant formula is enclosed as Appendix R: Annexure 1 to this Pricing Document. Latest date of delivery for considering price variation shall not be later than 180 days before the relevant Key Date for commissioning of RSS/ASS (extended Key Date if extension of time is permitted by the Employer). If transformer delivery is delayed, then the variation shall be paid as on above benchmark of

SN	Part No.	Section	Clause ref.	Existing description	Replaced with
				delivery) whichever is earlier.	180 days or on as actual date (for early delivery) whichever is earlier.
9.	Part 1	Section IV; Annexure IV-A Pricing Document	Para 2.2	Price Variation in EHV Cables (132kV) It shall be governed by the formula as given in the Appendix R: Annexure 2 of this Pricing Document. It shall be applicable on "Supply of EHV Cables".	Price Variation in EHV Cables (132kV) & 33kV Cables It shall be governed by the formula as given in the Appendix R: Annexure 2 of this Pricing Document. It shall be applicable on "Supply of EHV Cables" also .
10.	Part 1	Section IV; Annexure IV-A Pricing Document	9.0	Fees to Government Agencies For cable laying, fees deposited by the Contractor to Government Agencies for obtaining permission for laying of EHV cables shall be reimbursed by NMRCL on submission of documentary evidence of payment. Only road restoration charges paid by the Contractor to the civic agencies will be reimbursed by NMRCL on submission of documentary evidence of payment. If for some stretch, road restoration is to be done by the Contractor, the price shall be included in the Price Schedule.	Fees to Government Agencies For cable laying, fees deposited by the Contractor to Government Agencies for obtaining permission for laying of EHV cables, supervision charges etc. shall be reimbursed by NMRCL on submission of documentary evidence of payment. Road restoration work is under the scope of Contractor , the price for which shall be included in the Price Schedule.
11.	Part 1	Section IV; Annexure IV-A Pricing Document	Note (k) of Attachment to Bid Total (Details of taxes ...)	The amount mentioned other than INR for the purpose of comparison of the applicable taxes and levies, the exchange rate prevailing on the date of submission of the Tender would be considered.	The amount mentioned other than INR for the purpose of comparison of the applicable taxes and levies, the exchange rate prevailing on the date 28 days before the latest date of submission of the Tender would be considered.
12.	Part 1	Section IV; Annexure IV-A Pricing Document	Appendix C: Brief Description of Sections	Note: Bidders shall ascertain the length of corridor for the works in particular section from the Alignment drawings. Any change up to plus/minus 0.5 km in the alignment of the overall corridor shall not be considered as a variation.	Note: Bidders shall ascertain the length of corridor for the works in particular section from the Alignment drawings. Any change up to plus/minus 0.5 km in the alignment of the overall corridor shall not be considered as a variation. Regarding the 132kV cable route length, the Bidders shall ascertain the length of the route from the survey drawing provided in the Tender

SN	Part No.	Section	Clause ref.	Existing description	Replaced with
					Drawings volume. The route length is estimated as 6.2km. Any change upto plus/minus 0.2km in the in the overall route length shall not be considered as a variation.
13.	Part 1	Section IV; Annexure IV- A Pricing Document	Appendix K2; Section HVC – Cost Center B and Cost Center C	<u>Following items correction</u> B1.3: 132kV outdoor termination for RSS-1 B1.4: 132kV outdoor termination for RSS-1 C1.3: 132kV outdoor termination for RSS-1 C1.4: 132kV outdoor termination for RSS-2	B1.3: 132kV indoor termination for RSS-1 B1.4: 132kV indoor termination for RSS-1 C1.3: 132kV indoor termination for RSS-1 C1.4: 132kV indoor termination for RSS-2
14.	Part 1	Section IV; Annexure IV- A Pricing Document	Appendix M: ADJ (Additional / Unit Prices)	Items at SN 41 to 50 of the Table (Traction equipment 25kV)	Deleted
15.	Part 1	Section IV; Annexure IV- A Pricing Document	Appendix P (Vendor Approval ...) Para (1) under 'Systems and Subsystems'	Manufacturer shall have at least 5 years experience of design and manufacturing of similar system. Proposed systems from the proposed manufacturing unit shall have been in use and have established their satisfactory performance and reliability for 3 years in minimum.	Manufacturer shall have at least 5 years experience of design and manufacturing of similar system. Proposed systems from the proposed manufacturing unit shall have been in use and have established their satisfactory performance and reliability for 2 years in minimum (either in India or in minimum two other countries) .
16.	Part 1	Section IV; Annexure IV- A Pricing Document	Appendix P (Vendor Approval ...) Para (3) under 'Systems and Subsystems'	Proposed Systems/ sub-systems shall have been in use and have established their satisfactory performance and reliability on at least Two mass rapid transit systems (including Railway or Airports) in revenue service over a period of three years or more either outside the country of origin at an average in two different countries or in Indian metros. Systems/ Sub-systems/ components used in Indian metros do not get automatically qualified for use unless specifically approved by the Engineer for this project. If required by the Engineer, Contractor shall provide certificate of	Proposed Systems/ sub-systems shall have been in use and have established their satisfactory performance and reliability on at least Two mass rapid transit systems (including Railway or Airports) in revenue service over a period of two years or more (either in India or in minimum two other countries) . Systems/ Sub-systems/ components used in Indian metros do not get automatically qualified for use unless specifically approved by the Engineer for this project. If required by the Engineer, Contractor shall provide certificate of satisfactory performance for a period of

SN	Part No.	Section	Clause ref.	Existing description	Replaced with
				satisfactory performance for a period of five years or more from the Metro operators. Where similar System/ Sub-systems of a different rating are already proven in service as per the above criteria then the supply shall be based on such sub-systems.	two years or more from the Metro operators. Where similar System/ Sub-systems of a different rating are already proven in service as per the above criteria then the supply shall be based on such sub-systems.
17.	Part 2	Section VII-A (GS)	6.9	All test software, with the exclusion of built-in test software, shall be produced in accordance with a quality system controlled under the requirements of ISO 9000-3. Test software shall be developed and documented using structured techniques and shall be designed to be maintainable throughout the term of the Contract. All test software shall be documented to be supportive of maintenance. Any test software that is to be delivered to the Employer (for long term testing use) shall be fully documented including source code listings to allow the Employer to maintain the software for the life of the supported system.	All test software, with the exclusion of built-in test software, shall be produced in accordance with a quality system controlled under the requirements of ISO 9000-3. Test software shall be developed and documented using structured techniques and shall be designed to be maintainable throughout the term of the Contract. All test software shall be documented to be supportive of maintenance. Any test software that is to be delivered to the Employer (for long term testing use) shall be fully documented including application programming code listings to allow the Employer to maintain the software for the life of the supported system.
18.	Part 2	Section VII-A (GS)	Appendix 7 7.0	NOISE MONITORING (Not Used for this Contract)	NOISE MONITORING (Used for this Contract for relevant activities viz. 132kV cable works and RSS civil works)
19.	Part 2	Section VII-B (PS)	2.2.3	Power supply for the above corridors is received at: 132kV at twin Receiving Substations at Sitabuldi from the Mankapur Sub Station of MSETCL through duplicate (for each of the RSSs i.e. total four cable feeders) three phase cable feeders, each consisting of 3 single core cables of appropriate capacity. The 132kV arrangement at MSETCL Substation end, i.e. 132kV Switching Substation is also covered under the scope of this tender.	Power supply for the above corridors is received at: 132kV at twin Receiving Substations (with separate buildings) at Sitabuldi from the Mankapur Sub Station of MSETCL through duplicate (for each of the RSSs i.e. total four cable feeders) three phase cable feeders, each consisting of 3 single core cables of appropriate capacity. The 132kV arrangement at MSETCL Substation end, i.e. 132kV Switching Substation is also covered under the scope of this tender.

SN	Part No.	Section	Clause ref.	Existing description	Replaced with
20.	Part 2	Section VII-B (PS)	3.2.2.8.2 (b)	Final location survey and confirmation of utilities, preparation of final construction / cable layout drawings indicating cable pull boxes, joint locations, any uncharted utilities, utility/route diversions if any and co-ordinating with the various State and Central Government Departments & utilities whenever and wherever necessary on the behalf of NMRCL. The coordination with city agencies shall also be done for the purpose of crossing over/under or minor shifting of utilities for cable laying etc. in case of major problems, NMRCL may also assist. This includes taking permission, depositing fees, if any & taking clearance after restoring back the works & handing over. This will also include depositing cost of restoration works, penalties on any account levied, security deposits or compensation for any damage or loss during the course of work. Fees deposited by the Contractor to Government Agencies for obtaining permission for laying of EHV cables shall be reimbursed by NMRCL on submission of documentary evidence of payment. Only road restoration charges paid by the Contractor to the civic agencies will be reimbursed by NMRCL on submission of documentary evidence of payment. If for some stretch, road restoration is to be done by the Contractor, the price shall be included in the price schedule.	Final location survey and confirmation of utilities, preparation of final construction / cable layout drawings indicating cable pull boxes, joint locations, any uncharted utilities, utility/route diversions if any and co-ordinating with the various State and Central Government Departments & utilities whenever and wherever necessary on the behalf of NMRCL. The coordination with city agencies shall also be done for the purpose of crossing over/under or minor shifting of utilities for cable laying etc. in case of major problems, NMRCL may also assist. This includes taking permission, depositing fees, if any & taking clearance after restoring back the works & handing over. This will also include depositing cost of restoration works, penalties on any account levied, security deposits or compensation for any damage or loss during the course of work. Fees deposited by the Contractor to Government Agencies for obtaining permission for laying of EHV cables, supervision charges etc. shall be reimbursed by NMRCL on submission of documentary evidence of payment.
21.	Part 2	Section VII-B (PS)	3.2.2.8.3 (n)	Deal and resolve in co-ordination with the Employer the interface with Local Authorities like NIT, BSNL, IGL, Power Supply Authorities, PWD, Municipal Corporation and other state government authorities etc. to ensure progressing of the field works as per schedule.	Deal and resolve in co-ordination with the Employer the interface with Local Authorities like Nagpur Improvement Trust (NIT) , BSNL, Gas Supply companies , Power Supply Authorities, PWD, Municipal Corporation and other state government authorities etc. to ensure progressing of the field works as per schedule.

SN	Part No.	Section	Clause ref.	Existing description	Replaced with
22.	Part 2	Section VII-B (PS)	3.6.11	The Contractor shall install mock-up equipment for system and any such facility(s) considered necessary for the training of Employer's staff in the Mihan / Higna Depot training centre.	The Contractor shall install mock-up equipment for system (including but not limited to 132kV cables, sheath cross bonding, 33kV cable etc.) and any such facility(s) considered necessary for the training of Employer's staff in the Mihan / Higna Depot training centre. This shall also include installation of SCADA training RTU and workstation in any one location to be decided by Employer.
23.	Part 2	Section VII-B (PS)	4.1.10	For all transformers, the transformers losses (iron / copper / load) shall not exceed the expected values specified in Appendix B Technical Sheets	For all transformers, the transformers losses (iron / copper / load) shall not exceed the expected values specified in Appendix B Technical Sheets. All the losses values shall be indicated at 75°C.
24.	Part 2	Section VII-B (PS)	4.2.7.3	The availability of the Power Supply system shall be greater than 99.99%.	The availability of the Power Supply system shall be not less than 99.99%.
25.	Part 2	Section VII-B (PS)	5.6.6.1	The function though is forming a part of the remote monitoring function. Leakage and return current monitoring contains of two functions: (a) Supervision of status of connecting strips at all TSSs and giving an alarm if the device has been removed of if there is a brake in the conductor continuity. (b) The permanent supervision of leakage current along the line, which is realized by an independent computerized system. In case of earth failure and the caused increase of leakage current, this system will provide alarms to SCADA to be displayed at the MMI.	Deleted
26.	Part 2	Section VII-B (PS)	6.2.2.1 (2 nd Para)	The complete lighting fixture shall have an IP code of 55 to ensure a good protection against dust and water (raining). The lamps, low High pressure vapour sodium type, shall have a suitable power to ensure the required level of illumination specified above.	The complete lighting fixture shall have an IP code of 55 to ensure a good protection against dust and water (raining). The lamps, LED type, shall have a suitable power to ensure the required level of illumination specified above.

SN	Part No.	Section	Clause ref.	Existing description	Replaced with
27.	Part 2	Section VII-B (PS)	6.3.2.5.2	The oil along with inhibitor to be used for the transformer must be in conformity with the IEC 61099 (with latest amendments) and of the highest non-inflammability degree.	The oil to be used for the transformer must be in conformity with the IEC 61099 (with latest amendments) and of the highest non-inflammability degree.
28.	Part 2	Section VII-B (PS)	6.3.2.5.5	Dielectric strength of the oil during test should be more than 55 kV /2.5 mm; the contractor shall mention the method and the referenced standard employed.	Dielectric strength of the oil during test should be more than 72 kV /2.5 mm ; the contractor shall mention the method and the referenced standard employed.
29.	Part 2	Section VII-B (PS)	6.3.2.6.1	<p>Short-circuit on HV side □</p> <p>The transformer shall be designed and constructed so as to withstand without damage, or impairment in its performances, any external short-circuit.</p> <p>The primary winding of the transformer shall be designed for carrying the full symmetrical short circuit current, for 3 sec. The full symmetrical short circuit current shall be calculated in accordance with IEC after taking into account the system impedance on the primary voltage of the transformer.</p> <p>The design of the primary side bushings of the Transformers shall withstand the symmetrical current for three seconds during short-circuit on primary voltage as specified in IEC 60076-5.</p> <p>To limit the short-circuit symmetrical current to an allowable value, the impedance voltage shall never be less than twelve percent (12%).</p> <p>At rated power and frequency on the main tapping, the impedance voltage shall be equal to about twelve point five percent (12.5%).</p>	<p>Short-circuit on HV side □</p> <p>The transformer shall be designed and constructed so as to withstand without damage, or impairment in its performances, any external short-circuit.</p> <p>The primary winding of the transformer shall be designed for carrying the full symmetrical short circuit current, for 3 sec. The full symmetrical short circuit current shall be calculated in accordance with IEC after taking into account the system impedance on the primary voltage of the transformer.</p> <p>The design of the primary side bushings of the Transformers shall withstand the symmetrical current for three seconds during short-circuit on primary voltage as specified in IEC 60076-5.</p> <p>At rated power and frequency on the main tapping, the impedance voltage shall be equal to about thirteen point eight percent (13.8%).</p>

SN	Part No.	Section	Clause ref.	Existing description	Replaced with
30.	Part 2	Section VII-B (PS)	6.5.2.2	The access road shall be black topped and transformer area shall be either cement concrete or RCC. For this purpose, the Contractor shall prepare the necessary design & calculations and submit them to the Employer/Employer's Representative, for notice of no objection. On notice of no objection of designs and calculations, the Contractor shall construct the approach roads as per approved designs. The approach roads should, at the minimum, be 7.0m wide and shall be able to support 100 – tonne trailers.	The access road shall be black topped and transformer area shall be either cement concrete or RCC. For this purpose, the Contractor shall prepare the necessary design & calculations and submit them to the Employer/Employer's Representative, for notice of no objection. On notice of no objection of designs and calculations, the Contractor shall construct the approach roads as per approved designs. The approach roads should, at the minimum, be 7.0m wide and shall be able to support 100 – tonne trailers. The internal roads within substations shall be concrete or RCC.
31.	Part 2	Section VII-B (PS)	6.5.2.4.3.3 (f)	Battery room shall be finished with hard floor – acid resistant, walls to be with glazed ceramic tile for 2.5m (minimum), above it shall be finished with acrylic emulsion paint. This room to be air-conditioned to maintain the room temperature as per design requirement.	Battery room shall be finished with hard floor – acid resistant, walls to be with glazed ceramic tile for 2.5m (minimum), above it shall be finished with acrylic emulsion paint. This room to be air- ventilated as per design requirement.
32.	Part 2	Section VII-B (PS)	7.1.1.52	The voltage transformers shall be of capacitive type <input type="checkbox"/>	The voltage transformers shall be of capacitive or inductive type <input type="checkbox"/>
33.	Part 2	Section VII-B (PS)	7.1.2.2	The scope of work comprises of design, manufacture, shop testing, supply, delivery at site, installation, testing and commissioning of 3-phase, 132 kV (Rated voltage 145kV), 2000A, 31.5kA Gas insulated indoor type receiving sub-station. The supply will include all supporting structures, auxiliary equipments, mechanical linkages, hydraulic piping for control devices with pumps, SF6 gas piping, auxiliary circuits wiring, interlocking devices, current and voltage transformers, cable end boxes and SF6 bus ducts. Necessary sub-assemblies must be assembled in the supplier's plan, accounting for the transportation condition. The scope of work includes the following (but not limited to):	The scope of work comprises of design, manufacture, shop testing, supply, delivery at site, installation, testing and commissioning of 3-phase, 132 kV (Rated voltage 145kV), 1500A , 31.5kA Gas insulated indoor type receiving sub-station. The supply will include all supporting structures, auxiliary equipments, mechanical linkages, hydraulic piping for control devices with pumps, SF6 gas piping, auxiliary circuits wiring, interlocking devices, current and voltage transformers, cable end boxes and SF6 bus ducts. Necessary sub-assemblies must be assembled in the supplier's plan, accounting for the transportation condition. The scope of work includes the following (but not limited to):

SN	Part No.	Section	Clause ref.	Existing description	Replaced with
34.	Part 2	Section VII-B (PS)	7.1.2.10, Table 7.1	Item 4: Rated current of busbar ... 2000A rms	Item 4: Rated current of busbar ... 1500A rms
35.	Part 2	Section VII-B (PS)	7.1.3.1.20 (c)	Probes shall be able to be completely immersed in hot transformer oil they shall withstand exposure to hot vapor during the transformer insulation drying process, as part of Vacuum Phase Drying (VPD). The probes shall meet the requirement to eliminate the possibility of partial discharge in high electric stress areas in the transformer. Probes shall have certified Weidman testing for electrical parameters per ASTM D-3426 and ASTM D-149 that is current (no more than 1 year old). Test results and studies to be submitted by the transformer manufacturer along with the first unit of a certain type of transformer.	Probes shall be able to be completely immersed in hot transformer oil they shall withstand exposure to hot vapor during the transformer insulation drying process, as part of Vacuum Phase Drying (VPD). The probes shall meet the requirement to eliminate the possibility of partial discharge in high electric stress areas in the transformer. Probes shall have certified Weidman testing (or equivalent) for electrical parameters per ASTM D-3426 and ASTM D-149 that is current (no more than 1 year old). Test results and studies to be submitted by the transformer manufacturer along with the first unit of a certain type of transformer.
36.	Part 2	Section VII-B (PS)	7.1.3.2.1 (2 nd Para)	The transformers shall have a min power rating of 100 to 200 kVA.	The transformers shall have a min power rating of 200 kVA
37.	Part 2	Section VII-B (PS)	7.1.4.1.1 (b)	33kV / 415V, 100 to 200 kVA Auxiliary dry type transformers	33kV / 415V, 200 kVA Auxiliary dry type transformers
38.	Part 2	Section VII-B (PS)	7.1.6.1.7.2 (last two paras)	To provide protection against the hazardous voltages, which may arise as a result of a broken contact wire or as a result of a potential difference (voltage difference) between two conductive parts due to induced voltages, all possible metal or concrete parts in the zone should be bonded together and earthed. For the concrete structures falling in this zone, a connection socket similar to the Earth Bridge (Erico or equivalent) duly tested and accepted with Copper current collector part having threaded hole and the stub Cadwelded with steel bar the other end of which should be arc welded with the reinforcement bar, before being cast into the concrete. The Earth collection plates can then be interconnected externally with a jumper either externally or they can be both interconnected even before the	To provide protection against the hazardous voltages, which may arise as a result of a broken contact wire or as a result of a potential difference (voltage difference) between two conductive parts due to induced voltages, all possible metal or concrete parts in the zone should be bonded together and earthed. For the concrete structures falling in this zone, a connection socket or Earth Bridge duly tested and accepted with Copper current collector part having threaded hole and the stub Cadwelded with steel bar the other end of which should be arc welded with the reinforcement bar, before being cast into the concrete. The Earth collection plates can then be interconnected externally with a jumper either externally or they can be both interconnected even before the casting is done depending on the situation

SN	Part No.	Section	Clause ref.	Existing description	Replaced with																																																						
				<p>casting is done depending on the situation and ease of installation.</p> <p>For the same reasons of maintaining equipotential bonding and stronger electrical connectivity between different precast components, Erico's Earth bridges (or equivalent) should be used for the applications of connections between multiple precast segments placed close to each other.</p>	<p>and ease of installation.</p> <p>For the same reasons of maintaining equipotential bonding and stronger electrical connectivity between different precast components, Earth bridges should be used for the applications of connections between multiple precast segments placed close to each other.</p>																																																						
39.	Part 2	Section VII-B (PS)	7.2.3.3	<p>Characteristics of breaker</p> <p>Power frequency withstand one minute in kV (rms):</p> <ul style="list-style-type: none"> • 95 kV for 25 kV • 275 kV for 132 kV <p>Impulse withstand (1.2/50 microsecond) in kV (peak):</p> <ul style="list-style-type: none"> • 250 kV for 25 kV, • 650 kV for 132 kV and 	<p>Characteristics of breaker</p> <p>Power frequency withstand one minute in kV (rms):</p> <ul style="list-style-type: none"> • 95 kV for 25 kV • 275 kV for 132 kV <p>Impulse withstand (1.2/50 microsecond) in kV (peak):</p> <ul style="list-style-type: none"> • 200kV for 25 kV, • 650 kV for 132 kV and 																																																						
40.	Part 2	Section VII-B (PS)	7.2.3.6.6	<table border="1"> <thead> <tr> <th>SN</th> <th>Description</th> <th>Particular</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Enclosure Type</td> <td>Single Phase Enclosure</td> </tr> <tr> <td>2</td> <td>System Voltage</td> <td>27.5kV</td> </tr> <tr> <td>3</td> <td>Rated Insulation Voltage</td> <td>52 kV</td> </tr> <tr> <td>4</td> <td>Rated frequency</td> <td>50Hz</td> </tr> <tr> <td>5</td> <td>Rated Current</td> <td>2000A @ 40 Deg C</td> </tr> <tr> <td>6</td> <td>Power Frequency withstand voltage</td> <td>95kV rms</td> </tr> <tr> <td>7</td> <td>Lightning Impulse withstand voltage</td> <td>250kV rms as per EN 50124-1</td> </tr> <tr> <td>8</td> <td>Rated short time current</td> <td>16kA for 3sec</td> </tr> </tbody> </table>	SN	Description	Particular	1	Enclosure Type	Single Phase Enclosure	2	System Voltage	27.5kV	3	Rated Insulation Voltage	52 kV	4	Rated frequency	50Hz	5	Rated Current	2000A @ 40 Deg C	6	Power Frequency withstand voltage	95kV rms	7	Lightning Impulse withstand voltage	250kV rms as per EN 50124-1	8	Rated short time current	16kA for 3sec	<table border="1"> <thead> <tr> <th>SN</th> <th>Description</th> <th>Particular</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Enclosure Type</td> <td>Single Phase Enclosure</td> </tr> <tr> <td>2</td> <td>System Voltage</td> <td>27.5kV</td> </tr> <tr> <td>3</td> <td>Rated Insulation Voltage</td> <td>52 kV</td> </tr> <tr> <td>4</td> <td>Rated frequency</td> <td>50Hz</td> </tr> <tr> <td>5</td> <td>Rated Current</td> <td>2000A @ 40 Deg C</td> </tr> <tr> <td>6</td> <td>Power Frequency withstand voltage</td> <td>95kV rms</td> </tr> <tr> <td>7</td> <td>Lightning Impulse withstand voltage</td> <td>200kV rms as per EN 50124-1</td> </tr> <tr> <td>8</td> <td>Rated short time current</td> <td>16kA for 3sec</td> </tr> </tbody> </table>	SN	Description	Particular	1	Enclosure Type	Single Phase Enclosure	2	System Voltage	27.5kV	3	Rated Insulation Voltage	52 kV	4	Rated frequency	50Hz	5	Rated Current	2000A @ 40 Deg C	6	Power Frequency withstand voltage	95kV rms	7	Lightning Impulse withstand voltage	200kV rms as per EN 50124-1	8	Rated short time current	16kA for 3sec
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SN	Part No.	Section	Clause ref.	Existing description			Replaced with		
				9	Peak withstand current	40kA peak	9	Peak withstand current	40kA peak
				10	Guaranteed SF6 gas loss per year	< 1%	10	Guaranteed SF6 gas loss per year	< 1%
41.	Part 2	Section VII-B (PS)	7.3.4.3.3 (a)	<p>The function of the interrupter is to open a 33kV cable, on load. <input type="checkbox"/>Or coupling interrupter to ensure the continuity of supply by creating a loop on the 33 kV cables. They shall have the following characteristics:</p> <ul style="list-style-type: none"> • Voltage rating:<input type="checkbox"/> 36kV, 50Hz • Current rating:<input type="checkbox"/> minimum 400A • Operating voltage:<input type="checkbox"/> 33kV • Breaking capacity:<input type="checkbox"/> minimum 400A • Closing capacity:<input type="checkbox"/> minimum 31kA peak <p>Acceptable short duration current: minimum 12.5 kA rms for 3 second</p>			<p>The function of the interrupter is to open a 33kV cable, on load. <input type="checkbox"/>Or coupling interrupter to ensure the continuity of supply by creating a loop on the 33 kV cables. They shall have the following characteristics:</p> <ul style="list-style-type: none"> • Voltage rating:<input type="checkbox"/> 36kV, 50Hz • Current rating:<input type="checkbox"/> minimum 400A • Operating voltage:<input type="checkbox"/> 33kV • Breaking capacity:<input type="checkbox"/> minimum 12.5kA • Closing capacity:<input type="checkbox"/> minimum 31kA peak <p>Acceptable short duration current: minimum 12.5 kA rms for 3 second</p>		
42.	Part 2	Section VII-B (PS)	7.3.7.5.1	<p>They shall be constituted by assembly of three single core cables, insulated with chemically cross-linked polyethylene, with semi-conducting screen over a copper conducting core, and insulating envelope and polyvinyl chloride protective sheath.</p>			<p>They shall be constituted by assembly of three single core cables, insulated with chemically cross-linked polyethylene, with semi-conducting screen over a copper or aluminium conducting core, and insulating envelope and polyvinyl chloride protective sheath.</p>		
43.	Part 2	Section VII-B (PS)	7.3.7.6.1	<p>The conducting core shall be made of bare annealed copper, according to class 2 as per publication IEC 228.</p>			<p>The conducting core shall be made of bare annealed copper, according to class 2 as per publication IEC 228, or aluminium.</p>		
44.	Part 2	Section VII-B (PS)		<p><i>New sub-clause</i></p>			<p>The 33kV ring main cables laid on viaducts and at-grade mainline section (if installed in air on cable brackets / trays) may be unarmored depending on the designs and risk assessment performed by the Contractor. The 33kV cables from RSS to ASS and shall be armoured if the same are routed through open trenches or under the road.</p>		
45.	<i>Kept Blank</i>								

SN	Part No.	Section	Clause ref.	Existing description	Replaced with
46.	Part 2	Section VII-B (PS)	7.4.2.4.1	The conductor shall be made of copper with a minimum cross section of 240 sqmm aluminium.	The conductor shall be made of copper with a minimum cross section of 240 sqmm
47.				<i>Kept Blank</i>	
48.	Part 2	Section VII-B (PS)	7.4.3.2.1	<p>The cables shall be insulated with chemically cross-linked polyethylene, with semi-conducting screen over a copper conducting core, and insulating envelope and polyvinyl chloride protective sheath.</p> <ul style="list-style-type: none"> • Operating voltage: 33 kV rms between phases, • Specified voltage: 18 kV rms (according to IEC 502/1) 	<p>The cables shall be insulated with chemically cross-linked polyethylene, with semi-conducting screen over a copper or aluminium conducting core, and insulating envelope and polyvinyl chloride protective sheath.</p> <ul style="list-style-type: none"> • Operating voltage: 33 kV rms between phases, • Specified voltage: 19 kV rms (according to IEC 502/2)
49.	Part 2	Section VII-B (PS)	7.4.3.2.2	<p>Fire Retardant, Low Smoke (FRLS)☐</p> <p>All cables shall be non-fire propagating, non-toxic and low-smoke producing and conform with the UTE standard 32 700, test No 2, IEC 502-1 or equivalent.</p>	<p>Fire Retardant, Low Smoke (FRLS)☐</p> <p>All cables shall be non-fire propagating, non-toxic and low-smoke producing and conform with the UTE standard 32 700, test No 2, IEC 754 & ASTM D2843 and ASTM D2863 or equivalent.</p>
50.	Part 2	Section VII-B (PS)	7.4.3.2.3	<p>Conducting Core☐</p> <p>The conducting core shall be made of bare annealed copper, according to class 2 as per publication IEC 228, or aluminium.</p> <p>The cross section of the conducting core shall be as follows for various connections:</p> <p>(a) From SWGR Transformer Secondary to the 33kV Switchgear in the SWGR Room 400 sqmm copper (or as per detailed design)</p> <p>(b) From 33kV Switchgear in the SWGR Room to the 33kV / 415V Auxiliary Station Transformer in the SWGR Room Aluminium of appropriate size</p>	<p>Conducting Core☐</p> <p>The conducting core shall be made of bare annealed copper, according to class 2 as per publication IEC 228, or aluminium.</p> <p>The minimum cross section of the conducting core shall be as follows for various connections:</p> <p>(a) From SWGR Transformer Secondary to the 33kV Switchgear in the SWGR Room 2x240 sqmm aluminium or equivalent copper (or as per detailed design)</p> <p>(b) From 33kV Switchgear in the SWGR Room to the 33kV / 415V Auxiliary Station Transformer in the SWGR Room Aluminium or copper of appropriate size</p>

SN	Part No.	Section	Clause ref.	Existing description	Replaced with
51.	Part 2	Section VII-B (PS)	7.4.3.2.7	The anti-corrosion outer protective sheath, applied directly over the metallic screen shall consist of a heat-setting mix of polyvinyl chloride, whose grade is compatible with the operating temperature of the cables; it must ensure protection against corrosion. The nominal thickness of this sheath shall be determined according to the requirements set forth in standard IEC 502-1.	The anti-corrosion outer protective sheath, applied directly over the metallic screen shall consist of a heat-setting mix of polyvinyl chloride, whose grade is compatible with the operating temperature of the cables; it must ensure protection against corrosion. The nominal thickness of this sheath shall be determined according to the requirements set forth in standard IEC 502-2.
52.	Part 2	Section VII-B (PS)	7.8.3.1	To provide protection against the hazardous voltages is made which may arise as a result of a broken contact wire or as a result of a potential difference (voltage difference) between two conductive parts due to induced voltages, all possible metal or concrete parts in the zone should be bonded together and earthed. For the concrete structures falling in this zone, a connection socket similar to the Earth Bridge provided by Erico (or equivalent) and tested with Copper current collector part having threaded hole and the stub Cadwelded with steel bar the other end of which should be arc welded with the reinforcement bar, before being cast into the concrete similar to the below drawings. The Earth collection plates can then be interconnected externally with a jumper either externally or they can be both interconnected even before the casting is done depending on the situation and ease of installation.	To provide protection against the hazardous voltages is made which may arise as a result of a broken contact wire or as a result of a potential difference (voltage difference) between two conductive parts due to induced voltages, all possible metal or concrete parts in the zone should be bonded together and earthed. For the concrete structures falling in this zone, a connection socket or Earth Bridge and tested with Copper current collector part having threaded hole and the stub Cadwelded with steel bar the other end of which should be arc welded with the reinforcement bar, before being cast into the concrete similar to the below drawings. The Earth collection plates can then be interconnected externally with a jumper either externally or they can be both interconnected even before the casting is done depending on the situation and ease of installation.
53.	Part 2	Section VII-B (PS)	7.8.3.2	For the same reasons of maintaining equipotential bonding and stronger electrical connectivity between different precast components, Erico's Earth bridges (or equivalent) should be used for the applications of connections between Plinth segments, Pier Caps and Girder, Pier Earth test points and any multiple precast segments placed close to each other.	For the same reasons of maintaining equipotential bonding and stronger electrical connectivity between different precast components, Earth bridges should be used for the applications of connections between Plinth segments, Pier Caps and Girder, Pier Earth test points and any multiple precast segments placed close to each other.

SN	Part No.	Section	Clause ref.	Existing description	Replaced with																								
54.	Part 2	Section VII-B (PS)	7.8.3.5	Earth Electrodes protecting equipment or assets of different systems or applications like Telecom, Power etc. at locations other than substation should ideally be interconnected. This shall be achieved by using Potential equilization clamps (Erico or equivalent) . This helps in maintaining equipotential among different earthing types, by getting interconnected during the potential rising beyond a point and returning back to the disconnect phase during normal conditions.	Earth Electrodes protecting equipment or assets of different systems or applications like Telecom, Power etc. at locations other than substation should ideally be interconnected. This shall be achieved by using Potential equilization clamps. This helps in maintaining equipotential among different earthing types, by getting interconnected during the potential rising beyond a point and returning back to the disconnect phase during normal conditions.																								
55.	Part 2	Section VII-B (PS)	8.3.1.1	Routing of the MV cables between the transformers and the incoming circuit breakers shall be realized in cable channel going up from transformers secondary windings to the cable head of the incoming circuit breaker cell. Each connection from the transformer to the circuit breaker shall be made with 2 XLPE cables, two sets of 3 single cores, 400 mm ² Aluminium (subject to detailed design approved by Engineer)	Routing of the MV cables between the transformers and the incoming circuit breakers shall be realized in cable channel going up from transformers secondary windings to the cable head of the incoming circuit breaker cell. Each connection from the transformer to the circuit breaker shall be made with 2 XLPE cables, two sets of 3 single cores, minimum 240 mm ² Aluminium or equivalent copper (subject to detailed design approved by Engineer)																								
56.	<i>Kept Blank</i>																												
57.	Part 2	Section VII-B (PS)	9.6.9.4	<p>Contractor shall submit a training programme for following instructor-weeks for Power supply system in following areas:</p> <table border="1"> <thead> <tr> <th>SN</th> <th>Description</th> <th>Total Period (Man Months)</th> <th>Remarks</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Design of 132kV GIS RSS</td> <td>4</td> <td></td> </tr> <tr> <td>2</td> <td>Design of 33kV auxiliary network system</td> <td>4</td> <td>During the Design Stage</td> </tr> </tbody> </table>	SN	Description	Total Period (Man Months)	Remarks	1	Design of 132kV GIS RSS	4		2	Design of 33kV auxiliary network system	4	During the Design Stage	<p>Contractor shall submit a training programme for following instructor-weeks for Power supply system in following areas:</p> <table border="1"> <thead> <tr> <th>SN</th> <th>Description</th> <th>Total Period (Man Months)</th> <th>Remarks</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Design of 132kV GIS RSS</td> <td>3</td> <td></td> </tr> <tr> <td>2</td> <td>Design of 33kV auxiliary network system</td> <td>3</td> <td>During the Design Stage</td> </tr> </tbody> </table>	SN	Description	Total Period (Man Months)	Remarks	1	Design of 132kV GIS RSS	3		2	Design of 33kV auxiliary network system	3	During the Design Stage
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SN	Part No.	Section	Clause ref.	Existing description				Replaced with			
				3	Design of 25 kV traction supply (TSS)	4		3	Design of 25 kV traction supply (TSS)	3	
				4	Manufacturing facilities, Testing methods and procedures, Working Metro installations. Short Module course on System description, architecture and installation practices of Power supply system	12		4	Manufacturing facilities, Testing methods and procedures, Working Metro installations. Short Module course on System description, architecture and installation practices of Power supply system	12	
				<p>Note: The above requirement is tentative and Employer may alter the same suitably. However, the total provision of Contractor's trainers shall be in line with Pricing Document.</p>							
58.											
59.	Part 2	Section VII-B (PS); Appendix A: Interfaces	Table 3.1, Item 6	Item No.	Item Description	PST Contractor	PSA	Item No.	Item Description	PST Contractor	PSA
				6	Cable protection	<p>Shall provide necessary protection arrangements (line differential, distance, overcurrent etc.) as per design, for the incoming HT cables.</p> <p>The relays required to be provided at the PSA end, shall be supplied and installed, at the PSA premises (i.e. at Switching Substation), by the PST Contractor.</p> <p>If any pilot wire is required to be provided, for protection and SCADA, the same shall be supplied and installed by the PST Contractor. The pilot wire shall be armoured type.</p>	Shall verify and approve the final scheme of protection.	6	Cable protection	<p>Shall provide necessary protection arrangements as per design, for the incoming HT cables.</p> <p>The relays required to be provided at the PSA end, shall be supplied and installed, at the PSA premises (i.e. at Switching Substation), by the PST Contractor.</p> <p>If any pilot wire is required to be provided, for protection and SCADA, the same shall be supplied and installed by the PST Contractor. The pilot wire shall be armoured type.</p>	Shall verify and approve the final scheme of protection.

SN	Part No.	Section	Clause ref.	Existing description				Replaced with			
				Item No.	Item Description	PST Contractor	Station Building Contractors	Item No.	Item Description	PST Contractor	Station Building Contractors
60.	Part 2	Section VII-B (PS); Appendix A: Interfaces	Table 3.4, Item 5 (with Station Civil)		With Station Civil				With Station Civil		
				5	Earthing and bonding arrangements at stations	<p>Shall provide schematic arrangement of earthing and bonding schemes in the stations</p> <p>Shall connect station earth mats to Earth Cable by 300 mm² copper cable or equivalent MS connections</p> <p>Shall connect structure earth terminals to Earth Cable through 70 mm² copper cable</p> <p>Shall connect various structures at station to Earth Cable as per schematic</p>	<p>Shall Coordinate for requirements of earthing and bonding schemes</p> <p>Shall associate with PST Contractor to verify the earthing-bonding of structure as per approved scheme.</p> <p>Shall provide necessary earth terminals, earth mesh etc. and risers and respect the schematic earthing drawing</p> <p>Shall ensure provision of minimum of 50mm dia pipe (5 Nos.) on each platform under the floor for continuity of earthing platform shelter / canopy.</p>	5	Earthing and bonding arrangements at stations	<p>Shall provide schematic arrangement of earthing and bonding schemes in the stations</p> <p>Shall associate with PST Contractor to verify the earthing-bonding of structure as per approved scheme.</p> <p>Shall provide necessary earth terminals, earth mesh etc. and risers and respect the schematic earthing drawing</p> <p>Shall ensure provision of minimum of 50mm dia pipe (5 Nos.) on each platform under the floor for continuity of earthing platform shelter / canopy.</p>	
61.	Part 2	Section VII-B (PS); Appendix A: Interfaces	Table 3.5, Item 2			PST Contractor	Viaduct Contractors			PST Contractor	Viaduct Contractors
				2	Earthing and bonding arrangements at viaducts	PST Contractor shall provide designs / drawings showing arrangement of Earth terminals required to be provided on piers,	Will supply and provide welding of Reinforcement bars and earth terminals according to drawings ensuring	2	Earthing and bonding arrangements at viaducts	PST Contractor shall provide designs / drawings showing arrangement of Earth terminals required to be provided on piers,	Will supply and provide welding of Reinforcement bars and earth terminals according to drawings ensuring

SN	Part No.	Section	Clause ref.	Existing description				Replaced with													
					<p>pedestals, segments, parapet etc. and the extent of welding required to be done on Reinforcement bars.</p> <p>PST Contractor shall provide the necessary earthing connections between BEC /ITL earthing plates etc. and the earth terminals. This will include supply of cable to connect BEC and other connecting plates.</p> <p>Shall install support / brackets for Earth cable on viaduct (both UP and DN directions, including the station area)</p> <p>Shall coordinate with Viaduct Contractors for verification of earthing and bonding measures adopted in the structure, as per the recommendations in approved design.</p>	<p>continuity of reinforcement bars of viaduct segments piers and parapet segments. Shall provide earth terminals for connection.</p> <p>Shall coordinate with PST Contractor for verification of earthing and bonding measures adopted in the structure, as per the recommendations in approved design.</p>			<p>pedestals, segments, parapet etc. and the extent of welding required to be done on Reinforcement bars.</p> <p>Shall install support / brackets for Earth cable on viaduct (both UP and DN directions, including the station area)</p> <p>Shall coordinate with Viaduct Contractors for verification of earthing and bonding measures adopted in the structure, as per the recommendations in approved design.</p>	<p>continuity of reinforcement bars of viaduct segments piers and parapet segments. Shall provide earth terminals for connection.</p> <p>Shall coordinate with PST Contractor for verification of earthing and bonding measures adopted in the structure, as per the recommendations in approved design.</p>											
62.	Part 2	Section VII-B (PS); Appendix A: Interfaces	Table 3.5, Item 6	<table border="1"> <thead> <tr> <th>Item No.</th> <th>Item Description</th> <th>PST Contractor</th> <th>Viaduct Contractors</th> </tr> </thead> <tbody> <tr> <td>6</td> <td>Earthing connection for handrails</td> <td>PST Contractor will provide drawings showing arrangement of earth terminals required to be provided for earthing</td> <td>The Viaduct Contractor shall coordinate and provide arrangement / provisions for necessary earth</td> </tr> </tbody> </table>	Item No.	Item Description	PST Contractor	Viaduct Contractors	6	Earthing connection for handrails	PST Contractor will provide drawings showing arrangement of earth terminals required to be provided for earthing	The Viaduct Contractor shall coordinate and provide arrangement / provisions for necessary earth	<table border="1"> <thead> <tr> <th>Item No.</th> <th>Item Description</th> <th>PST Contractor</th> <th>Viaduct Contractors</th> </tr> </thead> <tbody> <tr> <td>6</td> <td>Earthing connection for handrails</td> <td>PST Contractor will provide drawings showing arrangement of earth terminals required to be provided for earthing</td> <td>The Viaduct Contractor shall coordinate and provide arrangement / provisions for necessary earth</td> </tr> </tbody> </table>	Item No.	Item Description	PST Contractor	Viaduct Contractors	6	Earthing connection for handrails	PST Contractor will provide drawings showing arrangement of earth terminals required to be provided for earthing	The Viaduct Contractor shall coordinate and provide arrangement / provisions for necessary earth
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SN	Part No.	Section	Clause ref.	Existing description				Replaced with			
						the hand rail PST Contractor shall provide earth cable connection and connect the hand rail (with 35 mm² copper or equivalent connection)	connection at handrails			the hand rail	connection at handrails
63.	Part 2	Section VII-B (PS); Appendix A: Interfaces	Table 3.8, Item 4	Item No.	Item Description	PST Contractor	Train Control / Telecom Contractors	Item No.	Item Description	PST Contractor	Train Control / Telecom Contractors
				A	Signalin g (SIG)			A	Signalin g (SIG)		
				4	Visual control panel	Shall interface with Train Control Contractor to ensure visual and functional compatibility of the proposed Visual Control Panel (VCP) of OCC SCADA has to be provided by PST Contractor with VCP being installed in the OCC by Train Control Contractor.	Shall provide details of the OCC layout and VCP design to PST contractor.	4	Visual control panel	Shall interface with Train Control Contractor to ensure visual and functional compatibility of the proposed Visual Control Panel (VCP) of OCC SCADA being supplied and installed in the OCC by Train Control Contractor.	Shall provide details of the OCC layout and VCP design to PST contractor for his consent. Shall supply and install VCP.
64.	Part 2	Section VII-B (PS); Appendix A: Interfaces	Table 3.8, Item 5	Item No.	Item Description	PST Contractor	Train Control / Telecom Contractors	Item No.	Item Description	PST Contractor	Train Control / Telecom Contractors
				A	Signalin g (SIG)			A	Signalin g (SIG)		
				5	Centraliz ed UPS in OCC	All wiring / cabling and E&M works related to extension of power supply from Centralized UPS to the SCADA server room. Design: To advise requirement of power from Centralized UPS for SCADA purpose to Train Control Contractor	Install Centralized UPS duly factoring in the requirements of power for SCADA purpose.	5	Centraliz ed UPS in OCC / BCC	All wiring / cabling and E&M works related to extension of power supply from Centralized UPS to the SCADA server room. Design: To advise requirement of power from Centralized UPS for SCADA purpose to Train Control Contractor	Install Centralized UPS duly factoring in the requirements of power for SCADA purpose.
65.	<i>Kept Blank</i>										

SN	Part No.	Section	Clause ref.	Existing description	Replaced with
66.	Part 2	Section VII-B (PS); Appendix B: Technical Sheets	2.1 (Table) Auxiliary Main Transformer	Item 17: Maximum iron losses kW ... (expected value) Item 22: Maximum copper losses – 4/4 of secondary load kW ... (expected value)	Item 17: Maximum iron losses kW ... 9kW (expected value) Item 22: Maximum copper losses – 4/4 of secondary load kW ... 50kW (expected value)
67.	Part 2	Section VII-B (PS); Appendix B: Technical Sheets	3.1 (Table) 200kVA Aux Transformer for RSS	Item 17: Maximum iron losses W ... (expected value) Item 18: Maximum load losses W ... (expected value)	Item 17: Maximum iron losses W ... 1100 ± 5% (expected value) Item 18: Maximum load losses W ... 2900 ± 5% (expected value)
68.	Part 2	Section VII-B (PS); Appendix B: Technical Sheets	4.1 (Table) Traction Main Transformer	Item A4: Standards ... IEC 60076, 60137, 60296 Item B15: Maximum iron losses kW ... (expected value) Item B20: Maximum copper losses – 4/4 of secondary load kW ... (expected value) Item E1(b): Noise level at rated voltage and no load ... 70 dBA	Item A4: Standards ... IEC 60076, 60137, 61099 Item 17: Maximum iron losses kW ... 8kW (expected value) Item 22: Maximum copper losses – 4/4 of secondary load kW ... 60kW (expected value) Item E1(b): Noise level at rated voltage and no load ... 75 dBA
69.	Part 2	Section VII-B (PS); Appendix B: Technical Sheets	6.3 (Table) 25kV cable	Item 16 Insulation screen material (non-metallic) ... Non-metallic part of semi-conducting material plus metallic part consisting of standard wire and copper tape, rated to carry a short circuit current of 14kA	Item 16 Insulation screen material (non-metallic) ... Non-metallic part of semi-conducting material plus metallic part consisting of standard wire and copper tape, rated to carry a short circuit current of 14kA for 1 second
70.	Part 2	Section VII-B (PS); Appendix B: Technical Sheets	8.1 (Table) 33kV CB	Item 10: Busbar set rated current ... 2000A	Item 10: Busbar set rated current ... 1250A
71.	Part 2	Section VII-B (PS); Appendix B:	10.9 (Table) 25kV GIS	Item 5: Rated insulation voltage ... 52kV Item 8: Rated lightning peak withstand voltage ... 250kV as per EN 50124-1	Item 5: Rated insulation voltage ... 52kV Item 8: Rated lightning peak withstand voltage ... 200kV as per EN 50124-1

SN	Part No.	Section	Clause ref.	Existing description	Replaced with
		Technical Sheets			
72.	Part 2	Section VII-B (PS); Appendix F: List of Deliverables	Second last para of the Appendix	The Contractor (or their Designer) is obligated to develop the simulation software (traction power and EMC/EMI simulations) in association with an Indian design-engineering firm and an Indian educational institution. The IPR for the software shall vest with NMRCL, Indian design-engineering firm and Indian educational institution jointly.	The Contractor (or their Designer) is obligated to develop the simulation software (traction power and EMC/EMI simulations) in association with an Indian design-engineering firm and an Indian educational institution. The IPR for the software shall vest with NMRCL, Indian design-engineering firm and Indian educational institution jointly. The inputs to traction power simulation software shall include the alignment data, rolling stock characteristics, operation data, contact line data (both for ac and dc traction), feeding configuration etc. and output shall constitute power requirement (short time and continuous), voltage drop, energy consumption, short circuit power / current etc. The development of EMC/EMI software tool shall consider the configuration of complete rail system with all its longitudinal conductors and shall examine EMC/EMI effect of traction system on other equipment / system in the vicinity.
73.	Part 3	Section IX. PC Part A Contract Data	SN 39, 14.2. (b) (Repayment amortization rate of advance payment)	The repayment amortization rate (%) shall be as under: The recovery of the above Advance Payment shall be done in respective currencies and shall commence when 20% of the original contract value of the work has been paid in respective currencies (in addition to the Mobilization advance) and shall be recovered by deduction of 25% of the amount of each Interim Payment, until the total of the mobilization advance is recovered.	The repayment amortization rate (%) shall be as under: The recovery of the above Advance Payment shall be done in respective currencies and shall commence when 30% of the original contract value of the work has been paid in respective currencies (in addition to the Mobilization advance) and shall be recovered by deduction of 35% of the amount of each Interim Payment, until the total of the mobilization advance is recovered.

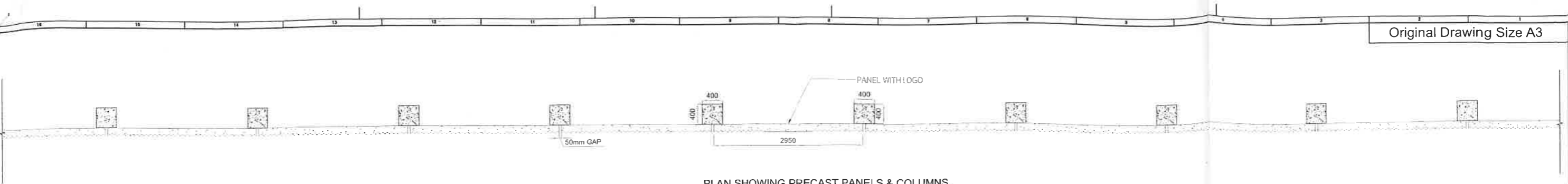
SN	Part No.	Section	Clause ref.	Existing description	Replaced with
74.	Part 3	Section IX. PC Part A Contract Data	SN 57, 20.6 (a) (Rules of Arbitration)	The arbitration rules are “International Chamber of Commerce (ICC) “ for foreign contractors and place of arbitration is Dubai or Delhi. For domestic contractors (Companies registered in India), Rules of Arbitration are accordance with the Arbitration and Conciliation Act 1996	The arbitration rules are “International Chamber of Commerce (ICC) “ for foreign contractors and place of arbitration is Dubai or Delhi. For domestic contractors (Companies registered in India), Rules of Arbitration are accordance with the Arbitration and Conciliation (Amendment) Act 2015
75.	Part 3	Section IX. PC Part B – Specific Provisions	SN 45, Sub- clause 13.8, Adjustments for Changes in Cost	Replace the GC Sub-Clause 13.8 with the provisions as under: The Contract Price, at the option of the Bidder, can be adjusted for increase/decrease of the price of Steel, Aluminum and Copper as per the Price Adjustment Formula as detailed in ‘Instructions for Completing the Pricing Document’ (Section IV: Bidding Forms; Form 3 Schedules, Annexure IV-A).	Replace the GC Sub-Clause 13.8 with the provisions as under: The Contract Price shall be adjusted for increase/decrease of the commodities prices as per the Price Adjustment Formula as detailed in ‘Instructions for Completing the Pricing Document’ (Section IV: Bidding Forms; Form 3 Schedules, Annexure IV-A).
76.	Part 3	Section IX. PC Part B – Specific Provisions	SN 48, Sub- clause 14.7 Payment; sub- para (c)	c) Stage Payment shall be made as under: For all items where Supply, Erection, Testing and Commissioning, all are combined in one item and rates are not identified separately, the following percentages shall apply: <ul style="list-style-type: none"> • Delivery of material – 75% • Payment after erection – 15% • Payment after successful testing, commissioning and handing over – 10% <p>The maximum payment against the supply will be limited to 85% of the cost of item incurred by the Contractor.</p>	c) Stage Payment shall be made as under: For all items where Supply, Erection, Testing and Commissioning, all are combined in one item and rates are not identified separately, the following percentages shall apply: <ul style="list-style-type: none"> • Delivery of material – 75% • Payment after erection – 15% • Payment after successful testing, commissioning and handing over – 10%
77.	Part 3	Section IX. PC Part B – Specific	SN 59, Sub- clause 19.4, Consequences	If the Contractor is prevented from performing his substantial obligations under the Contract by Force Majeure of which notice has been given under Sub-	Deleted (it implies that GC Clause 19.4 prevails and the same is not amended through PC)

SN	Part No.	Section	Clause ref.	Existing description	Replaced with
		Provisions	of Force Majeure	<p>Clause 19.2 [Notice of Force Majeure], and suffers delay and/or incurs Cost by reason of such Force Majeure, the Contractor shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to:</p> <p>(a) an extension of time for any such delay, if completion is or will be delayed, under Sub-Clause 8.4 [Extension of Time for Completion], and</p> <p>(b) if the event or circumstance is of the kind described in sub-paragraphs (i) to (iii) of Sub-Clause 19.1 [Definition of Force Majeure] and, in sub-paragraphs (ii) and (iii), occurs in the Country, payment of any such Cost, including the costs of rectifying or replacing the Works and/or Goods damaged or destroyed by Force Majeure, to the extent they are not indemnified through the insurance policy referred to in Sub-Clause 18.2 [Insurance for Works and Contractor's Equipment].</p> <p>After receiving this notice, the Engineer shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine these matters.</p>	

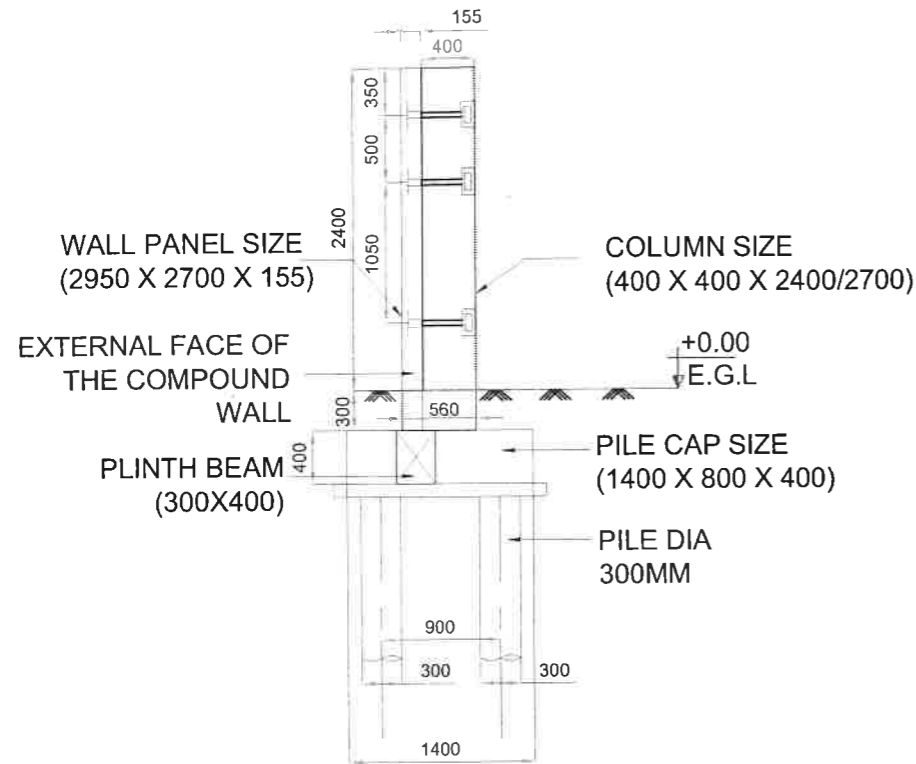
Eligibility Criteria (Reference Item 3 of Addendum)							
Eligibility and Qualification Criteria			Compliance Requirements				Documentation
No.	Subject	Requirement	Single Entity	Joint Venture (existing or intended)			Submission Requirements
				All Parties Combined	Each Member	One Member	
4. Experience							
4.1	General Construction Experience	Experience under railway (metro, railway, suburban, monorail, high speed rail etc.) system construction contracts in the role of prime contractor, JV member, sub-contractor, or management contractor for at least the last 5 <i>[five]</i> years, starting 1 st January 2011.	Must meet requirement	N/A	Must meet requirement	N/A	Form EXP – 4.1
4.2	Specific Construction & Contract Management Experience	Experience of satisfactory and substantial completion of similar works as under, as a prime contractor, joint venture member, management contractor or sub-contractor during last 10 years as on date of Bid submission:					
(a)		Minimum of Design, Detail Engineering, Supply, Installation, Testing and Commissioning of at least two (2) nos. of 25kV Traction Substation for elevated / at-grade / underground sections of Metro rail or suburban rail or mainline railway or depot.	Must meet requirement	N/A	N/A	Must meet requirement	Form EXP – 4.2 (a) & (b)

Eligibility Criteria (Reference Item 3 of Addendum)							
Eligibility and Qualification Criteria				Compliance Requirements			Documentation
No.	Subject	Requirement	Single Entity	Joint Venture (existing or intended)			Submission Requirements
				All Parties Combined	Each Member	One Member	
(b)		Minimum of Design, Detail Engineering, Supply, Installation, Testing and Commissioning of 11kV and above indoor Auxiliary Sub stations One contract of 10 Auxiliary Substations or more OR Two contracts of 14 Auxiliary Substations in total or more OR Three contracts of 17 Auxiliary Substations in total or more	<i>“Must meet requirement for one contract (Requirement can be met through a Specialized Sub-contractor)”</i>	N/A	N/A	<i>“Must meet requirement (Requirement can be met through a Specialized Sub-contractor)”</i>	Form EXP – 4.2 (b)
(c)		Minimum of Supply, Installation, Testing and Commissioning of 110kV and above Substation Systems One contract of at least 2 (two) Substations OR Three contracts of at least 3 Substations in total Note: In case the Bidder or a member of the JV/Consortium does not have experience of Supply, Erection, Supervision, Testing and Commissioning of Gas Insulated Substations (GIS), it will be required by the Bidder to engage suitable	Must meet requirement	N/A	N/A	Must meet requirement	Form EXP – 4.2 (b)

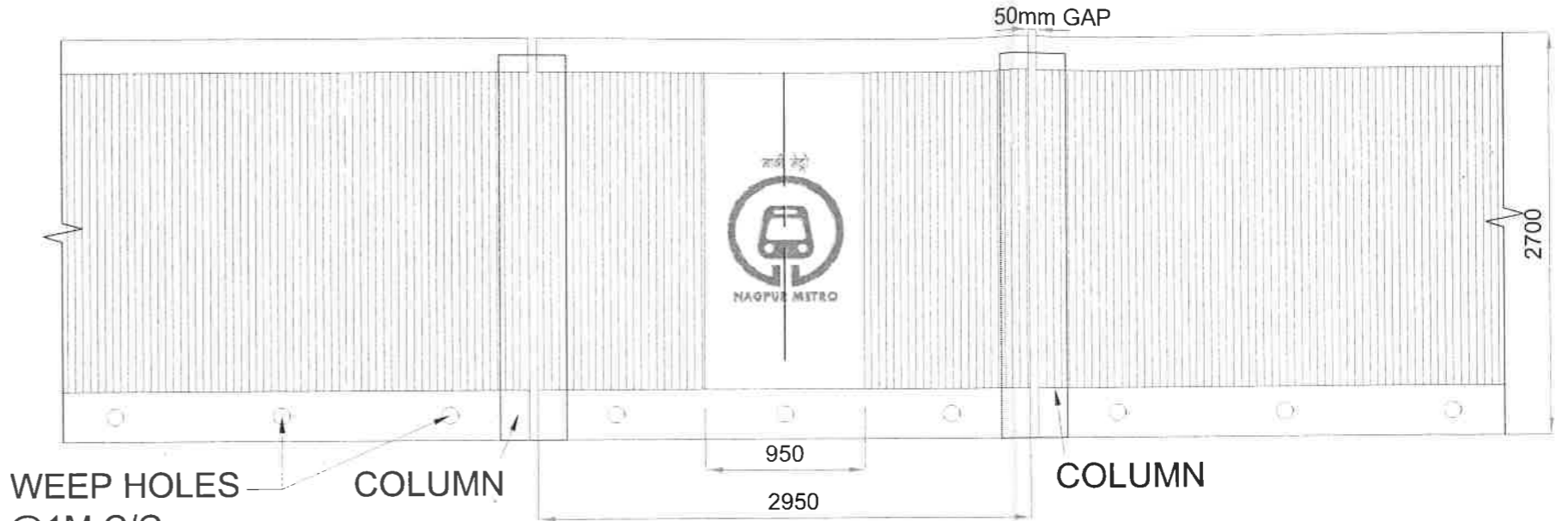
Eligibility Criteria (Reference Item 3 of Addendum)							
Eligibility and Qualification Criteria			Compliance Requirements			Documentation	
No.	Subject	Requirement	Single Entity	Joint Venture (existing or intended)			Submission Requirements
				All Parties Combined	Each Member	One Member	
		<i>experienced subcontractor / OEMs having experience in supply, erection, supervision, testing and Commissioning of 66kV or above GIS substations of at least 2 nos. with at least one such substation being outside the country of origin of OEM or in India. The credentials, work experience of the proposed GIS subcontractor / OEM and their MOU with Bidder to participate in this Bid should be submitted with this prequalification package, failing which the prequalification application may be rejected.</i>					
(d)		Experience of 132 kV and above cable laying One work for a route length of 2km OR Two works for total route length of 3km	Must meet requirement	N/A	N/A	Must meet requirement	Form EXP – 4.2 (b)
(e)		Supply, Erection, Testing and Commissioning of SCADA system for Elevated /at grade/ Underground sections of Metro Rail or Monorail or Suburban Rail or Main line Railway System	<i>“Must meet requirement for one contract (Requirement can be met through a Specialized Sub-contractor)”</i>	<i>Must meet requirement</i>	N/A	<i>“Must meet requirement (Requirement can be met through a Specialized Sub-contractor)”</i>	Form EXP – 4.2 (b)



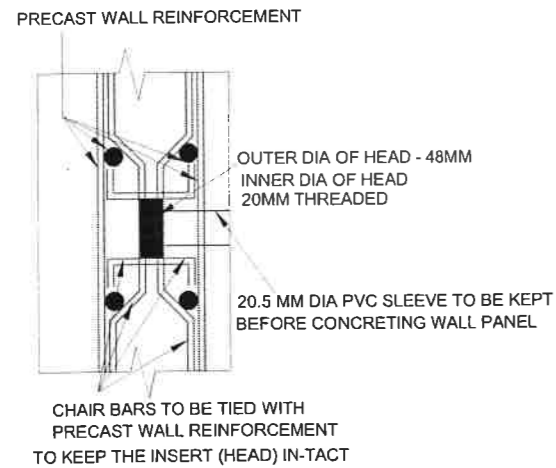
PLAN SHOWING PRECAST PANELS & COLUMNS



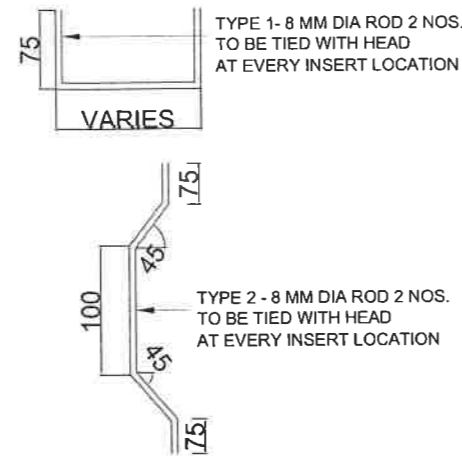
TYPICAL CROSS SECTION OF WALL PANEL WITH FOUNDATION



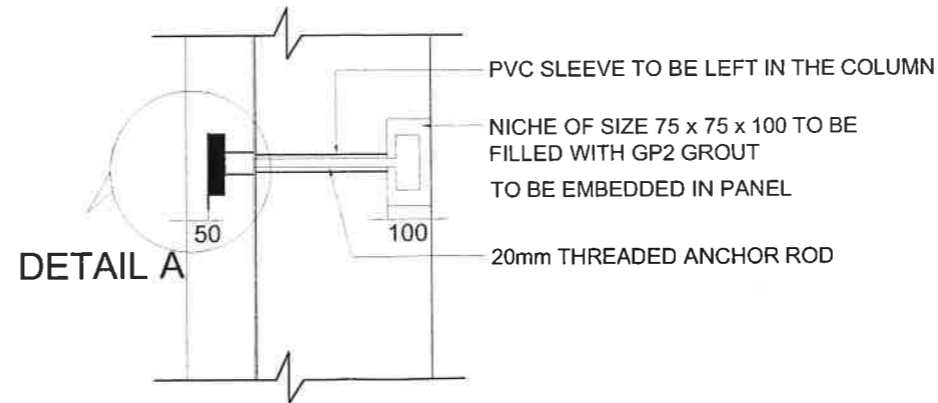
EXTERNAL FACE OF COMPOUND WALL IN ELEVATION



DETAIL A



CHAIR BAR DETAIL-A



DETAILS OF ANCHOR BOLT

NOTES:-

- 1.) REFER ARCHITECTURAL DRAWINGS FOR DETAILS OF FLUTES & LOGO
- 2.) CO-ORDINATE THIS DRAWING WITH THE RELEVANT ARCH DRAWINGS
- 3.) READ THIS DRAWING ALONGWITH FOLLOWING STRUCTURAL DRAWING:-
 - a. 221124/GENCW/STR/002/R-0 REINFORCEMENT DETAILS OF PRECAST PANEL, COLUMN AND PEDESTAL
 - b. 221124/GENCW/STR/003/R-0 REINFORCEMENT DETAILS OF PILE
- 4.) REINFORCED CEMENT CONCRETE DESIGN MIX M35
- 5.) MINIMUM CLEAR COVER FOR REINFORCEMENT SHALL BE 40 mm FOR COLUMNS & 20 mm FOR PRECAST PANELS
- 6.) ALL REINFORCEMENT SHALL BE TMT STEEL CONFORMING TO I.S. 1786 HAVING MINIMUM YIELD STRENGTH OF 500 MPa.

REV.	DATE	BRIEF DESCRIPTION	CHKD	APP.
2	01.09.15	CONCEALED BEAM DETAILS ELABORATED		
1	14.08.15	DETAILS OF ANCHOR BOLT FIXING ARRANGEMENTS SHOWN		
0	30.08.15	CONSTRUCTION DRAWINGS		

The design and drawings as certified and submitted by the Detailed Designer Consultant have been reviewed and proof checked by General Consultants and are recommended for approval.

(Name and Designation)
 Authorised Signatory for General Consultant
 GENERAL CONSULTANTS

QUALITY ASSURANCE			
The responsibility of control, check and verification of accuracy, correctness, completeness, integration and full compliance of contract provisions in respect of design analysis and drawings rests with the designer.			
Approved by NMRC			
DY GM			
GM (P&D)	Prepared by	Checked by	Approved by

DETAILED DESIGN CONSULTANT:

RITES
 THE INFRASTRUCTURE PEOPLE

60, BHARAT APARTMENTS, FAIRFIELD LAYOUT, RACE COURSE ROAD
 Bangalore-560001, Karnataka, INDIA

PROJECT TITLE
 INTERIM CONSULTANCY SERVICES FOR NAGPUR METRO RAIL PROJECT

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CLIENT	NAGPUR METRO RAIL CORPORATION LIMITED		Metro House, 28/2, Anand Nagar, C.K. Haldar Road, Civil Lines, Nagpur-440001 INDIA
DRAWING TITLE	DIMENSIONAL DETAILS OF WALL PANEL, PEDESTAL AND COLUMN		Issue Record
DRAWING NUMBER	221124/GENCW/STR/001	Rev 2	Approved for issue as
Scale	Date: 01.09.2015		As Built
			For Construction
			Contract Drawing
			Tender Drawing
			Definitive Design
			Preliminary Design
			Design Development

STRUCTURAL

Date: 28.03.2016

Minute of Meeting

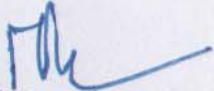
Sub:-Joint inspection for deciding point of supply in r/o M/s Nagpur Metro Rail Corporation Limited, at Morris collage Ground, Abhyankar Road Nagpur (25000 KVA On EHV level)


Ref: - SE/NUC/Tech/HT/1045 dated 12.03.2016

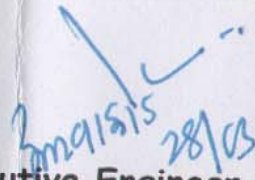
With reference to the above subject, the joint inspection for deciding point of supply in r/o prospective EHV consumer, M/s Nagpur Metro Rail Corporation Limited, at Morris collage Ground, Abhyankar Road Nagpur (25000 KVA On EHV level) is carried out jointly by the Superintending Engineer, Testing Circle, Nagpur and the Superintending Engineer, NUC, Nagpur in presence of consumer representative on dated 28.03.2016. Accordingly, the following points shall be observed for supervising the work metering installation of said above connection.

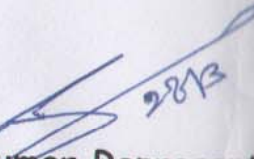
1. Details of metering arrangement proposed as (being a CD 25000 KVA on 132KV)
 - a. Current Transformers: - CTR-150/1A, Class- 0.2s, Burden- 10VA Single ratio, single core, as per MSEDCL specifications
 - b. Potential Transformers:-PTR-132000V/√3/110V/√3, Class- 0.2, Burden- 50 VA Single ratio, single core, as per MSEDCL specifications.
 - c. In case of two double circuit lines, summator meter for four incoming lines required to be provided with such special arrangement of cable terminations and auxiliary supply arrangement.
 - d. Being GIS substation, indoor metering arrangement is required to be provided with above specs.
2. Point of supply is jointly fixed and marked on the layout drawing.
3. Being Express feeder, check metering arrangement identical to main billing meter shall be provided at feeding substation in addition to panel meters. In this, ratio, class of accuracy and burden etc. shall be identical with that of above proposed billing metering installation at consumer end.
4. The transformer capacity adequate with the Contract demand shall be confirmed.
5. Existing LT or HT line if any in the premises shall be removed or shifted outside the premises.
6. Existing LT connection if any in the premises shall be made PD before releasing this HT connection. Old arrears position on the premises if any shall be cleared.
7. Due care should be taken for not having two connections in the same premises as per prevailing norms.
8. Other points shall be observed as per Director Operation's letter No. Metering guidelines/No. 21194/ dated 21.07.2006.

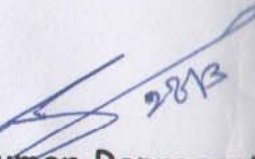
Encl:-Joint Inspection report with
Marking of point of supply


Superintending Engineer
Testing Circle, MSEDCL
Nagpur


Superintending Engineer
NUC, MSEDCL
Nagpur


Executive Engineer
Testing Division, MSEDCL
Nagpur U


Executive Engineer
O&M Division, MSEDCL
Congress Nagar


Consumer Representative
M/s Nagpur Metro Railway
Nagpur

SURVEY REPORT

CH : 1 - INTRODUCTION

M/s EHV Centre, Nagpur has been entrusted by NMRCL, Nagpur to carry out its project of Topographic Survey and and underground utility mapping for proposed 132KV Cable laying route/road survey from Mankapur Substation to Munje Chowk substation of NMRCL vide the work order bearing No. NMRCL/Elect./132 KV Cable Route Survey/313/2016, dated 17th Feb.'16

The originating point is Morris College Play Ground as Receiving substation is proposed and the terminating point is located at 132 KV Mankapur Substation inside Nagpur city.

EHV Centre, Nagpur has carried out the detailed survey as per the terms and conditions of the contract agreement. As per the contract agreement approx 6.2 km road/route alignment is to be surveyed during and

The first and foremost stage to carry out the detailed topographic survey was to collect the entire field data located above & below the ground. The collection of data is discussed in detail in the next chapter.

CH : 2 -COLLECTION OF DATA/SCOPE OF WORK

The collection of the required data, the work was preceded as per the Scope of work mentioned i.e carrying out topographic survey of proposed alignment (useful for EHV underground cable laying) of 4 lane or existing road details are as follows:

Length of existing alignment.

Curve details of existing road.

Details of existing CD structures/ Bridges (with existing dimensions, types etc)

Existing ROW details.

Carrying of permanent benchmarks @ each KM.

Utility shifting details.

Details of existing intersections/Junctions

Survey for tree cuttings Survey for encroachments.

Survey for road crossings (Rail/River/HT Line) etc.

AND

Underground utility mapping along the road

CH : 3 -METHODOLOGY ADOPTED

A detailed survey has been conducted to verify the route alignment throughout the route. The start and end point of this route/road was already shown. Beside adequate man power advanced survey Instruments such as Total Station and GPS were also deployed for this survey work. This detailed survey is completed within a span of 12days. Field visit were conducted to all the crucial area such as habitation, development, other major crossing points etc. Special attention has been given to the existing EHV Line, major crossings and U/G pipe line mapping.

In fact all the new developments were also marked in the proposed Route. All these were properly considered while studying the feasibility of the approval route.

CH : 4 -DESCRIPTION OF ROUTE

The route/road have been surveyed with equal and utmost care and and is described in detail as under;

The route survey (U/G as well as topographic) for laying of 132 KV U/G cable for Nagpur Metro starts from the tap off on the Mankapur substation inside the city of Nagpur to proposed Munje Chowk substation of NMRCL. The proposed U/G 132KV Cable to be laid along the length of route/road.

The said alignment is passing through Munje Sq. then the alignment is moving in same direction and will cross Variety Sq then is moving in the Northen direction and heading towards Morris College T-POINT SQ means parallel to Adivasi Gowari Shahid Flyover. The proposed route/road alignment is travelling straight towards Zero Mile Sq and then straight in the same direction to RBI SQ. After crossing RBI Sq the proposed alignment is moving to LIC Sq and from LIC Sq to Mount Road Sq then straight to Pandit Rewaramji Kawade Sq. After crossing Kawade

Sq Route alignment is travelling in the Western direction means parallel to Link Road for some short distance then alignment is

moving in the Northern direction (i.e along the Galli adjacent to MSEB Gaddigodam Office) towards Mangalwari Complex. The route alignment will then travel in the West direction towards Chhaoni Bustop then alignment is moving in the North direction towards Chaoni Sq then straight towards Poonam Chambers then is travelling straight to Mental Hospital Sq and is moving in the same direction and terminating to 132KV Mankapur Substation which is parallel to Mankapur Flyover.

The route Map is attached herewith the report

START & END POINT CO-ORDINATES:

Originating Point Coordinates: The originating point (Morris College Ground coordinates are

Longitude- $79^{\circ}5'7.20''$ & Latitude- $21^{\circ}8'18.30''$.

Terminating Point Coordinates: The terminating point (132 KV Mankapur Sub Station) coordinates are

Longitude- $79^{\circ}4'30.66''$ & Latitude - $21^{\circ}11'8.27''$.

CH : 5 -MAJOR CROSSINGS

The major crossings OR summary of the proposed Route/Road

Sr. No.	Particulars	Quantity
1	Road Crossing	14 NOS
2	Water bodies like Nallha	3 NOS
3	State Highway	--
4	Railway	--
5	Power line crossings (132KV and above	---
6	Chambers along the route	228 NOS
7	Distribution Box along the route	129 NOS
8	HDD (Horizontal Directional Drilling Method)*	9 NOS
9	OCC (Open Cut Cover Method)**	48 NOS
10	Transportation & Maintenance	Available
11	Approaches for Construction	Sufficient approach is available
12	U/G WATER PIPE LINE	16 NOS
13	U/G WATER PIPE LINE DEPTH	1.00 M
14	City	Nagpur
15	State	Maharashtra
16	Total Length of Route	6.200Km

U/G Utility Mapping details:-

Sr. No	U/G Length of Pipe line		Alignment of Water Pipe Line	Diameter of pipe line
	Start RD	End RD		
01	0Km	0.165Km	Nil	Nil
02	0.165Km	0.365Km	LHS	300MM
03	0.365Km	0.475Km	Nil	Nil
04	0.475Km	1.825Km	LHS	500MM
05	0.498Km	1.215Km	RHS	300MM
06	1.825Km	1.875Km	Nil	Nil
07	1.875Km	2.180Km	RHS	100MM
08	2.180Km	2.450Km	LHS	100MM
09	2.370KM	2.810Km	RHS	200MM
10	2.465Km	3.365Km	LHS	400MM
11	2.810Km	2.985Km	RHS	200MM
12	3.365Km	3.500Km	Nil	Nil
13	3.500Km	3.630Km	LHS	110MM
14	3.630Km	4.730Km	RHS	160MM
15	3.880KM	4.760Km	LHS	300MM
16	4.760Km	5.640Km	Nil	Nil
17	5.640Km	6.020Km	LHS	150MM
18	5.775Km	6.000Km	RHS	100MM

Note:-

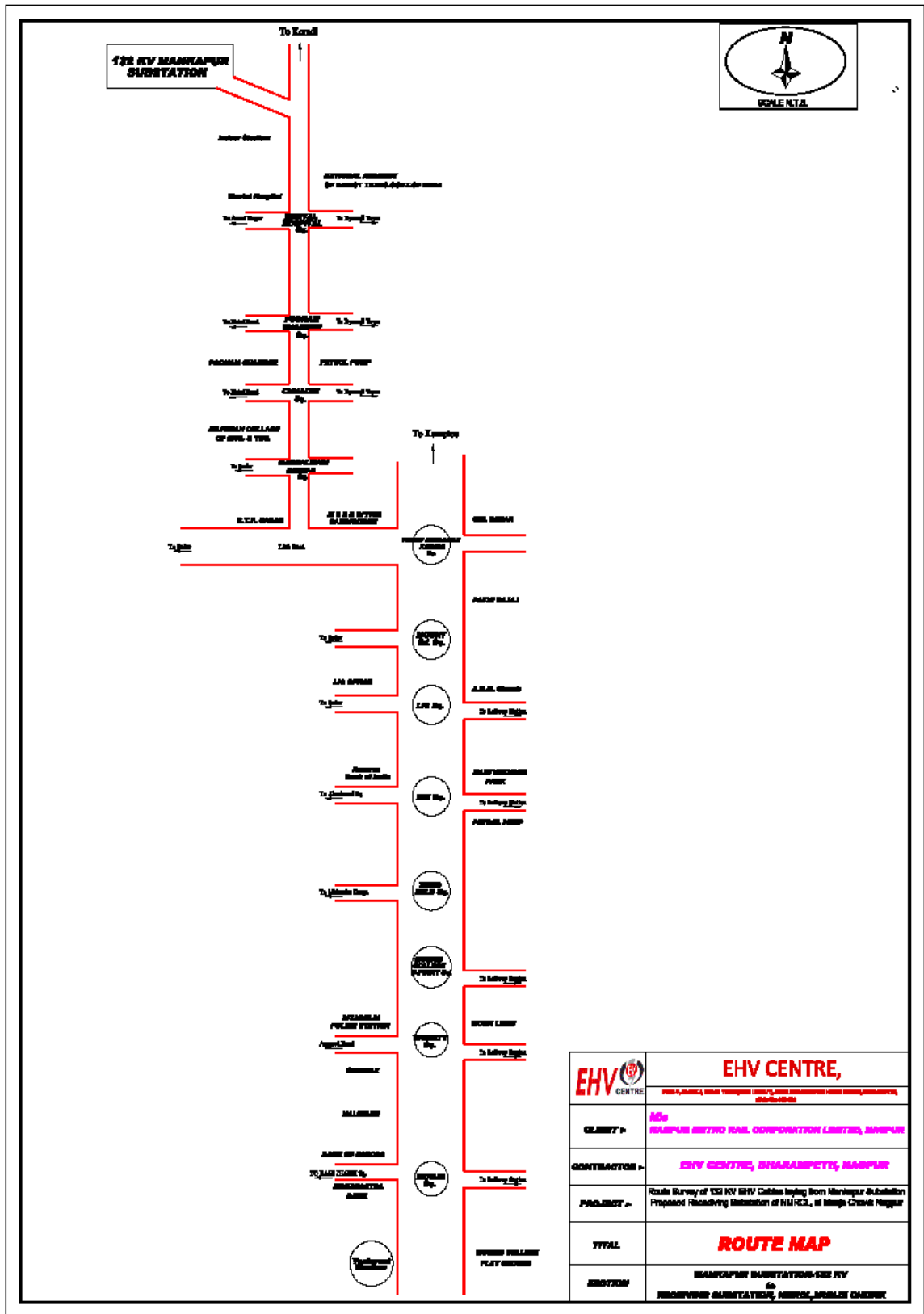
*Depth of HDD (laying of 132 KV cable underground through horizontal directional drilling) is normally at Min. depth of 2.00 to 2.50 M.

**In OCC (Open Cut and Cover method) the cable will be laid in HDPE pipes under the ground

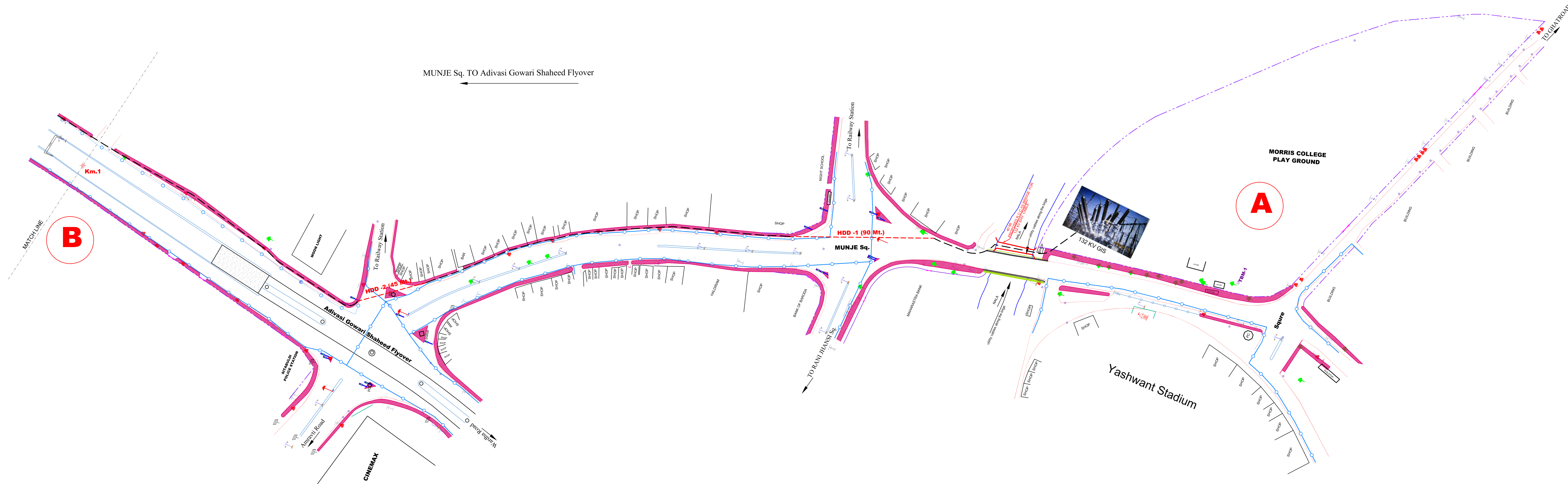
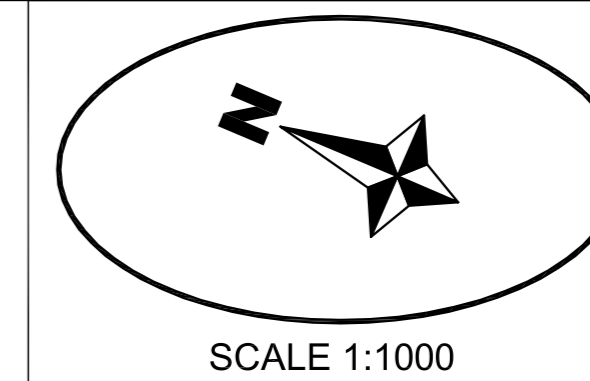
CONCLUSION:

The Topographic survey for the route was carried out and U/G pipe line (shown in Blue Colour) is mainly passing through the clear terrain, Feasible Cable route (Shown in Black Dotted Colour), Wherever HDD is proposed- it is marked by Red Dotted Colour and wherever OCC is proposed is marked with Red Dotted Rectangles. Proposed RCC / GI Bridge Construction is also proposed on Major Nallha

The proposed 132KV U/G Cable laying on optimal basis can be worked out on the basis of report submitted. It is suggested that Final Laying of 132 KV EHV Cable will completely rely on decision of MSETCL and NMRCL.



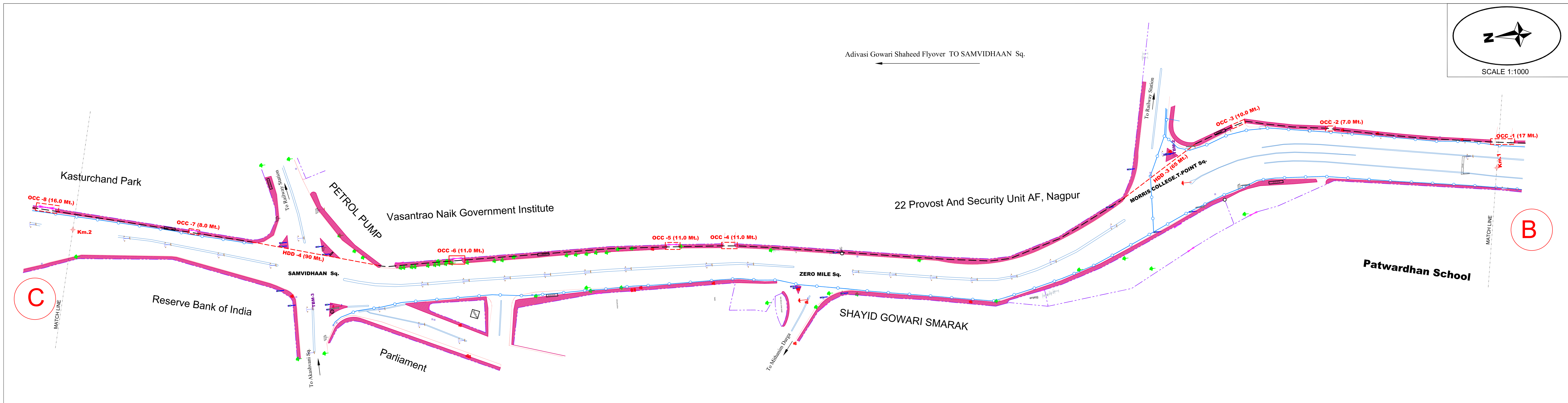




LEGEND			
	MAIN ROAD		TREE
	INTERNAL ROAD		LAMP POST
	STREAM / NALA		STREET LIGHT
	COMPOUND WALL		ELECTRIC POLE
	INTERNAL WALL		TELEPHONE POLE
	DRAIN		GATE
	FENCING		TBM LOCATION
	FOOTPATH		WATER TAP
	BUILDING/STRUCTURE		CHAMBER
	4G TOWER		HAND PUMP
	HIGH MASS		DISTRIBUTION BOX
	SIGNAL POLE		TEMPLE
	WATER PIPE LINE		SHED
	HDD		OCC
	FEASIBLE CABLE ROUTE (132 KV - 4 CIRCUITS IN TREFOIL FORMATION MIN. DEPTH = 1.20 M. FROM THE TOP OF CABLE)		

NOTE :- HDD IS PROPOSED AT ALL MAJOR ROADS / JUNCTIONS
HIGHWAY CROSSING

	EHV CENTRE, PLOT-3, BLOCK-6, KHARIE TOWNSHIP LAYOUT, NEAR INDIAN COFFEE HOUSE CHOWK, DHARAMPETH, NAGPUR-460 010
CLIENT :-	M/s NAGPUR METRO RAIL CORPORATION LIMITED, NAGPUR
CONTRACTOR :-	EHV CENTRE, DHARAMPETH, NAGPUR
PROJECT :-	Route Survey of 132 KV EHV Cables laying from Mankapur Substation Proposed Receiving Substation of NMRCCL, at Munje Chowk Nagpur
TOTAL	TOPOGRAPHICAL ROUTE SURVEY AND UNDERGROUND UTILITY MAPPING FOR NMRCCL
SECTION	MANKAPUR SUBSTATION-132 KV to RECEIVING SUBSTATION, NMRCCL, MUNJE CHOWK
SCALE	DRAWING NO. EHV/ NMRCCL/CR/1802016
H= 1:1000	SHEET No. 1

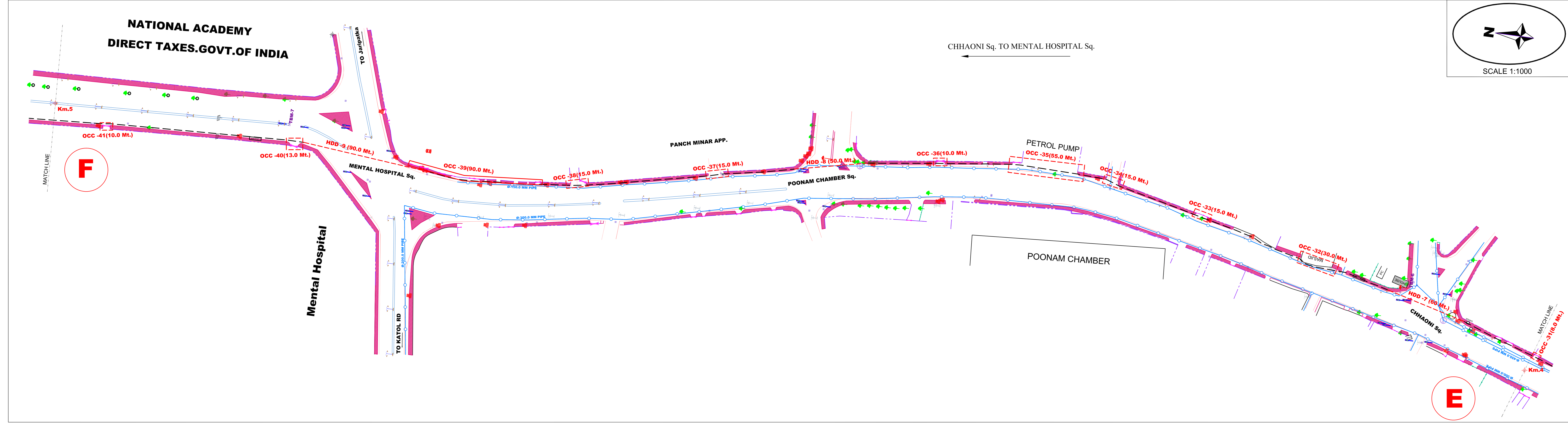
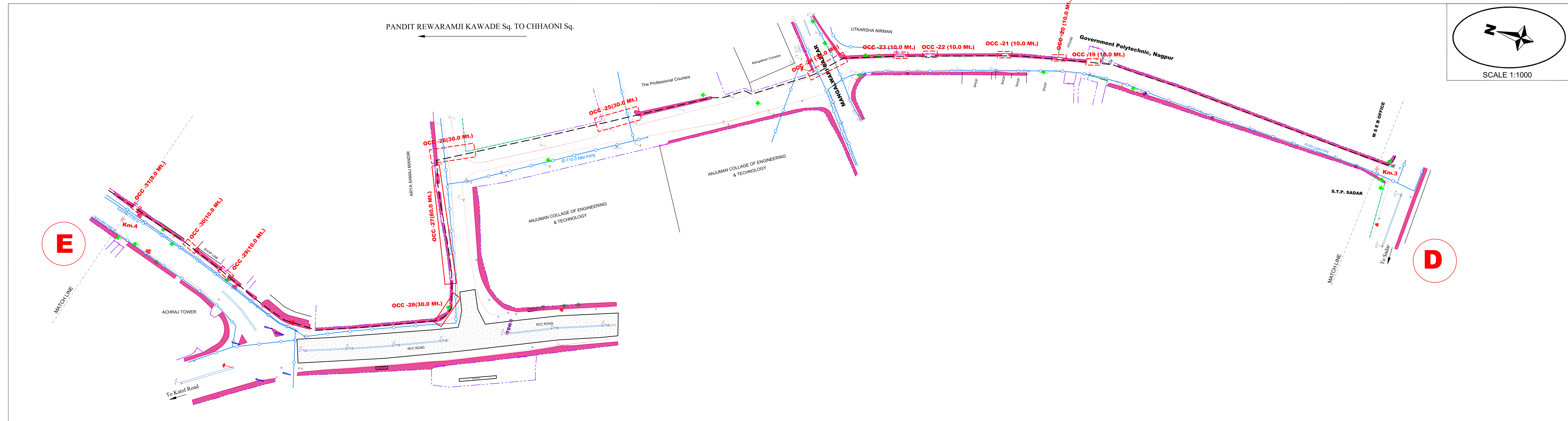


LEGEND

	MAIN ROAD		TREE
	INTERNAL ROAD		LAMP POST
	STREAM / NALA		STREET LIGHT
	COMPOUND WALL		ELECTRIC POLE
	INTERNAL WALL		TELEPHONE POLE
	DRAIN		GATE
	FENCING		TBM LOCATION
	FOOTPATH		WATER TAP
	BUILDING/STRUCTURE		CHAMBER
	4G TOWER		HAND PUMP
	HIGH MASS		DISTRIBUTION BOX
	SIGNAL POLE		TEMPLE
	WATER PIPE LINE		SHED
	HDD		OCC
	FEASIBLE CABLE ROUTE (132 KV - 4 CIRCUITS IN TREFOL FORMATION MIN. DEPTH = 1.20 M. FROM THE TOP OF CABLE)		

NOTE :- HDD IS PROPOSED AT ALL MAJOR ROADS / JUNCTIONS HIGHWAY CROSSING

	EHV CENTRE, PLOT-7, BLOCK-1, KHARIE TOWN(BUTI) LAYOUT, NEAR INDIAN COFFEE HOUSE CHOWK, DHARAMPETH, NAGPUR-460 002
CLIENT :-	M/s NAGPUR METRO RAIL CORPORATION LIMITED, NAGPUR
CONTRACTOR :-	EHV CENTRE, DHARAMPETH, NAGPUR
PROJECT :-	Route Survey of 132 KV EHV Cables laying from Mankapur Substation Proposed Receiving Substation of NMRCL, at Munje Chowk Nagpur
TOTAL	TOPOGRAPHICAL ROUTE SURVEY AND UNDERGROUND UTILITY MAPPING FOR NMRCL
SECTION	MANKAPUR SUBSTATION-132 KV to RECEIVING SUBSTATION, NMRCL, MUNJE CHOWK
SCALE	DRAWING NO.EHV/ NMRCL/CR/1802016 SHEET NO. 2

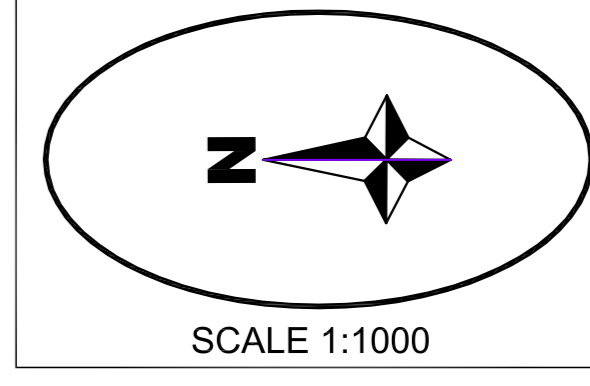
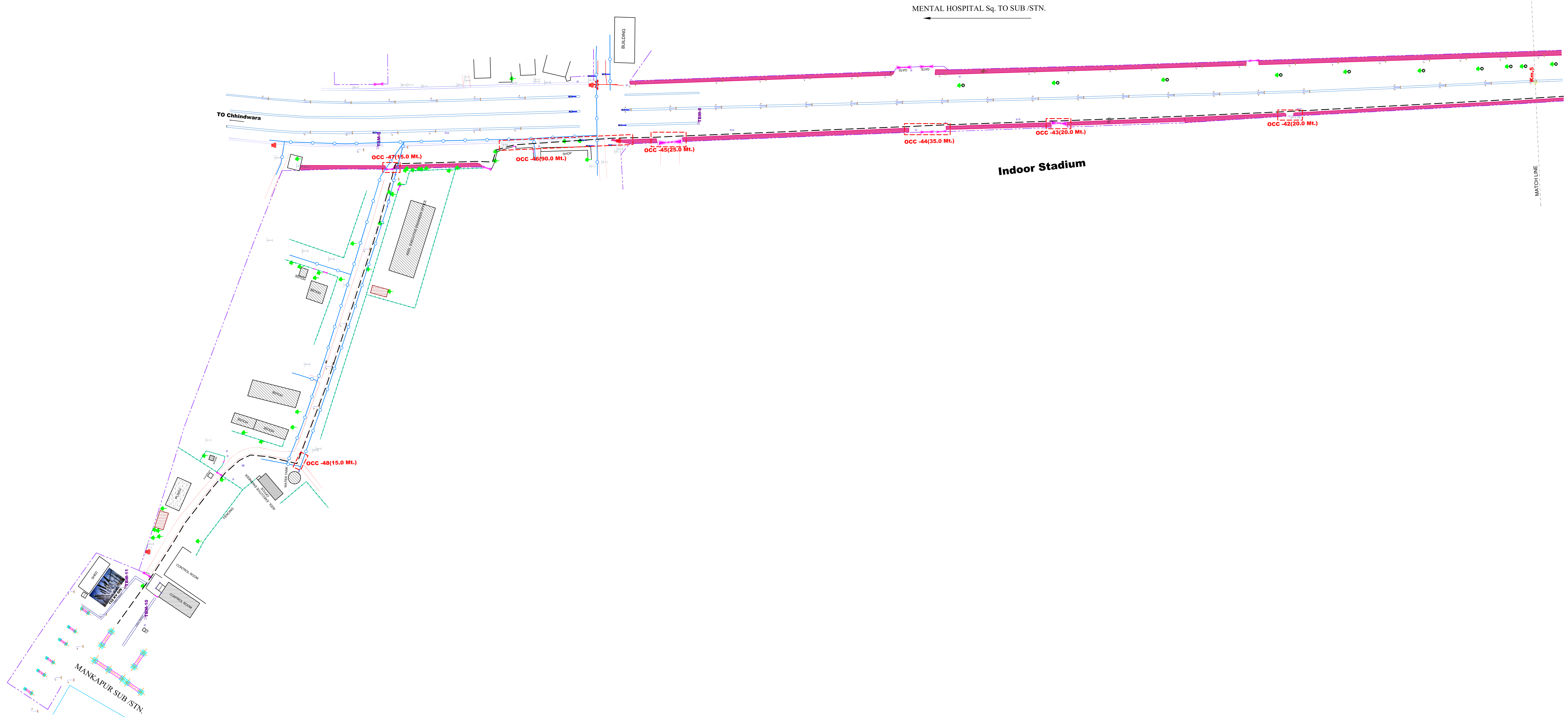


LEGEND

	MAIN ROAD		TREE
	INTERNAL ROAD		LAMP POST
	STREAM / NALA		STREET LIGHT
	COMPOUND WALL		ELECTRIC POLE
	INTERNAL WALL		TELEPHONE POLE
	DRAIN		GATE
	FENCING		TBM LOCATION
	FOOTPATH		WATER TAP
	BUILDING/STRUCTURE		CHAMBER
	4G TOWER		HAND PUMP
	HIGH MASS		DISTRIBUTION BOX
	SIGNAL POLE		TEMPLE
	WATER PIPE LINE		SHED
	HDD		OCC
<small>FEASIBLE CABLE ROUTE (132 KV - 4 CIRCUITS IN TREFOL FORMATION MIN. DEPTH = 1.20 M. FROM THE TOP OF CABLE)</small>			

NOTE :- HDD IS PROPOSED AT ALL MAJOR ROADS / JUNCTIONS HIGHWAY CROSSING

	EHV CENTRE, <small>Plot 7, Block-I, Khare Town/Buti Layout, Near Indian Coffee House Chowk, Dharampeth, Nagpur-461002</small>
CLIENT :-	M/s NAGPUR METRO RAIL CORPORATION LIMITED, NAGPUR
CONTRACTOR :-	EHV CENTRE, DHARAMPETH, NAGPUR
PROJECT :-	Route Survey of 132 KV EHV Cables laying from Mankapur Substation Proposed Receiving Substation of NMRCL, at Munje Chowk Nagpur
TOTAL	TOPOGRAPHICAL ROUTE SURVEY AND UNDERGROUND UTILITY MAPPING FOR NMRCL
SECTION	MANKAPUR SUBSTATION-132 KV to RECEIVING SUBSTATION, NMRCL, MUNJE CHOWK
SCALE	DRAWING NO. EHV/ NMRCL/CR/1802016 SHEET No. 3



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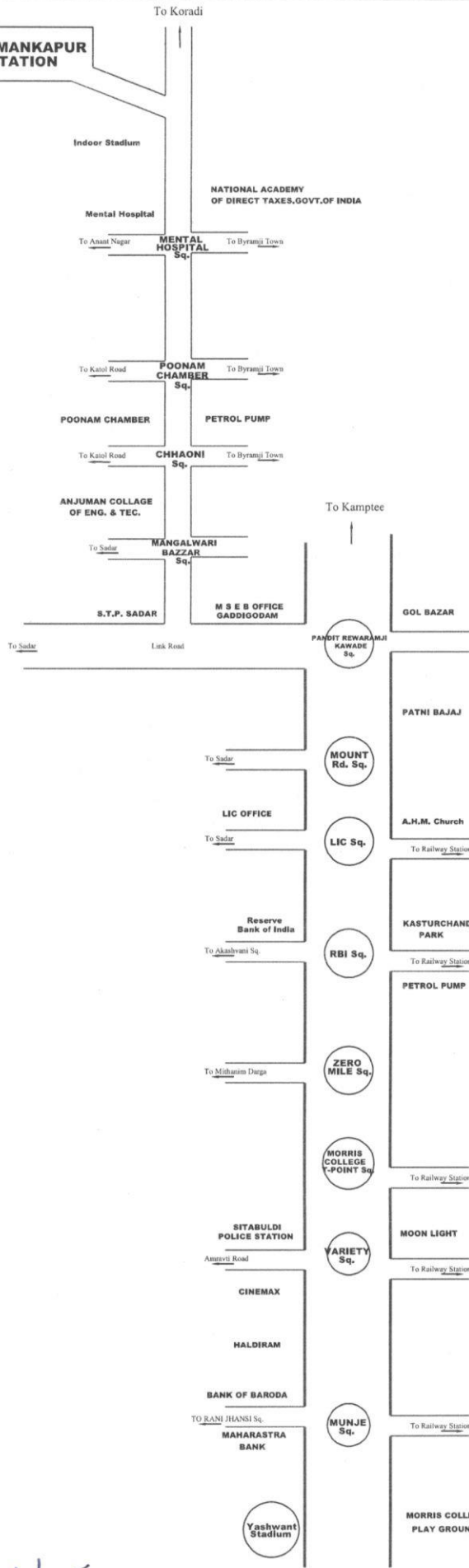
LEGEND

	MAIN ROAD		TREE
	INTERNAL ROAD		LAMP POST
	STREAM / NALA		STREET LIGHT
	COMPOUND WALL		ELECTRIC POLE
	INTERNAL WALL		TELEPHONE POLE
	DRAIN		GATE
	FENCING		TBM LOCATION
	FOOTPATH		WATER TAP
	BUILDING/STRUCTURE		CHAMBER
	4G TOWER		HAND PUMP
	HIGH MASS		DISTRIBUTION BOX
	SIGNAL POLE		TEMPLE
	WATER PIPE LINE		SHED
	HDD		OCC
	FEASIBLE CABLE ROUTE (132 KV - 4 CIRCUITS IN TRENCH OR MIN. DEPTH = 1.20 M. FROM THE TOP OF CABLE)		FORMATION

NOTE :- HDD IS PROPOSED AT ALL MAJOR ROADS / JUNCTIONS
HIGHWAY CROSSING

	EHV CENTRE, PLOT-7, BLOCK-I, KHARE TOWN/NEELI LAYOUT, NEAR INDIAN COFFEE HOUSE CHOWK, DHARAMPETH, NAGPUR-461 002
CLIENT :-	M/s NAGPUR METRO RAIL CORPORATION LIMITED, NAGPUR
CONTRACTOR :-	EHV CENTRE, DHARAMPETH, NAGPUR
PROJECT :-	Route Survey of 132 KV EHV Cables laying from Mankapur Substation Proposed Receiving Substation of NMRCL, at Munje Chowk Nagpur
TITAL	TOPOGRAPHICAL ROUTE SURVEY AND UNDERGROUND UTILITY MAPPING FOR NMRCL
SECTION	MANKAPUR SUBSTATION-132 KV to RECEIVING SUBSTATION, NMRCL, MUNJE CHOWK
SCALE	DRAWING NO. EHV/ NMRCL/CR/1802016
H= 1:1000	SHEET No. 4

132 KV MANKAPUR SUBSTATION



	<p align="center">EHV CENTRE,</p> <p align="center"><small>PLOT-7, BLOCK-L, KHARE TOWN(BUTI LAYOUT), NEAR INDIAN COFFEE HOUSE CHOWK, DHARAMPETH, NAGPUR-440 010</small></p>
	<p>CLIENT :- M/s NAGPUR METRO RAIL CORPORATION LIMITED, NAGPUR</p>
<p>CONTRACTOR :- EHV CENTRE, DHARAMPETH, NAGPUR</p>	
<p>PROJECT :- Route Survey of 132 KV EHV Cables laying from Mankapur Substation Proposed Receiving Substation of NMRCL, at Munje Chowk Nagpur</p>	
<p>TITAL</p>	<p>ROUTE MAP</p>
<p>SECTION</p>	<p>MANKAPUR SUBSTATION-132 KV to RECEIVING SUBSTATION, NMRCL, MUNJE CHOWK</p>

General Manager/Procurement
NMRCL, Nagpur