

MAHARASHTRA METRO RAIL CORPORATION LIMITED (PUNE METRO RAIL PROJECT)

BID DOCUMENTS FOR

Name of work: Geotechnical Investigation of Underground Section of NS Corridor Phase-I Extension Swargate-Katraj of Pune Metro Rail Project.

Tender No. P1Misc-34/2024

**BID DOCUMENT
(Part- 1 to 4)**



Maharashtra Metro Rail Corporation Limited

Civil Court Metro Station, Nyayamurti Ranade Path, Pune-411005,


Maharashtra, INDIA

E-mail: tenders.pmrp@mahametro.org

Website: www.punemetrorail.org

Parts of the Bid Document

Part	Name of the Document
NIT	Notice Inviting Tender
PART – 1	Bidding Procedures
PART – 2	Work Requirement
PART – 3	Conditions of Contract
PART - 4	Financial Bid

	<p align="center"><u>E-TENDER NOTICE</u></p> <p align="center">MAHARASHTRA METRO RAIL CORPORATION LIMITED</p> <p align="center">(A joint venture of Govt. of India & Govt. of Maharashtra)</p> <p align="center">Civil Court Metro Station, Nyayamurti Ranade Path, Pune-411005.</p> <p align="center">E-mail id: tenders.pmrp@mahametro.org Website: www.punemetrorail.org</p> <p align="center">e-tender portal https://mahametrorail.etenders.in.</p> <p align="center">(PUNE METRO RAIL PROJECT)</p>
Tender No. P1Misc-34/2024	Date: 17 January 2024
Name of work: Geotechnical Investigation of Underground Section of NS Corridor Phase-I Extension Swargate-Katraj of Pune Metro Rail Project.	

Key Details:

Completion Period	03 Months from the date specified in the LOA.
Document on Sale	Tender Documents can be downloaded from 16.00 hrs. On 29/01/2024 to 16.00 Hrs. on 12/02/2024 from the e-tender portal Maha-Metro e-tender portal https://mahametrorail.etenders.in .
Cost of Document	<p>INR 11,800/- (inclusive of applicable GST), non-refundable payable through e-payment by Credit Card / Debit Card / Net Banking, etc on e-tender of Maha-Metro, as per procedure given in the tender document.</p> <p>Also, refer to the Bid Data Sheet (BDS) of the Tender Document for further information. Agencies registered as MSME (only in the category: Micro or Small) are exempted from Cost of Tender Documents, subject to submission of Certificate of Registration as MSME.</p>
Pre-Bid Queries	Bidder's queries must be submitted through e-mail ID: tenders.pmrp@mahametro.org OR in hard copy to the ED (Procurement) office till 05/02/2024, 13:00 Hrs.
Bid Security (EMD)	<p>The Bid Security / EMD amounting to INR 2,17,285/- (INR Two Lakhs Seventeen Thousand Two Hundred Eighty-Five Only) refundable payable through e-payment by Credit Card / Debit Card / Net Banking, etc on e-tender of Maha-Metro, as per procedure given in the tender document.</p> <p>Name of Beneficiary: MMRCL- PUNE-TENDER FEES AND EMD</p> <p>Account No: 50200068854177</p> <p>IFSC Code: HDFC0000104</p> <p>Agencies registered as MSE (in category Micro or Small) are exempted from the submission of EMD; instead, they shall submit a Certificate of Registration as MSME and Bid Securing Declaration.</p>
Date & Time of submission of Tender	Online submission up till 16.00 Hrs. on Dt. 12/02//2024 on the e-tender portal.
Date & Time of Opening of Tender	On Dt. 13/02/2024 after 16.30 Hours in Procurement Department, Civil Court Metro Station, Nyayamurti Ranade Path, Pune-411005.
<p>1. To view this tender notice (NIT), an interested bidder may visit the Maha-Metro website www.punemetrorail.com</p> <p>Sale of the document, e-Payment procedure, submission, and other details are available on the e tender portal of Maha Metro i.e e-tender portal https://mahametrorail.etenders.in from 16.00 hrs. On 29/01/2024 to 16.30 Hrs. on 12/02/2024.</p> <p>2. The bidder shall bear all costs associated with the preparation and submission of the bid. Maha-Metro, in no case, will be responsible or liable for these costs, regardless of the conduct or outcome of the bidding process.</p>	

Executive Director/Procurement & Contracts
Maha-Metro, Pune

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MAHARASHTRA METRO RAIL CORPORATION LIMITED (PUNE METRO RAIL PROJECT)

BID DOCUMENTS

FOR

Name of work: Geotechnical Investigation of Underground Section of NS Corridor Phase-I Extension Swargate-Katraj of Pune Metro Rail Project.

Tender No. P1Misc-34/2024

PART 1: BIDDING PROCEDURE



Maharashtra Metro Rail Corporation Limited

Civil Court Metro Station, Nyayamurti Ranade Path, Pune-

411005, Maharashtra, INDIA

E-mail: tenders.pmrp@mahametro.org

Website: www.punemetrorail.org

Part- 1 - Bidding Procedures

Contents

Section I	Instructions to Bidders
Section II	Bid Data Sheet
	Annexure-II-A Deleted
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Section III	Evaluation and Qualification Criteria
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Section V	Eligibility Criteria and Social and Environmental Responsibility
Section VI	Agency Policy - Corrupt and Fraudulent Practices

**MAHARASHTRA METRO RAIL CORPORATION LIMITED
(PUNE METRO RAIL PROJECT)****BID DOCUMENTS****FOR**

Name of work: Geotechnical Investigation of Underground Section of NS Corridor Phase-I Extension Swargate-Katraj of Pune Metro Rail Project.

Tender No. P1Misc-34/2024

**PART 1: BIDDING PROCEDURE
SECTION I: INSTRUCTIONS TO BIDDERS**

**Maharashtra Metro Rail Corporation Limited**

Civil Court Metro Station, Nyayamurti Ranade Path, Pune-

411005. Tel- 020-7410004067/68

E-mail: tender.pmrp@mahametro.org

Website: www.punemetrorail.org

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Section I. Instructions to Bidders

A. General

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| 1. Scope of Bid | <p>1.1 In connection with the Invitation for Bids specified in the Bid Data Sheet (BDS), the Employer, as specified in the BDS, issues these Bidding Documents for the procurement of Works as specified in Section VII, Works Requirements. The name, identification, and number of Bid is as specified in the BDS.</p> <p>1.2 Throughout these Bidding Documents:</p> <p style="padding-left: 40px;">(a) the term “in writing” means communicated in written form and delivered against receipt;</p> <p style="padding-left: 40px;">(b) except where the context requires otherwise, words indicating the singular also include the plural and words indicating the plural also include the singular; and</p> <p style="padding-left: 40px;">(c) “day” means calendar day.</p> |
| 2. Source of Funds | <p>2.1 The Employer specified in the BDS has received or has applied for financing (hereinafter called “funds”) from the funding agency (as specified in BDS) toward the project named in the BDS. The Employer intends to apply a portion of the funds to eligible payments under the contract(s) for which these Bidding Documents are issued.</p> |
| 3. Corrupt and Fraudulent Practices | <p>3.1 The Agency requires compliance with its policy in regard to corrupt and fraudulent practices as set forth in Section VI.</p> <p>3.2 "The Bidder/Contractor grants the Employer, the EIB and auditors appointed by either of them, as well as any authority or European Union Institution or body having competence under European Union law, the right to inspect and copy the books and records of the bidder, contractor, supplier or consultant in connection with any EIB-financed contract".</p> |
| 4. Eligible Bidders | <p>4.1 A Bidder may be a firm that is a private entity, a government-owned entity—subject to ITB 4.4—or any combination of such entities in the form of a joint venture (JV) under an existing agreement or with the intent to enter into such an agreement supported by a letter of intent. In the case of a joint venture, all members shall be</p> |

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.

- 4.2 A Bidder shall not have a conflict of interest. Any Bidder found to have a conflict of interest shall be disqualified. A Bidder may be considered to have a conflict of interest for the purpose of this bidding process, if the Bidder:
- (a) directly or indirectly controls, is controlled by or is under common control with another Bidder; or
 - (b) receives or has received any direct or indirect subsidy from another Bidder; or
 - (c) has the same legal representative as another Bidder; or
 - (d) has a relationship with another Bidder, directly or through common third parties, that puts it in a position to influence the bid of another Bidder, or influence the decisions of the Employer regarding this bidding process; or
 - (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 sub-contractor in more than one bid; or
 - (f) any of its affiliates participated as a consultant in the preparation of the design or technical specifications of the works that are the subject of the bid; or
 - (g) any of its affiliates has been hired (or is proposed to be hired) by the Employer as Engineer for the Contract implementation; or
 - (h) has a close business or family relationship with a professional staff of the Employer (or of the project implementing agency, or of a recipient of a part of the loan) who: (i) are directly or indirectly involved in the preparation of the bidding documents or specifications of the contract, and/or the bid evaluation process of such contract; or (ii) would be involved in the implementation or supervision of such contract unless the conflict stemming from such relationship has been resolved in a manner acceptable to the Agency

throughout the procurement process and execution of the contract.

- (i) The assessment of any potential conflict of interest will be conducted as per the EIB Guide to Procurement

- 4.3 "Pursuant to its Sanctions Policy, the Bank shall not provide or otherwise make funds available, directly or indirectly, to or for the benefit of an individual or entity that is subject to financial sanctions imposed by the EU, either autonomously or pursuant to the financial sanctions decided by the United Nations Security Council on the basis of article 41 of the UN Charter
- 4.4. The Agency's eligibility criteria to bid are described in **Section V – Eligibility criteria and social and environmental responsibility**.
- 4.5 A Bidder shall not be under suspension from bidding by the Employer as the result of the operation of a Bid Security.
- 4.6 This bidding is open only to prequalified Bidders unless **specified in the BDS**.
- 4.7 A Bidder shall provide such evidence of eligibility satisfactory to the Employer, as the Employer shall reasonably request.
- 4.8 Bidders are required as a condition of admission to eligibility, to execute and attach the Covenant of Integrity and the Environmental and Social Covenant in the form indicated in Section IV: Bidding Forms. The covenants have to be signed by all members of the JV/consortium

5. Eligible Materials, Equipment, and Services

- 5.1 The materials, equipment and services to be supplied under the Contract and financed by the Agency may have their origin in any country subject to the restrictions specified in Section V, Eligibility criteria and social and environmental responsibility, and all expenditures under the Contract will not contravene such restrictions. At the Employer's request, Bidders may be required to provide evidence of the origin of materials, equipment and services.

B. Contents of Bidding Documents

6. Sections of Bidding Documents

- 6.1 The Bidding Documents consist of Parts 1, 2, 3 and 4, which include all the Sections specified below, and which should be read in conjunction with any Addenda issued in accordance with ITB 8.

Notice Inviting Tender (NIT)

Part- 1 - Bidding Procedures

Section I	Instructions to Bidders
Section II	Bid Data Sheet
Annexure-II-A	Deleted
Annexure-II-B	Deleted
Annexure II-C	Tool Kit for e-tender
Annexure-II-D	Grounds for Exclusion
Section III	Evaluation and Qualification Criteria
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Part- 3 - Conditions of the Contract and Contract Forms

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Section IX	Particular Conditions (PC)
Annexure - IX-A	Dispute Board
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PART- 4 - Financial Bid & Bill of Quantities

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	Bill of Quantities
	Annexure – 1 of Schedule B - Schedule for on Account Payments under Lump Sum Portion

- 6.2 The Invitation for Bids (Notice Inviting Tender) i.e. NIT issued by the Employer is part of the Bidding Documents.
- 6.3 Unless obtained directly by the bidder concerned from the Employer's office (as mentioned in NIT) or Employer's E-tender portal, the Employer is not responsible for the completeness of the Bidding Documents, responses to requests for clarification, the minutes of the pre-Bid meeting (if any), or Addenda to the Bidding Documents in accordance with ITB 8. (Downloaded / Uploaded by Bidder). In case of any contradiction, documents available at Employer's Office or uploaded on E-Tender portal of Employer shall prevail.
- 6.4 The Bidder is expected to examine all instructions, forms, terms, and specifications in the Bidding Documents and to furnish with its bid all information and documentation as is required by the Bidding Documents.
- Failure to comply with the requirements of the Bidding Documents and to furnish all information required by the Bidding Documents or submission of a Bid not substantially responsive to the Bidding Documents, in every respect will be at the Bidder's risk and may result in rejection of its Bid.
- 6.5. The Bidder shall not make or cause to be made any alteration, erasure or obliteration to the text of the Bid Documents issued by Employer or uploaded on the E-tender portal of Employer, which shall otherwise results in rejection of its Bid.
- 6.6. The documents including the Bid Document provided by Employer are and shall remain or becomes the property of Employer and are transmitted to the Bidders solely for the

purpose of preparation and the submission of a Bid in accordance herewith. The provisions of this Para shall also apply *mutatis mutandis* to the Bids and all other documents submitted by the Bidders, and Employer will not return to the Bidders any Bid, document or any information provided along therewith.

7. Clarification of Bidding Documents, Site Visit, Pre-Bid Meeting

7.1 A Bidder requiring any clarification of the Bidding Documents shall contact the Employer in writing at the Employer's address **specified in the BDS** or raise its enquiries during the pre-bid meeting if provided for in accordance with ITB 7.4. The Employer will respond in writing to any request for clarification, provided that such request is received on or before the date specified in this document. The Employer shall forward copies of its response to all Bidders who have acquired the Bidding Documents in accordance with ITB 6.3, including a description of the inquiry but without identifying its source. If so specified in the BDS, the Employer shall also promptly publish its response at the web page identified in the BDS. Should the clarification result in changes to the essential elements of the Bidding Documents, the Employer shall amend the Bidding Documents following the procedure under ITB 8 and ITB 22.2 **OR as provided for in BDS in consonance with E-Tendering System.**

7.2 The Bidder is advised to visit and examine the Site of Works and its surroundings and obtain for itself on its own responsibility all information that may be necessary for preparing the bid and entering into a contract for construction of the Works. The costs of visiting the Site shall be at the Bidder's own expense.

Any site / work information given in this bidding document is for guidance only. It shall be deemed that the Bidder has undertaken a visit to the Work Site of the Works and is aware of and has ascertained itself, the prevailing site conditions, traffic, location, surroundings, climate, demography availability of power, water and other utilities, raw materials, required consumables, access to Site, handling and storage of materials, weather data, applicable laws and regulations, and any other matter considered relevant by it prior to the submission of the Bid.

7.3 The Bidder and any of its personnel or agents will be granted permission by the Employer to enter upon its premises and lands for the purpose of such visit, but only upon the express condition that the Bidder, its personnel, and agents will release and indemnify the Employer and its personnel and agents from and against all liability in respect thereof, and will be responsible for death or

personal injury, loss of or damage to property, and any other loss, damage, costs, and expenses incurred as a result of the inspection.

- 7.4 If so specified in the BDS, the Bidder's designated representative is invited to attend a pre-bid meeting. The purpose of the meeting will be to clarify issues and to answer questions on any matter that may be raised at that stage **(as specified in BDS)**.
- 7.5 The Bidder is requested, as far as possible, to submit any questions in writing, to reach the Employer not later than one week before the meeting **or as specified in BDS**.
- 7.6 Minutes of the pre-bid meeting, if applicable, including the text of the questions asked by Bidders, without identifying the source, and the responses given, together with any responses prepared after the meeting, will be transmitted promptly to all Bidders who have acquired the Bidding Documents in accordance with ITB 6.3. Any modification to the Bidding Documents that may become necessary as a result of the pre-bid meeting shall be made by the Employer exclusively through the issue of an Addendum pursuant to ITB 8 and not through the minutes of the pre-bid meeting. Non-attendance at the pre-bid meeting will not be a cause for disqualification of a Bidder.
- 7.7 Bidders should alert the Employer in writing with a copy to Funding Agency (EIB) to procurementcomplaints@eib.org in case they consider that certain clauses or technical specifications of the Tender Documents might limit international competition or introduce an unfair advantage to some bidders

8. Amendment of Bidding Documents

- 8.1 At any time prior to the deadline for submission of bids, the Employer may amend the Bidding Documents by issuing addenda.
- 8.2 Any addendum /corrigendum issued by Employer shall be part of the Bidding Documents and shall be communicated in writing to all who have obtained the Bidding Documents from the Employer in accordance with ITB 6.3. The Employer shall also promptly publish the addendum on the Employer's web page in accordance with ITB 7.1. **or as specified in BDS**.
- 8.3 To give Bidders reasonable time in which to take an addendum into account in preparing their bids, the Employer may, at its discretion, extend the deadline for the submission of bids, pursuant to ITB 22.2

C. Preparation of Bids

- 9. Cost of Bidding** 9.1 The Bidder shall bear all costs associated with the preparation and submission of its Bid, and the Employer shall not be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process.
- 10. Language of Bid** 10.1 The Bid, as well as all correspondence and documents relating to the bid exchanged by the Bidder and the Employer, shall be written in the language **specified in the BDS**. Supporting documents and printed literature that are part of the Bid may be in another language provided they are accompanied by an accurate translation of the relevant passages in the language **specified in the BDS**, in which case, for purposes of interpretation of the Bid, such translation shall govern.
- 11. Documents Compiling the Bid** 11.1 The Bid shall comprise the following: **(refer BDS for additional requirement)**
- (a) Letter of Bid in accordance with ITB 12;
 - (b) completed schedules as required, including Price Schedules, in accordance with ITB 12 and 14;
 - (c) Bid Security or Bid-Securing Declaration, in accordance with ITB 19.1 **(as specified in BDS)**
 - (d) alternative bids, if permissible, in accordance with ITB 13 **(as specified in BDS)**;
 - (e) written confirmation authorizing the signatory of the Bid to commit the Bidder, in accordance with ITB 20.2;
 - (f) Covenant of Integrity and Environmental & Social Covenant duly signed, in accordance with ITB 12;
 - (g) Documentary evidence in accordance with ITB 17 establishing the Bidder's continued qualified status or, if post-qualification applies, as specified in accordance with ITB 4.5, the Bidder's qualifications to perform the contract if its Bid is accepted;
 - (h) Technical Proposal in accordance with ITB 16;
 - (i) Any other document **required in the BDS**.
- 11.2 In addition to the requirements under ITB 11.1, bids submitted by a JV shall include a copy of the Joint Venture Agreement entered into by all members. Alternatively, a letter of intent to execute a Joint Venture Agreement in the event of a successful bid shall be signed by all members and submitted with the bid, together with a

copy of the proposed Agreement.

- 11.3 The Bidder shall furnish in the Letter of Bid information on commissions and gratuities, if any, paid or to be paid to agents or any other party relating to this Bid **(as specified in BDS)**.

12. Letter of Bid and Schedules

- 12.1 The Letter of Bid, the Statement of Integrity and Schedules, including the Bill of Quantities for unit price contracts or the schedule of price in case of lump sum contracts, shall be prepared using the relevant forms furnished in Section IV, Bidding Forms. The Letter of Bid and the Statement of Integrity must be completed without any alterations to the text, and no substitutes shall be accepted except as provided under ITB 20.4. All blank spaces shall be filled in with the information requested.
- 12.2. The Letter of Bid with all Schedules/ Forms shall be completed and signed by an authorized and empowered representative of the Bidder. If the Bidder comprises a JV/Consortium, the Letter of Bid shall be signed by an authorized representative of the **Lead Member**. Signatures on the Letter of Bid shall be witnessed and dated. Copies of relevant powers of attorney shall be attached.

13. Alternative Bids

- 13.1 **Unless otherwise specified in the BDS**, alternative bids shall not be considered.
- 13.2 When alternative times for completion are explicitly invited, a statement to that effect **will be included in the BDS**, as will the method of evaluating different times for completion.
- 13.3 Except as provided under ITB 13.4 below, Bidders wishing to offer technical alternatives to the requirements of the Bidding Documents must first price the Employer's design as described in the Bidding Documents and shall further provide all information necessary for a complete evaluation of the alternative by the Employer, including drawings, design calculations, technical specifications, breakdown of prices, and proposed construction methodology and other relevant details. Only the technical alternatives, if any, of the lowest evaluated Bidder conforming to the basic technical requirements shall be considered by the Employer **(as specified in BDS)**
- 13.4 **When specified in the BDS**, Bidders are permitted to submit alternative technical solutions for specified parts of the Works, and such parts **will be identified in the BDS**,

as will the method for their evaluating, and described in Section VII, Works Requirements.

14. Bid Prices and Discounts

- 14.1 The prices and **discounts** quoted by the Bidder in the Letter of Bid and in the Schedules shall conform to the requirements specified below.**(or as specified in BDS)**
- 14.2 The Bidder shall submit a bid for the whole of the Works described in ITB 1.1, by filling in price(s) for all items of the works, as identified in Section IV, Bidding Forms. In case of admeasurement contracts, the Bidder shall fill in rates and prices for all items of the Works described in the Bill of Quantities. Items against which no rate or price is entered by the Bidder shall be deemed covered by the rates for other items in the Bill of Quantities and will not be paid for separately by the Employer. An item not listed in the priced Bill of Quantities shall be assumed to be not included in the Bid, and provided that the Bid is determined substantially responsive notwithstanding this omission, the average price of the item quoted by substantially responsive bidders will be added to the bid price and the equivalent total cost of the bid so determined will be used for price comparison. **(or as specified in BDS)**
- 14.3 The price to be quoted in the Letter of Bid shall be the total price of the Bid, excluding any discounts offered **(or as specified in BDS)**.
- 14.4 The Bidder shall quote any discounts and the methodology for their application in the Letter of Bid **(or as specified in BDS)**
- 14.5 Unless otherwise specified in the BDS** and the Contract, the rate(s) and price(s) quoted by the Bidder are subject to adjustment during the performance of the Contract in accordance with the provisions of the Conditions of Contract. In such a case, the Bidder shall furnish the indices and weightings for the price adjustment formulae in the Schedule of Adjustment Data and the Employer may require the Bidder to justify its proposed indices and weightings.
- 14.6 If so specified in ITB 1.1, bids are being invited for individual lots (contracts) or for any combination of lots (packages). Bidders wishing to offer discounts for the award of more than one Contract shall specify in their bid the price reductions applicable to each package, or alternatively, to individual Contracts within the package. Discounts shall be submitted in accordance with ITB 14.4, provided the bids for all lots (contracts) are opened at the

same time **or as specified in the BDS.**

- 14.7 Unless otherwise **specified in the BDS**, all duties, taxes, and other levies payable by the Contractor under the Contract, or for any other cause, as of the date **28 days** prior to the deadline for submission of bids, shall be included in the rates and prices and the total Bid Price submitted by the Bidder.

15. Currencies of Bid and Payment

- 15.1 The currency (ies) of the bid and the currency (ies) of payments shall be **as specified in the BDS.**
- 15.2 Bidders may be required by the Employer to justify, to the Employer's satisfaction, their local and foreign currency requirements, and to substantiate that the amounts included in the prices shown in the Schedule of Adjustment Data in the Appendix to Bid are reasonable, in which case a detailed breakdown of the foreign currency requirements shall be provided by Bidders.

**16. Documents
Comprising the
Technical
Proposal**

- 16.1 The Bidder shall furnish a Technical Proposal including a statement of work methods, equipment, personnel, schedule and any other information as stipulated in Section IV – Bidding Forms, in sufficient detail to demonstrate the adequacy of the Bidder's proposal to meet the work requirements and the completion time.

**17. Documents
Establishing the
Qualifications of
the Bidder**

- 17.1 In accordance with Section III, Evaluation and Qualification Criteria, to establish that the Bidder continues to meet the criteria used at the time of prequalification or at the time of actual bidding (as the case may be), the Bidder shall provide in the corresponding information sheets included in Section IV, Bidding Forms, updated information on any assessed aspect that changed from that time, or if post-qualification applies as specified in ITB 4.5, the Bidder shall provide the information requested in the corresponding information sheets included in Section IV, Bidding Forms.
- 17.2 If a margin of preference applies as specified in accordance with ITB 33.1, domestic Bidders, individually or in joint ventures, applying for eligibility for domestic preference shall supply all information required to satisfy the criteria for eligibility specified in accordance with ITB 33.1 (as detailed in BDS)
- 17.3 Any change in the structure or formation of a Bidder after being prequalified and invited to Bid (including, in the case of a JV, any change in the structure or formation of any member thereto) shall be subject to the written approval of the Employer prior to the deadline for submission of Bids. Such approval shall be denied if (i) as a consequence of

the change, the Bidder no longer substantially meets the qualification criteria set forth in Section III, Qualification Criteria and Requirements; or (ii) in the opinion of the Employer, the change may result in a substantial reduction in competition. Any such change should be submitted to the Employer not later than fourteen (14) days after the date of the Invitation for Bids. **(or as specified in BDS)**

18. Period of Validity of Bids

- 18.1 Bids shall remain valid for the period **specified in the BDS** from the bid submission deadline date prescribed by the Employer in accordance with ITB 22.1. A bid valid for a shorter period shall be rejected by the Employer as non-responsive.
- 18.2 In exceptional circumstances, prior to the expiration of the bid validity period, the Employer may request Bidders to extend the period of validity of their bids. The request and the responses shall be made in writing. If a bid security is requested in accordance with ITB 19, it shall also be extended for **twenty-eight (28)** days beyond the deadline of the extended validity period. A Bidder may refuse the request without forfeiting its bid security. A Bidder granting the request shall not be required or permitted to modify its bid, except as provided in ITB 18.3.
- 18.3 **Unless specified in BDS**, if the award is delayed by a period exceeding fifty-six (56) days beyond the expiry of the initial bid validity, the Contract price shall be determined as follows:
- (a) In the case of fixed price contracts, the Contract price shall be the bid price adjusted by the factor **specified in the BDS**.
 - (b) In the case of adjustable price contracts, no adjustment shall be made.
 - (c) In any case, bid evaluation shall be based on the bid price without taking into consideration the applicable correction from those indicated above.

19. Bid Security

- 19.1 The Bidder shall furnish as part of its bid, a bid security **as specified in the BDS**, in original form and, in the case of a bid security, in the amount and currency **specified in the BDS**.
- 19.2 A Bid-Securing Declaration shall use the form included in Section IV, Bidding Forms, **as specified in BDS**
- 19.3 If a bid security is specified pursuant to ITB 19.1, the bid security shall be a demand guarantee in any of the following forms at the Bidder's option:

- (a) an unconditional guarantee issued by any Scheduled bank in India;
- (b) an irrevocable letter of credit;
- (c) Demand Draft, from any Scheduled Bank in India.
- (d) another security **specified in the BDS**,

from a reputable source from an eligible country as specified in Section V-Eligibility criteria and social and environmental responsibility. If the unconditional guarantee is issued by a financial institution located outside the Employer's Country, the issuing financial institution shall have a correspondent financial institution located in the Employer's Country to make it enforceable. In the case of a bank guarantee, the bid security shall be submitted either using the Bid Security Form included in Section IV, Bidding Forms, or in another substantially similar format approved by the Employer prior to bid submission. The bid security shall be valid for twenty-eight (28) days beyond the original validity period of the bid, or beyond any period of extension if requested under ITB 18.2.

- 19.4 Any bid not accompanied by a substantially responsive **Bid security** or **Bid-Securing Declaration** (as the case may be) shall be rejected by the Employer as non-responsive.
- 19.5 The bid security of unsuccessful Bidders shall be returned as promptly as possible upon the successful Bidder's signing the Contract and furnishing the performance security pursuant to ITB 42.(**Replaced in BDS**)
- 19.6 The bid security of the successful Bidder shall be returned as promptly as possible once the successful Bidder has signed the Contract and furnished the required performance security.
- 19.7 The bid security may be forfeited or the Bid-Securing Declaration executed:
 - (a) if a Bidder withdraws its bid during the period of bid validity specified by the Bidder on the Letter of Bid, or any extension thereto provided by the Bidder; or
 - (b) If the Bidder submit fake / forged / fabricated /false documents as well as false & misleading information /data with his Bid which fails the authenticity verifications initiated by MAHA-Metro.
 - (c)If the Bidder tamper/ edit/ mutilate the Bid document

and associated information/data and submit the same with his Bid.

(d) If the successful Bidder fails to:

(i) sign the Contract in accordance with ITB 41; or

(ii) furnish a performance security in accordance with ITB 42.

(iii) authenticate and verification of performance security

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 names of all future members as named in the letter of intent referred to in ITB 4.1 and ITB 11.2. **or as Specified in BDS, Section-II**

19.9 If a bid security is **not required in the BDS pursuant to ITB 19.1**, and

(a) if a Bidder withdraws its bid during the period of bid validity specified by the Bidder on the Letter of Bid or any extension thereto provided by the Bidder, or

(b) if the successful Bidder fails to sign the Contract in accordance with ITB 41; or furnish a performance security in accordance with ITB 42;

the Employer may, **if provided for in the BDS**, declare the Bidder ineligible to be awarded a contract by the Employer for a period of time **as stated in the BDS**.

20. Format and Signing of Bid

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 discrepancy between the original and the copies, the original shall prevail. **(Replaced in BDS)**

20.2 The original and all copies of the bid shall be typed or written in indelible ink and shall be signed by a person duly authorized to sign on behalf of the Bidder. This authorization shall consist of a written confirmation **as specified in the BDS** and shall be attached to the bid. The name and position held by each person signing the

authorization must be typed or printed below the signature. All pages of the bid where entries or amendments have been made shall be signed or initialed by the person signing the bid. **(Replaced in BDS)**

20.3 In case the Bidder is a JV, the Bid shall be signed by an authorized representative of the JV on behalf of the JV, and so as to be legally binding on all the members as evidenced by a power of attorney signed by their legally authorized representatives. **(As specified in BDS)**

20.4 Any inter-lineation, erasures, or overwriting shall be valid only if they are signed or initialed by the person signing the bid.

D. Submission and Opening of Bids (as specified in BDS)

21. Sealing and Marking of Bids (Replaced In BDS)

21.1 The Bidder shall enclose the original and one set of all copies of the bid, including alternative bids, if permitted in accordance with ITB 13, in separate sealed envelopes, duly marking the envelopes as "ORIGINAL", "ALTERNATIVE" and "COPY." These envelopes containing the original and the copies shall then be enclosed in one single envelope.

21.2 The inner and outer envelopes shall:

- (a) bear the name and address of the Bidder;
- (b) be addressed to the Employer in accordance with ITB 22.1;
- (c) bear the specific identification of this bidding process specified in the BDS 1.1; and
- (d) bear a warning not to open before the time and date for bid opening.

21.3 If all envelopes are not sealed and marked as required, the Employer will assume no responsibility for the misplacement or premature opening of the bid.

22. Deadline for Submission of Bids

22.1 Bids must be received by the Employer at the address and no later than the date and time **specified in the BDS**. **When so specified in the BDS**, bidders shall have the option of submitting their bids electronically. Bidders submitting bids electronically shall follow the electronic bid submission procedures **specified in the BDS**.

22.2 The Employer may, at its discretion, extend the deadline for the submission of bids by amending the Bidding Documents in accordance with ITB 8, in which case all rights and obligations of the Employer and Bidders previously subject to the deadline shall thereafter be

subject to the deadline as extended.

23. Late Bids

- 23.1 The Employer shall not consider any bid that arrives after the deadline for submission of bids, in accordance with ITB 22. Any bid received by the Employer after the deadline for submission of bids shall be declared late, rejected, and returned unopened to the Bidder **or as specified in BDS**

24. Withdrawal, Substitution, and Modification of Bids

- 24.1 **Unless specified in BDS**, A Bidder may withdraw, substitute, or modify its bid after it has been submitted by sending a written notice, duly signed by an authorized representative, and shall include a copy of the authorization in accordance with ITB 20.2. The corresponding substitution or modification of the bid must accompany the respective written notice. All notices must be:
- (a) prepared and submitted in accordance with ITB 20 and ITB 21 (except that withdrawals notices do not require copies), and in addition, the respective envelopes shall be clearly marked "WITHDRAWAL," "SUBSTITUTION," "MODIFICATION;" and
 - (b) received by the Employer prior to the deadline prescribed for submission of bids, in accordance with ITB 22.
- 24.2 Bids requested to be withdrawn in accordance with ITB 24.1 shall be returned unopened to the Bidders.
- 24.3 No bid may be withdrawn, substituted, or modified in the interval between the deadline for submission of bids and the expiration of the period of bid validity specified by the Bidder on the Letter of Bid or any extension thereof.

25. Bid Opening

- 25.1 Except in the cases specified in ITB 23 and 24, the Employer shall publicly open and read out in accordance with ITB 25 all bids received by the deadline (regardless of the number of bids received), at the date, time and place **specified in the BDS**, in the presence of Bidders' designated representatives and anyone who choose to attend. Any specific electronic bid opening procedures required if electronic bidding is permitted in accordance with ITB 22.1, shall be **as specified in the BDS**.
- 25.2 First, envelopes marked "WITHDRAWAL" shall be opened and read out and the envelope with the corresponding bid shall not be opened, but returned to the Bidder. No bid withdrawal shall be permitted unless the corresponding withdrawal notice contains a valid authorization to request the withdrawal and is read out at bid opening. Next, envelopes marked "SUBSTITUTION" shall be opened and

read out and exchanged with the corresponding bid being substituted, and the substituted bid shall not be opened, but returned to the Bidder. No bid substitution shall be permitted unless the corresponding substitution notice contains a valid authorization to request the substitution and is read out at bid opening. Envelopes marked "MODIFICATION" shall be opened and read out with the corresponding bid. No bid modification shall be permitted unless the corresponding modification notice contains a valid authorization to request the modification and is read out at bid opening. Only bids that are opened and read out at bid opening shall be considered further.

25.3 All other envelopes shall be opened one at a time, reading out: the name of the Bidder and whether there is a modification; the total Bid Price, per lot (contract) if applicable, including any discounts and alternative bids; the presence or absence of a bid security and any other details as the Employer may consider appropriate. Only discounts and alternative bids read out at bid opening shall be considered for evaluation. The Letter of Bid and the Schedules are to be initialed by a minimum of three representatives of the Employer attending bid opening. The Employer shall neither discuss the merits of any bid nor reject any bid (except for late bids, in accordance with ITB 23.1) **(Replaced in BDS)**

25.4 The Employer shall prepare a record of the bid opening that shall include, as a minimum: the name of the Bidder and whether there is a withdrawal, substitution, or modification; the Bid Price, per lot (contract) if applicable, including any discounts and alternative bids; and the presence or absence of a bid security. The Bidders' representatives who are present shall be requested to sign the record. The omission of a Bidder's signature on the record shall not invalidate the contents and effect of the record. A copy of the record shall be distributed to all Bidders. **(Replaced in BDS)**

E. Evaluation and Comparison of Bids

26. Confidentiality

26.1 Information relating to the examination, evaluation, and comparison of the bids, and qualification of the Bidders and recommendation of contract award shall not be disclosed to Bidders or any other persons not officially concerned with the bidding process until information on Contract award is communicated to all Bidders in accordance with ITB 40.

26.2 Any attempt by a Bidder to influence the Employer in the examination, evaluation, and comparison of the bids, and

qualification of the Bidders, or Contract award decisions may result in the rejection of its bid.

26.3 Notwithstanding ITB 26.2, from the time of bid opening to the time of Contract award, if a Bidder wishes to contact the Employer on any matter related to the bidding process, it shall do so in writing.

26.4 The Bank requires that tenderers and (sub-) contractors participating in a tender procedure or a contract under a Bank-financed project shall not violate or have violated any intellectual property rights.

27. Clarification of Bids

27.1 To assist in the examination, evaluation, and comparison of the bids, and qualification of the Bidders, the Employer may, at its discretion, ask any Bidder for a clarification of its bid, given a reasonable time for a response. Any clarification submitted by a Bidder that is not in response to a request by the Employer shall not be considered. The Employer's request for clarification and the response shall be in writing. No change, including any voluntary increase or decrease, in the prices or substance of the bid shall be sought, offered, or permitted, except to confirm the correction of arithmetic errors discovered by the Employer in the evaluation of the bids, in accordance with ITB 31.

27.2 If a Bidder does not provide clarifications of its bid by the date and time set in the Employer's request for clarification, its bid may be rejected.

28. Deviations, Reservations, and Omissions

28.1 During the evaluation of bids, the following definitions apply:

- (a) "Deviation" is a departure from the requirements specified in the Bidding Documents;
- (b) "Reservation" is the setting of limiting conditions or withholding from complete acceptance of the requirements specified in the Bidding Documents; and
- (c) "Omission" is the failure to submit part or all of the information or documentation required in the Bidding Documents.

29. Determination of Responsiveness

29.1 The Employer's determination of a bid's responsiveness is to be based on the contents of the bid itself, as defined in ITB11.

29.2 A substantially responsive bid is one that meets the requirements of the Bidding Documents without material deviation, reservation, or omission. A material deviation, reservation, or omission is one that,

- (a) if accepted, would:
 - (i) affect in any substantial way the scope, quality, or performance of the Works specified in the Contract; or
 - (ii) limit in any substantial way, inconsistent with the Bidding Documents, the Employer's rights or the Bidder's obligations under the proposed Contract; or
- (b) if rectified, would unfairly affect the competitive position of other Bidders presenting substantially responsive bids.

29.3 The Employer shall examine the technical aspects of the bid submitted in accordance with ITB 16, in particular, to confirm that all requirements of Section VII, Works Requirements have been met without any material deviation, reservation or omission.

29.4 If a bid is not substantially responsive to the requirements of the Bidding Documents, it shall be rejected by the Employer and may not subsequently be made responsive by correction of the material deviation, reservation, or omission.

30. Nonmaterial Nonconformities

30.1 Provided that a bid is substantially responsive, the Employer may waive any nonmaterial non-conformity in the Bid.

30.2 Provided that a bid is substantially responsive, the Employer may request that the Bidder submit the necessary information or documentation, within a reasonable period of time, to rectify nonmaterial nonconformities in the bid related to documentation requirements. Requesting information or documentation on such nonconformities shall not be related to any aspect of the price of the Bid. Failure of the Bidder to comply with the request may result in the rejection of its Bid.

30.3 Provided that a bid is substantially responsive, the Employer shall rectify quantifiable nonmaterial nonconformities related to the Bid Price. To this effect, the Bid Price shall be adjusted, for comparison purposes only, to reflect the price of a missing or non-conforming item or component.

31. Correction of Arithmetical Errors

31.1 Provided that the bid is substantially responsive, the Employer shall correct arithmetical errors on the following basis:

- (a) Only for admeasurement contracts, if there is a

discrepancy between the unit price and the total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail and the total price shall be corrected, unless in the opinion of the Employer there is an obvious misplacement of the decimal point in the unit price, in which case the total price as quoted shall govern and the unit price shall be corrected;

(b) Only for admeasurement contracts, if there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected; and

(c) if there is a discrepancy between words and figures, the amount in words shall prevail, unless, only for admeasurement contracts, the amount expressed in words is related to an arithmetic error, in which case the amount in figures shall prevail subject to (a) and (b) above.

31.2 Bidders shall be requested to accept correction of arithmetical errors. Failure to accept the correction in accordance with ITB 31.1 shall result in the rejection of the Bid.

32. Conversion to Single Currency

32.1 For evaluation and comparison purposes, the currency(ies) of the Bid shall be converted into a single currency **as specified in the BDS**.

33. Margin of Preference

33.1 Unless otherwise specified in the BDS, a margin of preference for domestic bidders shall not apply.

34. Subcontractors

34.1 Unless otherwise stated in the BDS, the Employer does not intend to execute any specific elements of the Works by sub-contractors selected in advance by the Employer.

34.2 In case of Prequalification, the Bidder's Bid shall name the same specialized subcontractor as submitted in the prequalification application and approved by the Employer, or may name another specialized subcontractor meeting the requirements specified in the prequalification phase.

34.3 In case of Post-qualification, the Employer may permit subcontracting for certain specialized works as indicated in Section III Experience. When subcontracting is permitted by the Employer, the specialized subcontractor's experience shall be considered for evaluation. Section III describes the qualification criteria for sub-

contractors **or as specified in BDS.**

35. Evaluation of Bids

- 35.1 The Employer shall use the criteria and methodologies listed in this Clause. No other evaluation criteria or methodologies shall be permitted.
- 35.2 To evaluate a bid, the Employer shall consider the following **(as specified in BDS)**:
- (a) the bid price, excluding Provisional Sums and the provision, if any, for contingencies in the Schedules, but including Day work items, where priced competitively;
 - (b) price adjustment for correction of arithmetic errors in accordance with ITB 31.1;
 - (c) price adjustment due to discounts offered in accordance with ITB 14.4;
 - (d) converting the amount resulting from applying (a) to (c) above, if relevant, to a single currency in accordance with ITB 32;
 - (e) price adjustment due to quantifiable nonmaterial nonconformities in accordance with ITB 30.3;
 - (f) the additional evaluation factors as specified in Section III, Evaluation and Qualification Criteria.
- 35.3 The estimated effect of the price adjustment provisions of the Conditions of Contract, applied over the period of execution of the Contract, shall not be taken into account in bid evaluation.
- 35.4 If these Bidding Documents allows Bidders to quote separate prices for different lots (contracts), the methodology to determine the lowest evaluated price of the lot (contract) combinations, including any discounts offered in the Letter of Bid Form, is specified in Section III, Evaluation and Qualification Criteria.
- 35.5 An Abnormally Low Bid is one where the Bid price, in combination with other elements of the Bid, appears so low that it raises material concerns as to the capability of the Bidder in regards to the Bidder's ability to perform the Contract for the offered Bid Price. In the event of identification of a potentially Abnormally Low Bid, the Employer shall seek written clarifications from the Bidder, including detailed price analysis of its Bid price in relation to the subject matter of the contract, scope, proposed

methodology, schedule, allocation of risks and responsibilities and any other requirements of the Bidding document. After evaluation of the price analyses, in the event that the Employer determines that the Bidder has failed to demonstrate its capability to perform the Contract for the offered Bid Price, the Employer shall reject the Bid.

36. Comparison of Bids

36.1 The Employer shall compare the evaluated prices of all substantially responsive bids established in accordance with ITB 35.2 to determine the lowest evaluated bid.

37. Qualification of the Bidder

37.1 The Employer shall determine to its satisfaction whether the Bidder that is selected as having submitted the lowest evaluated and substantially responsive bid either continues to meet (if prequalification applies) or meets (if post-qualification applies) the qualifying criteria specified in Section III, Evaluation and Qualification Criteria.

37.2 The determination shall be based upon an examination of the documentary evidence of the Bidder's qualifications submitted by the Bidder, pursuant to ITB 17.1.

37.3 An affirmative determination shall be a prerequisite for award of the Contract to the Bidder. A negative determination shall result in disqualification of the bid, in which event the Employer shall proceed to the next lowest evaluated bid to make a similar determination of that Bidder's qualifications to perform satisfactorily.

38. Employer's Right to Accept Any Bid, and to Reject Any or All Bids

38.1 The Employer reserves the right to accept or reject any bid, and to annul the bidding process and reject all bids at any time prior to contract award, without thereby incurring any liability to Bidders. In case of annulment, all bids submitted and specifically, bid securities, shall be promptly returned to the Bidders.

F. Award of Contract

39. Award Criteria

39.1 Subject to ITB 38.1, the Employer shall award the Contract to the Bidder whose bid has been determined to be the lowest evaluated bid and is substantially responsive to the Bidding Documents, provided further that the Bidder is determined to be qualified to perform the Contract satisfactorily.

40. Notification of Award

40.1 Prior to the expiration of the period of bid validity, the Employer shall notify the successful Bidder, in writing, that its bid has been accepted. The notification letter (hereinafter and in the Conditions of Contract and Contract Forms called the "Letter of Acceptance") shall specify the sum that the Employer will pay the Contractor in consideration of the execution and completion of the

Works (hereinafter and in the Conditions of Contract and Contract Forms called “the Contract Price”) and the requirement for the Contractor to remedy any defects therein. At the same time, the Employer shall also notify all other Bidders of the results of the bidding.

40.2 Until a formal contract is prepared and executed, the notification of award shall constitute a binding Contract.

40.3 The Employer shall promptly respond in writing to any unsuccessful Bidder who, after notification of award in accordance with ITB 40.1, requests in writing the grounds on which its bid was not selected.

41. Signing of Contract

41.1 Promptly upon notification, the Employer shall send the successful Bidder the Contract Agreement.

41.2 In case the agreement is sent, within twenty-eight (28) days of receipt of the Contract Agreement, the successful Bidder shall sign, date, and return it to the Employer.

41.3 A standstill period of at least 10 calendar days will apply and the contract shall not be signed until the expiry of the specified standstill period from the date on which the contract award decision is issued to the tenderers

42. Performance Security

42.1 Within twenty-eight (28) days of the receipt of notification of award from the Employer, the successful Bidder shall furnish the performance security in accordance with the General Conditions of Contract, subject to ITB 35.5, using for that purpose the Performance Security Form included in Section X Contract Forms, or another form acceptable to the Employer. If the performance security furnished by the successful Bidder is in the form of a bond, it shall be issued by a bonding or insurance company that has been determined by the successful Bidder to be acceptable to the Employer. A foreign institution providing a bond shall have a correspondent financial institution located in the Employer’s Country.**(as specified in BDS)**

42.2 Failure of the successful Bidder to submit the above-mentioned Performance Security or sign the Contract shall constitute sufficient grounds for the annulment of the award and forfeiture of the bid security or execution of the Bid-Securing Declaration. In that event the Employer may award the Contract to the next lowest evaluated Bidder whose offer is substantially responsive and is determined by the Employer to be qualified to perform the Contract satisfactorily.

**MAHARASHTRA METRO RAIL CORPORATION LIMITED
(PUNE METRO RAIL PROJECT)****BID DOCUMENTS****FOR**

Name of work: Geotechnical Investigation of Underground Section of NS Corridor Phase-I Extension Swargate-Katraj of Pune Metro Rail Project.

Tender No. P1Misc-34/2024

PART 1: BIDDING PROCEDURE

SECTION II: BID DATA SHEET

**Maharashtra Metro Rail Corporation Limited**

Civil Court Metro Station, Nyayamurti Ranade Path, Pune-

411005. Tel- 020-7410004067/68

E-mail: tenders.pmrp@mahametro.org

Website: www.punemetrorail.org

Section II. Bid Data Sheet**A. General**

General	<p>The following terms are used in the Bidding Documents shall have the same meaning and interpretations:</p> <ul style="list-style-type: none"> • 'Tender(s)' and 'Bid(s)' • 'Tenderer(s)' and 'Bidder(s)' • 'Employer's Requirements' and 'Work Requirements'
ITB 1.1	<p><u>Name of Project:- Pune Metro Rail Project.</u></p> <p>Name of work: Geotechnical Investigation of Underground Sction of NS Corridor Phase-I Extension Swargate-Katraj of Pune Metro Rail Project.</p>
ITB 1.1	The Employer is: <u>Maharashtra Metro Rail Corporation Limited (Maha-Metro)</u>
ITB 1.1	<p>National Competitive Bid (NCB)</p> <p>The number of the Invitation for Bids (Tender No) is: Tender No. P1Misc-34/2024</p>
ITB 1.1	<p>The detailed Scope of Work under this contract is described in detail in the Part II: Section-VII (Works Requirements) of the bid document and other documents. The Contractor has to execute the work accordingly with the approval of Employer.</p> <p>The successful Bidder has to establish its Office at Pune, if it does not have at present.</p> <p>The cost and expenses for setting up the said office(s) will be deemed to have been included in the Quoted Contract Price by the bidder and no separate / extra / additional amount is payable by Employer</p>
ITB 2.1	<p>Source of Fund for the project: Source of Fund for the project: Funded by Equity of Government of India (GOI) & Government of Maharashtra (GOM)</p>
ITB 4.1	<p>The bidder may be a firm as a Single Entity</p> <p>Or</p> <p>A joint venture / Consortium</p> <p>Maximum number of members in the JV / Consortium shall be: 03 (Three)</p> <p>Lead member should not have less than 51% participation and other members shall have minimum 20% participation in the proposed JV / Consortium for this work.</p> <p>(a) In case of JV / Consortium, change in constitution or percentage participation of JV/Consortium shall not be permitted at any stage after their submission of Bid and thereafter.</p>

	<p>(b) The authorized representative from lead member of JV/Consortium shall be signatory of the bid. (Ref. Section-IV of Part-1)</p> <p>(c) Existing JV/Consortium already worked / working in any department & meeting the eligibility criteria mentioned in Section-III of Bid Document, can bid with the same JV configuration as a Single Entity</p>
ITB 4.2	<p>(In Continuation to the existing clause, further added as under)</p> <p>(i) No Bidder can be a subcontractor while submitting a Bid individually in his own name or as a partner of a JV / Consortium in the same bidding process. A Bidder, if proposed as a subcontractor in any Bid, may be a proposed subcontractor in more than one Bid also, but only in the capacity of Sub-contractor.</p> <p>(a) A JV/Consortium member will not be permitted to participate in the bid as a single entity.</p> <p>(b) No individual member will be member of JV/Consortium of more than one group of bidder.</p>
ITB 4.6	<p>This Bidding Process is in single stage two-packet system through e-tender portal https://mahametrorail.etenders.in. & open to all eligible bidders as per Evaluation & Qualification Criteria under Section-III of this Bid Document.</p>
ITB 4.7 (Additional Para)	<p>The bidders or any member of JV/ Consortium must not have been blacklisted / debarred, which is in force on the last date of Submission of the Bid,</p> <p>A. for the reasons like supply of sub-standard material, non-supply of material, abandonment of works, sub-standard quality of works, failure to abide "Bid Securing Declaration" etc. by:</p> <p style="padding-left: 40px;">a. any Department / PSU / Subordinate Offices under Ministry of Housing and Urban Affairs (MOHUA) or</p> <p style="padding-left: 40px;">b. any department of Government of Maharashtra</p> <p style="padding-left: 40px;">or</p> <p>B. By Department of Expenditure (DOE), Ministry of Finance, Government of India from participating in any government bidding procedure.</p> <p>Simultaneously the bidder or any of its member of JV/Consortium should not be listed in exclusion list of word bank (Ref. Section-V Cl. No 2 (vii)). The Bidder should submit undertaking to this effect.</p>
ITB 4.8 (Additional Para)	<p>In case, the Bidder is a consortium / JV, a detailed Consortium Agreement between the Members of such Consortium stating clearly their interrelationship and division of work and obligations among the Members as mentioned in ITB 4.13 below should be submitted along with the Bid for proper examination by MAHA-METRO. The format of the Consortium Agreement is provided in Section IV: Bidding Form.</p>

ITB 4.9 (Additional Para)	<p>Further, a Power of Attorney signed by all the JV/ Consortium Members duly supported by their board resolutions or statement of joint decision signed by directors must also accompany the Bid authorizing the Lead Member, inter alia, to submit the Bid on their behalf.</p>
ITB 4.10 (Additional Para)	<p>(a) Every Bidder, be it a single entity or a JV/ Consortium, is required to submit along with its Bid, a Power of Attorney duly signed and stamped and supported by its board resolution / Directors authorizing an individual as its authorized signatory, inter alia, to sign and submit the Bid. The formats of the Power of Attorney as well as the board resolution are provided in Section IV: Bidding Form. In case of JV/Consortium, such power of attorney and board resolution must be executed and passed respectively by the Lead Member.</p> <p>(b) 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.</p> <p>(c) All members of the Consortium / Joint Venture shall be jointly and severally responsible for the execution of the Contract in accordance with the terms and conditions of the Contract.</p> <p>(d) 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.</p> <p>(e) The Bid shall be signed so as to be legally binding on all the Members of the Consortium.</p> <p>(f) If the bidding entity is a Proprietorship firm, the proprietor of the firm shall submit a declaration notarized by Notary Public stating that he is the legal owner of the bidding firm & authorized signatory all document. Such declaration shall accompany with PAN Card of proprietor.</p> <p>(g) If the bidding entity is a Partnership firm / Private Limited Company, all the partners shall jointly provide a Power of Attorney in the name of one partner as an authorized signatory. Such declaration shall accompany with copy of DIN numbers of all partners.</p>
ITB 4.11 (Additional Para)	<p>The mode of execution of the power of attorney should be in accordance with the procedure, if any laid down by the applicable law and the charter documents of the executant(s) and when it is so required the same should be under common seal affixed in accordance with the required procedure in the prescribed format as provided in Section IV.</p> <p>For a Power of Attorney executed and issued overseas, the document will also have to be endorsed by the Indian Embassy or notarized/ registered with appropriate statutory authority in the jurisdiction where the Power of Attorney is being issued. However, the Power of Attorney provided by a Bidder from a country which has signed the Hague Legislation Convention, 1961 is not required to be endorsed by the Indian Embassy if it, carries a</p>

	conforming Apostille certificate. This power of attorney should be registered at appropriate authority and easily verifiable.
ITB 4.12 (Additional Para)	<p>If the Bidder is a Consortium or Joint Venture, the Bidder shall essentially submit the following information in addition to other requirement detailed in Section-III: Evaluation & Qualification Criteria..</p> <p>(a) A Memorandum of Understanding / Consortium Agreement / JV Agreement duly notarized by the notary public of country of origin and should be stamped by Embassy / High Commission (in case of overseas bidder). Bidders from Member Countries of Hague convention may submit all these documents with "Apostille" stamp instead of Embassy.</p> <p>(b) Nomination of one of the Members of the Consortium or Joint Venture to be in-charge ("Lead member"); and this authorization shall be covered in the Power of Attorney signed by the legally authorized signatories of all Members of Consortium or Joint Venture.</p> <p>(c) Details of the intended financial participation by each member shall be furnished with complete details of the proposed division of responsibilities and relationships among the individual Members.</p>
ITB 4.13 (Additional Para)	The Bidder shall submit with the Bid full details of its ownership and control or, if the Bidder is a Consortium, full details of ownership and control of each Member thereof. The required information should be submitted as per Form in the Section IV: Bidding Forms.
ITB 4.14 (Additional Para)	<p>Indian Bidders, or Indian Members of a JV/ Consortium shall submit, a copy of the Permanent Account Number (PAN) issued by the Income Tax Authorities and a certified copy of the last 3 years (including the latest Financial Year) income tax return, duly acknowledged by Income Tax department with their Bid and the Technical Package. In case the Indian member of a JV/ Consortium is a wholly owned 100% subsidiary of their foreign partner in the said Consortium and this Indian company has been formed less than 3 years ago, the certified copy of the latest Financial Year income tax return (applicable only if company was formed more than a year ago), duly acknowledged by Income Tax department shall be submitted in the Technical Package.</p> <p>The Indian bidders shall submit copy of GST registration Certificate along with the bid.</p> <p>The foreign partner of the JV/ Consortium shall submit appropriate documents pertaining to their financial capability/ audited balance sheets and clearances of taxes as per the relevant law of the country of their origin.</p>
ITB 4.15 (Additional Para)	Each Bidder (each Member in the case of a JV/Consortium) is required to confirm and declare with its Bid that no agent, middleman or any intermediary has been, or will be, engaged to provide any services, or any other item or work related to the award and performance of this Contract. Such Bidder or Member will have to further confirm and declare in the Bid that no agency commission or any payment which may be construed as an agency commission has been, or will be, paid and that the Contract Price will not include any such amount. If the Employer subsequently finds to the contrary, the Employer reserves the right to declare the Bidder as non-compliant, and

	declare any Contract if already awarded to the Bidder to be null and void. Specific declaration to this effect exactly as per Section IV: Bidding Form shall be submitted with the Technical Package.
ITB 4.16 (Additional Para)	Canvassing or offer of an advantage or any other inducement by any person with a view to influencing acceptance of a Bid will be an offence under laws of India. Such action will result in the rejection of the Bid, in addition to other punitive measures.
ITB 4.17 (Additional Para)	In case, the Bidder is a consortium / JV, a detailed Consortium Agreement between the Members of such Consortium stating clearly their inter-relationship and division of work and obligations among the Members as mentioned in ITB 4.13 below should be submitted along with the Bid for proper examination by MAHA-METRO. The format of the Consortium Agreement is provided in Section IV: Bidding Form.
ITB 4.17.1(Additional Para)	Provisions & guidelines of MAKE IN INDIA POLICY 2017 (latest Revision, till final date of submission of Bid), shall be applicable in this bid. The relevant Circulars / office Memorandum attached as an Annexure-II-A of BDS, Section-II.
ITB 4.18 (Additional Para)	Further, a Power of Attorney signed by all the JV/ Consortium Members duly supported by their board resolutions or statement of joint decision signed by directors must also accompany the Bid authorizing the Lead Member, inter alia, to submit the Bid on their behalf. The formats of the Power of Attorney as well as the board resolution are provided in Section IV: Bidding Form. All the relevant forms should be duly signed and be submitted as per the requirements of the forms.
ITB 4.18 .1 (Additional Para)	Restriction under Rule 144(xi) of General Finance Rule (GFR), 2017 As per Govt. Of India Order (Public Procurement No.1) bearing no. F.No.6/18/20-19-PPD, Dt. 23.07.2020 Restrictions on Bidding has been imposed on bidders from the country of origin which shares land boundary with India. Relevant Clauses is attached as an Annexure-II-B of BDS, Section-II, which is applicable to this bid without any change.
ITB 4.19	Additional grounds for exclusion shall be applicable as per Annexure-II D
B. Bidding Documents	
ITB 6.7 (Additional Para)	Supporting Documents / Information. (a) The reference documents, reports, drawings containing site information included in the Bidding Documents are for general information only and any interpretation of the results shall be construed as opinions only and not as representations or warranties as to the actual site conditions. The Bidders' attention is specifically drawn to ITB 6.7 (b) below. (b) The Bidders shall note the existence of over ground, at grade and underground structures, utilities and infrastructure in the near vicinity of the Works to be constructed.

	<p>(c) The accuracy or reliability of the documents and reports referred to in this Para ITB 6.7 and of any other information supplied, prepared or commissioned at any time by the Employer or others in connection with the Contract is not warranted. The Bidders' attention is drawn to Clause 4.10 of GC / S.No. 11 of PC in this regard. The Bidder should visit, examine and assess the Site including working conditions and will be deemed to have satisfied himself of the risks and obligations under the Contract.</p>
ITB 7.1	<p>(a) For clarification purposes only, the Employer's address is: Executive Director (Procurement & Contracts) MAHARASHTRA METRO RAIL CORPORATION LIMITED Civil Court Metro Station, Nyayamurti Ranade Path, Pune-411005., Maharashtra, INDIA Electronic mail address: tenders.pmrp@mahametro.org Web page: www.punemetrorail.org All correspondence from MAHA-METRO pertaining to this Bid till award of the work shall be done by the authorized representative of MAHA-METRO. The Bidders are advised to regularly check their email ID registered with their user account at e-tendering portal http://mahametrorail.etenders.in for any update/ addendum/ corrigendum/ pre-bid and post-bid queries/ any other correspondence by the Employer.</p> <p>(b) MAHA-METRO shall endeavor to respond to the questions raised or clarifications sought by the Bidders by uploading the same in the form of corrigendum/ clarification in the e-tender portal within the time and date specified in the NIT. MAHA-METRO will not respond and reply to each of the bidders separately.</p> <p>(c) MAHA-METRO may also on its own, if deemed necessary, issue interpretations and clarifications to all Bidders in the form of Addendum and the same shall be uploaded on e-tender portal. All clarifications and interpretations issued by MAHA-METRO shall be deemed to be part of the Bid Documents. Verbal clarifications and information given by MAHA-METRO or its employees or representatives shall not in any way or manner be binding on MAHA-METRO</p>
ITB 7.4	A Pre-Bid Queries: As per NIT.
ITB 7.5	<p>The Bidder is requested, as far as possible, to submit any questions in writing, to reach the Employer before the date and time specified for Pre-Bid meeting in NIT & ITB 7.4 above. The bidder may send such queries either by post to the address mentioned in the bid document or send by mail to tenders.pmrp@mahametro.org</p>
ITB 7.6	<p>Minutes of the pre-bid meeting, if applicable, including the text of the questions asked by Bidders, without identifying the source, and the responses given, together with any responses prepared after the meeting, will be uploaded on the E-Tender portal in accordance with ITB 6.3, and the same shall also be part and parcel of the Bid Document.</p>
ITB 8.2	<p>Following is added to the existing clause of ITB 8.2</p> <p>Such modification in the form of an addendum / Corrigendum will be uploaded on the e-tendering portal e-tender portal https://mahametrorail.etenders.in. within</p>

	<p>the date given in NIT, which shall be available for all the prospective Bidders.</p> <p>Without prejudice to the general order of precedence prescribed in the Clause 1.5 of GC, bidder shall ensure these documents should be submitted along with their original Bid documents submission. All these addendums, corrigendum and clarifications shall be part of the Contract.</p>
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C. Preparation of Bids

ITB 10.1	<p>The language of the bid is: English</p> <p>All correspondence/ exchange shall be in the English language. Language for translation of supporting documents and printed literature is English.</p> <p>Supporting documents related to eligibility criteria enclosed with the bid, other than English Language, should be translated in to English and will have to be endorsed by the Indian Embassy or notarized/ registered with appropriate statutory authority in the jurisdiction where the supporting document is being issued.</p> <p>However, such documents provided by a Bidder from a country which has signed the Hague Legislation Convention 1961 is not required to be endorsed by the Indian Embassy, if it carries a conforming Apostille Certificate.</p> <p>The bidder should provide the relevant contact number & E-Mail ID along with the postal address, in English, of issuing authority / agency of such documents for verification purpose.</p>
ITB 11	Documents Comprising the Bid
ITB. 11.1 (c)	Only Bid Security / EMD shall be acceptable as detailed in NIT & ITB 19.1
ITB. 11.1 (d)	Alternative bid is not permissible .
ITB. 11.1 (j)	<p>The Bidder shall, on or before the date and time given in the Notice of Invitation (NIT) to Bid, upload his Bid on e-tendering portal e-tender portal https://mahametrorail.etenders.in. in accordance with provisions in ITB 22.1.</p> <ol style="list-style-type: none"> The Bidder shall follow the procedure and steps of E-Tender portal given in E-Tender Toolkit provided as Annexure-II-C Cost of the bid: Paid online through E-Tender portal. Bid Security: Evidence of submission / payment of Bid Security as per provision of NIT and BDS ITB 19.1 to be submitted. Technical Package: To be submitted at appropriate place i.e. Technical Envelope on e-tender portal. Financial Package: Financial bid form to be duly filled up directly in the Commercial Envelope only on e-tender portal and not anywhere else. Bidder should ensure that the no part of the Financial Bid should

	<p>be up- loaded anywhere in the technical envelope, if the bidder does so then his bid will be rejected out-rightly.</p> <p>vii. The original Bank Guarantee towards Bid Security (if any), shall be submitted within (07) Seven working days from the last date stipulated for submission of bid at the office of MAHA-METRO at address given at ITB 7.1 above.</p>
ITB 11.1 (k)	The bid documents shall include all the corrigendum/ addendum/ clarifications provided by the Employer during the course and before submission of Bid along with all necessary essential enclosures as specified in the bid document. In case of failure by the bidder in uploading (submission) the same, the bid shall be treated as non-responsive and not evaluated further.
ITB 11.3	As per Letter of bid in Section IV. - Payment of Commission & Gratuities not permitted.
ITB 13.1	Alternative bids shall not be permitted under ITB 13.2, ITB 13.3, or ITB 13.4
ITB 13.2	Alternative times for completion not permitted.
ITB 13.3	Not Applicable.
ITB 13.4	Alternative technical solutions shall not be permitted.
ITB 14.1	<p>The Price is to be quoted Online on E-Tender Portal e-tender portal https://mahametrorail.etenders.in. & Letter of discount, if any, shall be uploaded in Financial Bid Section of E-Tender Portal only.</p> <p>No discounts offer are allowed to be quoted by the bidder in the Letter of Bid and No discount letter to be uploaded in Technical Bid Section of E-Tender Portal.</p> <p>Offering Discount in any form in Technical Section of E-Tender Portal or in Letter of Bid, shall lead to disqualification of Bidder and Financial Bid of such bidder shall not be taken in consideration for evaluation.</p>
ITB 14.2	The bidder shall quote the price online in the Financial Bid Section of the E-Tender portal e-tender portal https://mahametrorail.etenders.in , either rate against each item or in the summary sheet of schedule of BOQ or scanned & upload the filled BOQ/Schedule or Lump sum Price (as the case may be) as per provision described in the aforesaid Financial Bid Section of Bid Document.
ITB 14.3	The price quoted in the Financial Bid Section of E-tender portal https://mahametrorail.etenders.in shall be the total price of the bid.
ITB 14.4	<p>Any disclosure of Financial Offer and any offering of any Discount thereon in Technical Bid is not permitted.</p> <p>Discount, if any, shall be submitted by bidder in Financial Bid Section of E-Tender Portal only</p>
ITB 14.5	For price adjustment / variation, refer to instructions / conditions provided in the Section VIII- GC read with Section IX-Particular Conditions of Contract.
ITB 14.6	Not Applicable
ITB 14.7	i.Price quoted by the bidder includes GST & all other applicable Taxes,

	<p>Duties, Levies payables etc. complete,</p> <p>ii.All taxes, duties, levies prior to Base date i.e. 28 days prior to latest date of submission of Bid is deemed to be inclusive in the price quoted by Bidder.</p> <p>iii.Any change in legislation of any kind of Taxes by GOI or GOM, after Base Date shall be accounted separately and shall be applicable both ways (Reimbursement & Deduction).</p> <p>iv.Successful bidder has to pay the applicable stamp duty towards the registration of Contract Agreement, as per prevailing norms /act of Govt of Maharashtra.</p>
ITB 14.8 (Additional Para)	Bidders shall quote for the entire work on a “single responsibility” basis such that the Bid Price covers all Contractor’s obligations mentioned in or to be reasonably inferred from the Bid Documents in respect to this works and completion of the whole of Works. This includes all requirements under the Contractor’s responsibilities for testing and commissioning of the works executed including integrated testing and commissioning, the acquisition of all permits, approvals and tender licenses, etc.; the operation, maintenance and such other items and services as may be specified in the Bid Documents.
ITB 14.9 (Additional Para)	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 Pro forma of undertaking is provided in Section IV: Bidding Form.(Form-7)
ITB 14.10 (Additional Para)	With the Bid submission, the Bidder shall submit the Pro forma of undertaking provided in Section IV: Bidding Form stating that registrations under various fiscal and labour laws like GST, Central Excise, Import Export Code, Employee State Insurance, Provident Fund, Maharashtra Labour Welfare Fund, Local Body Tax shall be obtained by the bidders in the event of award of the work. (Form-32)
ITB 14.11 (Additional Para)	<p>MAHA-METRO 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 MAHA-METRO.</p> <p>As regards registration under Project Import, after the award of the contract, MAHA-METRO at the written request of Contractor shall facilitate the Contractor for obtaining sponsoring / recommendation letter from the Ministry of Urban Development / Government of Maharashtra for getting themselves registered for availing Project Import benefits. The responsibility to avail the concessional benefits under Project Import shall solely rest with the Contractor.</p>
ITB 15.1	The currency of the Bid & payment shall be Indian Rupees (INR) only.

ITB 17.2	Provisions and norms as stipulated in “Make in India Policy 2017” issued by GOI with the latest amendment till the time of submission of the bid, shall be applicable in this Tender.
ITB 17.3	Applicable if the bid is two stage i.e., Pre-Qualification Stage & Bidding Stage
ITB 18.1	The bid validity period shall be 180 (One Hundred & Eighty) days .
ITB 18.3 (a)	The bid price shall not be adjusted in event of delay of award.
ITB 19.1	<p>(a) A Bid Security is required as specified in NIT:</p> <p>(b) Bid security shall be in form of Unconditional guarantee issued by any Nationalized or Scheduled Commercial Bank (Except Co-Operative Bank) of Indian origin or Scheduled commercial foreign bank having business office in India. The Bid Security Bank Guarantee shall be as per Form in Section-IV: Bidding Forms.</p> <p>Or</p> <p>In the form of Bid Securing Declaration, as per format provided in Section –IV of Bid Document (If applicable, as specified in ITB 19.2 below)</p> <p>(c) A scanned copy of this BG is to be uploaded online and the Bidder should ensure physical submission of the original bank guarantee at the office of MAHA-METRO at address specified in Bidding Documents, within 7 (Seven) working days from the time and last date scheduled for handing over the Bidding Documents (online).</p> <p>(d) If the Bidder fails to submit the scanned copy at the aforesaid (c. above) or fails to submit the original bank guarantee (c. above) , his bid shall not be considered for opening/evaluation & shall be rejected outright.</p> <p><u>Bankers Detail of Employer (MAHA-METRO) for issuance of Bank Guarantee as Bid Security as per Structured Finance Messaging System (SFMS).</u></p> <p style="text-align: center;">Name of Beneficiary: MMRCL- PUNE-TENDER FEES AND EMD</p> <p style="text-align: center;">Bank Name: HDFC Bank, Shankarsheth Road Branch, Pune</p> <p style="text-align: center;">Account No: 50200068854177</p> <p style="text-align: center;">IFSC Code: HDFC0000104</p> <p><u>Note: -</u></p> <p>Bidders are requested not to deposit any cash in the above account towards Bid Security. This account is only for issuance of Bank Guarantee through Bidder’s Bank in Electronic format (SFMS).</p> <p>(e) The EMD / Bid Security received in the form of Bank Guarantee shall be scrutinized in accordance with the Format provided in Section-IV of Bid Document and its authenticity shall also be verified from the issuing</p>

	<p>bank.</p> <p>(f) Any material or cognizable changes in format of Bid Security Bank Guarantee (Provided in Section-IV), which leads to affect the interest of Maha-Metro adversely, shall not be accepted. In such case Maha-Metro reserves the right to reject the EMD/Bid Security & disqualify the bid.</p> <p>(g) The cash component of Bid Security (if any) shall be paid through the provision made on E-Tender portal itself via RTGS/ NEFT/ Credit Card (Not applicable in this tender).</p>
ITB 19.2	<p>As per GFR-2017, Rule No. 171, Bid Security / EMD is exempted for participating bidder registered as MSE (Micro or Small).</p> <p>If applicable, the bidder shall submit “Bid Securing Declaration” as per Format-34, Section-IV</p>
ITB 19.3	The Bidder shall submit with his Bid, a Bid Security for the sum mentioned in NIT in the form as specified in NIT and ITB 19.1 above.
ITB 19.4	EMD /Bid Security shall be as per ITB 19.1 & NIT
ITB 19.5	The bid security of unsuccessful Bidders shall be returned as promptly as possible upon the successful Bidder's acceptance of Letter of Acceptance (LOA) issued by MAHA-Metro.
ITB 19.8	The bid security or a Bid Securing Declaration (if applicable, Ref.19.2), as specified in Section-II BDS, Cl No. 19.1 can be submitted by JV/Consortium or lead member only on behalf of the JV/Consortium.
ITB 19.9	Bid Security is required in this bid.
ITB 20.1	<p>Replacement for ITB as under:</p> <p>Bid to be submitted through E-Tender portal only.</p>
ITB 20.2	<p>Replacement for ITB as under:</p> <p>The Bid shall be submitted by bidder, online through e-tender portal . Details has been described at ITB clause no. 21 & Annexure-II-C</p> <p>The written confirmation of authorization to sign on behalf of the Bidder shall consist of:</p> <ol style="list-style-type: none"> In case of bidder is a Proprietorship Firm, the proprietor shall be authorized signatory of bid and a notarized Undertaking shall be submitted by bidder as per Format provided in Section-IV : Bidding Forms A notarized Power Of Attorney authorizing a signatory, supported by board resolution in case of single bidder (i.e. Limited Company, Private Limited Company , LLP company) A notarized Power of Attorney, authorizing the Lead Member as a signatories of the Bid on behalf of JV/Consortium. This authorization of Lead Member shall be signed by authorized signatories (POA) of each member of the JV/Consortium supported by copy of POA and board resolution of respective JV/Consortium Member Company. The power of attorney (ies) shall be substantially in the format provided under Section IV: Bidding Forms of these Bidding Documents.

	iv. The online bid shall be submitted by using Digital Signature Certificate (DSC) of authorized POA of bidder detailed at (i),(ii) & (iii) above.
ITB 20.3	<p>i. 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.</p> <p>ii. A notarized Power of Attorney, authorizing the Lead Member as a signatories of the Bid on behalf of JV/Consortium. This authorization of Lead Member shall be signed by authorized signatories (POA) of each member of the JV/Consortium supported by copy of POA and board resolution of respective JV/Consortium Member Company. The power of attorney (ies) shall be substantially in the format provided under Section IV: Bidding Forms of these Bidding Documents.</p> <p>iii. The formats of the Power of Attorney as well as the board resolution are provided in Section IV: Bidding Form. All the relevant forms should be duly signed and be submitted as per the requirements of the forms</p> <p>iv. The facility on the E-tender portal is also available for viewing & downloading the document free of cost.</p>
ITB 21.1, 21.2 & 21.3	<p>The Bidder shall submit/ upload (through digital signature of authorized person in e-tender portal https://mahametrorail.etenders.in(as described in ITB 20) 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: -</p> <p>i. Physical Sign & seal of bidder on each page of Bid Documents available online is not required.</p> <p>ii. Copy of Power of Attorney signing the bid of bidder or of Lead member in case of JV / Consortium.</p> <p>iii. Scanned copy of Bid Security: Cash, (if any) as well as BG component refer E-tender Notice).</p> <p>iv. Scanned copy of POA of each member & Lead member in case of JV/ Consortium.</p> <p>v. All relevant formats given in Section IV: Bidding format. Physically Signed by authorized signatory / POA of bidders or Lead member in case of JV/ Consortium.</p> <p>vi. Certificate of registration and other statutory documents of formation of bidder's company or JV/ Consortium or each members of JV/</p>

	<p>Consortium (If not incorporated yet) issued by appropriate authority.</p> <p>vii. Copy of PAN card of bidder. (PAN card of Indian member of JV/Consortium, if JV/Consortium consist foreign member).</p> <p>viii. Copy of all financial documents as directed in Section-III.</p> <p>ix. Relevant work experience certificate (in line of Section III: Evaluation and Qualification Criteria) and other qualifications certificates as given in Evaluation of Qualification under Section III.</p> <p>x. All Format of Section-IV and other enclosure, certificates stated above or desired elsewhere in the bid documents shall be physically filled, signed & stamped by authorized signatory / POA of bidder or POA of Lead member of JV/Consortium and scanned copies of such enclosures/documents should be uploaded on e-tender portal https://mahametrorail.etenders.in along with bid-documents.</p> <p>The enclosures meant for Technical Bid shall be uploaded with Technical Envelope & Financial enclosures (If any) shall be uploaded with Commercial Envelope on E-Tender Portal of only.</p>
ITB 21.4 (Additional Para)	Financial Bid (Commercial Envelope)
ITB 21.4.1 (Additional Para)	<ol style="list-style-type: none"> The financial bid shall be submitted in financial envelope/commercial envelope. BOQ/Summary sheet provided in the Commercial Envelope/financial envelope Section of E-Tender portal https://mahametrorail.etenders.in shall be duly filled up online by bidder. Few price schedules may require to be filled up physically and required to be signed & stamped by authorized signatory / POA of bidder or POA of Lead member of JV/Consortium and a scanned copy of such schedules may be uploaded, as per instructions provided in the BOQ or E-Tender Portal. The Total Bid Price includes GST and other Taxes, Duties, Levies, Royalties (if not provided specifically) also. The price to be quoted shall be the total price of the Bid as elaborated in Part 4 Financial Bid & Bill of Quantities. Bidders are advised to examine the BOQ in details regarding the above.
ITB 22	<p>Last date and time of submission of online Bid shall be as per NIT or subsequent revision through corrigendum/addendum.</p> <p>Procedure of submission of bid electronically i.e. E-tender has been described in Annexure-II-C of bid document.</p>
ITB 23	The submission of bid is permitted through E-Tender portal only. Submission of bid is not possible beyond the permitted date and time of submission of bid.
ITB 24.1,	i. As the bid process is through e-tendering portal of MAHA-METRO, amendment/ modification of bid by using the Re-Work option of the E-

24.2 & 24.3	<p>Tender portal shall be permissible before closing of the bidding process i.e. last date and time of submission of bid.</p> <p>ii. In case the bidder desires to withdraw the already uploaded/submitted bid, the same would not be possible but the bidder can opt not to proceed with the submission of the bid after opting “Re-work” option on E-tender portal. This can be done only prior to closing date and time of bidding process.</p> <p>iii. The bidder should further note that in such case of not proceeding with submission of bid, the Bid Security, if paid online, through the E-Tender portal, the same will not be refunded immediately. Such cases shall be dealt separately offline after completion of bidding process.</p>
ITB 25.1	<p>The bid opening/ shall take place at office of: Executive Director (Procurement) MAHARASHTRA METRO RAIL CORPORATION LIMITED Civil Court Metro Station, Nyayamurti Ranade Path, Pune-411005, Maharashtra, INDIA</p> <p>Date: As per NIT Time: As per NIT</p> <p>The electronic bid (E-tender) opening procedure shall be as under: <u>The Technical Envelope/ Packages of Online Submitted Bids shall be opened/ downloaded by the opening committee on due date and time of Bid opening.</u></p> <p>No minimum number of bids is required in order to proceed to bid opening.</p> <p>In addition to the provisions of ITB 25.1, following shall apply:</p> <p>i. 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.</p> <p>Technical Envelope/ 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 and rejected. Also, bidders who have not uploaded the essential enclosures and formats and not agree the Bid document, Corrigendum, Addendum as uploaded on the E-Tender portal, their submission treated as non-responsive and no further technical evaluation will be carried out.</p> <p>ii. The entire submission of the bidder shall be downloaded and examined, scrutinized and evaluated by a committee of officers of MAHA-Metro.</p> <p>iii. After evaluation of Technical Bid received electronically via E-Tender portal, the Financial/ Commercial Package/ Envelope of bid of the bidders who have been evaluated as substantially responsive shall be opened. The date & time of opening of Financial Bid shall be communicated to Technically Successful bidder electronically (E-mail).</p>

ITB 25.2	Cases of “Withdrawal of Bid” and “Modification of Bid” has been described and clarified in clause ITB 24 above.
ITB 25.3	The Bid received through E-tender portal shall be opened in two stages i.e. Technical Bid opening and Financial Bid opening. The entire opening process shall be done online on E-Tender portal. If bidder desires, the opening of bids may be witnessed by their authorized representatives.
ITB 25.4	<p>Replace provisions of ITB 25.4 with the following:</p> <p>The opening of Bid shall be done online on E-Tender portal . The employer shall open the Bid using DSC (Digital Signature Certificate) of authorized officers of MAHA-Metro. The opening log of Bid shall be generated automatically on E-Tender Portal and the printout of the same shall be retained in the tender file.</p> <p>The Employer shall prepare a record of the bid opening that shall include the name of the Bidder. The Bidders’ representatives who are present shall be requested to sign the record. The omission of a Bidder’s signature on the record shall not invalidate the contents and effect of the record.</p> <p>The entire bid submitted by bidder shall be downloaded & printed for evaluation by a Tender Evaluation Committee.</p>
ITB 25.5 (Additional Para)	<p>After the evaluation of the Technical Bid in accordance with ITB 27, 28, 29 and ITB 30, the Employer shall prepare a list of responsive Bidders for opening of their Financial Bid.</p> <p>The Bidder is advised that the Employer's policy in respect of comparison of Bids is that the Technical Packages will be opened and reviewed to determine their acceptability and responsiveness to the Works Requirements and Bidding Drawings.</p> <p>Unacceptable and unresponsive bids will be rejected, and the corresponding Financial Package will not be opened.”</p> <p>The opening of Financial Bid shall be done in presence of respective representatives of responsive Bidders who choose to be present. A date, time and venue will be electronically notified to responsive bidders for announcing the result of evaluation and opening of the financial bid.</p> <p>Result of Technical Evaluation shall be communicated electronically to all the bidders.</p>
ITB 25.6 (Additional Para)	<p>All Financial Bid shall be opened by using DSC of authorized officer of Maha-Metro and the same shall be downloaded from the online E-Tender portal.</p> <p>The contents of the Financial Bid are to be initialed by bid opening committee of the Employer attending bid opening either in ink or by using DSC.</p> <p>The authorized representative of contractor are permitted to witness the opening process of Financial Bid</p>

E. Evaluation, and Comparison of Bids

ITB 26.4 (Additional	The Bid drawings and documentation issued for this work is the property of MAHA-METRO (Employer) and shall be used solely for bidding purpose as
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Para)	general guidance. They shall not be used in part or whole or altered form for any other purpose without the permission in writing of the Employer.
ITB 29.1.1 (Additional Para)	<p><u>Prior to the detailed evaluation of Bids, the Employer will determine whether each Bid:</u></p> <ul style="list-style-type: none"> i. All enclosures, declarations, formats are properly signed by authorized representative of bidder or authorized representative of lead member of a JV/Consortium ii. The complete bid document including all corrigendum/addendum/clarifications issued time to time, prior to the submission of bid should be agreed by bidder and all required enclosures should be uploaded on the e-tender portal through digital signature of bidders or through Digital Signature (DSC) of authorized representative of all members of a JV/Consortium has been accompanied by a valid Bid Security; and meets the Qualification & Evaluation Criteria - iii. Bidders, which do not qualify in any of the minimum eligibility criteria including Bid Capacity criteria and other criteria described in bid document elsewhere, shall not be considered for further evaluation of technical packages and shall be rejected. iv. meets the other aspects of general evaluation as per BDS ITB 4.9 to 4.17 v. includes the signed copy of Covenant of Integrity and the Environmental and Social Covenant <p>Absence of the above documents shall result in disqualification of the Bid/Bidder.</p>
ITB 29.5 (new Para)	Bidders may note that pursuant to their qualification in the 'Prequalification and Evaluation Criteria' and 'Technical Evaluation' as per ITB clause 29, any acts of the Bidder (applies to each individual member in case of a Joint Venture/Consortium) which constitute sufficient ground for exclusion as mentioned under ITB 4.19 will result in disqualification of the Bidder and the Financial Package of such Bidder shall be returned unopened.
	Replace existing ITB 32 and its sub-Para as under
ITB 32.1	Bids will be compared in Indian National Rupees (INR) only. This will be achieved by conversion of the Foreign Currency if any, of the Bid into Indian Rupees by using the Exchange Rates of Reserve Bank Of India at the close of business of the Reserve Bank of India on 7 days prior to the day of Bid submission , and then adding the same to the Indian Rupee portion (if any) of the Bid. In case this particular day happens to be a holiday, the exchange rate at the closing of the business of the Reserve Bank of India on the previous working day will be considered.
ITB 33.1	Margin of purchase preference shall be applicable as per MAKE IN INDIA POLICY 2017 (latest Revision at the time of Submission of Bid). The relevant Circulars / office Memorandum enclosed attached as an Annexure-II A of BDS.
ITB 34.1	No subcontractor is nominated by Employer.
ITB 34.2	Not Applicable

ITB 34.3	Not Applicable
ITB 34.4 (Additional Para)	<p>Sub-Contract</p> <p>Sub-contracting shall be generally limited to 50% of the awarded price of the work excluding the cost of design, if any. 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.</p> <p>For sub-contracts exceeding Rs 5 million, it will be obligatory for the Contractor to obtain a "No-Objection" from the Engineer/ Employer. The credentials of the Sub-contractor and Vendor need approval of employer. 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.</p> <p>The Subcontractor / Vendor shall fully comply with the technical specifications included in the Works Requirements.</p>
ITB 35.2	<p>Replace existing ITB 35.2 as below:</p> <p>For evaluation of Price Bid, the employer shall consider the price bid submitted by the bidder making corrections for errors, if any, pursuant to ITB 31.2 above only.</p> <p>Price variation clause will not be considered for financial evaluation.</p>
ITB 35.6 (Additional Para)	The Employer reserves the right to accept or reject any variation, deviation or alternative offer. Variations, deviations, alternative offers and other factors which are in excess of the requirements of the Bidding Documents or otherwise result in the accrual of unsolicited benefits to the Employer shall not be taken into account in Bid evaluation.
ITB 35.7 (Additional Para)	The Contractor grants the Employer, the EIB and auditors appointed by either of them, as well as any authority or European Union Institution or body having competence under European Union law, the right to inspect and copy the books and records of the bidder, contractor, supplier or consultant in connection with any EIB-financed contract

F. Award of Contract

ITB 39.1	<p>Replace the existing ITB 39.1 with the following:</p> <p>Subject to ITB 38.1 and ITB 39.2, the Employer will award the Contract to the Bidder whose Bid has been determined to be substantially responsive to the Bidding Documents and who has offered the Lowest Evaluated Bid Price, and whose offer is balanced in terms of ITB 35.6, provided that such Bidder has been determined to be eligible and qualified in accordance with provisions of ITB 4.</p>
ITB 39.2 (Additional Para)	In case, Successful Bidder is a JV/ Consortium, then the Performance Security may be furnished on behalf of the JV/ Consortium either by the Lead Member or by all the Members of such JV/ Consortium in such proportion as may be agreed between them as per JV/ Consortium agreement.

ITB 40.4 (Additional Para)	The “Letter of acceptance” will be sent in duplicate to the successful Bidder, who will return one copy to the Employer duly acknowledged and signed by the authorized signatory, within one week of receipt of the same by him. The Letter of Acceptance will constitute a part of the Contract.
ITB 42.1	The Performance Guarantee required in accordance with Clause 4.2 of the GC shall be for an amount as specified in Section IX. Particular Conditions in the form of a bank guarantee issued from a Scheduled commercial bank of India (excluding Cooperative Banks) or from a scheduled Foreign Bank having business office in India as defined in Section 2(e) of RBI Act 1934 read with Second Schedule in the types and proportions of currencies in which the Contract Price is payable.
ITB 42.3 (Additional Para)	The Bidder has to furnish other Guarantees, Undertakings, and Warranties, in accordance with the provisions of the General Conditions of Contract and Particular Conditions of Contract (refer ITB 43).
ITB 43 (Additional Para)	Guarantees and Warranties The Contractor shall submit other all Warranties, Guarantees & Undertakings (as applicable) in accordance with Clause 26 of PC and Section I ITB and Section X-Contract form.
ITB 44 (Additional Para)	Insurance The Bidders’ attention is drawn to the provisions contained in Clause 18 of the General Conditions of Contract and Clause 55, 56, 57, 58 and 59 of Particular Conditions of Contract.
ITB 45 (Additional Para)	<i>Settlement of Disputes of the Tender Process:</i> Any suit or application, arising out of any dispute or differences on account of this Tender shall be filed in District and Sessions court at <u>Pune</u> , Maharashtra, Bombay High Court, Maharashtra/ Supreme Court of India, New Delhi only and no other court or any other district of the country shall have any jurisdiction in the matter.”

Annexure-II-A
Public Procurement (Preference to Make in India)

To be attached

F. No. K-14011/10/2020 -UT-V
Government of India
Ministry of Housing and Urban Affairs
Urban Transport Division
(UT-V Desk)

311-B, Nirman Bhawan, New Delhi.

Dated the 24th September, 2020.

To,

MD's of all the Metro Rail Corporations (as per the list attached).

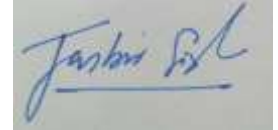
Subject: Public Procurement (Preference to Make in India) (PPP-MII) Order, 2017 - Revision-reg.

Sir/Madam,

I am directed to enclose herewith Order No. P-45021/2/2017-PP(BE-II) dated 16.09.2020 from Department for promotion of Industry and Internal Trade (DPIIT), Ministry of Commerce and Industry on the above cited subject for information and further necessary action.

Encl : As above.

Yours Sincerely,



(Jasbir Singh)

Under Secretary to the Govt. of India

Tel: 011-23062285

Copy to:

- i. Directorate General, CPWD, A-Wing, Room No. 101, Nirman Bhawan, New Delhi – 110011.
- ii. Chairman cum Managing Director, NBCC India Limited, NBCC Bhawan, Lodhi Road, New Delhi – 110 003.
- iii. Vice Chairman, Delhi Development Authority (DDA), B-Block, 1st Floor, Vikas Sadan, New Delhi – 110023.
- iv. Chairman cum Managing Director, HUDCO, HUDCO Bhawan, India Habitat Centre, Lodhi Road, New Delhi – 110 003.
- v. Shri Sudhir Kumar Mandal, Joint Secretary, Controller of Publication < cop-dep@nic.in>.
- vi. Shri Arun Kumar Bansal, Director, Directorate of Printing <bansal.arun@gov.in>.
- vii. Ms. Ritu Sain, Director (DE)-I, Directorate of Estates <ritusain@ias.nic.in>.
- viii. Shri Naveen Yadav, Director (DE)-II, Directorate of Estates <naveen.yadav@nic.in>.

No. P-45021/2/2017-PP (BE-II)
Government of India
Ministry of Commerce and Industry
Department for Promotion of Industry and Internal Trade
(Public Procurement Section)

Udyog Bhawan, New Delhi
Dated: 16th September, 2020

To

All Central Ministries/Departments/CPSUs/All concerned

ORDER

Subject: Public Procurement (Preference to Make in India), Order 2017– Revision; regarding.

Department for Promotion of Industry and Internal Trade, in partial modification [Paras 2, 3, 5, 10 & 13] of Order No.P-45021/2/2017-B.E.-II dated 15.6.2017 as amended by Order No.P-45021/2/2017-B.E.-II dated 28.05.2018, Order No.P-45021/2/2017-B.E.-II dated 29.05.2019 and Order No.P-45021/2/2017-B.E.-II dated 04.06.2020, hereby issues the revised 'Public Procurement (Preference to Make in India), Order 2017' dated 16.09.2020 effective with immediate effect.

Whereas it is the policy of the Government of India to encourage 'Make in India' and promote manufacturing and production of goods and services in India with a view to enhancing income and employment, and

Whereas procurement by the Government is substantial in amount and can contribute towards this policy objective, and

Whereas local content can be increased through partnerships, cooperation with local companies, establishing production units in India or Joint Ventures (JV) with Indian suppliers, increasing the participation of local employees in services and training them,

Now therefore the following Order is issued:

1. This Order is issued pursuant to Rule 153 (iii) of the General Financial Rules 2017.
2. **Definitions:** For the purposes of this Order:

'Local content' means the amount of value added in India which shall, unless otherwise prescribed by the Nodal Ministry, be the total value of the item procured (excluding net domestic indirect taxes) minus the value of imported content in the item (including all customs duties) as a proportion of the total value, in percent.

'Class-I local supplier' means a supplier or service provider, whose goods, services or works offered for procurement, meets the minimum local content as prescribed for 'Class-I local supplier' under this Order.

.....Contd. p/2

'Class-II local supplier' means a supplier or service provider, whose goods, services or works offered for procurement, meets the minimum local content as prescribed for 'Class-II local supplier' but less than that prescribed for 'Class-I local supplier' under this Order.

'Non - Local supplier' means a supplier or service provider, whose goods, services or works offered for procurement, has local content less than that prescribed for 'Class-II local supplier' under this Order.

'L1' means the lowest tender or lowest bid or the lowest quotation received in a tender, bidding process or other procurement solicitation as adjudged in the evaluation process as per the tender or other procurement solicitation.

'Margin of purchase preference' means the maximum extent to which the price quoted by a "Class-I local supplier" may be above the L1 for the purpose of purchase preference.

'Nodal Ministry' means the Ministry or Department identified pursuant to this order in respect of a particular item of goods or services or works.

'Procuring entity' means a Ministry or department or attached or subordinate office of, or autonomous body controlled by, the Government of India and includes Government companies as defined in the Companies Act.

'Works' means all works as per Rule 130 of GFR- 2017, and will also include *'turnkey works'*.

3. Eligibility of 'Class-I local supplier' / 'Class-II local supplier' / 'Non-local suppliers' for different types of procurement

(a) In procurement of all goods, services or works in respect of which the Nodal Ministry / Department has communicated that there is sufficient local capacity and local competition, only 'Class-I local supplier', as defined under the Order, shall be eligible to bid irrespective of purchase value.

(b) Only 'Class-I local supplier' and 'Class-II local supplier', as defined under the Order, shall be eligible to bid in procurements undertaken by procuring entities, except when Global tender enquiry has been issued. In global tender enquiries, 'Non-local suppliers' shall also be eligible to bid along with 'Class-I local suppliers' and 'Class-II local suppliers'. In procurement of all goods, services or works, not covered by sub-para 3(a) above, and with estimated value of purchases less than Rs. 200 Crore, in accordance with Rule 161(iv) of GFR, 2017, Global tender enquiry shall not be issued except with the approval of competent authority as designated by Department of Expenditure.

(c) For the purpose of this Order, works includes Engineering, Procurement and Construction (EPC) contracts and services include System Integrator (SI) contracts.

.....Contd. p/3

3A. Purchase Preference

(a) Subject to the provisions of this Order and to any specific instructions issued by the Nodal Ministry or in pursuance of this Order, purchase preference shall be given to 'Class-I local supplier' in procurements undertaken by procuring entities in the manner specified here under.

(b) In the procurements of goods or works, which are covered by para 3(b) above and which are divisible in nature, the 'Class-I local supplier' shall get purchase preference over 'Class-II local supplier' as well as 'Non-local supplier', as per following procedure:

- i. Among all qualified bids, the lowest bid will be termed as L1. If L1 is 'Class-I local supplier', the contract for full quantity will be awarded to L1.
- ii. If L1 bid is not a 'Class-I local supplier', 50% of the order quantity shall be awarded to L1. Thereafter, the lowest bidder among the 'Class-I local supplier' will be invited to match the L1 price for the remaining 50% quantity subject to the Class-I local supplier's quoted price falling within the margin of purchase preference, and contract for that quantity shall be awarded to such 'Class-I local supplier' subject to matching the L1 price. In case such lowest eligible 'Class-I local supplier' fails to match the L1 price or accepts less than the offered quantity, the next higher 'Class-I local supplier' within the margin of purchase preference shall be invited to match the L1 price for remaining quantity and so on, and contract shall be awarded accordingly. In case some quantity is still left uncovered on Class-I local suppliers, then such balance quantity may also be ordered on the L1 bidder.

(c) In the procurements of goods or works, which are covered by para 3(b) above and which are not divisible in nature, and in procurement of services where the bid is evaluated on price alone, the 'Class-I local supplier' shall get purchase preference over 'Class-II local supplier' as well as 'Non-local supplier', as per following procedure:

- i. Among all qualified bids, the lowest bid will be termed as L1. If L1 is 'Class-I local supplier', the contract will be awarded to L1.
- ii. If L1 is not 'Class-I local supplier', the lowest bidder among the 'Class-I local supplier', will be invited to match the L1 price subject to Class-I local supplier's quoted price falling within the margin of purchase preference, and the contract shall be awarded to such 'Class-I local supplier' subject to matching the L1 price.
- iii. In case such lowest eligible 'Class-I local supplier' fails to match the L1 price, the 'Class-I local supplier' with the next higher bid within the margin of purchase preference shall be invited to match the L1 price and so on and contract shall be awarded accordingly. In case none of the 'Class-I local supplier' within the margin of purchase preference matches the L1 price, the contract may be awarded to the L1 bidder.

- (d) "Class-II local supplier" will not get purchase preference in any procurement, undertaken by procuring entities.

3B. Applicability in tenders where contract is to be awarded to multiple bidders -

In tenders where contract is awarded to multiple bidders subject to matching of L1 rates or otherwise, the 'Class-I local supplier' shall get purchase preference over 'Class-II local supplier' as well as 'Non-local supplier', as per following procedure:

- a) In case there is sufficient local capacity and competition for the item to be procured, as notified by the nodal Ministry, only Class I local suppliers shall be eligible to bid. As such, the multiple suppliers, who would be awarded the contract, should be all and only 'Class I Local suppliers'.
- b) In other cases, 'Class II local suppliers' and 'Non local suppliers' may also participate in the bidding process along with 'Class I Local suppliers' as per provisions of this Order.
- c) If 'Class I Local suppliers' qualify for award of contract for at least 50% of the tendered quantity in any tender, the contract may be awarded to all the qualified bidders as per award criteria stipulated in the bid documents. However, in case 'Class I Local suppliers' do not qualify for award of contract for at least 50% of the tendered quantity, purchase preference should be given to the 'Class I local supplier' over 'Class II local suppliers' / 'Non local suppliers' provided that their quoted rate falls within 20% margin of purchase preference of the highest quoted bidder considered for award of contract so as to ensure that the 'Class I Local suppliers' taken in totality are considered for award of contract for at least 50% of the tendered quantity.
- d) First purchase preference has to be given to the lowest quoting 'Class-I local supplier', whose quoted rates fall within 20% margin of purchase preference, subject to its meeting the prescribed criteria for award of contract as also the constraint of maximum quantity that can be sourced from any single supplier. If the lowest quoting 'Class-I local supplier', does not qualify for purchase preference because of aforesaid constraints or does not accept the offered quantity, an opportunity may be given to next higher 'Class-I local supplier', falling within 20% margin of purchase preference, and so on.
- e) To avoid any ambiguity during bid evaluation process, the procuring entities may stipulate its own tender specific criteria for award of contract amongst different bidders including the procedure for purchase preference to 'Class-I local supplier' within the broad policy guidelines stipulated in sub-paras above.

4. **Exemption of small purchases:** Notwithstanding anything contained in paragraph 3, procurements where the estimated value to be procured is less than Rs. 5 lakhs shall be exempt from this Order. However, it shall be ensured by procuring entities that procurement is not split for the purpose of avoiding the provisions of this Order.

5. **Minimum local content:** The 'local content' requirement to categorize a supplier as 'Class-I local supplier' is minimum 50%. For 'Class-II local supplier', the 'local content' requirement is minimum 20%. Nodal Ministry/ Department may prescribe only a higher

percentage of minimum local content requirement to categorize a supplier as 'Class-I local supplier'/ 'Class-II local supplier'. For the items, for which Nodal Ministry/ Department has not prescribed higher minimum local content notification under the Order, it shall be 50% and 20% for 'Class-I local supplier'/ 'Class-II local supplier' respectively.

6. **Margin of Purchase Preference:** The margin of purchase preference shall be 20%.
7. **Requirement for specification in advance:** The minimum local content, the margin of purchase preference and the procedure for preference to Make in India shall be specified in the notice inviting tenders or other form of procurement solicitation and shall not be varied during a particular procurement transaction.
8. **Government E-marketplace:** In respect of procurement through the Government E-marketplace (GeM) shall, as far as possible, specifically mark the items which meet the minimum local content while registering the item for display, and shall, wherever feasible, make provision for automated comparison with purchase preference and without purchase preference and for obtaining consent of the local supplier in those cases where purchase preference is to be exercised.
9. **Verification of local content:**
 - a. The 'Class-I local supplier'/ 'Class-II local supplier' at the time of tender, bidding or solicitation shall be required to indicate percentage of local content and provide self-certification that the item offered meets the local content requirement for 'Class-I local supplier'/ 'Class-II local supplier', as the case may be. They shall also give details of the location(s) at which the local value addition is made.
 - b. In cases of procurement for a value in excess of Rs. 10 crores, the 'Class-I local supplier'/ 'Class-II local supplier' shall be required to provide a certificate from the statutory auditor or cost auditor of the company (in the case of companies) or from a practicing cost accountant or practicing chartered accountant (in respect of suppliers other than companies) giving the percentage of local content.
 - c. Decisions on complaints relating to implementation of this Order shall be taken by the competent authority which is empowered to look into procurement-related complaints relating to the procuring entity.
 - d. Nodal Ministries may constitute committees with internal and external experts for independent verification of self-declarations and auditor's/ accountant's certificates on random basis and in the case of complaints.
 - e. Nodal Ministries and procuring entities may prescribe fees for such complaints.
 - f. False declarations will be in breach of the Code of Integrity under Rule 175(1)(i)(h) of the General Financial Rules for which a bidder or its successors can be debarred for up to two years as per Rule 151 (iii) of the General Financial Rules along with such other actions as may be permissible under law.

- g. A supplier who has been debarred by any procuring entity for violation of this Order shall not be eligible for preference under this Order for procurement by any other procuring entity for the duration of the debarment. The debarment for such other procuring entities shall take effect prospectively from the date on which it comes to the notice of other procurement entities, in the manner prescribed under paragraph 9h below.
- h. The Department of Expenditure shall issue suitable instructions for the effective and smooth operation of this process, so that:
 - i. The fact and duration of debarment for violation of this Order by any procuring entity are promptly brought to the notice of the Member-Convenor of the Standing Committee and the Department of Expenditure through the concerned Ministry /Department or in some other manner;
 - ii. on a periodical basis such cases are consolidated and a centralized list or decentralized lists of such suppliers with the period of debarment is maintained and displayed on website(s);
 - iii. in respect of procuring entities other than the one which has carried out the debarment, the debarment takes effect prospectively from the date of uploading on the website(s) in the such a manner that ongoing procurements are not disrupted.

10. Specifications in Tenders and other procurement solicitations:

- a. Every procuring entity shall ensure that the eligibility conditions in respect of previous experience fixed in any tender or solicitation do not require proof of supply in other countries or proof of exports.
- b. Procuring entities shall endeavour to see that eligibility conditions, including on matters like turnover, production capability and financial strength do not result in unreasonable exclusion of 'Class-I local supplier'/ 'Class-II local supplier' who would otherwise be eligible, beyond what is essential for ensuring quality or creditworthiness of the supplier.
- c. Procuring entities shall, within 2 months of the issue of this Order review all existing eligibility norms and conditions with reference to sub-paragraphs 'a' and 'b' above.

d. Reciprocity Clause

- i. When a Nodal Ministry/Department identifies that Indian suppliers of an item are not allowed to participate and/ or compete in procurement by any foreign government, due to restrictive tender conditions which have direct or indirect effect of barring Indian companies such as registration in the procuring country, execution of projects of specific value in the procuring country etc., it shall provide such details to all its procuring entities including CMDs/CEOs of PSEs/PSUs, State Governments and other procurement agencies under their administrative control and GeM for appropriate reciprocal action.

- ii. Entities of countries which have been identified by the nodal Ministry/Department as not allowing Indian companies to participate in their Government procurement for any item related to that nodal Ministry shall not be allowed to participate in Government procurement in India for all items related to that nodal Ministry/ Department, except for the list of items published by the Ministry/ Department permitting their participation.
 - iii. The stipulation in (ii) above shall be part of all tenders invited by the Central Government procuring entities stated in (i) above. All purchases on GeM shall also necessarily have the above provisions for items identified by nodal Ministry/ Department.
 - iv. State Governments should be encouraged to incorporate similar provisions in their respective tenders.
 - v. The term 'entity' of a country shall have the same meaning as under the FDI Policy of DPIIT as amended from time to time.
- e. Specifying foreign certifications/ unreasonable technical specifications/ brands/ models in the bid document is restrictive and discriminatory practice against local suppliers. If foreign certification is required to be stipulated because of non-availability of Indian Standards and/or for any other reason, the same shall be done only after written approval of Secretary of the Department concerned or any other Authority having been designated such power by the Secretary of the Department concerned.
- f. "All administrative Ministries/Departments whose procurement exceeds Rs. 1000 Crore per annum shall notify/ update their procurement projections every year, including those of the PSEs/PSUs, for the next 5 years on their respective website."

10A. Action for non-compliance of the Provisions of the Order: In case restrictive or discriminatory conditions against domestic suppliers are included in bid documents, an inquiry shall be conducted by the Administrative Department undertaking the procurement (including procurement by any entity under its administrative control) to fix responsibility for the same. Thereafter, appropriate action, administrative or otherwise, shall be taken against erring officials of procurement entities under relevant provisions. Intimation on all such actions shall be sent to the Standing Committee.

11. Assessment of supply base by Nodal Ministries: The Nodal Ministry shall keep in view the domestic manufacturing / supply base and assess the available capacity and the extent of local competition while identifying items and prescribing the higher minimum local content or the manner of its calculation, with a view to avoiding cost increase from the operation of this Order.

12. Increase in minimum local content: The Nodal Ministry may annually review the local content requirements with a view to increasing them, subject to availability of sufficient local competition with adequate quality.

13. **Manufacture under license/ technology collaboration agreements with phased indigenization:** While notifying the minimum local content, Nodal Ministries may make special provisions for exempting suppliers from meeting the stipulated local content if the product is being manufactured in India under a license from a foreign manufacturer who holds intellectual property rights and where there is a technology collaboration agreement / transfer of technology agreement for indigenous manufacture of a product developed abroad with clear phasing of increase in local content.

13A. In procurement of all goods, services or works in respect of which there is substantial quantity of public procurement and for which the nodal ministry has not notified that there is sufficient local capacity and local competition, the concerned nodal ministry shall notify an upper threshold value of procurement beyond which foreign companies shall enter into a joint venture with an Indian company to participate in the tender. Procuring entities, while procuring such items beyond the notified threshold value, shall prescribe in their respective tenders that foreign companies may enter into a joint venture with an Indian company to participate in the tender. The procuring Ministries/Departments shall also make special provisions for exempting such joint ventures from meeting the stipulated minimum local content requirement, which shall be increased in a phased manner.

14. **Powers to grant exemption and to reduce minimum local content:** The administrative Department undertaking the procurement (including procurement by any entity under its administrative control), with the approval of their Minister-in-charge, may by written order, for reasons to be recorded in writing,

- a. reduce the minimum local content below the prescribed level; or
- b. reduce the margin of purchase preference below 20%; or
- c. exempt any particular item or supplying entities from the operation of this Order or any part of the Order.

A copy of every such order shall be provided to the Standing Committee and concerned Nodal Ministry / Department. The Nodal Ministry / Department concerned will continue to have the power to vary its notification on Minimum Local Content.

15. **Directions to Government companies:** In respect of Government companies and other procuring entities not governed by the General Financial Rules, the administrative Ministry or Department shall issue policy directions requiring compliance with this Order.

16. **Standing Committee:** A standing committee is hereby constituted with the following membership:

Secretary, Department for Promotion of Industry and Internal Trade—Chairman
Secretary, Commerce—Member
Secretary, Ministry of Electronics and Information Technology—Member
Joint Secretary (Public Procurement), Department of Expenditure—Member
Joint Secretary (DPIIT)—Member-Convenor

The Secretary of the Department concerned with a particular item shall be a member in respect of issues relating to such item. The Chairman of the Committee may co-opt technical experts as relevant to any issue or class of issues under its consideration.

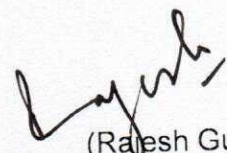
17. Functions of the Standing Committee: The Standing Committee shall meet as often as necessary, but not less than once in six months. The Committee

- a. shall oversee the implementation of this order and issues arising therefrom, and make recommendations to Nodal Ministries and procuring entities.
- b. shall annually assess and periodically monitor compliance with this Order
- c. shall identify Nodal Ministries and the allocation of items among them for issue of notifications on minimum local content
- d. may require furnishing of details or returns regarding compliance with this Order and related matters
- e. may, during the annual review or otherwise, assess issues, if any, where it is felt that the manner of implementation of the order results in any restrictive practices, cartelization or increase in public expenditure and suggest remedial measures
- f. may examine cases covered by paragraph 13 above relating to manufacture under license/ technology transfer agreements with a view to satisfying itself that adequate mechanisms exist for enforcement of such agreements and for attaining the underlying objective of progressive indigenization
- g. may consider any other issue relating to this Order which may arise.

18. Removal of difficulties: Ministries /Departments and the Boards of Directors of Government companies may issue such clarifications and instructions as may be necessary for the removal of any difficulties arising in the implementation of this Order.

19. Ministries having existing policies: Where any Ministry or Department has its own policy for preference to local content approved by the Cabinet after 1st January 2015, such policies will prevail over the provisions of this Order. All other existing orders on preference to local content shall be reviewed by the Nodal Ministries and revised as needed to conform to this Order, within two months of the issue of this Order.

20. Transitional provision: This Order shall not apply to any tender or procurement for which notice inviting tender or other form of procurement solicitation has been issued before the issue of this Order.



(Rajesh Gupta)
Director

Tel: 23063211

rajesh.gupta66@gov.in

Annexure-II-B
Public procurement-Rule 144 (xi)

To be attached

F. No. K-14011/10/2020 -UT-V
Government of India
Ministry of Housing and Urban Affairs
Urban Transport Division
(UT-V Desk)

311-B, Nirman Bhawan, New Delhi.

Dated the 14th August, 2020.

To,

MD's of all the Metro Rail Corporations (as per the list attached).

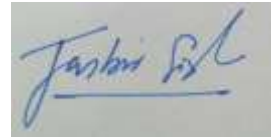
Subject: Request for details regarding Public Procurement in Metro Rail/RRTS Corporations.

Sir/Madam,

I am directed to refer to Department of Expenditure, Ministry of Finance OM dated 23.07.2020 (as enclosed) and to request that the requisite details /comments on Annexure-A and Annexure-B (copies enclosed) regarding public procurements w.r.t. your respective Metro Rail/RRTS projects may be furnished to this Ministry positively by 19.08.2020 2 pm.

Encl : As above.

Yours Sincerely,



(Jasbir Singh)
Under Secretary to the Govt. of India
Tel: 011-23062285

F.No.6/18/2019-PPD
Ministry of Finance
Department of Expenditure
Public Procurement Division

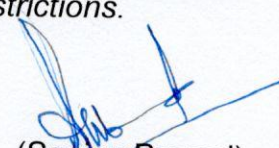
161, North Block,
New Delhi
23rd July, 2020

Office Memorandum

Subject: Insertion of Rule 144 (xi) in the General Financial Rules (GFRs), 2017

Rule 144 of the General Financial Rules 2017 entitled 'Fundamental principles of public buying', has been amended by inserting sub-rule (xi) as under:

Notwithstanding anything contained in these Rules, Department of Expenditure may, by order in writing, impose restrictions, including prior registration and/or screening, on procurement from bidders from a country or countries, or a class of countries, on grounds of defence of India, or matters directly or indirectly related thereto including national security; no procurement shall be made in violation of such restrictions.


(Sanjay Prasad)
Joint Secretary (PPD)
Email ID: js.pfc2.doe@gov.in
Telephone: 011-23093882

To,

- (1) Secretaries of All Ministries/ Departments of Government of India
- (2) Chief Secretaries/ Administrators of Union Territories/ National Capital Territory of Delhi



F.No.6/18/2019-PPD
Ministry of Finance
Department of Expenditure
Public Procurement Division

161, North Block,
New Delhi
23rd July, 2020

Order (Public Procurement No. 1)

Subject: Restrictions under Rule 144 (xi) of the General Financial Rules (GFRs), 2017

Attention is invited to this office OM no. 6/18/2019-PPD dated 23rd July 2020 inserting Rule 144 (xi) in GFRs 2017. In this regard, the following is hereby ordered under Rule 144 (xi) on the grounds stated therein:

Requirement of registration

1. Any bidder from a country which shares a land border with India will be eligible to bid in any procurement whether of goods, services (including consultancy services and non-consultancy services) or works (including turnkey projects) only if the bidder is registered with the Competent Authority, specified in **Annex I**.
2. This Order shall not apply to (i) cases where orders have been placed or contract has been concluded or letter/notice of award/ acceptance (LoA) has been issued on or before the date of this order; and (ii) cases falling under **Annex II**.

Transitional cases

3. Tenders where no contract has been concluded or no LoA has been issued so far shall be handled in the following manner: -
 - a) *In tenders which are yet to be opened, or where evaluation of technical bid or the first exclusionary qualificatory stage (i.e. the first stage at which the qualifications of tenderers are evaluated and unqualified bidders are excluded) has not been completed:* No contracts shall be placed on bidders from such countries. Tenders received from bidders from such countries shall be dealt with as if they are non-compliant with the tender conditions and the tender shall be processed accordingly.
 - b) *If the tendering process has crossed the first exclusionary qualificatory stage:* If the qualified bidders include bidders from such countries, the

entire process shall be scrapped and initiated *de novo*. The *de novo* process shall adhere to the conditions prescribed in this Order.

- c) As far as practicable, and in cases of doubt about whether a bidder falls under paragraph 1, a certificate shall be obtained from the bidder whose bid is proposed to be considered or accepted, in terms of paras 8, 9 and 10 read with para 1 of this Order.

Incorporation in tender conditions

- 4. In tenders to be issued after the date of this order, the provisions of paragraph 1 and of other relevant provisions of this Order shall be incorporated in the tender conditions.

Applicability

- 5. Apart from Ministries / Departments, attached and subordinate bodies, notwithstanding anything contained in Rule 1 of the GFRs 2017, this Order shall also be applicable
 - a. to all Autonomous Bodies;
 - b. to public sector banks and public sector financial institutions; and
 - c. subject to any orders of the Department of Public Enterprises, to all Central Public Sector Enterprises; and
 - d. to procurement in Public Private Partnership projects receiving financial support from the Government or public sector enterprises/ undertakings.
 - e. Union Territories, National Capital Territory of Delhi and all agencies/ undertakings thereof

Definitions

- 6. "Bidder" for the purpose of this Order (including the term 'tenderer', 'consultant' 'vendor' or 'service provider' in certain contexts) means any person or firm or company, including any member of a consortium or joint venture (that is an association of several persons, or firms or companies), every artificial juridical person not falling in any of the descriptions of bidders stated hereinbefore, including any agency, branch or office controlled by such person, participating in a procurement process.
- 7. "Tender" for the purpose of this Order will include other forms of procurement, except where the context requires otherwise.
- 8. "Bidder from a country which shares a land border with India" for the purpose of this Order means

- a) An entity incorporated, established or registered in such a country; or
- b) A subsidiary of an entity incorporated, established or registered in such a country; or
- c) An entity substantially controlled through entities incorporated, established or registered in such a country; or
- d) An entity whose *beneficial owner* is situated in such a country; or
- e) An Indian (or other) agent of such an entity; or
- f) A natural person who is a citizen of such a country; or
- g) A consortium or joint venture where any member of the consortium or joint venture falls under any of the above

9. "Beneficial owner" for the purpose of paragraph 8 above will be as under:

- (i) In case of a company or Limited Liability Partnership, the beneficial owner is the natural person(s), who, whether acting alone or together, or through one or more juridical person(s), has a controlling ownership interest or who exercises control through other means.

Explanation—

- a. "Controlling ownership interest" means ownership of, or entitlement to, more than twenty-five per cent of shares or capital or profits of the company;
- b. "Control" shall include the right to appoint the majority of the directors or to control the management or policy decisions, including by virtue of their shareholding or management rights or shareholders agreements or voting agreements;

- (ii) In case of a partnership firm, the beneficial owner is the natural person(s) who, whether acting alone or together, or through one or more juridical person, has ownership of entitlement to more than fifteen percent of capital or profits of the partnership;

- (iii) In case of an unincorporated association or body of individuals, the beneficial owner is the natural person(s), who, whether acting alone or together, or through one or more juridical person, has ownership of or entitlement to more than fifteen percent of the property or capital or profits of such association or body of individuals;

- (iv) Where no natural person is identified under (i) or (ii) or (iii) above, the beneficial owner is the relevant natural person who holds the position of senior managing official;

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(v) In case of a trust, the identification of beneficial owner(s) shall include identification of the author of the trust, the trustee, the beneficiaries with fifteen percent or more interest in the trust and any other natural person exercising ultimate effective control over the trust through a chain of control or ownership.

10. "Agent" for the purpose of this Order is a person employed to do any act for another, or to represent another in dealings with third persons.

Sub-contracting in works contracts

11. In works contracts, including turnkey contracts, contractors shall not be allowed to sub-contract works to any contractor from a country which shares a land border with India unless such contractor is registered with the Competent Authority. The definition of "contractor from a country which shares a land border with India" shall be as in paragraph 8 above. This shall not apply to sub-contracts already awarded on or before the date of this Order.

Certificate regarding compliance

12. A certificate shall be taken from bidders in the tender documents regarding their compliance with this Order. If such certificate given by a bidder whose bid is accepted is found to be false, this would be a ground for immediate termination and further legal action in accordance with law.

Validity of registration

13. In respect of tenders, registration should be valid at the time of submission of bids and at the time of acceptance of bids. In respect of supply otherwise than by tender, registration should be valid at the time of placement of order. If the bidder was validly registered at the time of acceptance / placement of order, registration shall not be a relevant consideration during contract execution.

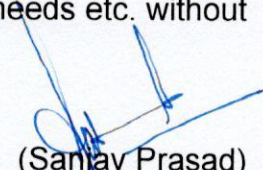
Government E-Marketplace

14. The Government E-Marketplace shall, as soon as possible, require all vendors/ bidders registered with GeM to give a certificate regarding compliance with this Order, and after the date fixed by it, shall remove non-compliant entities from GeM unless/ until they are registered in accordance with this Order.

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Model Clauses/ Certificates

15. Model Clauses and Model Certificates which may be inserted in tenders / obtained from Bidders are enclosed as **Annex III**. While adhering to the substance of the Order, procuring entities are free to appropriately modify the wording of these clauses based on their past experience, local needs etc. without making any reference to this Department.


(Sanjay Prasad)
Joint Secretary (PPD)
Email ID: js.pfc2.doe@gov.in
Telephone: 011-23093882

To

- (1) Secretaries of All Ministries/ Departments of Government of India for information and necessary action. They are also requested to inform these provisions to all procuring entities.
- (2) Secretary, Department of Public Enterprises with a request to immediately reiterate these orders in respect of Public Enterprises.
- (3) Secretary DPIIT with a request to initiate action as provided under Annex I
- (4) Chief Secretaries/ Administrators of Union Territories/ National Capital Territory of Delhi

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Annex I: Competent Authority and Procedure for Registration

- A. The Competent Authority for the purpose of registration under this Order shall be the Registration Committee constituted by the Department for Promotion of Industry and Internal Trade (DPIIT)*.
- B. The Registration Committee shall have the following members*:
- i. An officer, not below the rank of Joint Secretary, designated for this purpose by DPIIT, who shall be the Chairman;
 - ii. Officers (ordinarily not below the rank of Joint Secretary) representing the Ministry of Home Affairs, Ministry of External Affairs, and of those Departments whose sectors are covered by applications under consideration;
 - iii. Any other officer whose presence is deemed necessary by the Chairman of the Committee.
- C. DPIIT shall lay down the method of application, format etc. for such bidders as stated in para 1 of this Order.
- D. On receipt of an application seeking registration from a bidder from a country covered by para 1 of this Order, the Competent Authority shall first seek political and security clearances from the Ministry of External Affairs and Ministry of Home Affairs, as per guidelines issued from time to time. Registration shall not be given unless political and security clearance have both been received.
- E. The Ministry of External Affairs and Ministry of Home Affairs may issue guidelines for internal use regarding the procedure for scrutiny of such applications by them.
- F. The decision of the Competent Authority, to register such bidder may be for all kinds of tenders or for a specified type(s) of goods or services, and may be for a specified or unspecified duration of time, as deemed fit. The decision of the Competent Authority shall be final.
- G. Registration shall not be granted unless the representatives of the Ministries of Home Affairs and External Affairs on the Committee concur*.
- H. Registration granted by the Competent Authority of the Government of India shall be valid not only for procurement by Central Government and its agencies/ public enterprises etc. but **also for procurement by State Governments and their agencies/ public enterprises etc. No fresh registration at the State level shall be required.**

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- I. The Competent Authority is empowered to cancel the registration already granted if it determines that there is sufficient cause. Such cancellation by itself, however, will not affect the execution of contracts already awarded. Pending cancellation, it may also suspend the registration of a bidder, and the bidder shall not be eligible to bid in any further tenders during the period of suspension.
- J. For national security reasons, the Competent Authority shall not be required to give reasons for rejection / cancellation of registration of a bidder.
- K. In transitional cases falling under para 3 of this Order, where it is felt that it will not be practicable to exclude bidders from a country which shares a land border with India, a reference seeking permission to consider such bidders shall be made by the procuring entity to the Competent Authority, giving full information and detailed reasons. The Competent Authority shall decide whether such bidders may be considered, and if so shall follow the procedure laid down in the above paras.
- L. Periodic reports on the acceptance/ refusal of registration during the preceding period may be required to be sent to the Cabinet Secretariat. Details will be issued separately in due course by DPIIT.

[*Note:

- i. In respect of application of this Order to procurement by/ under State Governments, all functions assigned to DPIIT shall be carried out by the State Government concerned through a specific department or authority designated by it. The composition of the Registration Committee shall be as decided by the State Government and paragraph G above shall not apply. However, the requirement of **political and security clearance as per para D shall remain and no registration shall be granted without such clearance.**
- ii. Registration granted by State Governments shall be valid only for procurement by the State Government and its agencies/ public enterprises etc. and shall not be valid for procurement in other states or by the Government of India and their agencies/ public enterprises etc.]

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Annex II: Special Cases

- A. Till 31st December 2020, procurement of medical supplies directly related to containment of the Covid-19 pandemic shall be exempt from the provisions of this Order.
- B. *Bona fide* procurements made through GeM without knowing the country of the bidder till the date fixed by GeM for this purpose, shall not be invalidated by this Order.
- C. *Bona fide* small procurements, made without knowing the country of the bidder, shall not be invalidated by this Order.
- D. In projects which receive international funding with the approval of the Department of Economic Affairs (DEA), Ministry of Finance, the procurement guidelines applicable to the project shall normally be followed, notwithstanding anything contained in this Order and without reference to the Competent Authority. Exceptions to this shall be decided in consultation with DEA.
- E. This Order shall not apply to procurement by Indian missions and by offices of government agencies/ undertakings located outside India.

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MAHARASHTRA METRO RAIL CORPORATION LIMITED
(PUNE METRO RAIL PROJECT)

BID DOCUMENTS

FOR

Name of work: Geotechnical Investigation of Underground Section of NS Corridor Phase-I Extension Swargate-Katraj of Pune Metro Rail Project.

TENDER NO. P1Misc-34/2024

PART 1: BIDDING PROCEDURE
SECTION II: ANNEXURE II-C: Tool Kit for using E-Tender Portal



Maharashtra Metro Rail Corporation Limited

Civil Court Metro Station, Nyayamurti Ranade Path, Pune-411005.,

Maharashtra, INDIA. Tel- 020-7410004067/68

Website: www.punemetrorail.org

E- TENDERING PROCEDURE**Tool Kit for using E-Tender Portal of Maha-Metro****A] Tender Forms.**

- i. Tender Forms can be purchased from the e-Tendering Portal of Maha-Metro, i.e. <https://mahametrorail.etenders.in> after paying Tender Fees via online **mode** as Per the **Tender Schedule**.
- ii. Bidder should have valid class II/III digital signature certificates (DSC) obtain from any certifying authorities.
- iii. Bidder should install the Java and NxtCrypto service available on the Home Page of Download section URL:- <https://mahametrorail.etenders.in>

B] Pre-requisites to participate in the Tenders processed by Maha-Metro:**i. Enrolment of Contractors on Electronic Tendering System:**

The Contractors interested in participating in the Tenders of Maha-Metro processed using the Electronic Tendering System shall be required to enroll on the Electronic Tendering System to obtain User ID.

If the information is found to be complete, the enrolment submitted by the Vendor shall be approved automatically.

The Contractors may obtain the necessary information on the process of enrolment either from Helpdesk Support Team or may visit the information published under the link Help manual and tutorials on the Home Page of the Electronic Tendering System.

ii. Obtaining a Digital Certificate:

The Bid Data that is prepared online is required to be encrypted and the hash value of the Bid Data is required to be signed electronically using a Digital Certificate (Class - II or Class -III). This is required to maintain the security of the Bid Data and to establish the identity of the Contractor transacting on the System.

The Digital Certificates are issued by an approved Certifying Authority authorized by the Controller of Certifying Authorities of Government of India through their Authorized Representatives upon receipt of documents required to obtain a Digital Certificate.

Bid data / information for a particular Tender may be submitted only using the Digital Certificate, which is used to encrypt the data / information and sign the hash value during the Tender Submission stage. In case during the process of preparing and submitting a Bid for a particular Tender, the Contractor loses his/her Digital Signature Certificate (i.e. due to virus attack, hardware problem, operating system problem); he / she may not be able to submit the Bid online.

Hence, the Users are advised to store his / her Digital Certificate securely and if possible, keep a backup at safe place under adequate security to be used in case of need.

In case of online tendering, if the Digital Certificate issued to an Authorized User of a Partnership Firm is used for signing and submitting a bid, it will be considered equivalent to a no objection certificate / power of attorney to that User to submit the bid on behalf of the Partnership Firm. The Partnership Firm has to authorize a specific individual via an authorization certificate signed by a partner of the firm (and in case the applicant is a partner, another partner in the same form is required to authorize) to use the digital certificate as per Indian Information Technology Act, 2000.

Unless the Digital Certificate is revoked, it will be assumed to represent adequate authority of the Authority User to bid on behalf of the Firm for the Tenders processed on the Electronic Tender Management System of Government of Maharashtra as per Indian Information Technology Act, 2000. The Digital Signature of this Authorized User will be binding on the Firm. It shall be the responsibility of Partners of the Firm to inform the Certifying Authority or Sub Certifying Authority, if the Authorized User changes, and apply for a fresh Digital Signature Certificate. The procedure for application of a Digital Signature Certificate will remain the same for the new Authorized User.

The same procedure holds true for the Authorized Users in a Private / Public Limited Company. In this case, the Authorization Certificate will have to be signed by the Director of the Company or the Reporting Authority of the Applicant.

For information on the process of application for obtaining Digital Certificate, the Contractors may visit the section Digital Signature Forms on the Home Page of the Electronic Tendering System.

iii. **Recommended Hardware and Internet Connectivity:**

To operate on the Electronic Tendering System, the Contractors are recommended to use Computer System with at least 1 GB of RAM and broadband connectivity with minimum 512 kbps bandwidth.

iv. **Set up of Computer System for executing the operations on the Electronic Tendering System:**

To operate on the Electronic Tendering System of Maha-Metro, the Computer System of the Contractors is required be set up. The Contractors are required to install Utilities available under the section Downloads on the Home Page of the System.

The Utilities are available for download freely from the above mentioned section. The Contractors are requested to refer to the Help manual and Tutorials available online on the Home Page to understand the process of setting up the System, or alternatively, contact the Helpdesk Support Team on information / guidance on the process of setting up the System.

C] The e-tender portal contains two sections Technical Bid Submission & Financial Bid Submission.

- i. **Technical Bid Section:** - Technical Bid Section shall contain all Document and enclosures as directed in NIT, ITT and EQ. Bidder shall upload the PDF copy of such documents in Technical Section only.
- ii. **Financial Bid Section:** - All prices/Commercial offers/ or any information pertain to commercial offer required by MAHA-METRO from the bidders, shall be filled/ uploaded (If directed by MAHA-METRO) in Financial Bid Section only.
- iii. No information pertaining to Financial Bid section should be uploaded/disclosed in Technical Bid Section or vice versa.

D] Steps to be followed by Contractors to participate in the e-Tenders processed by Maha-Metro.

i. Preparation of online Briefcase:

All Contractors enrolled on the Electronic Tendering System of Maha-Metro are provided with dedicated briefcase facility to store documents / files in digital format. The Contractors can use the online briefcase to store their scanned copies of frequently used documents / files to be submitted as a part of their bid response. The Contractors are advised to store the relevant documents in the briefcase before starting the Tender Submission stage.

In case, the Contractors have multiple documents under the same type (e.g. multiple Work Completion Certificates) as mentioned above, the Contractors advised to either create a single .pdf file of all the documents of same type or compress the documents in a single compressed file in .zip or .rar formats and upload the same.

Note: Uploading of documents in the briefcase does not mean that the documents are available to Maha-Metro at the time of Tender Opening stage unless the documents are specifically attached to the Tender during the Tender Submission stage.

ii. Online viewing of Detailed Notice Inviting Tenders:

The Contractors Can View The Detailed **Tender Notice (NIT)** Along With The Time Schedule (Key Dates) For All The Live Tenders Released By Maha-Metro And **Eligibility Criteria (EQ)** On The Home Page of Maha-Metro E-Tendering Portal On <https://mahametrorail.etenders.in> Under The Section Online Tenders. Viewing & Downloading The **NIT & EQ** Is Free of Cost.

iii. Download of Tender Documents:

After going through the NIT & EQ, if bidder finds himself eligible for the bidding, he may purchase the complete bid document via online mode by paying the cost of Tender Document by Debit Card/Credit Card/ Net Banking as described on E-Tender Portal. After paying the cost of the document, bidder may download the complete bid documents.

iv. Online Submission of Bid:

- a. At the stage of EMD, the EMD payment may be either in the form of Cash or Bank Guarantee or combination of both. Bidders are advised to refer the Instruction to Bidders and Bid Data Sheet of the concerning Bid. For detail provision of payment of EMD, bidders are advised to refer concerning clause of Bid Document
- b. For Cash Component Payment of EMD, which bidder has to pay online using any one online pay mode as RTGS, NEFT, Debit Card, Credit Card & Net Banking through payment gateway of E-Tender Portal. For EMD payment, if bidder uses NEFT or RTGS then system will generate a challan (in two Copies) with unique challan No specific to the tender. Bidder will use this challan in his bank to make NEFT/RTGS Payment against the challan.
- c. Bidder should ensure the payment of online EMD, 72 Hours (Excepting Holiday if any) prior to the final submission date of the Bid. *
- d. Bidders have the option to pay EMD either at the initial stage of submission of bid or at the final stage of submission of bid, when all mandatory formats/ documents filled/ uploaded.
- e. If the EMD is in form of Bank Guarantee or part of EMD in form of BG, scan copy of such BG shall be uploaded by bidders in technical section of E-Tender Portal.
- f. Bidder shall download the Complete Bid Document along with all Corrigendum/Addendum/Clarification etc. by logging in with E-Tender Portal using his DSC (i.e. DSC of POA/ Owner) & read the all tender Instruction & clauses carefully.
- g. For submission of Tender Document and Corrigendum, Tick (✓) Submission Process has been enabled in Technical section of E-Tender Portal of MAHA-METRO. Bidders have to tick (✓) the corresponding checkbox provided in the Technical Section of E-Tendering portal as a token of acceptance of these bid documents & corrigendum / Addendums. By clicking the tick (✓) the bid documents & corrigendum /addendum shall automatically have attached to offer of bidder. Further bidder may proceed for submission by clicking submit button.
- h. If the bidder has completed the submission process of his bid before due date of submission and in between employer issue a corrigendum, in this circumstances the bidder has to re-submit his bid by “clicking tick (✓)” to the new added corrigendum, in case the new corrigendum has any implications to his already submitted bid. Bidder may, at his option, amend his bid accordingly & re-submit it.
- i. Physical Sign & seal of bidder on each page of Bid Documents available online is not required.
- j. All required enclosures as per bid document shall be uploaded in “Technical Envelope” / “Technical Section” of E-Tender portal by using DSC of bidder.

- k. The "Technical Envelope" / "Technical Section" of E-Tender portal has been provided with facilities to upload a file of maximum size of 10 mb only at each entity.
- l. If bidder is desirous to upload a file more than 10mb size, he shall have split the file in two or more parts of 10mb or lesser than 10mb each and can upload the same at appropriate **Technical Template** or **"Additional Document"** section of **"Technical Envelope/section"** of E-Tender Portal.

Note:-

- * Realization of NEFT/RTGS payment normally takes 24 hours, so it is advised to make Sure that NEFT/RTGS payment activity should be completed well before time.
- * NEFT/RTGS option will be depend on the amount of EMD.
- * Help File regarding use of e-Payment Gateway can be downloaded from e-Tendering Portal.

v. Short listing of Contractors for Financial Bidding Process:

The Tendering Authority will first open the Technical Bid documents of all Contractors and after scrutinizing these documents will shortlist the Contractors who are eligible for Financial Bidding Process. The shortlisted Contractors will be intimated by email.

vi. Opening of the Financial Bids:

The Contractors may remain present in the Office of the Tender Opening Authority at the time of opening of Financial Bids.

vii. Tender Schedule (Key Dates):

All the online activities are time tracked and the Electronic Tendering System enforces time-locks that ensure that no activity or transaction can take place outside the Start and End Dates and Time of the stage as defined in the Tender Schedule.

At the sole discretion of the Tender Authority, the time schedule of the Tender stages may be extended.

Note: - For details illustrations, please refer or down load the PPT demonstration available on E-Tender portal of <https://mahametrorail.etenders.in>.

E] Terms and Conditions for Online-Payments

The Terms and Conditions contained herein shall apply to any person ("User") using the services of Maha-Metro, Maharashtra, hereinafter referred to as "Merchant", for making Tender fee and Earnest Money Deposit (EMD) payments through an online Payment Gateway Service ("Service") offered by ICICI Bank Ltd. in association with E Tendering Service provider and Payment Gateway Service provider through MAHA-METRO Maharashtra website i.e. <https://mahametrorail.etenders.in> Each User is therefore deemed to have read and accepted these Terms and Conditions.

Privacy Policy:

The Merchant respects and protects the privacy of the individuals that access the information and use the services provided through them. Individually identifiable information about the User is not willfully disclosed to any third party without first receiving the User's permission, as covered in this Privacy Policy.

This Privacy Policy describes Merchant's treatment of personally identifiable information that Merchant collects when the User is on the Merchant's website. The Merchant does not collect any unique information about the User (such as User's name, email address, age, gender etc.) except when you specifically and knowingly provide such information on the Website. Like any business interested in offering the highest quality of service to clients, Merchant may, from time to time, send email to the User and other communication to tell the User about the various services, features, functionality and content offered by Merchant's website or seek voluntary information from The User.

Please be aware, however, that Merchant will release specific personal information about the User if required to do so in the following circumstances:

- a) In order to comply with any valid legal process such as a search warrant, statute, or court order, or available at time of opening the tender.
- b) if any of User's actions on our website violate the Terms of Service or any of our guidelines for specific services, or
- c) to protect or defend Merchant's legal rights or property, the Merchant's site, or the Users of the site or;
- d) to investigate, prevent, or take action regarding illegal activities, suspected fraud, situations involving potential threats to the security, integrity of Merchant's website/offerings. General

F] Terms and Conditions for E-Payment on E-Tender Portal

1. Once a User has accepted these Terms and Conditions, he/ she may register on Merchant's website and avail the Services.
2. Merchant's rights, obligations, undertakings shall be subject to the laws in force in India, as well as any directives/ procedures of Government of India, and nothing contained in these Terms and Conditions shall be in derogation of Merchant's right to comply with any law enforcement agencies request or requirements relating to any User's use of the website or information provided to or gathered by Merchant with respect to such use. Each User accepts and agrees that the provision of details of his/ her use of the Website to regulators or police or to any other third party in order to resolve disputes or complaints which relate to the Website shall be at the absolute discretion of Merchant.
3. If any part of these Terms and Conditions are determined to be invalid or unenforceable pursuant to applicable law including, but not limited to, the warranty disclaimers and liability limitations set forth herein, then the invalid or unenforceable provision will be deemed superseded by a valid, enforceable provision that most closely matches the intent of the original provision and the remainder of these Terms and Conditions shall continue in effect.

4. These Terms and Conditions constitute the entire agreement between the User and Merchant. These Terms and Conditions supersede all prior or contemporaneous communications and proposals, whether electronic, oral, or written, between the User and Merchant. A printed version of these Terms and Conditions and of any notice given in electronic form shall be admissible in judicial or administrative proceedings based upon or relating to these Terms and Conditions to the same extent and subject to the same conditions as other business documents and records originally generated and maintained in printed form.
5. The entries in the books of Merchant and/or the Payment Gateway Service Providers kept in the ordinary course of business of Merchant and/or the Payment Gateway Service Providers with regard to transactions covered under these Terms and Conditions and matters therein appearing shall be binding on the User and shall be conclusive proof of the genuineness and accuracy of the transaction.
6. **Refund for Charge Back Transaction:** In the event there is any claim for/ of charge back by the User for any reason whatsoever, such User shall immediately approach Merchant with his/ her claim details and claim refund from Merchant alone. Such refund (if any) shall be affected only by Merchant via payment gateway or by means of a demand draft or such other means as Merchant deems appropriate. No claims for refund/ charge back shall be made by any User to the Payment Gateway Service Provider(s) and in the event such claim is made it shall not be entertained.
7. In these Terms and Conditions, the term "**Charge Back**" shall mean, approved and settled credit card or net banking purchase transaction(s) which are at any time refused, debited or charged back to merchant account (and shall also include similar debits to Payment Gateway Service Provider's accounts, if any) by the acquiring bank or credit card company for any reason whatsoever, together with the bank fees, penalties and other charges incidental thereto.
8. Refund for fraudulent/duplicate transaction(s): The User shall directly contact Merchant for any fraudulent transaction(s) on account of misuse of Card/ Bank details by a fraudulent individual/party and such issues shall be suitably addressed by Merchant alone in line with their policies and rules.
9. Server Slow Down/Session Timeout: In case the Website or Payment Gateway Service Provider's webpage, that is linked to the Website, is experiencing any server related issues like 'slow down' or 'failure' or 'session timeout', the User shall, before initiating the second payment,, check whether his/her Bank Account has been debited or not and accordingly resort to one of the following options:
 - i. In case the Bank Account appears to be debited, ensure that he/ she does not make the payment twice and immediately thereafter contact Merchant via e-mail or any other mode of contact as provided by Merchant to confirm payment.
 - ii. In case the Bank Account is not debited, the User may initiate a fresh transaction to make payment.

However, the User agrees that under no circumstances the Payment Gateway Service Provider shall be held responsible for such fraudulent/duplicate transactions and hence no claims should be raised to Payment Gateway Service Provider. No communication received by the Payment Gateway Service Provider(s) in this regard shall be entertained by the Payment Gateway Service Provider.

G] Limitation of Liability of Merchant/ Payment Gateway

1. Merchant has made this Service available to the User as a matter of convenience. Merchant expressly disclaims any claim or liability arising out of the provision of this Service. The User agrees and acknowledges that he/ she shall be solely responsible for his/ her conduct and that Merchant reserves the right to terminate the rights to use of the Service immediately without giving any prior notice thereof.
2. Merchant and/or the Payment Gateway Service Providers shall not be liable for any inaccuracy, error or delay in, or omission of (a) any data, information or message, or (b) the transmission or delivery of any such data, information or message; or (c) any loss or damage arising from or occasioned by any such inaccuracy, error, delay or omission, nonperformance or interruption in any such data, information or message. Under no circumstances shall the Merchant and/or the Payment Gateway Service Providers, its employees, directors, and its third party agents involved in processing, delivering or managing the Services, be liable for any direct, indirect, incidental, special or consequential damages, or any damages whatsoever, including punitive or exemplary arising out of or in any way connected with the provision of or any inadequacy or deficiency in the provision of the Services or resulting from unauthorized access or alteration of transmissions of data or arising from suspension or termination of the Services.
3. The Merchant and the Payment Gateway Service Provider(s) assume no liability whatsoever for any monetary or other damage suffered by the User on account of:
(i) the delay, failure, interruption, or corruption of any data or other information transmitted in connection with use of the Payment Gateway or Services in connection thereto; and/ or (ii) any interruption or errors in the operation of the Payment Gateway.
4. The User shall indemnify and hold harmless the Payment Gateway Service Provider(s) and Merchant and their respective officers, directors, agents, and employees, from any claim or demand, or actions arising out of or in connection with the utilization of the Services.

The User agrees that Merchant or any of its employees will not be held liable by the User for any loss or damages arising from your use of, or reliance upon the information contained on the Website, or any failure to comply with these Terms and Conditions where such failure is due to circumstance beyond Merchant's reasonable control.

H] Miscellaneous Conditions:

Any waiver of any rights available to Merchant under these Terms and Conditions shall not mean that those rights are automatically waived.

1. The User agrees, understands and confirms that his/ her personal data including without limitation details relating to debit card/ credit card transmitted over the Internet may be susceptible to misuse, hacking, theft and/ or fraud and that Merchant or the Payment Gateway Service Provider(s) have no control over such matters.
2. Although all reasonable care has been taken towards guarding against unauthorized use of any information transmitted by the User, Merchant does not represent or guarantee that the use of the Services provided by/ through it will not result in theft and/or unauthorized use of data over the Internet.
3. The Merchant, the Payment Gateway Service Provider(s) and its affiliates and associates shall not be liable, at any time, for any failure of performance, error, omission, interruption, deletion, defect, delay in operation or transmission, computer virus, communications line failure, theft or destruction or unauthorized access to, alteration of, or use of information contained on the Website.
4. The User may be required to create his/ her own User ID and Password in order to register and/ or use the Services provided by Merchant on the Website. By accepting these Terms and Conditions the User agrees that his/ her User ID and Password are very important pieces of information and it shall be the User's own responsibility to keep them secure and confidential. In furtherance hereof, the User agrees to;
 - i. Choose a new password, whenever required for security reasons.
 - ii. Keep his/ her User ID & Password strictly confidential.
 - iii. Be responsible for any transactions made by User under such User ID and Password.

The User is hereby informed that Merchant will never ask the User for the User's password in an unsolicited phone call or in an unsolicited email. The User is hereby required to sign out of his/ her Merchant account on the Website and close the web browser window when the transaction(s) have been completed. This is to ensure that others cannot access the User's personal information and correspondence when the User happens to share a computer with someone else or is using a computer in a public place like a library or Internet cafe.

I] Debit/Credit Card, Bank Account Details

1. The User agrees that the debit/credit card details provided by him/ her for use of the aforesaid Service(s) must be correct and accurate and that the User shall not use a debit/ credit card, that is not lawfully owned by him/ her or the use of which is not authorized by the lawful owner thereof. The User further agrees and undertakes to provide correct and valid debit/credit card details.
2. The User may make his/ her payment (Tender Fee/Earnest Money deposit) to Merchant by using a debit/credit card or through online banking account. The User warrants, agrees and confirms that when he/ she initiates a payment transaction and/or issues an online payment instruction and provides his/ her card / bank details:

- i. The User is fully and lawfully entitled to use such credit / debit card, bank account for such transactions;
- ii. The User is responsible to ensure that the card/ bank account details provided by him/ her are accurate;
- iii. The User is authorizing debit of the nominated card/ bank account for the payment of Tender Fee and Earnest Money Deposit
- iv. The User is responsible to ensure sufficient credit is available on the nominated card/ bank account at the time of making the payment to permit the payment of the dues payable or the bill(s) selected by the User inclusive of the applicable Fee.

J] Personal Information

1. The User agrees that, to the extent required or permitted by law, Merchant and/ or the Payment Gateway Service Provider(s) may also collect, use and disclose personal information in connection with security related or law enforcement investigations or in the course of cooperating with authorities or complying with legal requirements.
2. The User agrees that any communication sent by the User vide e-mail, shall imply release of information therein/ therewith to Merchant. The User agrees to be contacted via e-mail on such mails initiated by him/ her.
3. In addition to the information already in the possession of Merchant and/ or the Payment Gateway Service Provider(s), Merchant may have collected similar information from the User in the past. By entering the Website, the User consents to the terms of Merchant's information privacy policy and to our continued use of previously collected information. By submitting the User's personal information to us, the User will be treated as having given his/her permission for the processing of the User's personal data as set out herein.
4. The User acknowledges and agrees that his/ her information will be managed in accordance with the laws for the time in force.

K] Payment Gateway Disclaimer:

The Service is provided in order to facilitate payment of Tender Fees/Earnest Money Deposit online. The Merchant or the Payment Gateway Service Provider(s) do not make any representation of any kind, express or implied, as to the operation of the Payment Gateway other than what is specified in the Website for this purpose. By accepting/ agreeing to these Terms and Conditions, the User expressly agrees that his/ her use of the aforesaid online payment service is entirely at own risk and responsibility of the User.

L] Other Instructions to Bidders

- (i) Bidders are required to register in the e-Tendering portal mahametrorail.etenders.in and purchase a valid Digital Signature and Digital encryption certificate as required
- (ii) If there are any clarifications, this may be obtained online through the e-Procurement Portal, or through the contact details given in the tender document. Bidder should take into account the corrigendum published online before bid submission.
- (iii) Bidder should arrange for the EMD or Bid Security as specified in the tender. The original should be posted/couriered/given in person to the Tender Inviting Authority, within the date and time specified in the portal for opening of the tender. A bidder is liable to be rejected if the requisite physical documents are not submitted in time.
- (iv) The bidder is advised to submit the tender document(s) online well in advance before the prescribed time to avoid any delay or problem during the bid submission process.
- (v) The bidders should get acquainted with the maximum file upload limitations and restrictions on the file extensions implemented in the e-Tendering software and should prepare its bid in compliance with these restrictions
- (vi) In order to reduce the file size, bidders are suggested to scan the documents in 75-100 DPI so that the clarity is maintained and also the size of file also gets reduced. This will help in quick uploading even at very low bandwidth speeds.
- (vii) Only the bids which are marked as submitted at the time of bid submission due date and time will be considered for evaluation
- (viii) The Tender Inviting Authority (TIA) will not be held responsible for any sort of delay or the difficulties faced during the submission of bids online by the bidders due to issues not related to the e-Procurement server set-up.
- (ix) The bidder should see that the bid documents submitted should be free from virus and if the documents could not be opened, due to virus, during tender opening, the bid is liable to be rejected
- (x) The time that is displayed from the server clock at the top of the tender Portal, will be valid for all actions of requesting bid submission, bid opening etc., in the e-Procurement portal. The Time followed in this portal is as per Indian Standard Time (IST) which is GMT+5:30. The bidders should adhere to this time during bid submission.
- (xi) The bidders are requested to submit the bids through online eProcurement system to the TIA well before the bid submission end date and time (as per Server System Clock).
- (xii) Bidders are informed to get acquainted with the bid submission process in e-Procurement system by contacting the help desk and by studying the training materials loaded in the portal: "mahametrorail.etenders.in".
- (xiii) Bid opening date specified in the e-Procurement site shall be taken as the final date. Maha-Metro reserves the right to open bids received in response to a tender on or after the bid opening date and time specified in the e-Procurement site: mahametrorail.etenders.in

- (xiv) Maha-Metro reserves the right to verify original copies of scanned documents uploaded by bidders. Maha-Metro may seek additional documentary evidence or clarifications from bidders on their technical proposals, which the bidders shall provide either online using the e-Procurement or in manual form.
- (xv) Maha-Metro reserves the right to seek extension of bid validity from the short-listed bidders in offline mode, just as it is in the manual system.
- (xvi) Maha-Metro reserves the right to extend bid submission timeline or recall the tender if e-Procurement server is down (i.e. inaccessible / inoperative) for a prolonged period of time within the last 24 hours of the bid submission due date. Maha-Metro shall consult the e-Procurement service provider and seek its opinion and decide to extend the bid submission timeline in accordance with the technical explanation provided by the Service Provider.
- (xvii) Aggrieved bidders shall submit their appeal offline and if an aggrieved bidder were to be found qualified subsequent to the appeal, the bid documents of the bidder will be opened online in the system as per system procedures.
- (xviii) Bidders shall bring to notice of the Maha-Metro about any disputes they may have on authenticity of the uploaded content as shown to the user within a period of one month of bid opening
- (xix) Bidders shall not lock electronic files uploaded in their proposal with passwords of their choice. Maha-Metro reserves the right to reject password locked files outright and not consider contents within such locked files for bid evaluation
- (xx) Bidders shall upload their bid documents in formats, which can be opened and read by open standard interfaces.
- (xxi) When an amendment or clarification is issued against a tender, the system will automatically withdraw the submitted bids. The onus is on the bidders to update its bid as required and resubmit the bid.
- (xxii) A bidder can withdraw its bid before the due date and time for bid submission. To withdraw the bid, the bidder should initiate the "Re-submit" function and not submit its bid after that

MAHARASHTRA METRO RAIL CORPORATION LIMITED
(PUNE METRO RAIL PROJECT)

BID DOCUMENTS
FOR

Name of work: Geotechnical Investigation of Underground Section of NS Corridor Phase-I Extension Swargate-Katraj of Pune Metro Rail Project.

TENDER NO. P1Misc-34/2024

PART 1: BIDDING PROCEDURE
SECTION II: ANNEXURE II-D: Grounds for
Exclusion:



Maharashtra Metro Rail Corporation Limited
Civil Court Metro Station, Nyayamurti Ranade Path, Pune-411005,
Maharashtra, INDIA Tel- 020-7410004067/68
Website: www.punemetrorail.org

Grounds for Exclusion:

Bidders (either natural or legal persons including any of their subcontractors) shall not be awarded this contract if, on the date of submission of an application or of a bid or on the date of award of a contract, they have been the subject of a conviction by final judgment for one of the following reasons:

- a) where the Bidder is bankrupt or is the subject of insolvency or winding up proceedings, where its assets are being administered by a liquidator or by the court, where it is in an arrangement with creditors, where its business activities are suspended or it is in any analogous situation arising from a similar procedure under national laws and regulations;
- b) Bidders have not fulfilled their obligations regarding the payment of social security contributions or taxes in accordance with the legal provisions of the country where they are established or the Employer's country;
- c) where the Employer can demonstrate by any appropriate means a violation by the Bidder of applicable obligations in the fields of environmental, social and labour law established by national law, collective agreements or by the international environmental, social and labour law provisions;
- d) where the Employer has sufficiently plausible indications to conclude that the Bidder has entered into agreements with other Bidder(s) aimed at distorting competition;
- e) where the Bidder has shown significant or persistent deficiencies in the performance of a substantive requirement under a prior public contract, a prior contract with the Employer or a prior concession contract which led to early termination of that prior contract, damages or other comparable sanctions;
- f) Bidders have been convicted within the past five years by a court decision, which has the force of residential jurisdiction in the country where the project is implemented, of fraud or corruption or any other Prohibited Conduct (as defined in the Covenant of Integrity) committed during the procurement or performance of a contract, unless they provide supporting information together with their Covenant of Integrity which shows that this conviction is not relevant in the context of this project;
- g) Bidder is listed for financial sanctions by the United Nations and/or the European Union for the purposes of fight against terrorist financing or threat to international peace and security;
- h) Bidder including JV Partners should be excluded by the EU Institutions or any major Multilateral Development Bank (including World Bank Group, African Development Bank, Asian Infrastructure Investment Bank, Asian Development Bank, European Bank for Reconstruction and Development, European Investment Bank or Inter-American Development Bank) from participation in a tendering procedure on the grounds of Prohibited Conduct;
- i) where the Employer can demonstrate by appropriate means that the Bidder is guilty of grave professional misconduct, which renders its integrity questionable;
- j) where a conflict of interest within the meaning of **Clause 4.2 of ITB** cannot be effectively remedied by other less intrusive measures;

k) where a distortion of competition from the prior involvement of the Bidder in the preparation of the procurement procedure, as referred to in **Section VI: Agency Policy – Corrupt and Fraudulent Practices of the Bid Document Part-1**, cannot be remedied by other, less intrusive measures;

l) where the Bidder has been guilty of serious misrepresentation in supplying the information required for the verification of the absence of grounds for exclusion or the fulfilment of the selection criteria, has withheld such information or is not able to submit the supporting documents required pursuant to **Clause 27 of ITB**; or

m) where the Bidder has undertaken to unduly influence the decision making process of the Employer, to obtain confidential information that may confer upon it undue advantages in the procurement procedure or to negligently provide misleading information that may have a material influence on decisions concerning exclusion, selection or award.

Notwithstanding point (a) of the first subparagraph, the Employer might not exclude a Bidder which is in one of the situations referred to in that point, where the Employer has established that the Bidder in question will be able to perform the contract, taking into account the applicable national rules and measures on the continuation of business in the case of the situations referred to in point (a).

Any Bidder that is in one of the situations referred to in the above paragraph may provide evidence to the effect that measures taken by the Bidder are sufficient to demonstrate its reliability despite the existence of a relevant ground for exclusion. If such evidence is considered as sufficient, the Bidder concerned will not be excluded from the procurement procedure.

For this purpose, the Bidder shall prove that it has paid or undertaken to pay compensation in respect of any damage caused by the criminal offence or misconduct, clarified the facts and circumstances in a comprehensive manner by actively collaborating with the investigating authorities and taken concrete technical, organisational and personnel measures that are appropriate to prevent further criminal offences or misconduct.

The measures taken by the Bidder will be evaluated taking into account the gravity and particular circumstances of the criminal offence or misconduct. Where the measures are considered to be insufficient, the Bidder shall receive a statement of the reasons for that decision.

Bidders and all of its associates (if any) and all the members of the “Group” in case of Joint Venture are required as a condition of admission to eligibility, to execute and attach a Covenant of Integrity in the form indicated in **Form 3 A** and an Environmental and Social Covenant in the form indicated in **Form 3 B** of Section-IV: Bidding Forms respectively.

Bidders will also be required to confirm and declare that no agent, middleman or any intermediary has been, or will be, engaged to provide any services, or any other items of work related to the award and performance of this contract.

**MAHARASHTRA METRO RAIL CORPORATION LIMITED
(PUNE METRO RAIL PROJECT)**

BID DOCUMENTS

FOR

Name of work: Geotechnical Investigation of Underground Section of NS Corridor Phase-I Extension Swargate-Katraj of Pune Metro Rail Project.

TENDER NO. P1Misc-34/2024

**PART 1: BIDDING PROCEDURE
SECTION III: Evaluation & Qualification Criteria**



Maharashtra Metro Rail Corporation Limited

Civil Court Metro Station, Nyayamurti Ranade Path, Pune-
411005, Maharashtra, INDIA

E-mail: tenders.pmrp@mahametro.org

Website: www.punemetrorail.org

SECTION-III: Evaluation & Qualification Criteria

This Section contains all the criteria that the Employer shall use to evaluate bids and qualify Bidders. In accordance with ITB 35 and ITB 37, no other factors, methods or criteria shall be used. The Bidder shall provide all the information requested in the forms included in Section IV, Bidding Forms.

1. Evaluation

In addition to the criteria listed in ITB 35.2 the following criteria shall apply:

1.1 Assessment of adequacy of Technical Proposal with Requirements

The assessment of the Technical Proposal submitted by a Bidder shall comprise:

- (a) evaluation of the Bidder's technical capacity to mobilize key equipment and key personnel to carry out the works,
- (b) manufacture / construction method,
- (c) manufacture / construction schedule
- (d) Sufficiently detailed supply sources in accordance with requirements specified in Section VII – Works Requirements.

1.2 Multiple Contracts - Not Applicable**1.3 Alternative Completion Times – Not Applicable****1.4 Technical alternatives – Not Applicable****1.5 Specialized Subcontractors**

Only the specific experience of sub-contractors for specialized works permitted by the Employer will be considered. The general experience and financial resources of the specialized sub-contractors shall not be added to those of the Bidder for purposes of qualification of the bidder.

2. Qualification

No.	Subject	Requirement	Single Entity	Joint Venture/ Consortium (existing or intended)			Documentation
				All Parties Combined	Each member	Lead member	
1	Eligibility						
1.1	Nationality	As per clause 4.3 of Section-I: ITB	Must meet requirement	Must meet requirement	Must meet requirement	Must meet requirement	Certificate of Incorporation or Registration certificate etc.
1.2	Conflict of Interest	No conflicts of interest in accordance with ITB 4.2	Must meet requirement	Must meet requirement	Must meet requirement	Must meet requirement	Form-1 (Letter of Bid)
1.3	Agency Eligibility	Not being ineligible to the Agency financing, as described in ITB 4.3	Must meet requirement	Must meet requirement	Must meet requirement	Must meet requirement	Form-3
1.4	Government Owned Entity of the Borrower country	Meet conditions of ITB 4.3	Must meet requirement	Must meet requirement	Must meet requirement	Must meet requirement	Form-3
2.0	Historical Contract Non-Performance						
2.1	History of Non-Performing Contracts	Non-performance of a contract ¹ did not occur as a result of contractor's default in the past five (5) years.	Must meet requirement ²	N/A	Must meet requirement ²	Must meet requirement ²	Form-15
2.2	Suspension Based on absence of Bid Security	Not under suspension based on absence of a Bid Security pursuant to ITB 4.4 or withdrawal of a Bid pursuant to ITB 19.9.	Must meet requirement	N/A	Must meet requirement ²	Must meet requirement ²	Form-1

¹Non-performance, as decided by the Employer, shall include all contracts where (a) non-performance was not challenged by the contractor, including through referral to the dispute resolution mechanism under the respective contract, and (b) contracts that were so challenged but fully settled against the contractor. Non-performance shall not include contracts where Employers decision was overruled by the dispute resolution mechanism. Non-performance must be based on all information on fully settled disputes or litigation, i.e. dispute or litigation that has been resolved in accordance with the dispute resolution mechanism under the respective contract and where all appeal instances available to the Bidder have been exhausted.

² This requirement also applies to contracts executed by the Bidder as JV member.

No.	Subject	Requirement	Single Entity	Joint Venture/ Consortium (existing or intended)			Documentation
				All Parties Combined	Each member	Lead member	
2.3	Pending Litigation	Applicant's financial position and prospective long term profitability still sound according to criteria established in 3.1 below and assuming that all pending litigation will be resolved against the Applicant.	Must meet requirement	N/A	Must meet requirement ²	Must meet requirement ²	Form-15
3.0	Financial Situation and Performance						
3.1 (a)	Financial Capabilities (cash flow) <i>(Not applicable for this tender)</i>	The Bidder shall demonstrate that it has access to, or has available, liquid assets, unencumbered real assets, lines of credit, and other financial means (independent of any contractual advance payment) sufficient to meet the construction cash flow requirements estimated as INR 2.17 Crore for the subject contract.	Must meet requirement	Must meet requirement	N/A	Must meet Min. 50% (Fifty percent) of the requirement	Form-18
3.1 (b)	Bid Capacity <i>(Not applicable for this tender)</i>	Evaluation of Bid Capacity: - The Bidders will be qualified only if their available bid capacity is more than the INR 2.17 Crore as per MAHA-METRO assessment. Available bid capacity will be calculated based on the following formula: Available Bid Capacity= 2xAxN – B Where, A = Maximum of the value of construction works executed in any one year during the last 05 (five) financial years reckoned up to 31st March'2023 (Updated to price level of 31 March 2023 assuming 5% (for INR portion) and 2%	Must meet requirement	Must meet the requirement	N/A	N/A	Form-17 & Form-19

No.	Subject	Requirement	Single Entity	Joint Venture/ Consortium			Documentation
				(existing or intended)			
				All Parties Combined	Each member	Lead member	
		<p>(for foreign currency portion) inflation per year compounded annually)</p> <p>N = Number of years prescribed for completion of the present work</p> <p>B = Value of existing commitments as on first day of the month of this Bid submission i.e. for on-going construction works during completion period of proposed work.</p> <p>Proportionate value will be taken if it falls during the financial year.</p> <p>Note:</p> <p>1. The available bid capacity should be more than the estimated cost of the proposed work.</p> <p>2. A certificate issued from a Statutory Auditor certifying A and B value must be enclosed with the Technical bid. The certificate must be with UDIN</p>					
3.1 (c)	Net Worth	<p>Net worth of Bidder ending 31st March'2023 should be minimum INR 72.45 Lakhs</p> <p>Note: Only Statutory Auditor's certificate required to be enclosed with bid. The certificate must be with UDIN.</p>	Must meet requirement	Must meet the requirement	Must meet Min. 20% (Twenty percent) of the requirement	Must meet Min. 50% (Fifty percent) of the requirement	Form-16

No.	Subject	Requirement	Single Entity	Joint Venture/ Consortium			Documentation
				(existing or intended)			
				All Parties Combined	Each member	Lead member	
3.1 (d)	Net Profit	<p>Summery sheet of audited balance sheets for the last 5 (five) years (FY 2018-19, 19-20, 20-21, 21-22 & 22-23) shall be submitted and must demonstrate the current soundness of the Applicant's financial position and indicate its prospective long-term profitability.</p> <p>The Bidder Must have made Net Profit before tax during any two of the last 5 financial years i.e. (FY 2018-19, 19-20, 20-21, 21-22 & 22-23)</p> <p>Note:</p> <p>1. Statutory Auditor's certified summary sheet of each year need to be enclosed with bid. The certificates must be with UDIN</p> <p>2. Copy of audited balance sheets also need to be submitted along with the bid</p>	Must meet requirement	N/A	Must meet requirement	Must meet requirement	Form-16
3.2	Average Annual Turnover	<p>Minimum average annual turnover of INR 65.18 Lakhs within the last 05 (Five) years</p> <p>Note: -</p> <p>1. Last Five years shall be (FY 2018,19,2019-2020,20-21, 21-22 & 22-23)</p>	Must meet requirement	Must meet the requirement	Must meet Min. 20% (Twenty percent) of the requirement	Must meet Min. 50% (Fifty percent) of the requirement	Form-17

No.	Subject	Requirement	Single Entity	Joint Venture/ Consortium			Documentation
				(existing or intended)			
				All Parties Combined	Each member	Lead member	
		<p>2. In case of Companies, which follows Financial Year as Calendar Year (January to December), data for 2021 shall be treated equivalent to the data of FY 2021-22 and so on.</p> <p>3. Statutory Auditor's certified summary sheet of audited balance sheet need to be enclosed with bid. The certificate must be with UDIN</p> <p>4. Copy of audited balance sheets also need to be submitted along with the bid</p>					
4.0	Experience						
4.1	General Experience	For the Lead Member, experience under contracts (single entity or Lead member of (JV) shall be at least 5 calendar years, (2018 to 2023). Whereas the other members of JV shall be at least two (2) years under similar contracts from 2021 to 2023.	Must meet requirement	N/A	Last 02 Calendar Year	For Lead Member during Last 05 Calendar year	Form-20
4.2 (a)	Specific Construction & Contract Management Experience	A minimum of *Similar Work contracts specified below that have been satisfactorily completed as a prime contractor or joint venture member during last 5 (Five) years reckoned from the last day of the month previous to the one in	Must meet requirement	Must meet the requirement	N/A	N/A	Form-21

No.	Subject	Requirement	Single Entity	Joint Venture/ Consortium			Documentation
				(existing or intended)			
				All Parties Combined	Each member	Lead member	
		<p>which the latest date of the bid submission falls.</p> <p>(a) Should have completed/ executed the similar work of value equivalent to at least INR 1.73 Crores under a Single Contract.</p> <p>OR</p> <p>(b) Should have completed/ executed the work of value equivalent to at least INR 1.08 Crores each under minimum two contracts</p> <p>OR</p> <p>c) Should have completed/ executed the work of value equivalent to at least INR 87 Lakhs each under minimum three contracts.</p> <p>Note:- Similar work: Means Any Geotechnical work, with any Government/Central Government/ Public sector Undertaking(PSU)/Urban local Bodies/Companies listed in stock exchanges of India (BSE and /or/NSE only) during the last preceding five financial years. The completion</p>					

No.	Subject	Requirement	Single Entity	Joint Venture/ Consortium			Documentation
				(existing or intended)			
				All Parties Combined	Each member	Lead member	
		certificate from the officer not below the rank of Executive Engineer of the concerned department should be submitted.					

3. Special Notes:

- i. For the above mentioned criteria, both completed as well as ongoing works may be considered subjected to production of certificate clearly mentioning the amount paid for completed work from the concerned authority including the status of the work. The value of work executed or under execution shall remain as mentioned in above clause.
- ii. During evaluation of this bid, if the bidder is awarded or is lowest in any other bid under process of evaluation with Maharashtra Metro Rail Corporation (for PMRP), then the bidder has to demonstrate that he aggregately (Combining present tender and previously awarded tender) satisfies criteria mentioned in 3.1a and 3.1b for this tender.
- iii. Full (100%) experience for previous works of the JV shall be considered, if the claiming member of the JV has at least 60% share in previous consortium/ JV for the relevant referred Work Experience, else proportionate quantum of experience of previous works up to the percentage share of participation in the previous JV shall be considered.
- iv. Existing JV/Consortium already worked/working in any department & meeting the eligibility criteria of *Similar work, mentioned in Section-III of Bid Document, can bid with the same JV configuration as a Single Entity.
- v. If any member has less than 20% share in previous JV/consortium, his experience shall be considered as non-substantial member and shall not be considered for evaluation.
- vi. The JV/Consortium member having maximum % contribution in proposed JV should be treated as Lead Member.
- vii. The mentioned experience must be supported by duly signed and stamped certificate from the employer. Bidder shall submit the contact details of issuing authority of the certificates for verification.

PMRP

Tender No. P1Misc-34/2024 Part-1: Bidding Procedure
Section-III: Evaluation & Qualification Criteria

**MAHARASHTRA METRO RAIL CORPORATION LIMITED
(PUNE METRO RAIL PROJECT)**

BID DOCUMENTS

Name of work: Geotechnical Investigation of Underground Section of NS Corridor Phase-I Extension Swargate-Katraj of Pune Metro Rail Project.

TENDER NO. P1Misc-34/2024

**PART 1: BIDDING PROCEDURE
SECTION IV: BIDDING FORMS**



Maharashtra Metro Rail Corporation Limited

Civil Court Metro Station, Nyayamurti Ranade Path, Pune-

411005. Tel- 020-7410004067/68

E-mail: tenders.pmrp@mahametro.org

Website: www.punemetrorail.org

Section IV. Bidding Forms
Table of Forms

Sr. No.	Form No.	Name of Form
01.	Form No.1	Letter of Bid
02.	Form No.2	Pro-Forma Letter of Participation from Each Partner of Joint-Venture /Consortium
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04.	Form No.4	Organization Chart & deployment of staff-Deleted
05.	Form No.5	Method Statement
06.	Form No.6	Work Program
07.	Form No.7	Certificate of compliance
08.	Form No.8	Deployment of construction machinery/equipment/systems-Deleted
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10	Form No.10	Outline safety assurance plan-Deleted
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22	Form No.22	Form of bid security
23	Form No.23	Form of joint bidding agreement
24	FormNo.24	Form of Legal capacity/power of attorney
25	Form No.25	Letter of undertaking regarding confidentiality of bid information
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29	Form No.29	Form of Declaration for non-engagement of any agent, middleman or intermediary
30	Form No.30	Form of certificate confirming careful examination of all the contents of Bidding Documents and signing of all pages of Bidder's proposal
31	Form No.31	Undertaking for passing on benefits of exemptions to Maharashtra Metro Rail Corporation Limited and for adjustment of amounts due from balance due
32	Form No.32	Undertaking for obtaining registrations under various fiscal and labour laws
33	Form No.33	Deleted
34	Form No. 34	Bid Securing Declaration
35	Form No. 35	Power of Attorney of Sole / Single Bidder
36	Form No. 36	Declaration of bidder as a signatory of Proprietorship firm
37	Form No. 37	Bid Index

Letter of Bid

[The Bidder shall prepare his Letter of Bid on a Letterhead paper specifying his name and address]

Bidder's Name: - _____

Tender No.: _____

Name of Work: _____

To:

Maharashtra Metro Rail Corporation Limited

Civil Court Metro Station, Nyayamurti Ranade Path, Pune-411005, Maharashtra, INDIA

We, the undersigned, declare that:

- (a) We have examined and have no reservations to the Bidding Documents, including Corrigenda/Addenda issued in accordance with Instructions to Bidders (ITB 8) _____;
- (b) We have no conflict of interest in accordance with ITB 4;
- (c) We have not been suspended nor declared ineligible by the Employer in absence of a Bid Security in the Employer's country in accordance with ITB 4.4.
- (d) We offer to execute in conformity with the Bidding Documents the following Works: (*name of work*) _____;
- (e) Our bid shall be valid for a period of 180 days (*as per BDS*) from the date fixed for the bid submission deadline in accordance with the Bidding Documents, and it shall remain binding upon us and may be accepted at any time before the expiration of that period;
- (f) If our bid is accepted, we commit to obtain a performance security in accordance with ITB 42 of the Bidding Documents;
- (g) We are not participating, as a Bidder, in more than one bid in this bidding process in accordance with ITB 4.2(e), other than alternative bids submitted in accordance with ITB 13;
- (j) We have not paid, or will pay the following commissions, gratuities, or fees with respect to the bidding process or execution of the Contract
- (k) We understand that this bid, together with your written acceptance thereof included in your notification of award, shall constitute a binding contract between us, until a formal contract is prepared and executed; and
- (l) We understand that you are not bound to accept the lowest evaluated bid or any other bid that you may receive.
- (m) We hereby certify that we have taken steps to ensure that no person acting for us or on our behalf will engage in any type of fraud and corruption.

Name of the Bidder* _____

Name of the person duly authorized to sign the Bid on behalf of the Bidder** _____

Title of the person signing the Bid_____

Signature of the person named above_____

Date signed _____ day of _____

Notes:-

*: In the case of the Bid submitted by joint venture specify the name of the Joint Venture as Bidder

**: Person signing the Bid shall have the power of attorney given by the Bidder to be attached with the Bid

Form-2**Pro-Forma Letter of Participation from Each Partner of Joint Venture (JV/Consortium)**
(On each Firm's Letter Head)

Dt. -----

To,
THE MANAGING DIRECTOR,
Maharashtra Metro Rail Corporation Limited
Civil Court Metro Station, Nyayamurti Ranade Path,
Pune-411005, Maharashtra, INDIA

Sir,

Regarding:

Tender No.: _____

Name of Work: _____

We wish to confirm that our company / firm (delete as appropriate) has formed a Joint Venture with
and for the purposes associated with NIT referred to above.

*(Member(s) who are not the lead partner of the JV/CONSORTIUM should add the following paragraph)**

'This JV/CONSORTIUM is led by *(Name of lead member)*whom we hereby authorize to act on our behalf for the purpose of submission of Bid for and authorize to incur liabilities and receive instructions for and on behalf of any and all the partners or constituents of the Joint Venture.'

OR

*(Member being the lead member of the group should add the following paragraph)**

'In this group we act as leader and, for the purposes of applying for qualification, represent the Joint Venture.'

In the event of our group being awarded the contract, we agree to be jointly with..... (Names of other members of our JV/CONSORTIUM)..... and severally liable to the Maharashtra Metro Rail Corporation Limited, its successors and assigns for all obligations, duties and responsibilities

arising from or imposed by the contract subsequently entered into between Maharashtra Metro Rail Corporation Limited and our JV/CONSORTIUM.

*I/We, further agree that entire execution of the contract shall be carried out exclusively through the lead partner.

Yours faithfully,

(Signature)

(Name of Signatory).....

(Capacity of Signatory).....

Seal

* Delete as applicable

Form-3**A. COVENANT OF INTEGRITY**

Bidder's Name:- _____

Tender No.: _____

Name of Work: _____

To:

Maharashtra Metro Rail Corporation Limited, Pune

We,(bidder's Name) declare and covenant that neither we nor anyone, including any of our directors, employees, agents, joint venture partners or sub-contractors, where these exist, acting on our behalf with due authority or with our knowledge or consent, or facilitated by us, has engaged, or will engage, in any Prohibited Conduct (as defined below) in connection with the tendering process or in the execution or supply of any works, goods or services for [*specify the contract or tender invitation*] (the "Contract") and covenant to so inform you if any instance of any such Prohibited Conduct shall come to the attention of any person in our organisation having responsibility for ensuring compliance with this Covenant.

We shall, for the duration of the tender process and, if we are successful in our tender, for the duration of the Contract, appoint and maintain in office an officer, who shall be a person reasonably satisfactory to you and to whom you shall have full and immediate access, having the duty, and the necessary powers, to ensure compliance with this Covenant.

We declare and covenant that neither we nor anyone, including any of our directors, employees, agents, joint venture partners or sub-contractors, where these exist, acting on our behalf with due authority or with our knowledge or consent, or facilitated by us, (i) is listed or otherwise subject to EU/UN Sanctions and (ii) in connection with the execution or supply of any works, goods or services for the Contract, will act in contravention of EU/UN Sanctions. We covenant to so inform you if any instance shall come to the attention of any person in our organisation having responsibility for ensuring compliance with this Covenant.

If (i) we have been, or any such director, employee, agent or joint venture partner, where this exists, acting as aforesaid has been, convicted in any court or sanctioned by any authority of any offence involving a Prohibited Conduct in connection with any tendering process or provision of works, goods or services during the five years immediately preceding the date of this Covenant, or (ii) any such director, employee, agent or a representative of a joint venture partner, where this exists, has been dismissed or has resigned from any employment on the grounds of being implicated in any Prohibited Conduct, or (iii) we have been, or any of our directors, employees, agents or joint venture partners, where these exist, acting as aforesaid has been excluded or otherwise sanctioned by the EU Institutions or any

major Multi-lateral Development Bank (including World Bank Group, African Development Bank, Asian Development Bank, European Bank for Reconstruction and Development, European Investment Bank or Inter-American Development Bank) from participation in a tendering procedure on the grounds of Prohibited Conduct, we give details of that conviction, dismissal or resignation, or exclusion below, together with details of the measures that we have taken, or shall take, to ensure that neither this company nor any of our directors, employees or agents commits any Prohibited Conduct in connection with the Contract [give details if necessary].

We acknowledge that if we are subject to an exclusion decision by the European Investment Bank (EIB), we will not be eligible to be awarded a contract to be financed by the EIB.

We grant [indicate the name of the Project Promoter], the European Investment Bank and auditors appointed by either of them, as well as any authority or European Union institution or body having competence under European Union law, the right to inspect and copy our books and records and those of all our sub-contractors under the Contract. We accept to preserve these books and records generally in accordance with applicable law but in any case for at least six years from the date of tender submission and in the event we are awarded the Contract, at least six years from the date of substantial performance of the Contract.”

For the purpose of this Covenant, Prohibited Conduct has the meaning provided in the EIB’s Anti-Fraud Policy**.

***EIB’s Anti-Fraud Policy for definitions (<http://www.eib.org/infocentre/publications/all/anti-fraud-policy.htm>)*

B. ENVIRONMENTAL AND SOCIAL COVENANT

Bidder's Name:- _____

Tender No.: _____

Name of Work: _____

To:

Maharashtra Metro Rail Corporation Limited, Pune

We,(bidder's Name) the undersigned, commit to comply with – and ensuring that all of our sub-contractors comply with – all labour laws and regulations applicable in the country of implementation of the contract, as well as all national legislation and regulations and any obligation in the relevant international conventions and multilateral agreements on environment applicable in the country of implementation of the contract.

Labour standards. We further commit to the principles of the eight Core ILO standards¹⁹ pertaining to: child labour, forced labour, non-discrimination and freedom of association and the right to collective bargaining. We will (i) pay rates of wages and benefits and observe conditions of work (including hours of work and days of rest) which are not lower than those established for the trade or industry where the work is carried out; and (ii) keep complete and accurate records of employment of workers at the site.

Workers relations. We therefore commit to developing and implementing a Human Resources Policy and Procedures applicable to all workers employed for the project in line with Standard 8 of the EIB's Environmental and Social Handbook. We will regularly monitor and report on its application to [insert name of the Contracting Authority] as well as on any corrective measures periodically deemed necessary.

Occupational and Public Health, Safety and Security. We commit to (i) complying with all applicable health and safety at work laws in the country of implementation of the contract; (ii) developing and implementing the necessary health and safety management plans and systems, in accordance with the measures defined in the Project's Environmental and Social Management Plan (ESMP) and the ILO Guidelines on occupational safety and management systems²⁰; (iii) providing workers employed for the project access to adequate, safe and hygienic facilities as well as living quarters in line with the provisions of Standard 9 of the EIB's Environmental and Social Handbook for workers living on-site; and (iv) using security management arrangements that are consistent with international human rights standards and principles, if such arrangements are required for the project.

Protection of the Environment. We commit to taking all reasonable steps to protect the environment on and off the site and to limit the nuisance to people and property resulting from pollution, noise, traffic and other outcomes of the operations. To this end, emissions, surface discharges and effluent from our activities will comply with the limits, specifications or stipulations as defined in [insert name of the relevant document]²¹ and the international and national legislation and regulations applicable in the country of implementation of the contract.

Environmental and social performance. We commit to (i) submitting [insert periodicity as indicated in the tender documents] environmental and social monitoring reports to [insert name of the Contracting Authority]; and (ii) complying with the measures assigned to us as set forth in the environmental permits [insert name of the relevant document if applicable]²² and any corrective or preventative actions set forth in the annual environmental and social monitoring report. To this end, we will develop and implement an Environmental and Social Management System commensurate to the size and complexity of the Contract and provide [insert name of the Contracting Authority] with the details of the (i) plans and procedures, (ii) roles and responsibilities and (iii) relevant monitoring and review reports.

We hereby declare that our tender price as offered for this contract includes all costs related to our environmental and social performance obligations as part of this contract. We commit to (i) reassessing, in consultation with [insert name of the Contracting Authority], any changes to the project design that may potentially cause negative environmental or social impacts; (ii) providing [insert name of the Contracting Authority] with a written notice and in a timely manner of any unanticipated environmental or social risks or impacts that arise during the execution of the contract and the implementation of the project previously not taken into account; and (iii) in consultation with [insert name of the Contracting Authority], adjusting environmental and social monitoring and mitigation measures as necessary to assure compliance with our environmental and social obligations.

Environmental and social staff. We shall facilitate the contracting authority's ongoing monitoring and supervision of our compliance with the environmental and social obligations described above. For this purpose, we shall appoint and maintain in office until the completion of the contract an Environmental and Social Management Team (scaled to the size and complexity of the Contract) that shall be reasonably satisfactory to the Contracting Authority and to whom the Contracting Authority shall have full and immediate access, having the duty and the necessary powers to ensure compliance with this Environmental and Social Covenant.

We accord the Contracting Authority and the EIB and auditors appointed by either of them, the right of inspection of all our accounts, records, electronic data and documents related to the environmental and social aspects of the current contract, as well as all those of our subcontractors.

Name

In the capacity of

Signed

Duly authorised to sign the contract for and on behalf of

Date

¹⁹ <http://www.ilo.org/global/standards/introduction-to-international-labour-standards/conventions-and-recommendations/lang--en/index.htm>

²⁰ http://www.ilo.org/safework/info/standards-and-instruments/WCMS_107727/lang--en/index.htm

²¹ For instance: ESIA (Environmental and Social Impact Assessment) and ESMP (Environmental and Social Management Plans).

²² For instance: ESIA (Environmental and Social Impact Assessment) and ESMP (Environmental and Social Management Plans).

Organization Chart & Deployment of staff-**Deleted**

Bidder's Name:- _____

Tender No.: _____

Name of Work: _____

The Bidder shall provide with the Bid a complete Schedule of deployment and Organization chart in the table below:

S.No.	Name	Qualification	Designation

Note:

The above shall be submitted by the bidder in accordance with the clause no.4 of Section-III, (Evaluation & Qualification Criteria), of Part-1 of Bid Document.

Form-5Method Statement

Bidder's Name:- _____

Tender No.: _____

Name of Work: _____

Each Bidder shall set out details of the Method Statement for the Works to demonstrate how it will meet the Employer's objective and requirements. As a minimum, the Method Statement shall address the following:

- (a) Details of the arrangements and methods which the Bidder proposes to implement for the construction of the Works, in sufficient detail to demonstrate their adequacy to achieve the requirements of the Contract including completion within the Time for Completion stated in the Particular Conditions of Contract.
- (b) Outline of the arrangements of the Bidder to manage coordination of Site access.
- (c) Comments on the geotechnical and subsurface aspects of the Works including materials, material sources and any constraints.
- (d) [Comments on any offshore or waterfront aspects of the Works.]; e.g. schedule of components to be manufactured off-shore and description of plants to be imported etc.
- (e) Comments on logistics and traffic management *[as may be appropriate]*.
- (f) Outline of the arrangements and organisation of the Bidder to ensure compliance with the Works Requirements.
- (g) Outline of the arrangements of the Bidder to carry out testing upon completion as specified in the Works Requirements.
- (h) The type of Superstructure proposed to be adopted may be submitted in detail (applicable for D&B viaduct work)
- (i) *[Insert other information, as may be appropriate.]*

Works Programme

Bidder's Name:- _____

Tender No.: _____

Name of Work: _____

1. The Bidder shall submit a Work Plan as a part of the Bid, which shall contain the following:
 - a. Proposed Works Programme.
2. The Bidder's proposed Works Programme shall indicate how the Bidder intends to organize and carry out the Works and achieve Stages and complete the whole of the Works by the appropriate Key Dates. The Works Programme shall be prepared in terms of weeks from the Commencement Date of Works.
3. The Bidder's Design Submission Programme shall cover the Design phase and include a schedule identifying, describing, cross-referencing and explaining the Design Packages and submissions, which it intends to submit.
4. The Design Submission Programme should take due account of the design coordination interface periods with other Designated Contractors and be consistent with the Works Programme.
5. The Works Programme shall include details as stipulated in Chapter 2 and 3 of the Works Requirements – General Specification, for review by the Engineer.
6. The proposed Works Programme or Programmes shall be developed as a critical path network using the Precedence Diagramming Method and be presented in bar chart and time scaled logic network format and shall clearly show the division of the Works, the start and completion dates for each activity and their inter-relationships and Key Dates. The network must be fully resourced and show the co-ordination with Designated Contractors.
7. The proposed Works Programme shall show achievement of all Key Dates as mentioned in **Section IX: Annexure-IX- G.**
8. The proposed Works Programme shall contain sufficient detail to assure the Employer of the feasibility of the plan and approach proposed by the Tenderer.
9. The Bidder should have regard to the possibility, as per Instructions to Bidders that during the bid evaluation period the proposed Works Programme may be developed into a Programme which, in the event of award of the Contract, would be the submission of the Preliminary Works Programme. To facilitate this process the Bidder shall, in the preparation of the proposed Works Programme, take due account of the provisions of Works Requirements in so far as they concern the Works Programme.
10. The proposed Works Programme shall be accompanied by a narrative statement that shall describe Programme activities, assumptions and logic in developing the works programme for Construction, EMP works etc.

This narrative statement shall also indicate which elements of the Works, the Bidder intends to carry out off-shore and/or in India with details of the proposed locations of where any such work is to be carried out, the facilities available and/or proposed to be set up. In particular the Bidder must clearly bring out how major activities (specifically the following) are proposed to be executed and explain his ability to mobilize the required plant, machinery and resources for the same.

11. The Bidders' attention is drawn to the Programme Logic Diagrams, which shows the general relationship between the Works under the Contract, Contract periods of Designated Contracts and Key Dates (Section IX. Particular Conditions Part A – Contract Data 'Table: Summary of Sections') (including that for completion of the Works). The logic diagrams shall be developed and submitted along with the Works Programmes as submitted during the course of the Works.

Form-7**Certificate of Compliance**

(On Bidder's Letterhead)

Bidder's Name:- _____

Tender No.: _____

Name of Work: _____

This Certificate is issued in the full knowledge that the Bid for the above referred work including the Technical Proposals submitted by us, are in Clause-by-Clause Compliance with the provisions of Bid Document i.e ITB, BDS, EQC, Works Requirements and other specifications, including Addenda/Corrigenda etc. thereon, accompanying the proposal.

Signed
Authorized Representative**Seal:****Date:**

Deployment of Construction Machinery/ Equipment / Systems**Deleted**

Bidder's Name:- _____

Tender No.: _____

Name of Work: _____

SN	Name of the Construction Machinery/ equipment / system	Min nos. required	Name of manufacturer and address	Year of Manufacture
1	2	3	4	5
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				

Note:

1. The above shall be submitted by the bidder in accordance with the clause no.5 of Section-III, (Evaluation & Qualification Criteria), of Part-1 of Bid Document.

Quality Assurance Plan**Deleted**

Bidder's Name:- _____

Tender No.: _____

Name of Work: _____

The Contractor shall establish and maintain a Quality Assurance System in construction procedures and the interfaces between them. This Quality Assurance system shall be applied without prejudice to, or without in any way limiting, any Quality Assurance Systems that the Contractor already maintains.

The Bidder shall submit as part of his Bid an Outline Quality Plan which shall contain sufficient information to demonstrate clearly the Bidder's proposals for achieving effective and efficient Quality Assurance System. The Outline Quality Plan should include an outline of the procedures and regulations to be developed and the mechanism by which they will be implemented for ensuring Quality as required.

The Bidder may be requested to amplify, explain or develop its Outline Quality Plan prior to the date of acceptance of the Bid and to provide more detail with a view to reaching provisional acceptance of such a plan.

Overall responsibility for Quality Assurance for construction / manufacture, testing, commissioning and DLP shall be with the bidder or jointly and severally of each member in case of JV/Consortium.

Outline Safety Assurance PlanBidder's Name:- _____ **Deleted**

Tender No.: _____

Name of Work: _____

The Bidder shall submit as part of its Bid an Outline System Safety Assurance Plan which shall contain sufficient information to demonstrate clearly the Bidder's proposals for achieving effective and efficient safety procedures in the design, construction / manufacture, transport, integrated testing and commissioning of Works.

The Outline System Safety Assurance Plan should include an outline of the safety procedures and regulations to be developed and the mechanism by which they will be implemented for ensuring safety including Hazard Analysis, Fire Control, Electromagnetic compatibility / Electro-magnetic Interference Control, reliability, availability and maintainability as given in this Bid.

The Bidder shall also include in the Outline Safety Plan sufficient information to demonstrate clearly the Bidder's proposal for the safety of the Works / Plant / Equipment and personnel at the site. On the basis of this information, the Contractor shall develop a Detailed Site Safety Plan as given in this Bid.

The Outline System Safety Assurance Plan shall be headed with a formal statement of policy in relation to safety and shall be sufficiently informative to define the Bidder's safety plans and set out in summary an adequate basis for the development of the Safety Plan to be submitted in accordance with the conditions of this Bid.

The Bidder may be requested to amplify, explain or develop its Outline System Safety Assurance Plan prior to the date of acceptance of the Bid and to provide more details with a view to reaching provisional acceptance of such a Plan.

Outline Safety, Health and Environmental Plan

Bidder's Name:- _____

Tender No.: _____

Name of Work: _____

The Bidder shall submit as part of his Bid an Outline Safety, Health & Environment Plan which shall contain sufficient information to demonstrate clearly the Bidder's proposals for achieving effective and efficient compliance to the conditions of contract on SHE manual (Refer: Section-XI of Part-3). The Outline Plan should include an outline of the procedures and regulations to be developed and the mechanism by which they will be implemented for ensuring safety as required by Sub-Clause 4.18 of the GC.

The Outline Plan shall be headed with a formal statement of policy in relation to Safety, Health & Environment protection and shall be sufficiently informative to define the Bidder's plans and set out in summary an adequate basis for the development of the Site Safety, Health & Environment Plan to be submitted in accordance with Sub-Clause 4.18 of the GC.

The Bidder may be requested to amplify, explain or develop its Outline Environmental Plan prior to the date of issue of Letter of Acceptance and to provide more details with a view to reaching provisional acceptance of such a plan.

Outline Project Management Plan**Deleted**

Bidder's Name:- _____

Tender No.: _____

Name of Work: _____

The Bidder shall submit with its Bid a Project Management Plan as prescribed in Works Requirements - inter-alia indicating names, qualifications, professional experience and corporate affiliation of all proposed key management and engineering personnel (above the level of supervisor) and specialists.

The Bidder shall include its proposals for its Co-ordination Control Team and include the name and qualifications of the Team Leader responsible for the interface co-ordination with Designated Contractors.

The Bidders shall provide a complete staffing schedule and organization chart as required under **clause-5, Section-III of Part-1 of Bid Document**.

The Bidder shall include in its proposals the methods that it shall employ to implement the Employer's requirements for Quality, Safety and Environmental Assurance. These shall include a commentary on how the programmes shall be initiated, maintained and reported, the tests that shall be carried out, and who shall be responsible for controlling and monitoring the programmes.

Bidder's Information Form

Bidder's Name:- _____

JV/Consortium member's Name _____

Tender No.: _____

Name of Work: _____

S.No.	Description	Information
1	Bidder's name	
2	In case of Joint Venture /Consortium, name of each member & a separate information form for each member shall be filled & enclosed.	
3	Bidder's country of registration: <i>[indicate country of Constitution]</i>	
4	Bidder's legal address [in country of registration]:	
5	Bidder's year of incorporation:	
6	Core Business	
7	Principal place of business	
8	Contact No. Of main Office at Principal place of business.	
9	Bidder's Present Address of Correspondence:	
10	E-Mail ID	
11	Bidder's authorized representative's information (As per POA / Declaration of authorized signatory)	
12	Name:	
13	Designation	
14	Address	
15	Telephone No.	

16	Mobile No.	
17	E-Mail ID	
18	PAN NO.(If Indian bidder)-Copy to be enclosed	
19	GST No. (If Indian bidder)-Copy to be enclosed	
20	Attach copies of original documents of following	
	Articles of Incorporation (or equivalent documents of constitution or association), and/or documents of registration of the legal entity named above.	
	(b) In case of JV/Consortium, letter of intent to form JV/Consortium or JV/Consortium agreement, in accordance with ITB 4.1.	
	(c) In case of Government-owned enterprise or institution, in accordance with ITB 4.3 documents establishing: <ul style="list-style-type: none">• Legal and financial autonomy• Operation under commercial law• Establishing that the Bidder is not dependent agency of the Employer	
21	Power of Attorney in favour of authorized signatory supported by board resolution	
22	A list of Board of Directors with DIN No., and the beneficial ownership.	

Bidder's JV/Consortium Information Form
(to be completed for each member of Bidder's JV/Consortium and any Specialized subcontractor if applicable)

Bidder's Name:- _____

JV/Consortium member's Name _____

Tender No.: _____

Name of Work: _____

Description	Information
Bidder's JV/Consortium name:	
JV/ Consortium member's name alongwith % participation and role (Lead / Other member):	
JV/ Consortium member's country of registration:	
JV/ Consortium member's year of constitution:	
JV/ Consortium member's legal address in country of constitution:	
JV/ Consortium member's authorized representative information Name: _____ Address: _____ Telephone/Fax numbers: _____ E-mail address: _____	
1. Attached are copies of original documents of <input type="checkbox"/> Articles of Incorporation (or equivalent documents of constitution or association), and/ or registration documents of the legal entity named above. <input type="checkbox"/> In case of a Government-owned enterprise or institution, documents establishing legal and financial autonomy, operation in accordance with commercial law, and absence of dependent status, in accordance with ITB 4.3. 2. Included are the organizational chart, a list of Board of Directors, and the beneficial ownership.	

Historical Contract Non-Performance, Pending Litigation and Litigation History
(to be completed by the Bidder and by each member of the Bidder's JV/Consortium)

Bidder's Name:- _____

JV/Consortium member's Name _____

Tender No.: _____

Name of Work: _____

Non-Performed Contracts in accordance with Section III, Evaluation and Qualification Criteria			
<input type="checkbox"/> Contract non-performance did not occur since 1 st January <i>[insert current year number less 5]</i> specified in Section III, Evaluation and Qualification Criteria, Clause No. 2.1.			
<input type="checkbox"/> Contract(s) not performed as indicated below since 1 st January <i>[insert current year number less 5]</i> specified in Section III, Evaluation and Qualification Criteria, requirement, Clause No. 2.1			
Year	Non-performed portion of contract	Contract Identification	Total Contract Amount (INR)
<i>[insert year]</i>	<i>[insert amount and percentage]</i>	Contract Identification: <i>[indicate complete contract name/ number, and any other identification]</i> Name of Employer: <i>[insert full name]</i> Address of Employer: <i>[insert street/city/country]</i> Reason(s) for nonperformance: <i>[indicate main reason(s)]</i>	<i>[insert amount]</i>
Pending Litigation, in accordance with Section III, Qualification Criteria and Requirements			
<input type="checkbox"/> No pending litigation in accordance with Section III, Qualification Criteria and Requirements, Clause No.2.3.			
<input type="checkbox"/> Pending litigation in accordance with Section III, Evaluation and Qualification Criteria, Clause No. 2.3 as indicated below.			
Year of dispute	Amount in dispute (currency)	Contract Identification	Total Contract Amount (INR)
		Contract Identification: _____ Name of Employer: _____ Address of Employer: _____ Matter in dispute: _____ Party who initiated the dispute: _____ Status of dispute: _____	

Financial Situation and Performance of Bidder

Bidder's Name: _____
 JV Member's Name _____
 Tender Number _____
 Name of Work _____

	Historic information for previous 05 Financial years				
Type of Financial Information	2018-19	2019-20	2020-21	2021-22	2022-23
Statement of Financial Position (Information from Balance Sheet)					
Total Assets (TA)					
Total Liabilities (TL)					
Current Assets (CA)					
Current Liabilities (CL)					
Current Ratio (CA/CL)					
Liquid Assets (LA)					
Liquid Liabilities (LL)					
Liquid Ratio (LA/LL)					
Working Capital (WC=CA-CL)					
Net Worth (NW)					
Cash & Cash Equivalent (Including Bank Balance)					
Sundry Debtors					
Information from Income Statement					
Total Revenue/Turnover (TR)					
Profits Before Taxes (PBT)					
Profit After Taxes (PAT)					

* See Section _____, Evaluation and Qualification Criteria, Clause No. _____

(Signature of the Authorised Signatory):

(Name and designation of the Authorised Signatory):

.....

Seal of Bidder.

Note:

- 1) In addition to the above Form, the Bidder shall provide a Certificate from Statutory Auditor certifying the above information along with valid UDIN.
- 2) Bidder are required to attach Financial Statements of preceding five Financial Year.
- 3) Net Worth (NW) means the aggregate value of the paid up share capital and all reserves created out of the profits and securities premium account, after deducting the aggregate value of the accumulated losses, deferred expenditures and misc. expenditures not written- of, as per the audited balance sheet but does not include reserves created out of revaluation of assets, write back of depreciation and amalgamation.
- 4) For all annual financial statements, periods mentioned are ending with 2022-23. In case of ending of financial is Month of December then, annual financial statements shall be ending with financial year 2023.

Average Annual Turnover

Bidder's Name: _____

JV Member's Name _____

Tender Number _____

Name of Work _____

Year	Annual turnover data			Updated value to Current year (Note 2)
	INR	Exchange Rate	Equivalent Amount (INR)	
	<i>(Indicate amount & Currency)</i>			
2022-23				
2021-22				
2020-21				
2019-20				
2018-19				
Average Annual Turnover *				

* See Section_____, Evaluation and Qualification Criteria, Clause No. _____

(Signature of the Authorised Signatory)

(Name and designation of the Authorised Signatory):

.....

Seal of Bidder.

Note:

- 1) *In addition to the above Form, the Bidder shall provide a Certificate from Statutory Auditor certifying the above information with valid UDIN.*
- 2) *All prices in foreign currency will be converted to Indian Rupees using the Exchange Rates for those currencies published by the Reserve Bank of India on the day 28 days (Base date) prior to the date of Bid submission.*

Form-18

Financial Resources

Bidder's Name: _____
JV Member's Name _____
Tender Number _____
Name of Work _____

Specify proposed sources of financing, such as liquid assets, lines of credit, and other financial, other than any contractual advance payments, net of current commitments, available to meet the cash flow requirement of the subject contract as specified in Section _____ Clause No. _____ (Evaluation and Qualification Criteria)

S. No.	Source of Finance	Amount (Indicate Currency)	Amount (In Equivalent INR)
1	Working Capital		
2	Bank CC & OD		
3	Line of Credit		
4	Any other Sources of Finance		
	Total Financial Resources		

(Signature of the Authorised Signatory)
(Name and designation of the Authorised Signatory):
.....

Seal of Bidder.

Note:

- (i) **Bankers Certificate for sanctioned Line of Credit to be submitted.**
- (ii) **In addition to the above Form, the Bidder shall provide a Certificate from Statutory Auditor certifying the above information.**

Form-19

Current Contract Commitments / Works in Progress

Bidder's Name: _____

JV Member's Name _____

Tender Number _____

Name of Work _____

Bidders and each member to a JV should provide information on their current commitments on all contracts that have been awarded, or for which a letter of intent or acceptance has been received, or for contracts approaching completion, but for which an unqualified, full completion certificate has yet to be issued.

Current Contract Commitments

S.No.	Name of Contract	Employer Name, address, Contact details, Email	Value of Outstanding work (Eq. INR)	Value of Outstanding work (Eq. INR)	Estimated Completion date	Average monthly invoicing of last six months (INR/monthly)
1						
2						
3						
4						
5						
6						
	Total					

(Signature of the Authorised Signatory)

(Name and designation of the Authorised Signatory):

.....

Seal of Bidder.

Note: In addition to the above Form, the Bidder shall provide a Certificate from Statutory Auditor certifying the above information.

General Construction / Works Experience*(Each Bidder or member of a JV/Consortium must fill this form)*

Bidder's Name: _____

JV/CONSORTIUM Member's Name _____

Tender No. : _____

Name of Work:- _____

Starting Year*	Ending Year	Contract Identification	Role of Bidder
		Name of Work: _____ Name, Address and <i>E-Mail ID</i> of Employer: _____ Contract value (as well as Revised Contract value if any): Status of work: On-Going/ Completed Date of Commencement: Date of Completion: Value of Work Executed (As per Experience Certificate):	
		Name of Work: _____ Name, Address and <i>E-Mail ID</i> of Employer: _____ Contract value (as well as Revised Contract value if any): Status of work: On-Going/ Completed Date of Commencement: Date of Completion: Value of Work Executed (As per Experience Certificate):	
		Name of Work: _____ Name, Address and <i>E-Mail ID</i> of Employer: _____ Contract value (as well as Revised Contract value if any): Status of work: On-Going/ Completed Date of Commencement: Date of Completion: Value of Work Executed (As per Experience Certificate):	

* See Section III Evaluation and Qualification Criteria – Clause No. 4.1

Note:

In support of the above, bidders are required to enclosed copy of work completion certificate issued by previous employer.

Specific Construction /Similar Works and Contract Management Experience*(Each Bidder or member of a JV/CONSORTIUM must fill this form)*

Bidder's Name: _____

JV/CONSORTIUM Member's Name _____

Tender No. : _____

Name of Work:- _____

Similar Contract No.	Information			
Contract Identification				
Award date				
Completion date				
Role in Contract	Prime Contractor <input type="checkbox"/>	Member in JV/CONSORTIUM <input type="checkbox"/>	Management Contractor <input type="checkbox"/>	Sub-contractor <input type="checkbox"/>
Total Contract Amount (INR)				
If member in a JV/CONSORTIUM or sub-contractor, specify participation in total Contract amount				
Employer's Name:				
Address:				
Telephone/fax number				
E-mail:				

* See Section III Evaluation and Qualification Criteria – Clause No. 4.2(a)

Note:-

In support of the above, bidders are required to enclosed work completion certificate issued by previous employer

Specific Construction / Similar Works and Contract Management Experience (continue.)

Similar Contract No.	Information
Description of the similarity in accordance with Sub-Factor 4.2(a) of Section III:	
1. Amount	
2. Physical size of required works items / Nos	
3. Complexity	
4. Methods/Technology	
5. Construction rate for key activities	
6. Other Characteristics	

Notes:

1. Documentary proof such as completion certificates from client clearly indicating the nature/scope of work, actual completion cost and actual date of completion for such work should be submitted. The offers submitted without this documentary proof shall not be evaluated.
2. In case the work is executed for private client, copy of work order, bill of quantities, bill wise details of payment received certified by CA, TDS certificates for all payments received and copy of final/last bill paid by client shall be submitted.
3. Value of successfully completed portion of any ongoing work up to date of Bid submission will also be considered for qualification of work experience criteria.

Form-22**Form of Bid Security
(Demand Guarantee)****Beneficiary:** _____**PERFORMANCE GUARANTEE No.:** _____**Guarantor:** _____

We have been informed that _____ (hereinafter called "the Applicant") has entered into Contract No. _____ dated _____ with the Beneficiary, for the execution of _____ (hereinafter called "the Contract").

Furthermore, we understand that, according to the conditions of the Contract, a performance guarantee is required.

At the request of the Applicant, we as Guarantor, waiving all objections and defences under the aforementioned contract, hereby irrevocably and independently undertake to pay the Beneficiary any sum or sums not exceeding in total an amount of _____ (____),¹ such sum being payable in the types and proportions of currencies in which the Contract Price is payable, upon receipt by us of the Beneficiary's first demand supported by the Beneficiary's statement, whether in the demand itself or in a separate signed document accompanying or identifying the demand, stating that the Applicant has failed to duly perform the aforementioned contract, without the Beneficiary needing to prove or to show grounds for your demand or the sum specified therein.

This guarantee shall expire, no later than the Day of, 2...², and any demand for payment under it must be received by us at this office indicated above on or before that date.

This guarantee is subject to the Uniform Rules for Demand Guarantees (URDG) 2010 Revision, ICC Publication No. 758, except that the supporting statement under Article 15(a) is hereby excluded.

[signature(s)]

¹ The Guarantor shall insert an amount representing the percentage of the Accepted Contract Amount specified in the Letter of Acceptance, less provisional sums, if any, and denominated either in the currency(cies) of the Contract or a freely convertible currency acceptable to the Beneficiary.

² Insert the date twenty-eight days after the expected completion date. The Employer should note that in the event of an extension of this date for completion of the Contract, the Employer would need to request an extension of this guarantee from the Guarantor. Such request must be in writing and must be made prior to the expiration date established in the guarantee. In preparing this guarantee, the Employer might consider adding the following text to the form, at the end of the penultimate paragraph: "The Guarantor agrees to a one-time extension of this guarantee for a period not to exceed [six months][one year], in response to the Beneficiary's written request for such extension, such request to be presented to the Guarantor before the expiry of the guarantee."

Note: All italicized text (including footnotes) is for use in preparing this form and shall be deleted from the final product.

Form 23**Form of Joint Bidding Agreement**
(JV/ Consortium Agreement)

(To be on non-judicial stamp paper of appropriate value as per Stamp Act relevant to place of execution, duly signed on each page and duly notarised by Notary Public. Foreign entities submitting the Bid are required to follow the applicable law in their country)

FORM OF JV/CONSORTIUM AGREEMENT BETWEEN
M/S....., M/S.....,
M/S..... AND M/S.....
FOR (.....)

THIS Consortium Agreement (hereinafter referred to as "Agreement") executed on the.....
day of (.....)

..... a company incorporated under the laws
of and having its Registered Office at (hereinafter called
the "Party 1", which expression shall include its successors, executors and permitted assigns), and

..... a company incorporated under the laws of
and having its Registered Office at (hereinafter called the "Party 2", which
expression shall include its successors, executors and permitted assigns) and

..... a Company incorporated under the laws
of and having its Registered Office
at (hereinafter called the "Party 3", which expression shall include
its successors, executors and permitted assigns)

*(The Bidding Consortium should list the name, address of its registered office and other details of all
the Consortium Members)*

for the purpose of submitting the Bid in response to the Bidding Documents and in the event of
selection as Successful Bidderto execute the Contract Agreement and/or other requisite documents,
and to carry out the '.....' ("Works") for Maharashtra Metro Rail Corporation Limited (Name
of Project.....) to be awarded by Maharashtra Metro Rail Corporation Limited (hereinafter
referred as "Maharashtra Metro Rail Corporation Limited" or "the Company").

Party 1, Party 2, and Party 3 are hereinafter collectively referred to as the "Parties" and individually as
a "Party".

WHEREAS Maharashtra Metro Rail Corporation Limited desired to engage a contractor for
..... [name of the Works] for Maharashtra Metro Rail Corporation Limited Rail Project.

AND WHEREAS the Consortium of [.....] (insert the names of all the Members)
intends to participate for the Bid, against the Bidding Documents issued to [Insert the
name of purchaser of Bidding Document].

AND WHEREAS Para BDS ITB 4.7 of the Instructions to Bidder stipulates that the Bidders bidding on
the strength of a Consortium shall submit a legally enforceable Consortium Agreement in a format
specified in the Bidding Documents.

NOW THEREFORE, THIS INDENTURE WITNESSTH AS UNDER:

In consideration of the above premises and agreement, all the parties in this Consortium do hereby mutually agree as follows:

1. In consideration of the selection of the Consortium as the Successful Bidder by the Company, we the Members of the Consortium and Parties to the Consortium Agreement do hereby unequivocally agree that M/s..... (Insert name of the Lead Member), shall act as the Lead Member as defined in the Bidding Documents for self and agent for and on behalf of (the names of all the other Members of the Consortium to be filled in here) to do on behalf of the Consortium, all or any of the acts, deeds or things necessary or incidental to the Consortium's Bid for the Contract including submission of the Bid, participating in meetings, responding to queries, submission of information/ documents and generally to represent the Consortium in all its dealings with Maharashtra Metro Rail Corporation Limited or any other Government Agency or any person, in connection with the Works until culmination of the process of bidding till the Contract is entered into with Maharashtra Metro Rail Corporation Limited and thereafter till the expiry of the Contract.
2. The Lead Member is hereby authorized by the Members of Consortium and Parties to the Consortium Agreement to bind the Consortium, incur liabilities and receive instructions for and on behalf of all Members. It is agreed by all the Members that entire execution of the Contract including payment shall be carried out exclusively through the Lead Member.
3. The Lead Member shall be liable and responsible for ensuring the individual and collective commitment of each of the Members of the Consortium in discharging all their respective obligations under the Contract with Maharashtra Metro Rail Corporation Limited. Each Consortium Member further undertakes to be individually liable for the performance of its part of the obligations without in any way limiting the scope of collective liability envisaged in this Agreement.
4. In case of any breach of any of the obligations as specified under clause 3 above by any of the Consortium Members, the Lead Member shall be liable to fulfil such obligation.
5. It is agreed that sharing of responsibilities hereto among the Consortium members shall not in any way be a limitation of responsibility of the Lead Member under these presents.
6. This Consortium Agreement shall be construed and interpreted in accordance with the Laws of _____.
7. It is hereby agreed that the Lead Member shall furnish the Bid Security, as stipulated in the Bidding Documents, on behalf of the Consortium.
8. It is hereby agreed that in case of selection of bidding Consortium as the Successful Bidder, the Parties to this Consortium Agreement do hereby agree that the Lead Member shall furnish the Performance Security on behalf of the Consortium, as stipulated in the Bidding Documents.
9. It is further expressly agreed that the Consortium Agreement shall be irrevocable and, for the Successful Bidder, shall remain valid over the term of the Contract, unless expressly agreed to the contrary by the Company.
10. The Lead Member is authorized and shall be fully responsible for the accuracy and veracity of the representations and information submitted by the Consortium Members respectively from time to time in response to the Bidding Documents for the purposes of the Bidding.
11. It is expressly understood and agreed between the Members that the responsibilities and obligations of each of the Members shall be as follows:
.....
.....
12. It is agreed by the Members that the above sharing of responsibilities and obligations shall not in any way be a limitation of joint and several responsibilities and liabilities of the Members, with

regards to all matters relating to the execution of the Works as envisaged in the Bidding Documents and the Contract. The Parties shall be jointly and severally liable for execution of the Works in accordance with the terms of the Contract and the Bidding Documents.

13. It is clearly agreed that the Lead Member shall ensure performance under the Contract and if one or more Consortium Members fail to perform its /their respective obligations under the agreement(s), the same shall be deemed to be a default by all the Consortium Members.
14. It is hereby agreed that in case of selection of the Consortium as the Successful Bidder, [the Lead Member shall furnish the Performance Security on behalf of the Consortium as stipulated in the Bidding Documents] / [the Performance Security as stipulated in the Bidding Documents shall be furnished by the Members on behalf of the Consortium in such proportion as may be agreed to between us]
15. It is agreed by all the Members that there shall be separate Consortium Bank Account (distinct from the bank accounts of the individual Members) to which the individual Members shall contribute their share capital and/or working capital and the financial obligations of the Consortium shall be discharged through the said Consortium Bank Account only and also all the payments received by the Consortium from the Employer shall be through that account alone.
16. It is hereby expressly agreed between the Parties to this Consortium Agreement that neither Party shall assign or delegate its rights, duties or obligations under this Agreement except with prior written consent of the Company.
17. We hereby agree to ratify all acts, deeds and things lawfully done by the aforesaid Lead Member pursuant to this Agreement and that all acts, deeds and things done by the aforesaid Lead Member shall and shall always be deemed to have been done by us/Consortium.

This Consortium Agreement

- (a) has been duly executed and delivered on behalf of each Party hereto and constitutes the legal, valid, binding and enforceable obligation of each such Party,
- (b) sets forth the entire understanding of the Parties hereto with respect to the subject matter hereof including the Consortium/Bidder's legal persona and there is or are no other agreements relating to the Consortium/Bidder's incorporation, constitution, powers or organisation which may affect in any way its ability to carry out the Works;
- (c) may not be amended or modified except in writing signed by each of the Parties and with prior written consent of the Company.

IN WITNESS WHEREOF, the Parties to the Consortium Agreement have, through their authorized representatives, executed these presents and affixed common seals of their respective companies on the Day, Month and Year first mentioned above.

Common Seal of
has been affixed in my/our
presence pursuant to the
Board of Director's resolution
dated

For and on behalf of
Consortium Member (party 1)
M/s.....

.....
(Signature)
representative)

.....
(Signature of authorized

Name:

Name:

Designation:.....

Designation:

Place:

Date:

Witness:

1.
(Signature)
Name
Designation.....
2.
(Signature)
Name
Designation.....

Common Seal of
has been affixed in my/our
presence pursuant to the
Board of Director's
resolution dated

For and on behalf of
Consortium Member (Party 2)
M/s.....

.....
(Signature)

Name:
Designation:
Place:
Date:

.....
(Signature of authorized
representative)
Name:
Designation:

WITNESS

1.
(Signature)
Name
Designation.....
2.
(Signature)
Name
Designation.....

Attested:

.....
(Signature)
(Notary Public)

Place:
Date:

Common Seal of
has been affixed in my/our
presence pursuant to the
Board of Director's
resolution dated

For and on behalf of
Consortium Member (Party 3)
M/s.....

.....
(Signature)

.....
(Signature of authorized

Name:
Designation:
Place:
Date:

representative)
Name:
Designation:

WITNESS

1.
(Signature)
Name
Designation.....

2.
(Signature)
Name
Designation.....

Attested:

.....
(Signature)
(Notary Public)

Place:
Date:

Form of Legal Capacity / Power of Attorney
(Refer ITB20.2)

(To be forwarded on the letterhead of the Bidder or Lead Member of JV/Consortium, as the case may be)

Format for Board Resolution**(A) Format for the Board resolution to be passed by a Bidder (not applicable in case of JV/Consortium)**

The Board, after discussion, at the duly convened Meeting on (Insert date), with the consent of all the Directors present and in compliance of the provisions of the Companies Act, 1956, passed the following Resolution:

RESOLVED THAT pursuant to the applicable provisions of the Companies Act, 1956 and as permitted under the Memorandum and Articles of Association of the Company, approval of the Board be and is hereby accorded to submit a Bid in response to the Bidding Documents dated _____ issued by Maharashtra Metro Rail Corporation Limited (Maharashtra Metro Rail Corporation Limited) for *[Insert name of the work]* for Maharashtra Metro Rail Corporation Limited.

FURTHER RESOLVED THAT Mr./Ms....., (insert the name and designation of the concerned official of the Company) be and is hereby authorized to take all the steps required to be taken by the Company for submission of the aforesaid Bid, including in particular, signing the Bid, making changes thereto and submitting amended Bid, signing and executing all the documents related to the Bid, certified copy of this Board resolution or letter or undertakings, etc., required to be submitted to Maharashtra Metro Rail Corporation Limited as part of the Bid or such other documents as may be necessary in this regard and to do in our name and our behalf all or any of the acts, deeds or things necessary or incidental to submission of our said Bid including signing and executing the Contract Documents, making representations to Maharashtra Metro Rail Corporation Limited or any other authority, and providing information / responses to Maharashtra Metro Rail Corporation Limited, representing us in all matters before Maharashtra Metro Rail Corporation Limited, and generally dealing with Maharashtra Metro Rail Corporation Limited in all matters in connection with our Bid till the completion of the bidding process as per the terms of the above said Bidding Documents and further till the Contract is entered into with Maharashtra Metro Rail Corporation Limited and thereafter till the expiry of the Contract.

FURTHER RESOLVED THAT a power of attorney as per the draft attached to the Bidding Documents be issued in favour of the above named person, _____, to be executed by Mr. _____ or Mr. _____, Directors of the Company under the Common seal of the Company, affixation thereof to be witnessed by one or both of the above named Directors and by Mr. _____, (insert the name and designation of the concerned official of the Company) or as per the Memorandum and Articles of Association of the Company.

Signature and stamp of Company Secretary / Managing Director/Directors of Bidding entity

Notes:

1. This certified true copy should be submitted on the letterhead of the Company, signed by the Company Secretary / Managing Director/Director of the Bidder.
2. The contents of the format may be suitably re-worded indicating the identity of the entity passing the resolution.
3. In the event the Board resolution is from a company incorporated outside India, the same needs to be notarized by a notary in the home country of company passing the resolution and legalized by the Indian Embassy there. However, in case such company is from a country which has signed The Hague Legislation Convention 1961, then the Board Resolution is not required to be legalized by the Indian Embassy if it carries a conforming Apostille certificate.
4. This format may be modified only to the limited extent required to comply with the local regulations and laws applicable to a foreign entity submitting this resolution. For example, reference to Companies Act 1956 may be suitably modified to refer to the law applicable to the entity submitting the resolution. However, in such case, the foreign entity shall submit an unqualified opinion issued by the legal counsel of such foreign entity, stating that the Board resolutions are in compliance with the applicable laws of the respective jurisdictions of the issuing company and the authorizations granted therein are true and valid.

Or

(B) Format for the Board resolution to be passed by “Lead Member” of JV/Consortium (applicable in case the Bidder is a JV/Consortium)

The Board, after discussion, at the duly convened Meeting on (Insert date), with the consent of all the Directors present and in compliance of the provisions of the Companies Act, 1956, passed the following Resolution:

RESOLVED THAT pursuant to the applicable provisions of the Companies Act, 1956 and as permitted under the Memorandum and Articles of Association of the Company, approval of the Board be and is hereby accorded to submit a Bid in response to the Bidding Documents dated _____ issued by Maharashtra Metro Rail Corporation Limited (Maharashtra Metro Rail Corporation Limited) for ‘.....’ [Name of the work] for Maharashtra Metro Rail Corporation Limited in Consortium with _____ (insert the name and address of the other Consortium members).

FURTHER RESOLVED THAT pursuant to the applicable provisions of the Companies Act, 1956 and as permitted under the Memorandum and Articles of Association of the Company, approval of the Board be and is hereby accorded to execute a **JV/Consortium Agreement** as per the format annexed to the aforesaid Bidding Documents with _____ (insert the name and address of the other **JV/Consortium** members).

FURTHER RESOLVED THAT approval of the Board be and is hereby accorded to the Company to accept and act as the **Lead Member** of the aforesaid **JV/Consortium** and also as true and lawful attorney to do in the name and on behalf of the **JV/Consortium**, all such acts, deeds and things necessary in connection with or incidental to submission of Consortium’s Bid in response to the Bidding Documents dated _____ issued by Maharashtra Metro Rail Corporation

Limited for '.....' [name of the work] including signing and submission of the Bid and all documents related to the Bid as specified in the Bidding Documents, including but not limited to undertakings, letters, certificates, acceptances, clarifications, guarantees or any other document, which Maharashtra Metro Rail Corporation Limited may require us to submit and carrying out the Contract and doing all necessary deeds and things as may be required in respect of the above and also for making representations to Maharashtra Metro Rail Corporation Limited and providing information / responses to Maharashtra Metro Rail Corporation Limited, representing the Consortium in all matters before Maharashtra Metro Rail Corporation Limited, and generally dealing with Maharashtra Metro Rail Corporation Limited and/or any other authority in all matters in connection with Consortium's Bid, till completion of the bidding process in accordance with the Bidding Documents and further till the Contract is entered into with Maharashtra Metro Rail Corporation Limited and thereafter till the expiry of the Contract.

FURTHER RESOLVED THAT Mr./Ms....., (insert the name and designation of the concerned official of the Company) be and is hereby authorized to take all the steps required to be taken by the Company for submission of the **JV/Consortium's** Bid, including in particular, signing the Bid, making changes thereto and submitting amended Bid, signing and executing all the documents related to the Bid, certified copy of this Board resolution or letter or undertakings, etc., required to be submitted to Maharashtra Metro Rail Corporation Limited as part of the Bid or such other documents as may be necessary in this regard and to do in the name and on behalf the **JV/Consortium** all or any of the acts, deeds or things necessary or incidental to submission of said Bid including signing and executing the Contract Documents, making representations to Maharashtra Metro Rail Corporation Limited or any other authority, and providing information / responses to Maharashtra Metro Rail Corporation Limited, representing the **JV/Consortium** in all matters before Maharashtra Metro Rail Corporation Limited, and generally dealing with Maharashtra Metro Rail Corporation Limited in all matters in connection with our Bid till the completion of the bidding process as per the terms of the above said Bidding Documents and further till the Contract is entered into with the Company and thereafter till the expiry of the Contract.

FURTHER RESOLVED THAT a power of attorney as per the draft attached to the Bidding Documents be issued in favour of the above named person, _____, to be executed by Mr. _____ or Mr. _____, Directors of the Company under the Common seal of the Company, affixation thereof to be witnessed by one or both of the above named Directors and by Mr. _____, (insert the name and designation of the concerned official of the Company) or as per the Memorandum and Articles of Association of the Company.

Signature and stamp of Company Secretary / Managing Director/Directors of Bidding entity

Notes:

1. This certified true copy should be submitted on the letterhead of the Company, signed by the Company Secretary / Managing Director/Directors of the Bidding Entity.
2. The contents of the format may be suitably re-worded indicating the identity of the entity passing the resolution.
3. In the event the Board resolution is from a company incorporated outside India, the same needs to be notarized by a notary in the home country of company passing the resolution and legalized by the Indian Embassy there. However, in case such company is from a country which has signed The Hague Legislation Convention 1961, then the Board

Resolution is not required to be legalized by the Indian Embassy if it carries a conforming Apostille certificate.

4. This format may be modified only to the limited extent required to comply with the local regulations and laws applicable to a foreign entity submitting this resolution. For example, reference to Companies Act 1956 may be suitably modified to refer to the law applicable to the entity submitting the resolution. However, in such case, the foreign entity shall submit an unqualified opinion issued by the legal counsel of such foreign entity, stating that the Board resolutions are in compliance with the applicable laws of the respective jurisdictions of the issuing company and the authorizations granted therein are true and valid.

(C) Format for the Board resolution to be passed by a Member other than the Lead Member of JV/Consortium (applicable in case the Bidder is a JV/Consortium)

The Board, after discussion, at the duly convened Meeting on (Insert date), with the consent of all the Directors present and in compliance of the provisions of the Companies Act, 1956, passed the following Resolution:

RESOLVED THAT pursuant to the applicable provisions of the Companies Act, 1956 and as permitted under the Memorandum and Articles of Association of the Company, approval of the Board be and is hereby accorded to submit a Bid in response to the Bidding Documents dated _____ issued by Maharashtra Metro Rail Corporation Limited (Maharashtra Metro Rail Corporation Limited) for '.....' [name of the work] for Maharashtra Metro Rail Corporation Limited in **JV/Consortium** with _____ (insert the name and address of the other **JV/Consortium** members).

FURTHER RESOLVED THAT pursuant to the applicable provisions of the Companies Act, 1956 and as permitted under the Memorandum and Articles of Association of the Company, approval of the Board be and is hereby accorded to execute a **JV/Consortium** Agreement as per the format annexed to the aforesaid Bidding Documents with _____ (insert the name and address of the other **JV/Consortium** members).

FURTHER RESOLVED THAT approval of the Board be and is hereby accorded to constitute, appoint and authorize _____ (name and registered office address of the **Lead Member**), which is one of the Members of the **JV/Consortium**, to act as the **Lead Member** of the aforesaid **JV/Consortium** and also as true and lawful attorney, to do in the name and on behalf of the **JV/Consortium**, all such acts, deeds and things necessary in connection with or incidental to submission of **JV/Consortium's** Bid in response to the Bidding Documents dated _____ issued by Maharashtra Metro Rail Corporation Limited for '.....' [name of the work] including signing and submission of the Bid and all documents related to the Bid as specified in the Bidding Documents, including but not limited to undertakings, letters, certificates, acceptances, clarifications, guarantees or any other document, which Maharashtra Metro Rail Corporation Limited may require us to submit and carrying out the Contract and doing all necessary deeds and things as may be required in respect of the above and also for making representations to Maharashtra Metro Rail Corporation Limited and providing information / responses to Maharashtra Metro Rail Corporation Limited, representing the **JV/Consortium** in all matters before Maharashtra Metro Rail Corporation Limited, and generally dealing with Maharashtra Metro Rail Corporation Limited and/or any other authority in all matters in connection with our Bid, till completion of the bidding process in accordance with the Bidding Documents and further till the Contract is entered into with Maharashtra Metro Rail Corporation

Limited and thereafter till the expiry of the Contract.

FURTHER RESOLVED THAT a power of attorney as per the draft attached to the Bidding Documents be issued in favour of the above said Lead Member, _____, to be executed by Mr. _____ or Mr. _____, Directors of the Company under the Common seal of the Company, affixation thereof to be witnessed by one or both of the above named Directors and by Mr. _____, (insert the name and designation of the concerned official of the Company) or as per the Memorandum and Articles of Association of the Company.

FURTHER RESOLVED THAT a power of attorney as per the draft attached to the Bidding Documents be issued in favour of Mr./Ms....., (insert the name and designation of the concerned official of the Company) to be executed by Mr. _____ or Mr. _____, Directors of the Company under the Common seal of the Company, affixation thereof to be witnessed by one or both of the above named Directors and by Mr. _____, (insert the name and designation of the concerned official of the Company) or as per the Memorandum and Articles of Association of the Company.

FURTHER RESOLVED THAT Mr./Ms....., (insert the name and designation of the concerned official of the Company) be and is hereby authorized to take all the steps required to be taken by the Company for submission of the aforesaid Bid, including in particular, signing and executing all the documents related to the Bid, certified copy of this Board resolution or letter or undertakings, etc., required to be submitted to Maharashtra Metro Rail Corporation Limited as part of the Bid or such other documents as may be necessary in this regard and to do in our name and on our behalf all or any of the acts, deeds or things necessary or incidental to give effect to this resolution.

Signature and stamp of Company Secretary / Managing Director/Directors of Bidding Entity

Notes:

1. This certified true copy should be submitted on the letterhead of the Company, signed by the Company Secretary / Managing Director/Director of the Bidder.
2. The contents of the format may be suitably re-worded indicating the identity of the entity passing the resolution.
3. In the event the Board resolution is from a company incorporated outside India, the same needs to be notarized by a notary in the home country of company passing the resolution and legalized by the Indian Embassy there. However, in case such company is from a country which has signed The Hague Legislation Convention 1961, then the Board Resolution is not required to be legalized by the Indian Embassy if it carries a conforming Apostille certificate.
4. This format may be modified only to the limited extent required to comply with the local regulations and laws applicable to a foreign entity submitting this resolution. For example, reference to Companies Act 1956 may be suitably modified to refer to the law applicable to the entity submitting the resolution. However, in such case, the foreign entity shall submit an unqualified opinion issued by the legal counsel of such foreign entity, stating that the Board resolutions are in compliance with the applicable laws of the respective jurisdictions of the issuing company and the authorizations granted therein are true and valid.

(D) Power of Attorney to be provided by each of the Members of the JV/Consortium (other than the Lead Member) in favour of the Lead Member of Bidding Entity

WHEREAS Maharashtra Metro Rail Corporation Limited, (the Company) has issued the Bidding Documents on _____ / Tender No. for inviting Bids for '.....' [name of the work] for Maharashtra Metro Rail Corporation Limited on the terms and contained in the Bidding Documents;

AND WHEREAS, and (Insert names of all Members of Consortium) the Members of the Consortium are desirous of submitting a Bid in response to the Bidding Documents, and if selected, undertaking the responsibility of '*Insert the name of the work*' as per the terms of the Bidding Documents;

AND WHEREAS all the Members of the **JV/Consortium** have agreed under the **JV/Consortium** Agreement dated entered into between all the Members and submitted along with the Bid to appoint (Insert the name and address of the Lead Member) as Lead Member to represent all the Members of the **JV/Consortium** for all matters regarding the Bidding Documents and the Bid;

AND WHEREAS pursuant to the terms of the Bidding Documents and the **JV/Consortium** Agreement, we, the Members of the **JV/Consortium** hereby designate M/s (Insert name of the Lead Member) as the Lead Member to represent us in all matters regarding the Bid and the Bidding Documents, in the manner stated below:-

Know all men by these presents, We (Insert name and address of the registered office of the Member-1), (Insert name and address of the registered office of the Member-2) (Insert name and address of the registered office of the Member-n) do hereby constitute, appoint and authorize (name and registered office address of the Lead Member), which is one of the Members of the **JV/Consortium**, to act as the **Lead Member** and our true and lawful attorney, to do in our name and on our behalf, all such acts, deeds and things necessary in connection with or incidental to submission of JV/Consortium's Bid in response to the *Bidding Document dated / Tender No* _____ issued by the Company for '.....' [name of the work] including signing and submission of the Bid and all documents related to the Bid as specified in the Bidding Documents, including but not limited to undertakings, letters, certificates, acceptances, clarifications, guarantees or any other document, which the Company may require us to submit and carrying out the Contract and doing all necessary deeds and things as may be required in respect of the above. The aforesaid Attorney shall be further authorized for making representations to the Company named in the Bidding Documents, and providing information / responses to the Company named in the Bidding Documents, representing us and the **JV/Consortium** in all matters before the Company named in the Bidding Documents, and generally dealing with the Company named in the Bidding Documents and/or any other authority in all matters in connection with our Bid, till completion of the bidding process in accordance with the Bidding Documents and further till the Contract is entered into with the Company and thereafter till the expiry of the Contract.

We, as Members of the Consortium, hereby agree to ratify all acts, deeds and things done by our said attorney pursuant to this Power of Attorney and that all acts, deeds and things done by our aforesaid attorney shall be binding on us and shall always be deemed to have been done by us.

All the terms used herein but not defined shall have the meaning ascribed to such terms in the Bidding Documents.

Signed by the within named
.....[Insert the name of the executant company]
through the hand of

Mr.
(duly authorized by the Board to issue such Power of Attorney)

Signature of Executant

Dated this day of

Accepted

.....
Signature of Attorney
(Name, designation and address of the Attorney)

Attested

.....
(Signature of the executant)
(Name, designation and address of the executant)

.....
Signature and stamp of Notary of the place of execution

Common seal of has been affixed in my/our presence pursuant to Board of Director's Resolution dated.....

WITNESS:

1.
(Signature)

Name
Designation.....

2.
(Signature)

Name
Designation.....

Notes:

1. The mode of execution of the power of attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executant(s) and the same should be under common seal of the executant affixed in accordance with the applicable procedure. Further, the person whose signatures are to be provided on the power of attorney shall be duly authorized by the executant(s) in this regard.
2. In the event, power of attorney has been executed outside India, the same needs to be notarized by a notary in the home country of company executing this power of attorney and legalized by the Indian Embassy there. However, in case such company is from a country which has signed The Hague Legislation Convention 1961, then the said power of attorney is not required to be legalized by the Indian Embassy if it carries a conforming Appostille certificate.

3. Also, wherever required, the executant(s) should submit for verification the extract of the chartered documents and documents such as a Board resolution / power of attorney, in favour of the person executing this power of attorney for delegation of power hereunder on behalf of the executant(s).

(E) Format for PoA for Lead Member of JV/Consortium
POWER OF ATTORNEY

(To be on non-judicial stamp paper of appropriate value as per Stamp Act relevant to place of execution and notarised with Notary Public. Foreign companies submitting Bids are required to follow the applicable law in their country)

Power of Attorney to be provided by the Bidder Company/ **Lead Member** in favour of its representative as evidence of authorized signatory's authority.

Know all men by these presents, We(name and address of the registered office of the Bidding Company or Lead Member of the Bidding **JV/Consortium**, as applicable) do hereby constitute, appoint and authorize Mr./Ms.....(name and residential address) who is presently employed with us and holding the position of _____, as our Attorney to do in our name and our behalf all or any of the acts, deeds or things necessary or incidental to submission of our Bid for '.....' [name of the work] for Maharashtra Metro Rail Corporation Limited in response to the Bidding Document dated _____ issued by Maharashtra Metro Rail Corporation Limited (Maharashtra Metro Rail Corporation Limited) (the Company) including signing and submission of the Bid and all other documents related to the bidding, including but not limited to undertakings, letters, certificates, acceptances, clarifications, guarantees or any other document which the Company may require us to submit the bid and also signing and executing the Contract Documents. The aforesaid Attorney is further authorized for making representations to the Company or any other authority, and providing information / responses to the Company, representing us in all matters before the Company, and generally dealing with the Company in all matters in connection with our Bid till the completion of the bidding process as per the terms of the Bidding Documents and further till the Contract is entered into with the Company and thereafter till the expiry of the Contract.

We hereby agree to ratify all acts, deeds and things done by our said attorney pursuant to this Power of Attorney and that all acts, deeds and things done by our aforesaid attorney shall be binding on us and shall always be deemed to have been done by us.

(Add in the case of a **JV/Consortium**)

Our firm is a Member/Lead member of the **JV/Consortium** of _____, _____ and _____

All the terms used herein but not defined shall have the meaning ascribed to such terms under the Bidding Documents.

Signed by the within named
.....[Insert the name of the executant company]
through the hand of
Mr.
duly authorized by the Board to issue such Power of Attorney
Signature of Executant of POA

Dated this day of

Accepted

.....
Signature of Attorney
(Name, designation and address of the Attorney)

Attested
.....
(Signature of the executant)

(Name, designation and address of the executant)

.....

Signature and stamp of Notary of the place of execution

Common seal of has been affixed in my/our presence pursuant to Board of Director's Resolution dated.....

WITNESS

1.
(Signature)

Name
Designation.....

2.
(Signature)

Name
Designation.....

Notes:

1. The mode of execution of the power of attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executant(s) and the same should be under common seal of the executant affixed in accordance with the applicable procedure. Further, the person whose signatures are to be provided on the power of attorney shall be duly authorized by the executant(s) in this regard.
2. In the event, power of attorney has been executed outside India, the same needs to be duly notarized by a notary public of the jurisdiction where it is executed.
3. Also, wherever required, the executant(s) should submit for verification the extract of the charter documents and documents such as a board resolution / power of attorney, in favour of the person executing this power of attorney for delegation of power hereunder on behalf of the executant(s).

(F) Format for PoA for Other Member(s)
POWER OF ATTORNEY

(To be on non-judicial stamp paper of appropriate value as per Stamp Act relevant to place of execution and notarised with Notary Public . Foreign companies submitting Bids are required to follow the applicable law in their country)

Power of Attorney to be provided by **each Member** other than the **Lead Member** in favor of its representative as evidence of authorized signatory's authority. (Applicable to **JV/Consortium** only)

Know all men by these presents, We(name and address of the registered office of the Member of the **JV/Consortium**, as applicable) do hereby constitute, appoint and authorize Mr./Ms.....(name and residential address) who is presently employed with us and holding the position of _____, as our Attorney to sign bid document and execute the Contract Agreement and any other requisite document in our name and our behalf for *Tender No.* '.....' *[name of the work]* for Maharashtra Metro Rail Corporation Limited in response to the Bidding Document dated _____ issued by Maharashtra Metro Rail Corporation Limited (Maharashtra Metro Rail Corporation Limited) (the Company) and to do all or any of the acts, deeds or things necessary or incidental to the above.

We hereby agree to ratify all acts, deeds and things done by our said attorney pursuant to this Power of Attorney and that all acts, deeds and things done by our aforesaid attorney shall be binding on us and shall always be deemed to have been done by us.

(Add in the case of a Consortium)

Our firm is a Member of the Consortium of _____, _____ and _____

All the terms used herein but not defined shall have the meaning ascribed to such terms under the Bidding Documents.

Signed by the within named

.....[Insert the name of the executant company]

through the hand of

Mr.

Signature of executant

duly authorized by the Board to issue such Power of Attorney (As per board resolution)

Dated this day of

Accepted

.....

Signature of Attorney

(Name, designation and address of the Attorney)

Attested

.....

(Signature of the executant)

(Name, designation and address of the executant)

.....

Signature and stamp of Notary of the place of execution

Common seal of has been affixed in my/our presence pursuant to Board of Director's Resolution dated.....

WITNESS

1.
(Signature)

Name
Designation.....

2.
(Signature)

Name
Designation.....

Notes:

1. The mode of execution of the power of attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executant(s) and the same should be under common seal of the executant affixed in accordance with the applicable procedure. Further, the person whose signatures are to be provided on the power of attorney shall be duly authorized by the executant(s) in this regard.
2. In the event, power of attorney has been executed outside India, the same needs to be duly notarized by a notary public of the jurisdiction where it is executed.
3. Also, wherever required, the executant(s) should submit for verification the extract of the charter documents and documents such as a board resolution / power of attorney, in favour of the person executing this power of attorney for delegation of power hereunder on behalf of the executant(s).

Letter of Undertaking Regarding Confidentiality of Bid Information

(This document is to be prepared by the Bidder and submitted on Bidder's Letterhead as part of Technical Package as per BDS 26.4)

To:**Date:**

THE MANAGING DIRECTOR,
Maharashtra Metro Rail Corporation Limited
Civil Court Metro Station, Nyayamurti Ranade Path, Pune-411005,
Maharashtra, INDIA

Ref:-

Bidder's Name: _____

Tender No. : _____

Name of Work:- _____

We (Name of Bidder / Consortium) hereby undertake that the Bid drawings, both in hard copy and digitized format, and the Bidding documents purchased as a necessary part of our preparation of this Bid shall be used solely for the preparation of the Bid and that if the Bid is successful, shall be used solely for the execution of Works.

We further undertake that the aforesaid Bid drawings and documents prepared by Maharashtra Metro Rail Corporation Limited, shall not be used in whole, in part or in any altered form on any other project, scheme, design or proposal that the Bidder / Consortium / Members of Consortium or its/their parent companies or sub-contractors of the Bidder / Consortium are, or will be involved with either in India or in any other Country.

Signed:

For and on behalf of

(Name of Bidder / Joint Venture / Consortium)

(To be signed by each member of the Joint Venture / Consortium, as applicable)

* In case of a JV/Consortium, to be submitted by the Authorized representative of the Lead Member.

Undertaking for Downloaded Bidding Documents

Bidder's Name: _____

Tender No. : _____

Name of Work:- _____

We hereby confirm that, we have downloaded the complete set of Bid Documents along with the set of enclosures hosted in e-tendering portal <https://mahametrorail.etenders.in>.

We confirm that the Bidding Documents has not been edited or modified by us. In case, it is observed by Maharashtra Metro Rail Corporation Limited that the Bidding Documents have been edited or modified, we agree for the rejection of our Bid by Maharashtra Metro Rail Corporation Limited.

Company name

Name

Signature

Address of correspondence

E-mail ID

Phone Fax

* In case of a JV/Consortium, to be submitted by the Authorized representative of the Lead Member.

Form-27**Form of Certificate confirming submission of all documents of Financial Package in the Technical Package with prices left blank**

Bidder's Name: _____

Tender No. : _____

Name of Work:- _____

1. This is to certify that the copy of all the documents of Financial Package, submitted with the Technical Package, is a true Copy of the Financial Package with prices left blank.
2. It is further certified that there are no additional comments, remarks, deviations, terms and conditions in our Financial Package and even if it is there, it shall be treated as NULL and VOID and stand withdrawn.

SIGNATURE OF BIDDER

* In case of a JV/Consortium, to be submitted by the Authorized representative of the Lead Member.

Form of Certificate confirming downloading of all Bidding Documents, Corrigendum and Addendum

Bidder's Name: _____

Tender No. : _____

Name of Work:- _____

This is to certify that we, M/s _____ [* Name of the Bidder] have downloaded all Bidding Documents, Corrigendum, Clarifications and Addenda for Contract No. _____ as listed below:

1. Addendum No.
2.
3.
4.

SIGNATURE OF BIDDER

* In case of a JV/Consortium, to be submitted by the Authorized representative of the Lead Member.

Form of Declaration for non-engagement of any agent, middleman or intermediary

Bidder's Name: _____

Tender No. : _____

Name of Work:- _____

[We hereby declare / We hereby jointly and severally]@ declare that the submission of this Bid confirms that no agent, middleman or any intermediary has been, or will be engaged to provide any services, or any other item or work related to the award and performance of this Contract. We further confirm and declare that no agency commission or any payment, which may be construed as an agency commission, has been, or will be paid and that the Bid price does not include any such amount. We acknowledge the right of the Employer, if it finds to the contrary, to declare our Bid to be non-compliant and if the Contract has been awarded to declare the Contract NULL and VOID.

SIGNATURE OF THE BIDDER

* In case of a JV/Consortium, to be submitted by the Authorized representative of the Lead Member

Form No.30**Form of certificate confirming careful examination of all the contents of Bidding Documents
and signing of all pages of Bidder's proposal**

Bidder's Name: _____

Tender No. : _____

Name of Work:- _____

This is to certify that we, M/s _____ [*Name of the company/JV/Consortium] have carefully examined all the contents of the Bidding Documents including Addenda (if any) and all the pages of our proposal have been signed and stamped by our authorized signatory.®.

SIGNATURE OF BIDDER

**In case of a joint venture or Consortium, such pages to be signed by authorized signatory of the Lead member.

Form No.31

Undertaking for passing on benefits of exemptions to Maharashtra Metro Rail Corporation Limited and for adjustment of amounts due from balance due

(To be submitted on Bidder's Letterhead)

Dated:.....

Letter of Undertaking

Bidder's Name: _____

Tender No. : _____

Name of Work:- _____

I _____ (State Name of Director/Partner/ Karta/Authorized Person) in capacity of _____ of _____ (State name of the undertaking organization) here by undertake to reimburse / pass on benefit of any duty draw back / export, import incentive / exemption / concession / benefit etc. obtained for the Maharashtra Metro Rail Corporation Limited project to Maharashtra Metro Rail Corporation Limited. I will maintain proper records as required by Maharashtra Metro Rail Corporation Limited and relevant statute. I will furnish such records to Maharashtra Metro Rail Corporation Limited as and when required by them.

I agree to adjustment of any benefits/ duty draw back / export, import incentive / exemptions / concessions to be made from the balance due to me without any prejudice.

I also undertake to indemnify Maharashtra Metro Rail Corporation Limited in case of any loss caused due to non-reimbursement / passing on the benefit of duty draw back / export, import incentive / exemption / concession etc.

I state that everything declared by me is true and correct to my belief.

Signed.....

For on behalf of

(Name of Bidder / Consortium)

* In case of a JV/Consortium, to be submitted by the Authorized representative of the Lead Member

Undertaking for obtaining registrations under various fiscal and labour laws

(To be submitted on Bidder's Letterhead)

Dated:.....

Letter of Undertaking

Bidder's Name: _____

Tender No. : _____

Name of Work:- _____

I _____ (State Name of Director/Partner /Authorized Person) in capacity of _____ of _____ (State name of the undertaking organization) here by undertake to get registered under _____ (state the type of registration to be obtained) before _____ (state time line) (preferably immediately after award of Contract).

I also undertake to indemnify Maharashtra Metro Rail Corporation Limited in case of any loss caused due to non-registration.

I state that everything declared by me is true and correct to my belief.

Signed.....

For on behalf of

(Name of Bidder / Consortium)

* In case of a JV/Consortium, to be submitted by the Authorized representative of the Lead Member

PMRP

Tender No. P1Misc-34/2024

Part-1: Bidding Procedure
Section-IV: Bidding Forms

Form No.33

Deleted

Bid Securing Declaration**[Applicable if EMD/ Bid Security exemption is availed by Bidder as per BDS/ ITB Clause No. 19.1]**

Dt. ____/____/____

Bidder's Name:- _____

Tender No.: _____

Name of Work: _____

To,

Maharashtra Metro Rail Corporation Ltd (Maha-Metro), hereinafter called "the **Employer**" acting through Executive Director (Procurement), Maharashtra Metro Rail Corporation Ltd Civil Court Metro Station, Nyayamurti Ranade Path, Pune-411005, MAHARASHTRA, INDIA
We, the undersigned, declare that:

We understand that, according to your conditions, Bids must be supported by a Bid-Securing Declaration. We accept that we will automatically be suspended from being eligible for bidding in any contract with the Borrower for the period of time of **05 (Five) Years** starting on the date that we receive a notification from the Employer, if we are in breach of our obligation(s) under the bid conditions, because we

- (a) have withdrawn our Bid during the period of bid validity specified in the Letter of Bid; or
- (b) do not accept the correction of errors in accordance with the Instructions to Bidders (hereinafter "the ITB"); or
- (c) having been notified of the acceptance of our Bid by the Employer during the period of bid validity, (i) fail or refuse to execute the Contract, if required; or (ii) fail or refuse to furnish the Performance Security, in accordance with the ITB; or (iii) fail or refuse to furnish a domestic preference security, if required.

We understand that this Bid-Securing Declaration shall expire if we are not the successful Bidder, upon the earlier of (i) our receipt of your notification to us of the name of the successful Bidder; or (ii) 28 days after the issue of LOA (Letter of Acceptance) in favour of successful bidder. .

Signed: [insert signature of person whose name and capacity are shown]

In the capacity of [insert legal capacity of person signing the Bid-Securing Declaration] . .

Name: [insert complete name of person signing the Bid-Securing Declaration]

Duly authorized to sign the bid for and on behalf of [insert complete name of the bidder]

Dated on _____ day of _____, _____ [insert date of signing]

Corporate Seal [where appropriate]

Note: Relevant Copy of certificate of MSME registration shall be enclosed by bidder

Format-35**Format for Power of Attorney**

(Applicable if bidder is a Partnership firm/ Private limited company /Limited company and participating as sole / single entity bidder)

(To be on non-judicial stamp paper of appropriate value as per Stamp Act relevant to place of execution. Foreign companies submitting Bid are required to follow the applicable law in their country)

(Power of Attorney to be provided by the Bidder Company/ Bidder in favour of its representative as evidence of authorized signatory's authority)

Know all men by these presents, we (Name and address of the registered office of the Bidding Company or Bidder) do hereby constitute, appoint and authorize Mr./Ms.....S/o..... (name and residential address) who is presently employed with us and holding the position of as our Attorney to do in our name and our behalf all or any of the acts, deeds or things necessary or incidental to submission of our Bid for '.....' [Name of the work] for Pune Metro Rail Project of Maha-Metro in response to the Bid (Tender No.) issued by Maharashtra Metro Rail Corporation Limited (the Employer) including signing and submission of the Bid and all other document related to the bidding, including but not limited to undertakings, letters, certificates, acceptances, clarifications, guarantees or any other document which the Company may require us to submit and also signing and executing the Contract Document. The aforesaid Attorney is further authorized for making representations to the Company or any other authority, and providing information / responses to the Company, representing us in all matters before the Company, and generally dealing with the Company in all matters in connection with our Bid till the completion of the bidding process as per the terms of the Bidding Document and further till the Contract is entered into with the Company and thereafter till the expiry of the Contract.

We hereby agree to ratify all acts, deeds and things done by our said attorney pursuant to this Power of Attorney and that all acts, deeds and things done by our aforesaid attorney shall be binding on us and shall always be deemed to have been done by us.

All the terms used herein but not defined shall have the meaning ascribed to such terms under the Bidding Document.

Signed by the within named [Insert the name of the Firm/company/bidding entity] through the hand of

Mr.....

Name of the Executant)

Duly authorized by the Board to issue such Power of Attorney by board resolution Dt.....

(Copy enclosed

Dated this _____ day of Accepted.....

Signature of the POA holder)

(Name, designation and address of the POA holder)

Attested

.....
(Signature & Seal / stamp of the executant)
(Name, designation and address of the executant)

.....
Signature and stamp of Notary of the place of execution

Common seal of has been affixed in my/our presence pursuant to Board of Director's Resolution dated.....

WITNESS:

1. (Signature) Name Designation
2. (Signature) Name Designation

Notes:

1. The mode of execution of the power of attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter document of the executant(s) and the same should be under common seal of the executant affixed in accordance with the applicable procedure. Further, the person whose signatures are to be provided on the power of attorney shall be duly authorized by the executant(s) in this regard.
2. In the event, power of attorney has been executed outside India, the same needs to be duly notarized by a notary public of the jurisdiction where it is executed.
3. Also, wherever required, the executant(s) should submit for verification the extract of the charter document and document such as a board resolution / power of attorney, in favour of the person executing this power of attorney for delegation of power hereunder on behalf of the executant(s).

UNDERTAKING OF AUTHORIZED SIGNATORY**(If bidder is sole & Proprietorship firm)***(To be typed on INR: 100 Stamp Paper & notarized by Notary Public)*

Bidder's Name:- _____

Tender No.: _____

Name of Work: _____

1. I, _____ Son/Daughter of Shri. _____ Proprietor of M/s _____ competent to sign the declaration and execute this bid and agreement in event of award.
2. I have carefully read and understood all the terms and conditions of the tender which are fully acceptable to me.
3. The information / documents furnished along with the above tender are true and authentic to the best of my knowledge and belief. I/we, am/ are well aware of the fact that furnishing of any false information/fabricated document would lead to rejection of my tender & forfeiture of my Bid Security /EMD besides liabilities towards prosecution under appropriate law.

(Signature of Proprietor)

Full Name:

Date:

Place:

Seal:

Signature & Seal of Notary Public

Note:

1. The above declaration shall be notarized by notary public

Form No.-37**Bid Index**

Bidder's Name:- _____

Tender No.: _____

Name of Work: _____

The Bidder shall include with its Bid an index which cross refers all of the Employer's bidding requirements elaborated in these documents to all the individual sections within Package 1: Technical Package and Package 2: Financial Package which the Bidder intends to be the responses to each and every one of those requirements.

The Packages submitted must be clearly presented, all pages numbered and laid out in a logical sequence with main and subheadings to facilitate evaluation.

**MAHARASHTRA METRO RAIL CORPORATION LIMITED
(PUNE METRO RAIL PROJECT)**

BID DOCUMENTS

FOR

Name of work: Geotechnical Investigation of Underground Section of NS Corridor Phase-I Extension Swargate-Katraj of Pune Metro Rail Project.

TENDER NO. P1Misc-34/2024

PART 1: BIDDING PROCEDURE

**SECTION V: ELIGIBILITY CRITERIA AND
SOCIAL AND ENVIRONMENTAL
RESPONSIBILITY**



Maharashtra Metro Rail Corporation Limited

Civil Court Metro Station, Nyayamurti Ranade Path, Pune-411005,
Maharashtra, INDIA

Tel- 020-7410004067/68,

Website: www.punemetrorail.org

Section-V: Eligibility Criteria and Social and Environmental Responsibility**Eligibility in Maha-Metro/Agency-Financed Procurement**

1. To the exception of any equipment or any sector, which is subject to an embargo by the United Nations or the European Union, all goods and services are eligible for Maha-Metro/ EIB financing regardless of the country of origin of the supplier, contractor, provider or sub-contractors, inputs or resources used in the implementation processes.
2. Natural or legal persons (including all members of a joint venture or any of their subcontractors) shall not be awarded an Maha-Metro/Agency-financed contract if, on the date of submission of an application or of a bid or on the date of award of a contract, they:
 - a) where the Bidder is bankrupt or is the subject of insolvency or winding up proceedings, where its assets are being administered by a liquidator or by the court, where it is in an arrangement with creditors, where its business activities are suspended or it is in any analogous situation arising from a similar procedure under national laws and regulations;
 - b) Bidders have not fulfilled their obligations regarding the payment of social security contributions or taxes in accordance with the legal provisions of the country where they are established or the Employer 's country;
 - c) where the Employer can demonstrate by any appropriate means a violation by the Bidder of applicable obligations in the fields of environmental, social and labour law established by national law, collective agreements or by the international environmental, social and labour law provisions;
 - d) where the Employer has sufficiently plausible indications to conclude that the Bidder has entered into agreements with other Bidder(s) aimed at distorting competition;
 - e) where the Bidder has shown significant or persistent deficiencies in the performance of a substantive requirement under a prior public contract, a prior contract with the Employer or a prior concession contract which led to early termination of that prior contract, damages or other comparable sanctions;
 - f) Bidders have been convicted within the past five years by a court decision, which has the force of residential jurisdiction in the country where the project is implemented, of fraud or corruption or any other Prohibited Conduct (as defined in the Covenant of Integrity) committed during the procurement or performance of a contract, unless they provide supporting information together with their Covenant of Integrity which shows that this conviction is not relevant in the context of this project;

- g) Bidder is listed for financial sanctions by the United Nations and/or the European Union for the purposes of fight against terrorist financing or threat to international peace and security;
 - h) Bidder including JV Partners should be excluded by the EU Institutions or any major Multilateral Development Bank (including World Bank Group, African Development Bank, Asian Infrastructure Investment Bank, Asian Development Bank, European Bank for Reconstruction and Development, European Investment Bank or Inter-American Development Bank) from participation in a tendering procedure on the grounds of Prohibited Conduct;
 - i) where the Employer can demonstrate by appropriate means that the Bidder is guilty of grave professional misconduct, which renders its integrity questionable;
 - j) where a conflict of interest within the meaning of Clause 4.2 of ITB cannot be effectively remedied by other less intrusive measures;
 - k) where a distortion of competition from the prior involvement of the Bidder in the preparation of the procurement procedure, as referred to in Section VI: Agency Policy – Corrupt and Fraudulent Practices of the Bid Document Part-1, cannot be remedied by other, less intrusive measures;
 - l) where the Bidder has been guilty of serious misrepresentation in supplying the information required for the verification of the absence of grounds for exclusion or the fulfilment of the selection criteria, has withheld such information or is not able to submit the supporting documents required pursuant to Clause 27 of ITB; or
 - m) where the Bidder has undertaken to unduly influence the decision making process of the Employer, to obtain confidential information that may confer upon it undue advantages in the procurement procedure or to negligently provide misleading information that may have a material influence on decisions concerning exclusion, selection or award.
 - n) have committed misrepresentation in documentation requested by the Employer as part of the contract procurement procedure;
3. Bidders that are Government-owned enterprises or institutions may participate only if they can establish that they (i) are legally and financially autonomous (ii) operate under commercial law. To be eligible, a government-owned enterprise or institution shall establish to the Agency's satisfaction, through all relevant documents, including its Charter and other information the Agency may request, that it: (i) is a legal entity separate from their government (ii) does not currently receive substantial subsidies or budget support; (iii) operates like any commercial enterprise, and, inter alia, is not obliged to pass on its surplus to their government, can acquire rights and liabilities, borrow funds and be liable for repayment of its debts, and can be declared bankrupt.

4. In order to promote sustainable development, Maha-Metro/Agency seeks to ensure that internationally recognised environmental and social standards are complied with. Candidates for Maha-Metro/Agency-financed contracts shall consequently undertake in the Statement of Integrity to:
- i) comply with and ensure that all their subcontractors comply with international environmental and labour standards, consistent with applicable law and regulations in the country of implementation of the Project, including the fundamental conventions of the International Labour Organisation (ILO) and international environmental treaties;
 - ii) adopt any environmental and social risk mitigations measures as defined in the environmental and social management plan or in the environmental and social impact notice issued by the Employer.

**MAHARASHTRA METRO RAIL CORPORATION LIMITED
(PUNE METRO RAIL PROJECT)**

BID DOCUMENTS

FOR

Name of work: Geotechnical Investigation of Underground Section of NS Corridor Phase-I Extension Swargate-Katraj of Pune Metro Rail Project._

TENDER NO. P1Misc-34/2024

**PART 1: BIDDING PROCEDURE
SECTION VI: AGENCY POLICY – CORRUPT
AND FRAUDULENT PRACTICES**



Maharashtra Metro Rail Corporation Limited

Civil Court Metro Station, Nyayamurti Ranade Path, Pune-411005,

Maharashtra, INDIA

Website: www.punemetrorail.org

Section VI. Agency Policy - Corrupt and Fraudulent Practices

In pursuance of the Funding Agency's (EIB's) Anti-Fraud Policy (refer to <http://www.eib.org/en/infocentre/publications/all/anti-fraud-policy.htm>), Prohibited Conduct includes corruption, fraud, coercion, collusion, obstruction, money laundering and financing of terrorism defined as follows:

- a) A corrupt practice, is the offering, giving, receiving, or soliciting, directly or indirectly, anything of value to influence improperly the actions of another party.
- b) A fraudulent practice, is any act or omission, including a misrepresentation that knowingly or recklessly misleads, or attempts to mislead, a party to obtain a financial or other benefit or to avoid an obligation.
- c) A coercive practice, is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party.
- d) A collusive practice, is an arrangement between two or more parties designed to achieve an improper purpose, including influencing improperly the actions of another party.
- e) An obstructive practice is (a) deliberately destroying, falsifying, altering or concealing of evidence material to the investigation; and/or threatening, harassing or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation, or (b) acts intended to materially impede the exercise of the EIB's contractual rights of audit or access to information or the rights that any banking, regulatory or examining authority or other equivalent body of the European Union or of its Member States may have in accordance with any law, regulation or treaty or pursuant to any agreement into which the EIB has entered in order to implement such law, regulation or treaty.
- f) Money laundering is,
 - i. the conversion or transfer of property, knowing that such property is derived from criminal activity or from an act of participation in such activity, for the purpose of concealing or disguising the illicit origin of the property or of assisting any person who is involved in the commission of such activity to evade the legal consequences of his action;
 - ii. the concealment or disguise of the true nature, source, location, disposition, movement, rights with respect to, or ownership of property, knowing that such property is derived from criminal activity or from an act of participation in such activity;
 - iii. the acquisition, possession or use of property, knowing, at the time of receipt, that such property was derived from criminal activity or from an act of participation in such activity;

- iv. participation in, association to commit, attempts to commit and aiding, abetting, facilitating and counselling the commission of any of the actions mentioned in the foregoing points.

g) Financing of terrorism is the provision or collection of funds, by any means, directly or indirectly, with the intention that they should be used or in the knowledge that they are to be used, in full or in part, to commit, or to contribute to the commission of any of the offences within the meaning of Articles 3 to 10 of Directive (EU) 2017/541 of 15 March 2017 on combating terrorism. Where the financing of terrorism concerns any of the offences laid down in Articles 3, 4 and 9 of Directive (EU) 2017/541, it shall not be necessary that the funds be in fact used, in full or in part, to commit, or to contribute to the commission of any of those offences, nor shall it be required that the offender knows for which specific offence or offences the funds are to be used.

The Employer will declare a firm ineligible, either indefinitely or for a stated period of time, for any Employer's contract, if at any time determines that the firm has engaged in Prohibited Conduct in competing for, or in executing, a borrowed financed contract in general.

The Tenderer/Contractor grant the Employer, the Funding Agencies and auditors appointed by either of them, as well as any authority or European Union Institution or body having competence under European Union law, the right to inspect and copy the books and records of the tenderer, contractor, supplier or consultant.

If it is established to the required standards that a project-related party has engaged in Prohibited Conduct in the course of a procurement process or implementation of a contract to be financed, the Funding Agency:

- a) may seek appropriate remediation of the Prohibited Conduct to its satisfaction;
- b) may declare ineligible such project-related party to be awarded the contract; and/or
- c) may withhold the Funding Agency's no objection to contract award and may apply appropriate contractual remedies, which may include suspension and cancellation, unless the Prohibited Conduct has been dealt with to the satisfaction of the Funding Agency.

Furthermore, within the framework of the Funding Agency's Exclusion Policy (see the EIB's Exclusion Policy: <https://www.eib.org/en/publications/exclusion-policy.htm>), the Funding Agency may declare such project related party ineligible to be awarded a contract under any EIB project or to enter into any relationship with the Funding Agency.

It should be noted that, in the Covenant of Integrity, the tenderer is requested to self-declare all sanctions and / or exclusions (including any similar decisions having the effect of imposing conditions on the tenderer or its subsidiaries or to exclude the said tenderer or its subsidiaries, such as temporary suspension, conditional non-exclusion, etc.) imposed by the European institutions or any multilateral development banks (including the World Bank Group, the African Development Bank, the Asian Development Bank, European Bank for Reconstruction and Development, European Investment Bank or Inter-American Development Bank), regardless of the date of issue and the expiration or not of such decisions and of the current status of any sanction and / or exclusion. In this regard, any omission or misrepresentation, made knowingly or recklessly, may be considered as fraud

under the EIB Anti-Fraud Policy. Therefore, the Employer reserves the right to reject any offer presenting an inaccurate or incomplete Covenant of Integrity, and may cause the rejection of the offer for prohibited conduct.”

**MAHARASHTRA METRO RAIL CORPORATION LIMITED
(PUNE METRO RAIL PROJECT)**

BID DOCUMENTS

FOR

Name of work: Geotechnical Investigation of Underground Section of NS Corridor Phase-I Extension Swargate-Katraj of Pune Metro Rail Project.

Tender No. P1Misc-34/2024**PART 2:
SECTION-VII-A,
EMPLOYER'S REQUIREMENTS****Maharashtra Metro Rail Corporation Limited**

Civil Court Metro Station, Nyayamurti Ranade Path, Pune-
411005, Maharashtra, INDIA

E-mail: tenders.pmrp@mahametro.orgWebsite: www.punemetrorail.org

SCOPE OF WORK**1.0 INTRODUCTION**

It is proposed to do on an average 30 m of vertical drilling in soil, overburden & rock, conducting laboratory tests including submission of report for "Geotechnical Investigations of underground section of NS corridor from Swargate TO Katraj (CH. 16440.000- 21923.582) for Pune Metro Rail Project".

2.0 SCOPE OF WORK

The Scope of work includes:

- i) Drilling of Boreholes of depth varying from 20 m to 40 m in soil, rock & overburden from the existing ground surface, to determine the in-situ engineering properties.
- ii) Conducting Standard Penetration Test at every 3.0m alternate interval starting from first sample at 1.5m depth or at the change of stratum as per IS: 2131.
- iii) Collection of Undisturbed soil samples at 3 m alternate interval as per IS: 2132.
- iv) Preparation of bore logs and location plan of boreholes on computer by using suitable Software.
- v) Conducting various laboratory tests on soil and rock samples as per relevant IS codes with submission of test reports.
- vi) Submission of draft report including Geological logs, lab test results & foundation analysis in 2 copies and final report in 3 copies.
- vii) Shifting of rig, providing of barricades, loading & unloading of barricades and traffic diversion is in the scope of contractor.
- viii) Any legal, statutory permission for work or local permission is in the scope of contractor.
- ix) Providing of watchman/guards if any to safeguard of machineries and samples is in the scope of contractor.
- x) Necessary lighting arrangement for working at night will be arranged by contractor by its own cost.
- xi) Utility identification and its protection at borehole location is in the scope of contractor.

SPECIAL TECHNICAL SPECIFICATIONS:

Drilling of boreholes is required to be carried out in accordance with specifications of relevant codes of Bureau of Indian Standard as given below:

- IS: 4078 Code of practice for indexing & storage of drill cores.
- IS: 2131 Method for standard penetration test
- IS: 1892 Code of practice for sub-surface investigation for foundations
- IS: 6926 Diamond core drilling site investigation for river valley projects.
- IS: 5313 Guide for core drilling observation.
- IS: 4464 Code of practice for presentation of drilling information and core description in foundation investigation.
- IS: 5529 (Part-I & Part-II) Code of practice for in-situ permeability tests in overburden and rock respectively.
- IS: 2132-1987

- IS: 2720 (Pt.-II, Pt.-XV, Pt.-XIII, Pt. IV, Pt. V)
- IS: 4221
- Any other relevant codes & specifications as decided by Employer/Engineer in charge.

FIELD INVESTIGATION - IN SOIL

BORING

(i) General Requirement

- a) Boreholes shall be taken at specified locations to obtain information about the sub-soil profile, its nature and strength and to collect soil samples for strata identification and conducting laboratory tests. The minimum diameter of the bore shall be 150 mm and boring shall be carried out in accordance with the provisions of IS: 1892 as per this specification.
- b) All bore holes shall extend up to depths as directed by the Engineer. If the strata with Standard Penetration Test (SPT) "N" value greater than 100 with characteristics of rock is met with, prior to the specified depth, the bore hole shall be advanced further by chiselling. Chiselling shall be continued for a maximum depth of 20 cm or up to 2 hours whichever is earlier. During chiselling rock fragments shall be collected. Identification of rock strata shall be on the basis of visual examination of SPT sample and rock fragments. After it is established that rock is met with, borehole shall be advanced further by drilling in rock and core shall be collected. When the bore hole is terminated in soil strata, an additional Standard Penetration Test shall be carried out at the termination depth.
- c) Casing pipe shall be used in the borehole to support its sides when a side fall is suspected to occur inside the borehole. When casing pipe is used, it shall be ensured that its bottom end is at all times less than 15 cm above the bottom of the borehole and not below the level at which the test has to be conducted or sampling has to be done. In case of cohesion less soils the advancement of the casing pipe shall be such that it does not disturb the soil to be tested or sampled. The casing shall be advanced by slowly turning the casing pipe and not by driving.
- d) In-situ tests shall be conducted or undisturbed samples (UDS) shall be collected in the bore holes at regular intervals and at change of strata or as decided by the Engineer in charge/Employer. Representative disturbed samples shall be preserved for conducting various identification tests in the laboratory. Water table in the borehole shall be carefully recorded and reported. No water /drilling mud shall be added while boring above ground water table. For cohesion less soil below water table, the water level in the bore hole shall at all times be maintained slightly above the water table.
- e) The bore hole shall be cleaned using suitable tools up to the depth of testing or sampling, ensuring that there is minimum disturbance of the soil at the bottom of the bore hole. The process of jetting through an open tube sampler shall not be permitted. In cohesive soils, the bore hole may be cleaned using a bailer with a flap valve. Gentle circulation of drilling fluid shall be done when rotary mud circulation boring is adopted.
- f) On completion of the bore hole, including the borehole in which special tests are conducted by the contractor shall backfill all the boreholes and restore to its original condition as directed by Engineer in charge/Employer.
- g) In sandy and non-cohesive strata, soil samples shall be collected with due care that the samples collected truly represents the strata and is not vitiated in any way by washing out of fines.

- h) During drilling, depth of water table, joint set, joint Nos. should be recorded.
- i) During drilling, all samples shall be systematically collected, correctly identified and properly stored in wooden/steel core boxes.
- j) It has to be ensured that casing does not advance, ahead of the borehole under any circumstances.
- k) Before & during drilling, care must be taken that no utilities are damaged. Moreover, work is to be executed in city limits where congestion is expected, work may have to be executed during night with all necessary safety precautions and safety arrangements.
- l) Elevations of various strata and all levels that are recorded and referred to shall be with respect to the bench mark to be given at any nearby convenient location by the engineer.

Rotary Mud Circulation Boring

This method can be used in all types of soil below water table. In this method boring shall be done by rotating the bit fixed at the bottom of the drill rod. Proper care shall be taken to keep firm contact between the bit and the bottom of the bore hole. Suitable precaution to be taken to prevent caving in of the bore hole sides. Use of percussion tool shall be permitted in hard clays and dense sandy deposits.

STANDARD PENETRATION TEST

This test shall be conducted in all types of soil deposits met within a bore hole, to find the variation in the soil stratification by correlating with the number of blows required for unit penetration of standard penetrometer. This test shall be conducted at 3.0m intervals and every change of strata and as per the direction of the Engineer. The depth interval between the top levels of Standard Penetration Test and next undisturbed sampling shall not be less than 1.0m. The specifications for the equipment's and other accessories, procedure for conducting the test, presentation of test results and collection of the disturbed soil samples shall conform to IS: 2131.

This test shall be carried out by driving a standard split spoon sampler in the bore hole by means of a 63.5 kg hammer having a free fall of 0.75m. The sampler shall be driven using the hammer and for 450mm. While driving the number of blows for every 150 mm penetration and the penetration for every 50 blows shall be recorded. The number of blows for the last 300 mm drive shall be reported as N value. This test shall be discontinued when the blows count is equal to 100 at the penetration shall be recorded. Refusal shall be considered to be met with when the blow count is equal to or greater than 50. At the location where the test is discontinued the penetration and the number of blows shall also be reported. Sufficient quantity of disturbed soil samples shall be collected from the split spoon sampler for Identification, and laboratory testing. The sample shall be visually classified and recorded at the site and shall be properly preserved and labelled for future identification.

It may not be possible to conduct SPT test wherever boulders/cobbles/ pebbles/gravels are encountered in bore holes drilled in top overburden debris. However, attempt will be made to get SPT values wherever soil is encountered up to the required depth.

SAMPLING**(i) General**

- a) Sufficient number of soil samples shall be collected for reliable estimation of soil properties. The samples collected shall be either disturbed or undisturbed. Disturbed soil samples shall be collected for field identification and conducting tests such as sieve analysis, index properties, specific gravity, chemical analysis, etc. Undisturbed samples shall be collected to estimate the strength and settlement properties of the soil.
- b) All the accessories required for sampling and the method of sampling shall conform to IS: 2132. All the disturbed and undisturbed samples collected in the field shall be classified at the site as per IS: 1498.
- c) All the samples shall be identified with date, bore hole or trial pit number, depth of sampling, etc. It is also essential to mark an arrow pointing towards the top surface of the sample. Care shall be taken to keep the undisturbed soil samples and box samples vertically with the arrow directing upwards. The tube samples shall be properly trimmed at both ends and sealed with molten paraffin wax at both ends immediately after extracting the samples from the bore hole and suitably capped on both sides.
- d) Precaution shall be taken to ensure that there shall not be any change in moisture content and disturbance of the soil samples and they shall be placed in a temporary store at the end of the day's work. All the samples shall be kept over a bed of sand, jute bags, saw dust, etc. and covered over on top with similar material. The bed and top cover shall be kept moist till they are properly packed in steel/wooden boxes. Contractor shall be responsible for packing and transporting of all the samples from site to the laboratory after sampling with proper protection against loss and damage.
- e) All the samples shall be packed in Steel /wooden box using sand, saw dust etc. all around the samples before transportation to laboratory for testing.

ii) Disturbed sample

- a) Disturbed soil samples shall be collected in bore holes at regular intervals to provide complete description of soil profile and its variation. Samples shall be immediately stored in air tight or polythene bags and labeled with bore hole number and depth.
- b) In elevated areas, if superficial material is available in plenty, then bulk samples from a depth of about 0.5m below ground level shall be collected to establish all the required properties to use it as a fill material. Disturbed samples weighing about 250 N shall be collected at shallow depths and immediately stored in polythene bags as per IS: 1892. The bags shall be sealed properly and they shall be kept, in wooden boxes.

iii) Undisturbed samples

In each bore hole undisturbed sample shall be collected at every change of strata and at regular intervals of 3.0 m and as directed by the Engineer. The starting depth shall be staggered in alternate boreholes. In cohesive soils collection of UDS shall be preferred in place of SPT. Undisturbed samples shall be 100 mm dia. and 450 mm length. Samples shall be collected in such a manner that the structure of the soil and its moisture content do not get altered. The specifications for the accessories required for sampling and the sampling procedure shall conform to IS: 1892 and IS: 2132. Undisturbed sampling in sand

shall be done using compressed air technique mentioned in IS: 8763. Thin walled sampler shall be used to collect undisturbed samples by pushing the tube into the soil. The sampling tube shall have a smooth finish on both surfaces and minimum effective length of 450 mm. The area ratio of sampling tubes shall be less than 12.5%. However, in case of very stiff soils, area ratio up to 20% shall be permitted.

iv) Relaxation During Sampling

- a) The Sampler shall be pushed into the soil and driving of sampler shall be resorted to only when it cannot be pushed into the soil. This shall be done only with the permission of the Engineer and all the details about the same shall be recorded into the bore logs.
- b) In clays when N value is above 50, undisturbed samples may be replaced by standard penetration test.

GROUND WATER

- i) The methods as per IS: 6935 shall be adopted for determining the ground water table in bore holes and as per the instructions of the Engineer.
- ii) In case any variation in the ground water level is observed in any specific boreholes, then the water level in these bore holes shall be recorded daily during the course of the field Investigation. Levels in nearby wells, streams, etc. if any shall be noted whenever these readings are taken.

iii) Sub-Soil Water Samples

- a) Sub-soil water samples shall be collected for carrying out chemical analysis. Representative samples of ground water shall be addition of water to aid boring or drilling. Water samples shall not be collected when bentonite-slurry or mud has been used for drilling operations. If water has been added for drilling purpose or if ground water has been diluted by surface rain water, then the bore hole shall be dewatered and water allowed to rise from which the sample may be taken.
- b) The sampling apparatus shall be such that the water at the desired depth can be collected directly without any disturbance and any change in the concentration of the constituents like dissolved gases, etc. Under agitation shall be avoided. An ordinary suction pump with its suction end inserted up to the required depth in the bore hole shall be used for this purpose.
- c) The sample shall be collected in a clean vessel and allowed to settle so that the supernatant liquid can be poured into a clean well raised glass or polythene bottle. Sufficient quantity and number of samples shall be collected to carry out the chemical analysis and sent to a laboratory in airtight bottles with proper labelling. Chemical analysis of water samples shall include determination of pH value, turbidity; sulphate, carbonate, nitrate and chloride, presence of organic matter and suspended solids.
- d) In some cases, constituents may be mixed and analyzed later as specified in file specific test methods. Chemical preservatives may be added to the sample for cases as specified in the test method/IS codes. This shall only be done if analysis cannot be conducted within an hour of collection and shall have the prior written permission and approval of the Engineer.

FIELD INVESTIGATION - ROCK**ROCK DRILLING****General Requirements**

Conventional Diamond core drilling equipment may be used for drilling vertical holes up to a maximum depth of 50m each (actual depth to be ascertained based on foundation size, formation level and ground conditions). The size of core in the upper portion of rock shall be HX/HQ if required, which should be continued to as much depth as possible. But it may be required to be reduced to NX/NQ after certain depth. Unlike some types of drilling, the aim of core drilling is not to make a hole, but to retrieve a core sample- a long solid cylinder of rock that geologists can analyze to determine the composition of rock under the ground.

Rock drilling shall be carried out as per BIS-6926 and/or ASTM D2113. Quality drilling is Important in maintaining a reasonable straight vertical hole and nearly circular cross- section. The rotary drilling machine shall also be capable of drilling angular holes where required by the prevailing geological site conditions. For meaningful interpretation of the orientation of the geological features, suitable core orientation procedures shall be employed during the investigation. Only hydraulically operated drilling rigs shall be used with good quality compatible drill rods. A sufficient number of spare parts shall be readily available at the site for maintenance of drilling rig, drilling rods, pump sets etc.

The core barrel employed for rock drilling shall be HX/HQ or NX/NQ Size double tube, longitudinally split inner tube for good rock and triple tube, longitudinally split inner tube for poor rock with diamond core bit.

Equipment

- a) Core drilling shall be done by rotary motion using diamond bit. The feed or thrust to the drilling bit shall be actuated by hydraulic type. The equipment or set up shall be capable of recovering 75% of the drilled volume. The rotary core drilling equipment and procedure for drilling shall conform to IS: 6926. The equipment shall be provided with necessary facilities to regulate the spindle speed bit pressure and water pressure during core drilling to get good core recovery.
- b) Drilling shall be carried out with HX/HQ or NX/NQ size diamond tipped drill bits or impregnated diamond bit depending on the type of rock encountered. Double tube swivel core barrel of Type B conforming to IS: 6926 shall be used to ensure good core recovery and to pick up cores from all layers of rock. Suitable core catches shall be used to ensure continuous and good core recovery. For ensuring maximum core recovery in weak rocky formation, triple tube core barrel including split type core barrel shall be used.

Core Samples

- a) The field logging of rock core samples obtained from the borehole will be done by competent professional engineering geologist.
- b) Core samples shall be extracted by the application of a continuous pressure at one end of the core with the barrel held horizontally without vibration. Friable cores shall be extracted from the barrel directly into a suitable sized half round plastic channel section. Care shall be taken to maintain the direction of extrusion of sample same as that while coring to avoid stress reversal.

- c) Immediately after withdrawal from the core barrel the Cores shall be placed in a tray and transferred into boxes specially prepared for the purpose. The boxes shall be made from Galvanized Iron Steel or any other durable material and shall be indexed on top of the lid as per IS: 4078. The cores shall be numbered serially and arranged in the boxes in a sequential order. The description of the core samples shall be recorded as per IS: 4464. Where no core is recovered. It shall be recorded as specified in the continuous record of core recovery and RQD to be mentioned in the bore log as per IS: 11315 Part-II.
- d) The basic information for the standard basic geo-technical description of rocks shall cover a) degree of weathering b) discontinuity spacing c) strength d) colour e) grain size f) texture g) structural condition, the mineralogy of the grains and cementing material h) rock name and supplementary adjectives, if any, special features like major joint planes fractures/laminations, faults, etc. shall also be indicated.

Laboratory Tests:

Following laboratory tests have to be carried out:

Soil Samples:

- i. Natural Moisture content & NDD.
- ii. Atterberg Limits.
- iii. Specific Gravity.
- iv. Particle size distribution including Hydrometer analysis.
- v. Triaxial Shear test.
- vi. Consolidation tests (drained and undrained conditions)
- vii. Direct Shear Strength Test

Rock Samples:

- i. Water Absorption
- ii. Porosity
- iii. Specific Gravity
- iv. Uniaxial Compressive Strength

Chemical Test: Chemical Test: Chemical Analysis of soil and water samples for determination of Ph value, Chloride, Sulphate, Nitrate and Organic matter..

Note: Contractor shall bound to do any addition necessary test as directed by Employer/Engineer In-charge as required.

However, before lab testing is conducted, Lab Testing schedule shall be prepared by contractor and got approved from Engineer-in-charge/Employer.

The methodology of conducting the above tests must be in accordance with the corresponding IS codes.

REPORT:**General**

- a) On completion of all the field and laboratory work, the Contractor shall submit a draft report containing Geological information of the region, procedure adopted for investigation, field observations, summarised test data, statistical average parameters for each identified layer. The report shall include detailed bore logs, subsoil sections, field test results, laboratory observations and test results both in tabular as well as graphical form, practical and theoretical considerations for the interpretation of test

results, the supporting calculations/ documents for the conclusions drawn, etc. Initially, the Contractor shall submit three copies of the report in draft form for the Owner's review. The abstract of the sub-soil stratification of the project shall also be included in the report.

Report shall also include

- i) SPT values at various depths starting from NGL at interval of 3.0 m.
- ii) Field permeability test
- iii) Laboratory test shall include porosity, Dry density, Specific gravity, Water content, Water absorption, Grain size analysis, Plasticity indices/Atterberg limits, Triaxial shear strength, Direct shear strength, unconsolidated compressive strength drained and undrained condition, Angle of repose, cohesive values.
- iii) Properties of Rock strata, core recovery, tensile strength of intact rock, Triaxial test, Uniaxial Compressive strength, Deformation modulus, cohesion and friction angle, Modulus of elasticity and Poisson's ratio.
- iv) Coefficient of earth pressure for soil and rock.
- v) Properties of soil and rock
- vi) Ground water conditions
- vii) Geotechnical Risk Assessment
- viii) Analysis of spacing of discontinuities, condition of discontinuities in rock
- b) Detailed discussion on the contents of draft report shall be done to decide as to what modifications need to be done in the draft report.
- c) Thereafter the Contractor shall incorporate in the report the agreed modifications as suggested by the Owner and submit the revised draft report for Owner's approval. Upon Owner's approval, the final comprehensive report shall be submitted in five hard copies. The approved report shall also be submitted in soft copies.
- d) Recommendations shall include bearing capacity of soil based on shear strength and settlement criteria, Ground Improvement techniques if required, foundation types and SBC based on various sizes, Type of Lining to be adopted, tunnelling methods to be adopted, Type of cement to be used etc.
- e) Identification of Aquifers, Faults, Existing structures protection/Risk associated with it.

Data to be furnished

The report shall also include but not be limited to the following:

- a) A plot plan showing the locations and levels of all field tests e.g. bore holes, trial pits, penetration tests, plate load tests, etc., properly drawn to scale and dimensioned with reference to the established grid lines.
- b) Geological information of the area.
- c) A true cross section of all individual boreholes and trial pits with levels and coordinates showing the classification and thickness of individual stratum, position of ground water table, various in-situ tests conducted and samples collected at different depths and the

rock stratum, if met with. All soil profiles shall be presented using any latest software package.

- d) Results of all laboratory tests conducted.
- e) Drilling Record including Borehole number, Method of making borehole, log of soil type and condition, Depth of water in borehole, weather and temperature.
- f) Test Record: Type of test, Date and time. Notes on any deviation from standard test procedure.
- e) Any other relevant points as required.

Deliverables

The following drawings, reports documents etc. shall be submitted by the contractor as per time frame Indicated below:

A	Mobilization of machinery/deployment of manpower	Within 01 week from the date of LOA.
B	Completion of field work and submission of bore log details	Within 07 weeks from the date of LOA.
C	Submission of Draft report	Within 08 weeks from the date of LOA.
D	Submission of Final report	Within 01 week after acceptance of draft report by Employer/ Engineer In-Charge.

Delay damages for not meeting the above key dates shall be 1% of contract value per week of delay subject to maximum of 10%

PAYMENT SCHEDULE

Payment shall be made as per the following schedule

1. 10% of award value on mobilization of machinery/deployment of manpower etc at site and start of field work.
2. 60% of the award value on completion of field work and submission of bore logs details and its accepted by Employer/Engineer In-Charge.
3. 20% of the award value on submission of draft report for acceptance.
4. 10% of the award value on submission of final reports and acceptance by Employer/Engineer In-Charge.

MAHARASHTRA METRO RAIL CORPORATION LIMITED

BID DOCUMENTS

FOR

Name of work: Geotechnical Investigation of Underground Section of NS Corridor Phase-I Extension Swargate-Katraj of Pune Metro Rail Project.

TENDER NO. P1Misc-34/2024

PART 3:
CONDITIONS OF CONTRACT AND CONTRACT FORMS



Maharashtra Metro Rail Corporation Limited

Civil Court Metro Station, Nyayamurti Ranade Path, Pune-

411005, Maharashtra, INDIA

E-mail: tenders.pmrp@mahametro.org

Website: www.punemetrorail.org

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1	Section VIII - General Condition (GC)
2	Section IX - Particular Condition (PC)
3	Annexure - IX-A- Dispute Board
4	Annexure - IX-B- Conciliation procedure

MAHARASHTRA METRO RAIL CORPORATION LIMITED
(CRF WORKS)

BID DOCUMENTS

FOR

Name of work: Geotechnical Investigation of Underground Section of NS Corridor Phase-I Extension Swargate-Katraj of Pune Metro Rail Project.

TENDER NO. P1Misc-34/2024

Part-3: Conditions of Contract and Contract Forms
Section -VIII: General Conditions of Contract (GC)



Maharashtra Metro Rail Corporation Limited

Civil Court Metro Station, Nyayamurti Ranade Path, Pune-
411005, Maharashtra, INDIA

E-mail: tenders.pmrp@mahametro.org
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General Conditions of Contract (GC)

The General Conditions that follow are based on the Conditions of Contract for Construction prepared and copyrighted by the International Federation of Consulting Engineers (*Federation Internationale des Ingenieurs-Conseils*, or FIDIC), FIDIC 2010 with required modification / correction & as per local working conditions, organizational requirement & keeping in view of law of land.

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General Conditions

1. General Provisions

1.1 Definitions	In the Conditions of Contract ("these Conditions"), which include Particular Conditions , and these General Conditions, the following words and expressions shall have the meanings stated. Words indicating persons or parties include corporations and other legal entities, except where the context requires otherwise.
1.1.1 The Contract	<p>1.1.1.1 "Contract" means the Contract Agreement, the Letter of Acceptance, the Letter of Tender, these Conditions, the Specification, the Drawings, the Schedules, and the further documents (if any) which are listed in the Contract Agreement or in the Letter of Acceptance.</p> <p>1.1.1.2 "Contract Agreement" means the contract agreement referred to in Sub-Clause 1.6 [Contract Agreement].</p> <p>1.1.1.3 "Letter of Acceptance" means the letter of formal acceptance, signed by the Employer, of the Letter of Tender, including any annexed memoranda comprising agreements between and signed by both Parties. If there is no such letter of acceptance, the expression "Letter of Acceptance" means the Contract Agreement and the date of issuing or receiving the Letter of Acceptance means the date of signing the Contract Agreement.</p> <p>1.1.1.4 "Letter of Tender" means the document entitled letter of tender or letter of bid, which was completed by the Contractor and includes the signed offer to the Employer for the Works.</p> <p>1.1.1.5 "Specification" means the document entitled specification, as included in the Contract, and any additions and modifications to the specification in accordance with the Contract. Such document specifies the Works.</p> <p>1.1.1.6 "Drawings" means the drawings of the Works, as included in the Contract, and any additional and modified drawings issued by (or on behalf of) the Employer in accordance with the Contract.</p> <p>1.1.1.7 "Schedules" means the document(s) entitled schedules, completed by the Contractor and submitted with the Letter of Tender, as included in the Contract. Such document may include the Bill of Quantities, data, lists, and schedules of rates and/or prices.</p>

	<p>1.1.1.8 "Tender" means the Letter of Tender and all other documents which the Contractor submitted with the Letter of Tender, as included in the Contract.</p> <p>1.1.1.9 "Bill of Quantities", "Day work Schedule" and "Schedule of Payment Currencies" mean the documents so named (if any) which are comprised in the Schedules.</p> <p>1.1.1.10 "Particular Condition s" means the pages completed by the Employer entitled Particular Condition s which constitute supplementation or modification or replacement of respective clause of General Condition of Contract (GC).</p>
1.1.2 Parties and Persons	<p>1.1.2.1 "Party" means the Employer or the Contractor, as the context requires.</p> <p>1.1.2.2 "Employer" means the person named as Employer in the Particular Condition s and the legal successors in title to this person.</p> <p>1.1.2.3 "Contractor" means the person(s) named as Contractor in the Letter of Tender accepted by the Employer and the legal successors in title to this person(s).</p> <p>1.1.2.4 "Engineer" means the person appointed by the Employer to act as the Engineer for the purposes of the Contract and named in the Particular Condition s, or other person appointed from time to time by the Employer and notified to the Contractor under Sub-Clause 3.4 [Replacement of the Engineer].</p> <p>1.1.2.5 "Contractor's Representative" means the person named by the Contractor in the Contract or appointed from time to time by the Contractor under Sub-Clause 4.3 [Contractor's Representative], who acts on behalf of the Contractor.</p> <p>1.1.2.6 "Employer's Personnel" means the Engineer, the assistants referred to in Sub-Clause 3.2 [Delegation by the Engineer] and all other staff, labour and other employees of the Engineer and of the Employer; and any other personnel notified to the Contractor, by the Employer or the Engineer, as Employer's Personnel.</p> <p>1.1.2.7 "Contractor's Personnel" means the Contractor's Representative and all personnel whom the Contractor utilizes on Site, who may include the staff, labour and other employees of the Contractor and of each Subcontractor; and any other personnel assisting the Contractor in the execution of the Works.</p>

	<p>1.1.2.8 "Sub Contractor" means any person named in the Contract as a Sub Contractor, or any person appointed as a Sub Contractor, for a part of the Works; and the legal successors in title to each of these persons.</p> <p>1.1.2.9 "DB" means the person or three persons appointed under Sub-Clause 20.2 [Appointment of the Dispute Board] or Sub Clause 20.3 [Failure to Agree on the Composition of the Dispute Board]</p> <p>1.1.2.10 "FIDIC" means the Federation Internationale des Ingenieurs Conseils, the International Federation of Consulting Engineers.</p> <p>1.1.2.11 "Bank" means the financing institution (if any) named in the Particular Condition s.</p> <p>1.1.2.12 "Borrower" means the person (if any) named as the borrower in the Particular Condition s.</p>
1.1.3 Dates, Tests, Periods and Completion	<p>1.1.3.1 "Base Date" means the date 28 days prior to the latest date for submission of the Tender.</p> <p>1.1.3.2 "Commencement Date" means the date notified under Sub Clause 8.1 [Commencement of Works].</p> <p>1.1.3.3 "Time for Completion" means the time for completing the Works or a Section (as the case may be) under Sub-Clause 8.2 [Time for Completion], as stated in the Particular Condition s (with any extension under Sub-Clause 8.4 [Extension of Time for Completion]), calculated from the Commencement Date.</p> <p>1.1.3.4 "Tests on Completion" means the tests which are specified in the Contract or agreed by both Parties or instructed as a Variation, and which are carried out under Clause 9 [Tests on Completion] before the Works or a Section (as the case may be) are taken over by the Employer.</p> <p>1.1.3.5 "Taking-Over Certificate" means a certificate issued under Clause 10 [Employer's Taking Over].</p> <p>1.1.3.6 "Tests after Completion" means the tests (if any) which are specified in the Contract and which are carried out in accordance with the Specification after the Works or a Section (as the case may be) are taken over by the Employer.</p> <p>1.1.3.7 "Defects Notification Period" means the period for notifying defects in the Works or a Section (as the case may be) under Sub-Clause 11.1 [Completion of Outstanding Work and Remedying Defects], which extends over 365 days except if</p>

	<p>otherwise stated in the Particular Conditions (with any extension under Sub-Clause 11.3 [Extension of Defects Notification Period]), calculated from the date on which the Works or Section is completed as certified under Sub-Clause 10.1 [Taking Over of the Works and Sections].</p> <p>1.1.3.8 "Performance Certificate" means the certificate issued under Sub-Clause 11.9 [Performance Certificate].</p> <p>1.1.3.9 "Day" means a calendar day and "year" means 365 days.</p>
1.1.4 Money and Payments	<p>1.1.4.1 "Accepted Contract Amount" means the amount accepted in the Letter of Acceptance for the execution and completion of the Works and the remedying of any defects.</p> <p>1.1.4.2 "Contract Price" means the price defined in Sub-Clause 14.1 [The Contract Price], and includes adjustments in accordance with the Contract.</p> <p>1.1.4.3 "Cost" means all expenditure reasonably incurred (or to be incurred) by the Contractor, whether on or off the Site, including overhead and similar charges, but does not include profit.</p> <p>1.1.4.4 "Final Payment Certificate" means the payment certificate issued under Sub-Clause 14.13 [Issue of Final Payment Certificate].</p> <p>1.1.4.5 "Final Statement" means the statement defined in Sub Clause 14.11 [Application for Final Payment Certificate].</p> <p>1.1.4.6 "Foreign Currency" means a currency in which part (or all) of the Contract Price is payable, but not the Local Currency.</p> <p>1.1.4.7 "Interim Payment Certificate" means a payment certificate issued under Clause 14 [Contract Price and Payment], other than the Final Payment Certificate.</p> <p>1.1.4.8 "Local Currency" means the currency of the Country.</p> <p>1.1.4.9 "Payment Certificate" means a payment certificate issued under Clause 14 [Contract Price and Payment].</p> <p>1.1.4.10 "Provisional Sum" means a sum (if any) which is specified in the Contract as a provisional sum, for the execution of any part of the Works or for the supply of Plant, Materials or services under Sub-Clause 13.5 [Provisional Sums].</p> <p>1.1.4.11 "Retention Money" means the accumulated retention moneys which the Employer retains under Sub-Clause 14.3 [Application for Interim Payment Certificates] and pays under Sub-Clause 14.9 [Payment of Retention Money].</p>

	1.1.4.12 "Statement" means a statement submitted by the Contractor as part of an application, under Clause 14 [Contract Price and Payment], for a payment certificate.
1.1.5 Works and Goods	<p>1.1.5.1 "Contractor's Equipment" means all apparatus, machinery, vehicles and other things required for the execution and completion of the Works and the remedying of any defects. However, Contractor's Equipment excludes Temporary Works, Employer's Equipment (if any), Plant, Materials and any other things intended to form or forming part of the Permanent Works.</p> <p>1.1.5.2 "Goods" means Contractor's Equipment, Materials, Plant and Temporary Works, or any of them as appropriate.</p> <p>1.1.5.3 "Materials" means things of all kinds (other than Plant) intended to form or forming part of the Permanent Works, including the supply-only materials (if any) to be supplied by the Contractor under the Contract.</p> <p>1.1.5.4 "Permanent Works" means the permanent works to be executed by the Contractor under the Contract.</p> <p>1.1.5.5 "Plant" means the apparatus, machinery and other equipment intended to form or forming part of the Permanent Works, including vehicles purchased for the Employer and relating to the construction or operation of the Works.</p> <p>1.1.5.6 "Section" means a part of the Works specified in the Particular Conditions as a Section (if any).</p> <p>1.1.5.7 "Temporary Works" means all temporary works of every kind (other than Contractor's Equipment) required on Site for the execution and completion of the Permanent Works and the remedying of any defects.</p> <p>1.1.5.8 "Works" mean the Permanent Works and the Temporary Works, or either of them as appropriate.</p>
1.1.6 Other Definitions	<p>1.1.6.1 "Contractor's Documents" means the Designs, calculations, computer programs and other software, soft & hard copy of documents, drawings, manuals, models and other documents of a technical nature (if any) supplied by the Contractor under the Contract.</p> <p>1.1.6.2 "Country" means the country specified in the Particular Conditions in which the Site (or most of it) is located, where the Permanent Works are to be executed.</p> <p>1.1.6.3 "Employer's Equipment" means the apparatus, machinery and vehicles (if any) made available by the Employer for the</p>

	<p>use of the Contractor in the execution of the Works, as stated in the Specification; but does not include Plant which has not been taken over by the Employer.</p> <p>1.1.6.4 "Force Majeure" is defined in Clause 19 [Force Majeure].</p> <p>1.1.6.5 "Laws" means all national (or state) legislation, statutes, ordinances and other laws, and regulations and by-laws of any legally constituted public authority.</p> <p>1.1.6.6 "Performance Security" means the security (or securities, if any) under Sub-Clause 4.2 [Performance Security].</p> <p>1.1.6.7 "Site" means the places mentioned in the Particular Conditions where the Permanent Works are to be executed, including storage and working areas, and to which Plant and Materials are to be delivered, and any other places as may be specified in the Contract as forming part of the Site.</p> <p>1.1.6.8 "Unforeseeable" means not reasonably foreseeable by an experienced Contractor by the Base Date.</p> <p>1.1.6.9 "Variation" means any change to the Works, which is instructed or approved as a variation under Clause 13 [Variations and Adjustments].</p> <p>1.1.6.10 "Notice of Dissatisfaction" means the notice given by either Party to the other under Sub-Clause 20.4 [Obtaining Dispute Board's Decision] indicating its dissatisfaction and intention to commence arbitration.</p> <p>1.1.6.11 "Climatic Conditions" means General Metrological information mentioned in the Particular Conditions</p>
1.2 Interpretation	<p>In the Contract, except where the context requires otherwise:</p> <p>(a) words indicating one gender include all genders;</p> <p>(b) words indicating the singular also include the plural and words indicating the plural also include the singular;</p> <p>(c) provisions including the word "agree", "agreed" or "agreement" require the agreement to be recorded in writing;</p> <p>(d) "written" or "in writing" means hand-written, type-written, printed or electronically made, and resulting in a permanent record; and</p> <p>(e) the word "tender" is synonymous with "bid" and "tenderer" with "bidder" and the words "tender documents" with "bidding documents"</p> <p>(f) The marginal words and other headings shall not be taken into consideration in the interpretation of these Conditions.</p>

	<p>(g) In these Conditions, provisions including the expression "Cost plus profit" require this profit to be indicated in the Particular Conditions.</p>
1.3 Communications	<p>Wherever these Conditions provide for the giving or issuing of approvals, certificates, consents, determinations, notices, requests and discharges, these communications shall be:</p> <ul style="list-style-type: none"> (a) in writing and delivered by hand (against receipt), sent by mail or courier, or transmitted using any of the agreed systems of electronic transmission as stated in the Particular Conditions; and (b) delivered, sent or transmitted to the address for the recipient's communications as stated in the Particular Conditions. However: <ul style="list-style-type: none"> (i) if the recipient gives notice of another address, communications shall thereafter be delivered accordingly; and (ii) if the recipient has not stated otherwise when requesting an approval or consent, it may be sent to the address from which the request was issued. <p>Approvals, certificates, consents and determinations shall not be unreasonably withheld or delayed. When a certificate is issued to a Party, the certifier shall send a copy to the other Party. When a notice is issued to a Party, by the other Party or the Engineer, a copy shall be sent to the Engineer or the other Party, as the case may be.</p>
1.4 Law and Language	<p>The Contract shall be governed by the law of the country or other jurisdiction stated in the Particular Conditions.</p> <p>The ruling language of the Contract shall be that stated in the Particular Conditions.</p> <p>The language for communications shall be that stated in the Particular Conditions. If no language is stated there, the language for communications shall be the ruling language of the Contract.</p>
1.5 Priority of Documents	<p>The documents forming the Contract are to be taken as mutually explanatory of one another. For the purposes of interpretation, the priority of the documents shall be in accordance with the following sequence:</p> <ul style="list-style-type: none"> (a) the Contract Agreement (On appropriate Stamp Paper). (b) the Letter of Acceptance (LOA) (c) Accepted Financial Bid & Bill of Quantities

	<p>(d) Corrigendum/ Addendum/ Clarifications</p> <p>(e) the Particular Condition of Contract (PCC)</p> <p>(f) the General Conditions (GC)</p> <p>(g) the Work Specification & Employer's Requirement,</p> <p>(h) the Drawings,</p> <p>(i) Contractor's Submissions</p> <p>U) and any other reference documents forming part of the Contract.</p> <p>If an ambiguity or discrepancy is found in the documents, the Employer shall issue any necessary clarification or instruction by approval of competent authority.</p>
1.6 Contract Agreement	<p>The Parties shall enter into a Contract Agreement within 28 days after the Contractor receives the Letter of Acceptance, unless the Particular Conditions establish otherwise. The Contract Agreement shall be based upon the Form annexed to the Particular Conditions.</p> <p>The costs of stamp duties and similar charges (if any) imposed by law and as per Stamp Duty Act (amended from time to time) of state in which the work is executed, in connection to entering into the Contract Agreement, shall be borne by the Contractor.</p>
1.7 Assignment	<p>Contractor shall not assign the whole or any part of the Contract or any benefit or interest in or under the Contract. However, the Employer:</p> <p>(a) may assign the whole or any part of the work, in event of exceptionally slow progress due to delay attributed to Contractor or poor quality (in accordance with Sub Clause 15.2 (g)) , and</p> <p>(b) may, as security in favour of a bank or financial institution, assign its right to any moneys due, or to become due, under the Contract.</p>
1.8 Care and Supply of Documents	<p>The Specification and Drawings shall be in the custody and care of the Employer. Unless otherwise stated in the Contract, two copies of the Contract and of each subsequent Drawing shall be supplied to the Contractor, who may make or request further copies at the cost of the Contractor.</p> <p>Each of the Contractor's Documents shall be in the custody and care of the Contractor, unless and until taken over by the Employer. Unless otherwise stated in the Contract, the Contractor shall supply to the Engineer six copies of each of the Contractor's Documents.</p> <p>The Contractor shall keep, on the Site, a copy of the Contract, publications named in the Specification, the Contractor's Documents</p>

	<p>(if any), the Drawings and Variations and other communications given under the Contract. The Employer's Personnel shall have the right of access to all these documents at all reasonable times.</p> <p>If a Party becomes aware of an error or defect in a document which was prepared for use in executing the Works, the Party shall promptly give notice to the other Party of such error or defect.</p>
1.9 (a) Delayed Drawings or Instructions	<p>The Contractor shall give notice to the Engineer whenever the Works are likely to be delayed or disrupted if any necessary drawing or instruction is not issued to the Contractor within a particular time, which shall be reasonable. The notice shall include details of the necessary drawing or instruction, details of why and by when it should be issued, and the nature and amount of the delay or disruption likely to be suffered if it is late.</p> <p>If the Contractor suffers delay as a result of a failure of the Engineer to issue the notified drawing or instruction within a time which is reasonable and is specified in the notice with supporting details, the Contractor shall give a further notice to the Engineer and shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to an extension of time only, for any such delay, if completion is or will be delayed, under Sub-Clause 8.4 [Extension of Time for Completion].</p> <p>After receiving this further notice, the Engineer shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine these matters.</p> <p>However, if and to the extent that the Engineer's failure was caused by any error or delay by the Contractor, including an error in, or delay in the submission of, any of the Contractor's Documents, the Contractor shall not be entitled to such extension of time, Cost or profit.</p>
1.9 (b) Errors in Employer's Requirement	<p>If the Contractor suffers delay and/or incurs Cost as a result of an error in the Employer's Requirements, and an experienced Contractor exercising due care would not have discovered the error when scrutinizing the Employer's Requirements under Section -VII , Part-2, the Contractor shall give notice to the Engineer and 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) payment of any such Cost plus reasonable profit towards addition in work requirement (if any) or additional cost implication in amendment / corrections in Employers Requirement , which shall be estimated / evaluated by Engineer and included in the Contract</p>

	<p>Price. After receiving this notice, the Engineer shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine (i) whether and (if so) to what extent the error could not reasonably have been so discovered, and (ii) the matters described in sub-paragraphs (a) and (b) above related to this extent.</p>
<p>1.10 Employer's Use of Contractor's Documents</p>	<p>As between the Parties, the Contractor shall retain the copyright and other intellectual property rights in the Contractor's Documents and other design documents made by (or on behalf of) the Contractor.</p> <p>The Contractor shall be deemed (by signing the Contract) to give to the Employer a non-terminable transferable non-exclusive royalty-free licence to copy, use and communicate the Contractor's Documents, including making and using modifications of them. This licence shall:</p> <p>(a) apply throughout the actual or intended working life (whichever is longer) of the relevant parts of the Works,</p> <p>(b) entitle any person in proper possession of the relevant part of the Works to copy, use and communicate the Contractor's Documents for the purposes of completing, operating, maintaining, altering, adjusting, repairing and demolishing the Works, and in the case of Contractor's Documents which are in the form of computer programs or soft copy and other software, permit their use on any computer on the Site and other places as envisaged by the Contract, including replacements of any computers supplied by the Contractor.</p>
<p>1.11 Contractor's Use of Employer's Documents</p>	<p>As between the Parties, the Employer shall retain the copyright and other intellectual property rights in the Specification, the Drawings software, soft copy of documents, digital format of document and other documents made by (or on behalf of) the Employer. The Contractor may, at his cost, copy, use, and obtain communication of these documents for the purposes of the Contract. They shall not, without the Employer's consent, be copied, used or communicated to a third party by the Contractor, except as necessary for the purposes of the Contract.</p>
<p>1.12 Confidential Details</p>	<p>The Contractor's and the Employer's Personnel shall disclose all such confidential and other information as may be reasonably required in order to verify compliance with the Contract and allow its proper implementation. Each of them shall treat the details of the Contract as private and confidential, except to the extent necessary to carry out their respective obligations under the Contract or to comply with applicable Laws. Contractor shall not publish or disclose any</p>

	<p>particulars of the Works prepared by the either Party without the previous agreement of the Employer.</p> <p>However, the Contractor shall be permitted to disclose any publicly available information on public domain, or information otherwise required to establish his qualifications to compete for other projects.</p>
1.13 Compliance with Laws	<p>The Contractor shall, in performing the Contract, comply with applicable Laws. Unless otherwise stated in the Particular Conditions:</p> <ul style="list-style-type: none"> (a) the Employer shall have obtained (or shall obtain) the planning, zoning, building permit or similar permission for the Permanent Works, and any other permissions described in the Specification as having been (or to be) obtained by the Employer; and the Employer shall indemnify and hold the Contractor harmless against and from the consequences of any failure to do so; and (b) the Contractor shall give all notices, pay all taxes, duties and fees, and obtain all permits, licenses and approvals, as required by the Laws in relation to the execution and completion of the Works and the remedying of any defects; and the Contractor shall indemnify and hold the Employer harmless against and from the consequences of any failure to do so, unless the Contractor is impeded to accomplish these actions and shows evidence of its diligence.
1.14 Joint and Several Liability	<p>If the Contractor constitutes (under applicable Laws) a joint venture, consortium or other unincorporated grouping of two or more persons:</p> <ul style="list-style-type: none"> (a) these persons shall be deemed to be jointly and severally liable to the Employer for the performance of the Contract; (b) these persons shall notify the Employer of their leader who shall have authority to bind the Contractor and each of these persons; and (c) the Contractor shall not alter its composition or legal status without the prior consent of the Employer.
1.15 Inspections and Audit by the Bank/ Funding Entity	<p>The Contractor shall permit the Bank/ Funding Entity and /or persons appointed by the Bank/ Funding Entity to inspect the Site and/or the Contractor's accounts and records relating to the performance of the Contract and to have such accounts and records audited by auditors appointed by the Bank/ Funding Entity, if required by the Bank.</p>

2. The Employer

2.1 Right of Access to the Site	<p>After award of the work, The Engineer shall grant the Contractor right of access to, and /or possession of, the Site progressively for the completion of Works. Such right and possession may not be exclusive to the Contractor. The Contractor will draw/ modify the schedule for completion of Works according to progressive possession / right of such sites.</p> <p>If the Contractor suffers delay from failure on the part of the Employer to grant right of access to, or possession of the Site, the Contractor shall give notice to the Engineer in a period of 28 days of such occurrence.</p> <p>After receipt of such notice the Engineer shall proceed to determine any extension of time to which the Contractor is entitled and shall notify the Contractor accordingly.</p> <p>For any such delay in handing over of site, Contractors will be entitled to only reasonable extension of time Sub-Clause 8.4 [Extension of Time for Completion] and no monetary claims whatsoever shall be paid or entertained on this account.</p> <p>The Access Dates shown in the Works Requirements are for planning purposes only.</p> <p>The Engineer reserves the right to make each site available to the Contractor any time before or after the Access Dates. The Engineer will notify the Contractor of the actual Access Dates in advance for each part of the works. This Notice will specify the area to which it refers is accessible and in a sufficient state of completion to permit the Contractor to begin installation and testing therein. It shall not imply that the Contractor will enjoy exclusive use of the area or that the work of other Contractor's therein is complete. The Contractor shall begin installation in each area by the actual Access Date, and shall complete all installation and testing in each area by the relevant Key Date (If Any)</p> <p>Notwithstanding the actual Access Date, whether before or after the stipulated Access Dates, the Employer shall not accept any increase in cost to the Employer.</p>
2.2 Permits, Licenses or Approvals	<p>The Employer shall provide, at the request of the Contractor, such reasonable assistance as to allow the Contractor to obtain properly:</p> <ul style="list-style-type: none">(a) copies of the Laws of the Country which are relevant to the Contract but are not readily available, and(b) any permits, licenses or approvals required by the Laws of the Country:

	<ul style="list-style-type: none"> (i) which the Contractor is required to obtain under Sub Clause 1.13 [Compliance with Laws], (ii) for the delivery of Goods, including clearance through customs, and other statutory authorities, local administrative bodies (iii) for the export of Contractor's Equipment when it is removed from the Site.
2.3 Employer's Personnel	<p>The Employer shall be responsible for ensuring that the Employer's Personnel and the Employer's other Contractors on the Site:</p> <ul style="list-style-type: none"> (a) co-operate with the Contractor's efforts under Sub-Clause 4.6 [Co-operation], and (b) take actions similar to those which the Contractor is required to take under sub-paragraphs (a), (b) and (c) of Sub-Clause 4.8 [Safety Procedures] and under Sub-Clause 4.18 [Protection of the Environment].
2.4 Employer's Financial Arrangements	<p>The Employer shall ensure the adequacy of fund & financial support for payment to Contractor & completion of the work, prior to commencement of work. The details may be made public or communicated to Contractor at the discretion of Employer.</p>
2.5 Employer's Claims	<p>If the Employer considers himself to be entitled to any payment under any Clause of these Conditions or otherwise in connection with the Contract, and/or to any extension of the Defects Notification Period, the Employer or the Engineer shall give notice and particulars to the Contractor. However, notice is not required for payments due under Sub-Clause 4.19 [Electricity, Water and Gas], under Sub-Clause 4.20 [Employer's Equipment and Free-Issue Materials], or for other services requested by the Contractor.</p> <p>The notice shall be given as soon as practicable and no longer than 28 days after the Employer became aware, or should have become aware, of the event or circumstances giving rise to the claim. A notice relating to any extension of the Defects Notification Period shall be given before the expiry of such period.</p> <p>The particulars shall specify the Clause or other basis of the claim, and shall include substantiation of the amount and/or extension to which the Employer considers himself to be entitled in connection with the Contract. The Engineer shall then proceed in accordance with Sub Clause 3.5 [Determinations] to agree or determine (i) the amount (if any) which the Employer is entitled to be paid by the Contractor, and/or</p> <p>(ii) the extension (if any) of the Defects Notification Period in</p>

	<p>accordance with Sub-Clause 11.3 [Extension of Defects Notification Period].</p> <p>This amount may be included as a deduction in the Contract Price and Payment Certificates. The Employer shall only be entitled to set off against or make any deduction from an amount certified in a Payment Certificate, or to otherwise claim against the Contractor, in accordance with this Sub-Clause.</p>
3. The Engineer	
3.1 Engineer's Duties and Authority	<p>The Employer shall appoint the Engineer who shall carry out the duties assigned to him in the Contract. The Engineer's staff shall include suitably qualified Engineers and other professionals who are competent to carry out these duties.</p> <p>The Engineer shall have no authority to amend the Contract.</p> <p>The Engineer may exercise the authority attributable to the Engineer as specified in or necessarily to be implied from the Contract. If the Engineer is required to obtain the approval of the Employer before exercising a specified authority, the requirements shall be as stated in the Particular Conditions. The Employer shall promptly inform the Contractor of any change to the authority attributed to the Engineer.</p> <p>However, whenever the Engineer exercises a specified authority for which the Employer's approval is required, then (for the purposes of the Contract) the Employer shall be deemed to have given approval.</p> <p>Except as otherwise stated in these Conditions:</p> <ul style="list-style-type: none"> (a) whenever carrying out duties or exercising authority, specified in or implied by the Contract, the Engineer shall be deemed to act for the Employer; (b) the Engineer has no authority to relieve either Party of any duties, obligations or responsibilities under the Contract; (c) any approval, check, certificate, consent, examination, inspection, instruction, notice, proposal, request, test, or similar act by the Engineer (including absence of disapproval) shall not relieve the Contractor from any responsibility he has under the Contract, including responsibility for errors, omissions, discrepancies and non-compliances; and (d) any act by the Engineer in response to a Contractor's request except as otherwise expressly specified shall be notified in writing to the Contractor within 28 days of receipt. <p>The following provisions shall apply:</p>

	<p>The Engineer shall obtain the specific approval of the Employer before taking action under the-following Sub-Clauses of these Conditions:</p> <ul style="list-style-type: none"> (a) Sub-Clause 4.12: agreeing or determining an extension of time and /or additional cost. (b) Sub-Clause 13.1: instructing a Variation, except; <ul style="list-style-type: none"> (i) in an emergency situation as determined by the Engineer, or (ii) if such a Variation would increase the Accepted Contract Amount as per provision of Particular Conditions, subjected to approval of Employer, as the case may be. (c) Sub-Clause 13.3: Approving a proposal for Variation submitted by the Contractor in accordance with Sub Clause 13.1 or 13.2. (d) Sub-Clause 13.4: Specifying the amount payable in each of the applicable currencies <p>Notwithstanding the obligation, as set out above, to obtain approval, if, in the opinion of the Engineer, an emergency occurs affecting the safety of life or of the Works or of adjoining property, he may, without relieving the Contractor of any of his duties and responsibility under the Contract, instruct the Contractor to execute all such work or to do all such things as may, in the opinion of the Engineer, be necessary to abate or reduce the risk. The Contractor shall forthwith comply, despite the absence of approval of the Employer, with any such instruction of the Engineer. The Engineer shall determine an addition to the Contract Price, in respect of such instruction, in accordance with Clause 13 and shall notify the Contractor accordingly, with a copy to the Employer.</p>
3.2 Delegation by the Engineer	<p>The Engineer may from time to time assign duties and delegate authority to assistants, and may also revoke such assignment or delegation. These assistants may include a resident Engineer, and/or independent inspectors appointed to inspect and/or test items of Plant and/or Materials. The assignment, delegation or revocation shall be in writing and shall not take effect until copies have been received by both Parties. However, unless otherwise agreed by both Parties, the Engineer shall not delegate the authority to determine any matter in accordance with Sub-Clause 3.5 [Determinations].</p> <p>Each assistant, to whom duties have been assigned or authority has been delegated, shall only be authorized to issue instructions to the Contractor to the extent defined by the delegation. Any approval, check, certificate, consent, examination, inspection, instruction, notice, proposal, request, test, or similar act by an assistant, in</p>

	<p>accordance with the delegation, shall have the same effect as though the act had been an act of the Engineer. However:</p> <ul style="list-style-type: none"> (a) any failure to disapprove any work, Plant or Materials shall not constitute approval, and shall therefore not prejudice the right of the Engineer to reject the work, Plant or Materials; (b) if the Contractor questions any determination or instruction of an assistant, the Contractor may refer the matter to the Engineer, who shall promptly confirm, reverse or vary the determination or instruction.
3.3 Instructions of the Engineer	<p>The Engineer may issue to the Contractor (at any time) instructions and additional or modified Drawings which may be necessary for the execution of the Works and the remedying of any defects, all in accordance with the Contract. The Contractor shall only take instructions from the Engineer, or from an assistant to whom the appropriate authority has been delegated under this Clause. If an instruction constitutes a Variation, Clause 13 [Variations and Adjustments] shall apply.</p> <p>The Contractor shall comply with the instructions given by the Engineer or delegated assistant, on any matter related to the Contract. Whenever practicable, their instructions shall be given in writing. If the Engineer or a delegated assistant:</p> <ul style="list-style-type: none"> (a) gives an oral instruction, (b) receives a written confirmation of the instruction, from (or on behalf of) the Contractor, within two working days after giving the instruction, and (c) does not reply by issuing a written rejection and/or instruction within two working days after receiving the confirmation, <p>then the confirmation shall constitute the written instruction of the Engineer or delegated assistant (as the case may be).</p>
3.4 Replacement of the Engineer	<p>If the Employer intends to replace the Engineer, the Employer shall, not less than 21 days before the intended date of replacement, give notice to the Contractor of the name, address and relevant experience of the intended replacement Engineer. If the Contractor considers the intended replacement Engineer to be unsuitable, he has the right to raise objection against him by notice to the Employer, with supporting particulars, and the Employer shall give full and fair consideration to this objection.</p>
3.5 Determinations	<p>Whenever these Conditions provide that the Engineer shall proceed in accordance with this Sub-Clause 3.5 to agree or determine any matter, the Engineer shall consult with each Party in an endeavor to</p>

	<p>reach agreement. If agreement is not achieved, the Engineer shall make a fair determination in accordance with the Contract, taking due regard of all relevant circumstances.</p> <p>The Engineer shall give notice to both Parties of each agreement or determination, with supporting particulars, within 28 days from the receipt of the corresponding claim or request except when otherwise specified. Each Party shall give effect to each agreement or determination unless and until revised under Clause 20 [Claims, Disputes and Arbitration].</p>
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4. The Contractor

<p>4.1 Contractor's General Obligations</p>	<p>The Contractor shall design (to the extent specified in the Contract), execute and complete the Works in accordance with the Contract and with the Engineer's instructions, and shall remedy any defects in the Works.</p> <p>The Contractor shall provide the Plant and Contractor's Documents specified in the Contract, and all Contractor's Personnel, Goods, consumables and other things and services, whether of a temporary or permanent nature, required in and for this design, execution, completion and remedying of defects.</p> <p>All equipment, material, and services to be incorporated in or required for the Works shall have their origin in any eligible source country as defined by the Bank.</p> <p>The Contractor shall be responsible for the adequacy, stability and safety of all Site operations and of all methods of construction. Except to the extent specified in the Contract, the Contractor (i) shall be responsible for all Contractor's Documents, Temporary Works, and such design of each item of Plant and Materials as is required for the item to be in accordance with the Contract, and (ii) shall not otherwise be responsible for the design or specification of the Permanent Works.</p> <p>The Contractor shall, whenever required by the Engineer, submit details of the arrangements and methods which the Contractor proposes to adopt for the execution of the Works. No significant alteration to these arrangements and methods shall be made without this having previously been notified to the Engineer.</p> <p>If the Contract specifies that the Contractor shall design any part of the Permanent Works, then unless otherwise stated in the Particular Condition s:</p> <ul style="list-style-type: none"> (a) the Contractor shall submit to the Engineer the Contractor's Documents for this part in accordance with the procedures specified in the Contract; (b) these Contractor's Documents shall be in accordance with the Specification and Drawings, shall be written in the language for communications defined in Sub-Clause 1.4 [Law and Language], and shall include additional information required by the Engineer to add to the Drawings for co-ordination of each Party's designs; (c) the Contractor shall be responsible for this part and it shall, when the Works are completed, be fit for such purposes for which the part is intended as are specified in the Contract; and (d) prior to the commencement of the Tests on Completion, the Contractor shall submit to the Engineer the "as-built"
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	<p>and, if applicable, operation and maintenance manuals in accordance with the Specification and in sufficient detail for the Employer to operate, maintain, dismantle, reassemble, adjust and repair this part of the Works. Such part shall not be considered to be completed for the purposes of taking-over under Sub-Clause 10.1 [Taking Over of the Works and Sections] until these documents and manuals have been submitted to the Engineer.</p> <p>(e) The Contractor shall prepare, and keep up-to-date, a complete set of "as-built" records of the execution of the Works, showing the exact "as-built" locations, sizes and details of the Works as executed, with cross references to relevant specifications and data sheets. These records shall be kept on the Site and shall be used exclusively for the purposes of this Sub-Clause. Six copies shall be submitted to the Engineer prior to the commencement of the Tests on Completion.</p> <p>(f) Prior to the issue of any Taking Over Certificate, the Contractor shall submit to the Engineer one microfilm / soft copy, one full size original copy and six printed copies of the relevant "as-built drawings", and any further Construction and/or Manufacture Documents specified in the Works Requirements. The Works shall not be considered to be completed for the purposes of Taking Over under Clause 10 until such documents have been submitted to the Engineer.</p> <p>(g) Prior to commencement of the Tests on Completion, the Contractor shall prepare, and submit to the Engineer, Operation and Maintenance Manuals in accordance with the Works Requirements and in sufficient detail for the Employer to operate, maintain, dismantle, reassemble, adjust and repair the Works. The Works shall not be considered to be completed for the purposes of Taking Over under Clause 10 until such Operation and Maintenance Manuals have been submitted to the Engineer and received his consent.</p> <p>(h) The Operation and Maintenance Manuals and drawings submitted by the Contractor shall be updated by him during the Defects Liability Period and the Contractor shall re-submit the updated manuals at the end of the OLP for review and acceptance by the Engineer.</p>
4.2 Performance Security	<p>The Contractor shall obtain (at his cost) a Performance Security for proper performance, in the amount stated in the Particular Conditions Of Contract and denominated in the currency (ies) of the Contract or in a freely convertible currency acceptable to the</p>

	<p>Employer. If an amount is not stated in the Particular Condition of Contract, this Sub-Clause shall not apply.</p> <p>The Contractor shall deliver the Performance Security to the Employer within 28 days after receiving the Letter of Acceptance, and shall send a copy to the Engineer. The Performance Security shall be issued by a scheduled commercial bank of Indian Origin or Schedule Commercial Bank Foreign origin (Except Cooperative Bank) having business office in India, acceptable to the Employer, and shall be in the form annexed to Contract Forms in Section X, as stipulated by the Employer in the Particular Condition of Contract, or in another form approved by the Employer.</p> <p>The Contractor shall ensure that the Performance Security is valid and enforceable until the Contractor has executed and completed the Works and remedied any defects during DLP and 60 (Sixty) days beyond OLP. If the terms of the Performance Security specify its expiry date, and the Contractor has not become entitled to receive the Performance Certificate by the date 28 days prior to the expiry date, the Contractor shall extend the validity of the Performance Security until the Works have been completed and any defects have been remedied.</p> <p>The Employer shall not make a claim under the Performance Security, except for amounts to which the Employer is entitled under the Contract in the event of:</p> <ul style="list-style-type: none"> (a) failure by the Contractor to extend the validity of the Performance Security as described in the preceding paragraph, in which event the Employer may claim the full amount of the Performance Security, (b) failure by the Contractor to pay the Employer an amount due, as either agreed by the Contractor or determined under Sub Clause 2.5 [Employer's Claims] or Clause 20 [Claims, Disputes and Arbitration], within 42 days after this agreement or determination, (c) failure by the Contractor to remedy a default within 42 days after receiving the Employer's notice requiring the default to be remedied, (d) Any act or work of contractor, which leads to the breach of contract. (e) Circumstances which entitle the Employer to termination under Sub-Clause 15.2 [Termination by Employer], irrespective of whether notice of termination has been given.
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	<p>The Employer shall indemnify and hold the Contractor harmless against and from all damages, losses and expenses (including legal fees and expenses) resulting from a claim under the Performance Security to the extent to which the Employer was not entitled to make the claim.</p> <p>The Employer shall return the Performance Security to the Contractor within 60 (Sixty) days after receiving a copy of the Performance Certificate. (i.e. successful completion of Defect Liability Period (DLP), if any)</p> <p>Without limitation to the provisions of the rest of this Sub-Clause, whenever the Engineer determines an addition or a reduction to the Contract Price as a result of a change in cost and/or legislation, or as a result of a Variation, amounting to more than 25 percent of the portion of the Contract Price payable in a specific currency, the Contractor shall at the Engineer's request promptly increase, or may decrease, as the case may be, the value of the Performance Security in that currency by an equal percentage.</p> <p>Note: - In case the Performance Security is in the form of other than Bank Guarantee the detail is specifically mentioned in Particular Condition of Contract & the same shall prevail.</p>
<p>4.3 Contractor's Representative</p>	<p>The Contractor shall appoint the Contractor's Representative and shall give him all authority necessary to act on the Contractor's behalf under the Contract.</p> <p>Unless the Contractor's Representative is named in the Contract, the Contractor shall, prior to the Commencement Date, submit to the Engineer for consent the name and particulars of the person the Contractor proposes to appoint as Contractor's Representative. If consent is withheld or subsequently revoked in terms of Sub-Clause 6.9 [Contractor's Personnel], or if the appointed person fails to act as Contractor's Representative, the Contractor shall similarly submit the name and particulars of another suitable person for such appointment.</p> <p>The Contractor shall not, without the prior consent of the Engineer /Employer, revoke the appointment of the Contractor's Representative or appoint a replacement.</p> <p>The whole time of the Contractor's Representative shall be given to directing the Contractor's performance of the Contract. If the Contractor's Representative is to be temporarily absent from the Site during the execution of the Works, a suitable replacement person shall be appointed, subject to the Engineer's prior consent, and the Engineer shall be notified accordingly.</p>

	<p>The Contractor's Representative shall, on behalf of the Contractor, receive instructions under Sub-Clause 3.3 [Instructions of the Engineer].</p> <p>The Contractor's Representative may delegate any powers, functions and authority to any competent person, and may at any time revoke the delegation. Any delegation or revocation shall not take effect until the Engineer has received prior notice signed by the Contractor's Representative, naming the person and specifying the powers, functions and authority being delegated or revoked.</p> <p>The Contractor's Representative shall be fluent in the language for communications defined in Sub-Clause 1.4 [Law and Language]. If the Contractor's Representative's delegates are not fluent in the said language, the Contractor shall make competent interpreters available during all working hours in a number deemed sufficient by the Engineer.</p>
4.4 Sub-Contractors	<p>The Contractor shall not subcontract the whole of the Works.</p> <p>The Contractor shall be responsible for the acts or defaults of any Sub Contractor, his agents or employees, as if they were the acts or defaults of the Contractor. Unless otherwise stated in the Particular Condition s:</p> <ul style="list-style-type: none"> (a) the Contractor shall not be required to obtain consent to suppliers solely of Materials, or to a subcontract for which the Subcontractor is named in the Contract; (b) the prior consent of the Engineer shall be obtained to other proposed Sub Contractors; (c) the Contractor shall give the Engineer not less than 28 days' notice of the intended date of the commencement of each Subcontractor's work, and of the commencement of such work on the Site; and (d) each subcontract shall include provisions which would entitle the Employer to require the subcontract to be assigned to the Employer under Sub-Clause 4.5 [Assignment of Benefit of Subcontract] (if or when applicable) or in the event of termination under Sub-Clause 15.2 [Termination by Employer] (e) Sub-contracting of works shall be limited to 50% of the awarded cost of the work. The terms and conditions of subcontracts and the payments that have to be made to the Sub Contractors shall be the sole responsibility of the Contractor. However, the Sub Contractor / Vendor shall fully comply with the technical specifications included in the Works Requirements and other contractual obligations with the main Contractor.

	<p>(f) The Contractor shall not be required to provide to the Engineer the details of the pricing of their Sub-contracts.</p> <p>(g) For sub-contracts exceeding Rs 5 million each, it will be obligatory for the Contractor to obtain a "Notice of No Objection" from the Engineer, for selection of the Sub Contractor and Vendor. The Contractor shall submit the full detail of sub-Contractor and tasks proposed to be assigned, along with application of NOC. 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.</p> <p>(h) The Contractor shall provide sufficient superintendence, whether on the site or elsewhere, to ensure that the work to be carried out by a Sub-Contractor complies with the requirements of the Contract.</p> <p>(i) Notwithstanding any consent to sub-contract given by the Engineer, if in his opinion it is consider necessary, the Engineer shall have full authority to order the removal of any sub-Contractor from the Site or off-Site, place of construction/fabrication or storage.</p> <p>U) The Contractor shall ensure that their sub-Contractors, material / equipment suppliers and other agencies deployed by them in connection with execution of the Contract do not make any claim or raise any dispute before Employer. For this, necessary provision shall be made in the agreement between Contractor and their Sub Contractors / other agencies. Similarly the agreement should also incorporate the provision of dispute resolution. An <i>Undertaking</i> in this regard shall be furnished in the "Form-13" provided in Section-X: Contract Form.</p> <p>(k) Employer is not responsible for payment of any dues, claims of Sub-Contractor of Contractor.</p> <p>(l) The Contractor shall ensure that the requirements imposed on the Contractor by Sub-Clause 1.12 [Confidential Details] apply equally to each Sub Contractor.</p> <p>(m) Where practicable, the Contractor shall give fair and reasonable opportunity for Sub-Contractors from within the Country.</p>
4.5 Assignment of Benefit of Subcontract	<p>If a Subcontractor's obligations extend beyond the expiry date of the relevant Defects Notification Period and the Engineer, prior to this date, instructs the Contractor to assign the benefit of such obligations to the Employer, then the Contractor shall do so. Unless otherwise stated in the assignment, the Contractor shall have no liability to the</p>

	Employer for the work carried out by the Sub Contractor after the assignment takes effect.
4.6 Co-operation	<p>The Contractor shall, as specified in the Contract or as instructed by the Engineer, allow appropriate opportunities for carrying out work to:</p> <ul style="list-style-type: none"> (a) the Employer's Personnel, (b) any other Contractors employed by the Employer, and (c) the personnel of any legally constituted public authorities, <p>who may be employed in the execution on or near the Site of any work not included in the Contract.</p> <p>The Contractor shall be responsible for his construction activities on the Site, and shall co-ordinate his own activities with those of other contractors to the extent (if any) specified in the Employer's Requirements.</p> <p>If, under the Contract, the Employer is required to give to the Contractor possession of any foundation, structure, plant or means of access in accordance with Contractor's Documents, the Contractor shall submit such documents to the Engineer in the time and manner stated in the Specification</p>
4.7 Setting Out	<p>The Contractor shall set out the Works in relation to original points, lines and levels of reference specified in the Contract or notified by the Engineer. The Contractor shall be responsible for the correct positioning of all parts of the Works, and shall verify & rectify any error in the positions, levels, dimensions or alignment of the Works.</p> <p>The Engineer shall be responsible for any errors, in these specified or notified items of reference (if the design, drawing is supplied by Employer/ Engineer), but the Contractor shall use reasonable efforts to verify their accuracy before they are used and corrective measures shall be taken by Contractor accordingly.</p> <p>In Contract, where the Design is entirely in the scope of Contractor, the Contractor shall be responsible for any error & its further consequences.</p> <p>If the Contractor suffers delay and/or incurs Cost from executing work which was necessitated by an error in these items of reference (due to reasons whatsoever), and Contractor could not reasonably have discovered such error and avoided this delay and/or Cost, the Contractor shall give notice to the Engineer and shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to an extension of time only for any such delay, if completion is or will be delayed, under Sub-Clause 8.4 [Extension of Time for Completion], and</p>

	<p>After receiving this notice, the Engineer shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine (i) whether and (if so) to what extent the error could not reasonably have been discovered, and (ii) the matters described above.</p>
<p>4.8 Safety Procedures</p>	<p>The Contractor shall:</p> <ul style="list-style-type: none"> (i) comply with all applicable safety regulations, (ii) take care for the safety of all persons entitled to be on the Site, (iii) use reasonable efforts to keep the Site and Works clear of unnecessary obstruction so as to avoid danger to these persons, (iv) provide fencing, lighting, guarding and watching of the Works until completion and taking over under Clause 10 [Employer's Taking Over], and (v) provide any Temporary Works (including roadways, footways, guards and fences) which may be necessary, because of the execution of the Works, for the use and protection of the public and of owners and occupiers of adjacent land. (vi) Within 8 weeks of the date of Notice to Proceed, the Contractor shall submit a detailed and comprehensive contract-specific Site Safety Plan based on the Employer's Safety, Health and Environment Manual (SHE Manual). The Contractor is required to make himself aware of all the requirements of the Employer's Safety, Health and Environment Manual in this regard and comply with them. The Site Safety Plan shall include detailed policies, procedures and regulations which, when implemented, will ensure compliance with Sub-Clauses 4.8 and 6.7 of General Conditions of Contract. (vii) The Contractor shall, from time to time and as necessary or required by the Engineer, produce supplements to the Site Safety Plan such that it is at all times a detailed, comprehensive and contemporaneous statement by the Contractor of his site safety and industrial health obligations, responsibilities, policies and procedures (under the laws of India) or as stated in the Contract or elsewhere relating to work on Site. (viii) If at any time the Site Safety Plan is, in the opinion of the Engineer, insufficient or requires revision or modification to ensure the security of the Works and the safety of all workmen upon, and visitors to the Site, the Engineer may instruct the Contractor to revise the Site Safety Plan. The Contractor shall, within 14 days, submit the revised plan to the Engineer for review.

	<p>(ix) Any omission, inconsistency or error in the Site Safety Plan or the Engineer concurrence or rejection of the Site Safety Plan and/or supplements thereto shall be without prejudice to the Contractor's obligations with respect to site safety and industrial health and shall not excuse any failure by the Contractor to adopt proper and recognized safety practices throughout the execution of the Works.</p> <p>(x) The Contractor shall adhere to the Site Safety Plan and shall ensure, that all sub-Contractors of all tiers have a copy of the Site Safety Plan and comply with its provisions.</p> <p>(xi) The Contractor shall provide all necessary access, assistance and facilities to enable the Engineer and the Employer to carry out surveillance to verify that the Site Safety Plan is being properly and fully implemented.</p> <p>(xii) The Contractor shall notify the Engineer immediately of any occurrence or incident that results in death or serious injury as defined in the Indian Penal Code. Such initial notification may be verbal and confirmed in writing thereafter and shall be followed by a comprehensive written report within 24 hours of the occurrence/incident. The Contractor shall duly complete standard forms as required by the Engineer and Statutory Authorities.</p> <p>(xiii) The Contractor shall provide and maintain all necessary temporary fire protection and firefighting facilities on the Site during the construction of the Works in accordance with the statutory regulations and as required by the Engineer. The Contractor shall ensure that all gases, fuels and other dangerous Materials and goods are stored and handled in a safe manner and in accordance with the statutory regulations and as required by the Engineer.</p> <p>(xiv) The obligations and requirements for safety and industrial health under this Contract are entirely without prejudice to, and do not derogate from, the Contractor's statutory obligations, with respect to safety and industrial health.</p> <p>(xv) Contractor is required to take note of all the necessary provisions in Employer's Safety, Health and Environment Manual (SHE Manual) and the Contractor's price shall be inclusive of all the necessary costs to meet the prescribed safety standards. In the case, the Contractor fails in the above; the Employer may provide the necessary arrangements and recover the costs from the Contractor.</p>
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	<p>(xvi) The Contractor shall submit a detailed and comprehensive contract-specific Site Safety Plan and System Safety Assurance Plan in accordance with the provisions in Employer's Safety, Health & Environment (SHE) Manual and Employer's Requirements.</p> <p>(xvii) where any work would otherwise be carried out in darkness, ensure that all parts of the Site where work is being carried out are so lighted as to ensure the safety & Security of all persons on or in the vicinity of the Site and of such work.</p> <p>(xviii) The Contractor shall, from time to time and as necessary or required by the Engineer, produce supplements to the Site Safety and System Safety Assurance Plans such that they are at all times detailed, comprehensive and contemporaneous statements by the Contractor of his site safety measures, policies and procedures (under the laws of India) or as stated in the Contract or elsewhere.</p> <p>(xix) If at any time the Site Safety Plan and/or System Safety Assurance Plan is, in the Engineer's opinion, insufficient or requires revision or modification, the Engineer may instruct the Contractor to revise the appropriate Plan. The Contractor shall, within fourteen days, submit the revised plan to the Engineer for review.</p> <p>(xx) Any omission, inconsistency or error in the Safety Plans or the Engineer's consent or rejection of the Safety Plans and/or supplements thereto shall be without prejudice to the Contractor's obligations with respect to safety measures and shall not excuse any failure by the Contractor to adopt proper and recognized safety practices throughout the execution of the Works.</p> <p>(xxi) have full regard for the safety of all persons on or in the vicinity of the Site (including without limitation persons to whom access to the Site has been allowed by the Contractor), comply with all relevant safety regulations, including provision of safety gear, and insofar as the Contractor is in occupation or otherwise is using areas of the Site, keep the Site and the Works (so far as the same are not completed and occupied by the Employer) in an orderly state appropriate to the avoidance of injury to all persons and shall keep the Employer indemnified against all injuries to such person</p>
4.9 Quality Assurance	The Contractor shall institute a quality assurance system to demonstrate compliance with the requirements of the Contract. The

	<p>system shall be in accordance with the details stated in the Contract. The Engineer shall be entitled to audit any aspect of the system.</p> <p>Details of all procedures and compliance documents shall be submitted to the Engineer for information before each design and execution stage is commenced. When any document of a technical nature is issued to the Engineer, evidence of the prior approval by the Contractor himself shall be apparent on the document itself.</p> <p>Compliance with the quality assurance system shall not relieve the Contractor of any of his duties, obligations or responsibilities under the Contract.</p>
4.10 Site Data	<p>The Employer shall have made available to the Contractor with the Bidding documents such relevant data/ studies/ reports/ technical information in Employer's possession. The accuracy or reliability of the data/ studies/ reports/ technical information and of any other information supplied at the time of bidding by the Employer or Engineer is not warranted with respect to the viability of his execution of Works and the Contractor shall be responsible for verifying and interpreting all such data.</p> <p>The Contractor shall conduct further investigations considered necessary by him at his own cost and any error, discrepancies if found in Employer's data at any stage will not constitute ground for any claim for extra time and costs.</p> <p>The Contractor shall be deemed to have obtained all necessary information as to risks, contingencies and other circumstances which may influence or affect the Tender or Works.</p> <p>The Contractor shall also be deemed to have inspected and examined the Site, its surroundings, the above data and other available information with respect to the viability of his design and execution of Works and to have satisfied himself before submitting the Tender, as to all the relevant matters including without limitation:</p> <ul style="list-style-type: none"> a) the climatic conditions; b) the hydrological conditions and the form and nature of the Site, including Sub-Surface conditions c) the extent and nature of the work, Plant, and Materials necessary for the execution and completion of the Works and the remedying of any defects; d) the applicable laws, procedures and labour practices e) The Contractor's requirement for access, accommodation, facilities, personnel, power, transport and other services f) the risk of injury or damage to property adjacent to the Site and to the occupiers of such property or any other risk.

<p>4.11 Sufficiency of the Accepted Contract Amount</p>	<p>The Contractor shall be deemed to:</p> <ul style="list-style-type: none"> (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 Sub-Clause 4.10 [Site Data]. <p>Unless otherwise stated in the Contract, the Accepted Contract Amount covers all the Contractor's obligations under the Contract (including those under Provisional Sums, if any) and all things necessary for the proper execution and completion of the Works and the remedying of any defects.</p>
<p>4.12 Unforeseeable Physical Conditions</p>	<p>In this Sub-Clause, "physical conditions" means natural physical conditions and man-made and other physical obstructions and pollutants, which the Contractor encounters at the Site when executing the Works, including sub-surface and hydrological conditions but excluding climatic conditions.</p> <p>If the Contractor encounters adverse physical conditions which he considers to have been Unforeseeable, the Contractor shall give notice to the Engineer as soon as practicable.</p> <p>This notice shall describe the physical conditions, so that they can be inspected by the Engineer, and shall set out the reasons why the Contractor considers them to be Unforeseeable. The Contractor shall continue executing the Works, using such proper and reasonable measures as are appropriate for the physical conditions, and shall comply with any instructions, which the Engineer may give. If an instruction constitutes a Variation, Clause 13 [Variations and Adjustments] shall apply.</p> <p>If and to the extent that the Contractor encounters physical conditions which are Unforeseeable, gives such a notice, and suffers delay and/or incurs Cost due to these conditions, the Contractor shall be entitled subject to notice under Sub-Clause 20.1 [Contractor's Claims] to</p> <ul style="list-style-type: none"> (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]. (b) payment of any such cost, which shall be included in the Contract Price <p>Upon receiving such notice and inspecting and /or investigating these physical conditions, the Engineer shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine (i) whether and</p>

	<p>(if so) to what extent these physical conditions were Unforeseeable, and (ii) the matters described above related to this extent.</p> <p>The Engineer shall take account of any evidence of the physical conditions foreseen by the Contractor when submitting the Tender, which shall be made available by the Contractor, but shall not be bound by the Contractor's interpretation of any such evidence.</p>
4.13 Rights of Way and Facilities	<p>Unless otherwise specified in the Contract the Employer shall provide effective access to and possession of the Site including special and/or already available temporary access and rights-of-way which are necessary for the Works.</p> <p>The Contractor shall obtain / construct, 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.</p>
4.14 Avoidance of Interference	<p>The Contractor shall not interfere unnecessarily or improperly with:</p> <ul style="list-style-type: none"> (a) the convenience of the public, or (b) the access to and use and occupation of all roads and footpaths, irrespective of whether they are public or in the possession of the Employer or of others. (c) Shall not interfere in smooth functioning of traffic & shall make suitable arrangement at his own cost to segregate it from the working area without causing any safety concern of common people. <p>The Contractor shall indemnify and hold the Employer harmless against and from all damages, losses, claims and expenses (including legal fees and expenses) resulting from any such unnecessary or improper interference.</p>
4.15 Access Route	<p>The Contractor shall be deemed to have been satisfied as to the suitability and availability of access routes to the Site at Base Date. The Contractor shall use reasonable efforts to prevent any road or bridge from being damaged by the Contractor's traffic or by the Contractor's Personnel. These efforts shall include the proper use of appropriate vehicles and routes.</p> <p>Except as otherwise stated in these Conditions:</p> <ul style="list-style-type: none"> (a) the Contractor shall (as between the Parties) be responsible for any maintenance which may be required for his use of access routes; (b) the Contractor shall provide all necessary signs or directions along access routes, and shall obtain any permission which may

	<p>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>(f) All operations for the execution of the Works shall be carried out so as not to interfere unnecessarily with the convenience of the public or the access to public or private roads or footpaths or properties owned by the Employer or by any other person. The Contractor shall select routes, choose and use such vehicles so that movement of Contractor's Equipment, Plant and Materials from and to the Site is so limited that traffic is not delayed and damage to highways and bridges is prevented. If there is any delay or damage or injury, the cost of rectification or reconstruction of highways or bridges shall be borne by the Contractor. The Contractor shall indemnify the Employer in respect of all claims, demands, proceedings, damages, costs, charges and expenses whatsoever arising out of or in relation to any such matters.</p> <p>(g) If during the execution of the Works the Contractor shall receive any claim arising out of the execution of the Works in respect of damage to highways or bridges, he shall immediately report the facts to the Engineer. The Contractor shall negotiate a settlement in respect of such claims and indemnify the Employer in respect of all claims, proceedings, damages, costs, charges and expenses in relation thereto.</p>
4.16 Transport of Goods	<p>Unless otherwise stated in the Particular Conditions:</p> <p>(a) the Contractor shall give the Engineer not less than 21 days' notice of the date on which any Plant or a major item of other Goods will be delivered to the Site;</p> <p>(b) the Contractor shall be responsible for packing, loading, transporting, receiving, unloading, storing and protecting all Goods and other things required for the Works; and</p> <p>(c) the Contractor shall indemnify and hold the Employer harmless against and from all damages, losses and expenses (including legal fees and expenses) resulting from the transport of Goods, and shall negotiate and pay all claims arising from their transport.</p>

<p>4.17 Contractor's Equipment</p>	<p>The Contractor shall be responsible for all Contractor's Equipment. When brought on to the Site, Contractor's Equipment shall be deemed to be exclusively intended for the execution of the Works. The Contractor shall not remove from the Site any major items of Contractor's Equipment without the consent of the Engineer. However, consent shall not be required for vehicles transporting Goods or Contractor's Personnel off Site.</p>
<p>4.18 Protection of the Environment</p>	<p>The Contractor shall take all reasonable steps to protect the environment (both on and off the Site) and to limit damage and nuisance to people and property resulting from pollution, noise and other results of his operations.</p> <p>The Contractor shall ensure that emissions, surface discharges and effluent from the Contractor's activities shall not exceed the values stated in the Specification or prescribed by applicable Laws.</p> <p>Contractor shall submit Outline Environmental Plan in accordance with the provisions of Employer's Safety, Health & Environment (SHE) Manual and shall include in summary form, the Contractor's proposed means of complying with his obligations in relation to:</p> <ul style="list-style-type: none"> • the Site Environment; and • System Environment as described in Works Requirements. <p>Within 60 days of the date of the Notice to Proceed, the Contractor shall submit a detailed and comprehensive Environmental Plan based on the Outline Environmental Plan. The Environmental Plan shall include detailed policies, procedures and applicable regulations.</p> <p>The Contractor shall provide all necessary access, assistance and facilities to enable the Engineer and the Employer to monitor and conduct tests at site to verify that the Environmental Plan is being properly and fully implemented.</p>
<p>4.19 Electricity, Water and Gas</p>	<p>The Contractor shall be responsible for the provision of all power, water and gas and any other services, at his own cost, he may require for his construction activities and to the extent defined in the Specifications, for the tests.</p> <p>However, the Contractor may be permitted at the discretion of Employer to use for the purposes of the Works such supplies of electricity, water, gas and other services, if available, at the prevailing price payable to Employer. The Contractor shall, at his risk and cost, provide any apparatus necessary for his use of these services and for measuring the quantities consumed. Necessary equipment, arrangements, & metering devices shall be arranged by Contractor at his own cost</p>

	<p>The quantities consumed and the amounts due (at these prices) for such services shall be agreed or determined by the Engineer in accordance with Sub-Clause 2.5 [Employer's Claims] and Sub-Clause 3.5 [Determinations]. The Contractor shall pay these amounts to the Employer.</p>
<p>4.20 Employer's Equipment and Free Issue Materials</p>	<p>The Employer will not provide any tools, plant, equipment and machinery or materials under the Contract. The Contractor shall arrange the required tools, plants, equipment at his own cost without any additional cost to Maha-Metro.</p> <p>However, the Employer shall make the Employer's Equipment (if any) available for the use of the Contractor in the execution of the Works in accordance with the details, arrangements and prices stated in the Specification. Unless otherwise stated in the Specification:</p> <p>(a) the Employer shall be responsible for the Employer's Equipment, except that</p> <p>(b) the Contractor shall be responsible for each item of Employer's Equipment whilst any of the Contractor's Personnel is operating it, driving it, directing it or in possession or control of it.</p> <p>The appropriate quantities and the amounts due (at such stated prices) for the use of Employer's Equipment shall be agreed or determined by the Engineer in accordance with Sub-Clause 2.5 [Employer's Claims] and Sub-Clause 3.5 [Determinations]. The Contractor shall pay these amounts to the Employer.</p> <p>The Employer shall supply, free of charge, the "free-issue materials" (if any) in accordance with the details stated in the Specification. The Employer shall, at his risk and cost, provide these materials at the time and place specified in the Contract. The Contractor shall then visually inspect them, and shall promptly give notice to the Engineer of any shortage, defect or default in these materials. Unless otherwise agreed by both Parties, the Employer shall immediately rectify the notified shortage, defect or default.</p> <p>After this visual inspection, the free-issue materials shall come under the care, custody and control of the Contractor. The Contractor's obligations of inspection, care, custody and control shall not relieve the Employer of liability for any shortage, defect or default not apparent from a visual inspection.</p>
<p>4.21 Progress Reports</p>	<p>Unless otherwise stated in the Particular Condition s, monthly progress reports shall be prepared by the Contractor and submitted to the Engineer in three copies. The first report shall cover the period up to the end of the first calendar month following the Commencement</p>

	<p>Date. Reports shall be submitted monthly thereafter, each within 7 days after the last day of the period to which it relates.</p> <p>Reporting shall continue until the Contractor has completed all work which is known to be outstanding at the completion date stated in the Taking-Over Certificate for the Works.</p> <p>Each report shall include:</p> <ul style="list-style-type: none"> (a) charts and detailed descriptions of progress, including each stage of design (if any), Contractor's Documents, procurement, manufacture, delivery to Site, construction, erection and testing; and including these stages for work by each nominated Sub Contractor (as defined in Clause 5 [Nominated Sub Contractors]), (b) photographs showing the status of manufacture and of progress on the Site; (c) for the manufacture of each main item of Plant and Materials, the name of the manufacturer, manufacture location, percentage progress, and the actual or expected dates of: <ul style="list-style-type: none"> (i) commencement of manufacture, (ii) Contractor's inspections, (iii) tests, and (iv) shipment and arrival at the Site; (d) the details described in Sub-Clause 6.10 [Records of Contractor's Personnel and Equipment]; (e) copies of quality assurance documents, test results and certificates of Materials; (f) list of notices given under Sub-Clause 2.5 [Employer's Claims] and notices given under Sub-Clause 20.1 [Contractor's Claims]; (g) safety statistics, including details of any hazardous incidents and activities relating to environmental aspects and public relations; and (h) comparisons of actual and planned progress, with details of any events or circumstances which may jeopardise the completion in accordance with the Contract, and the measures being (or to be) adopted to overcome delays.
4.22 Security of the Site	<p>Unless otherwise stated in the Particular Conditions:</p> <ul style="list-style-type: none"> (a) the Contractor shall be responsible for keeping unauthorised persons off the Site, and

	<p>(b) authorised persons shall be limited to the Contractor's Personnel and the Employer's Personnel; and to any other personnel notified to the Contractor, by the Employer or the Engineer, as authorised personnel of the Employer's other Contractors on the Site.</p> <p>(c) The Contractor shall ensure proper security of all his assets along with Employer's assets by proper barricading / fencing (where ever required) and by deploying adequate security personnel and Security Equipment at his own cost.</p> <p>(d) The Contractor shall throughout the execution of the Works including the carrying out of any testing, commissioning (including Integrated Testing and Commissioning), or remedying of any defect which includes the following:-</p> <p>(i) take full responsibility for the adequacy, stability, safety and security of the Works, Plant, Contractor's Equipment, Temporary Works, operations on Site and methods of manufacture, installation, construction and transportation;</p> <p>(ii) provide and maintain all lights, guards, fences and warning signs and watchmen when and where necessary or required by the Engineer or by laws or by any relevant authority for the protection of the Works and for the safety and convenience of the public and all persons on or in the vicinity of the Site; and</p> <p>(iii) The Contractor shall provide all necessary access, assistance and facilities to enable the Engineer and the Employer to carry out surveillance, by installing CCTV Cameras with backup system to verify that the Safety & security Plans are being properly and fully implemented.</p>
4.23 Contractor's Operations on Site	<p>The Contractor shall confine his operations to the Site, and to any additional areas which may be obtained by the Contractor and agreed by the Engineer as additional working areas. The Contractor shall take all necessary precautions to keep Contractor's Equipment and Contractor's Personnel within the Site and these additional areas, and to keep them off adjacent land.</p> <p>During the execution of the Works, the Contractor shall keep the Site free from all unnecessary obstruction, and shall store or dispose of any Contractor's Equipment or surplus materials. The Contractor shall clear away and remove from the Site any wreckage, rubbish and Temporary Works which are no longer required.</p> <p>Upon the issue of a Taking-Over Certificate, the Contractor shall clear away and remove, from that part of the Site and Works to which the Taking-Over Certificate refers, all Contractor's Equipment, surplus material, wreckage, rubbish and Temporary Works. The Contractor</p>

	shall leave that part of the Site and the Works in a clean and safe condition. However, the Contractor may retain on Site, during the Defects Notification Period, such Goods as are required for the Contractor to fulfil obligations under the Contract.
4.24 Fossils	<p>All fossils, coins, articles of value or antiquity, and structures and other remains or items of geological or archaeological interest found on the Site shall be placed under the care and authority of the Employer. The Contractor shall take reasonable precautions to prevent Contractor's Personnel or other persons from removing or damaging any of these findings.</p> <p>The Contractor shall, upon discovery of any such finding, promptly give notice to the Engineer, who shall issue instructions for dealing with it. If the Contractor suffers delay, the Contractor shall give a further notice to the Engineer and shall be entitled subject to Sub Clause 20.1 [Contractor's Claims] to 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].</p> <p>After receiving this further notice, the Engineer shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine these matters.</p>
5. Nominated Sub Contractors	
5.1 Definition of "nominated Sub Contractor"	<p>In the Contract, "nominated Sub Contractor" means a Sub Contractor:</p> <ul style="list-style-type: none"> (a) who is stated in the Contract as being a nominated Sub Contractor, or (b) whom the Engineer, under Clause 13 [Variations and Adjustments], instructs the Contractor to employ as a Sub Contractor subject to Sub-Clause 5.2 [Objection to Notification]. (c) If the design is also a part of the contract, Employer may nominate designers as a subcontractor and a list of such nominated designer shall be provide in Section-III: EQC. Contractor may engage any one of them as approved designer
5.2 Objection to Nomination	<p>The Contractor shall not be under any obligation to employ a nominated Sub Contractor against whom the Contractor raises reasonable objection by notice to the Engineer as soon as practicable, with supporting particulars. An objection shall be deemed reasonable if it arises from (among other things) any of the following matters, unless the Employer agrees in writing to indemnify the Contractor against and from the consequences of the matter:</p>

	<p>(a) there are reasons to believe that the Sub Contractor does not have sufficient competence, resources or financial strength;</p> <p>(b) the nominated Sub Contractor does not accept to indemnify the Contractor against and from any negligence or misuse of Goods by the nominated Sub Contractor, his agents and employees; or</p> <p>(c) the nominated Sub Contractor does not accept to enter into a subcontract which specifies that, for the subcontracted work (including design, if any), the nominated Sub-Contractor shall:</p> <ul style="list-style-type: none"> (i) undertake to the Contractor such obligations and liabilities as will enable the Contractor to discharge his obligations and liabilities under the Contract; (ii) indemnify the Contractor against and from all obligations and liabilities arising under or in connection with the Contract and from the consequences of any failure by the Sub-Contractor to perform these obligations or to fulfil these liabilities, and (iii) be paid only if and when the Contractor has received from the Employer payments for sums due under the Subcontract referred to under Sub-Clause 5.3 [Payment to nominated Sub-Contractors].
5.3 Payments to nominated Sub Contractors	<p>The Contractor shall pay to the nominated Sub-Contractor the amounts shown on the nominated Sub-Contractor's invoices approved by the Contractor, which the Engineer certifies to be due in accordance with the subcontract. These amounts plus other charges shall be included in the Contract Price in accordance with subparagraph (b) of Sub-Clause 13.5 [Provisional Sums], except as stated in Sub-Clause 5.4 [Evidence of Payments].</p> <p>Any payments due to Sub Contractor is the responsibility of the Contractor and Employer neither liable to pay any Sub Contractor directly nor shall be party in any dispute arising between Contractor and Sub Contractor.</p>
5.4 Evidence of Payments	<p>Before issuing a Payment Certificate which includes an amount payable to a nominated Sub-Contractor, the Engineer may request the Contractor to supply reasonable evidence that the nominated Sub Contractor has received all amounts due in accordance with previous Payment Certificates, less applicable deductions for retention or otherwise. Unless the Contractor:</p> <ul style="list-style-type: none"> (a) submits this reasonable evidence to the Engineer, or (b)

	<p>(i) satisfies the Engineer in writing that the Contractor is reasonably entitled to withhold or refuse to pay these amounts, and</p> <p>(ii) submits to the Engineer reasonable evidence that the nominated Sub Contractor has been notified of the Contractor's entitlement,</p> <p>then the Employer may (at his sole discretion) pay, direct to the nominated Sub Contractor, part or all of such amounts previously certified (less applicable deductions) as are due to the nominated Sub Contractor and for which the Contractor has failed to submit the evidence described in sub-paragraphs (a) or (b) above. The Contractor shall then repay, to the Employer, the amount which the nominated Sub Contractor was directly paid by the Employer.</p>
6. Staff and Labour	
6.1 Engagement of Staff and Labour	<p>Except as otherwise stated in the Specification, the Contractor shall make arrangements for the engagement of all staff and labour, local or otherwise, and for their payment, feeding, transport, and, when appropriate, housing.</p> <p>The Contractor is encouraged, to the extent practicable and reasonable, to employ staff and labour with appropriate qualifications and experience from sources within the Country.</p>
6.2 Rates of Wages and Conditions of Labour	<p>The Contractor shall pay rates of wages, and observe conditions of labour, which are not lower than the rate fixed by legislation of the Country / Local Governing Authority where the work is carried out. If no established rates or conditions are applicable, the Contractor shall pay rates of wages and observe conditions which are not lower than the general level of wages and conditions observed locally by Employers whose trade or industry is similar to that of the Contractor.</p> <p>(xxii) The Contractor shall inform the Contractor's Personnel about their liability to pay personal income taxes in the Country in respect of such of their salaries, wages, allowances and any benefits as are subject to tax under the Laws of the Country for the time being in force, and the Contractor shall perform such duties in regard to such deductions thereof as may be imposed on him by such Laws.</p> <p>(a) The Contractor shall make himself aware of all labour regulations and their impact on the cost and build up the same in the Contract Price. During the Contract Period no extra amount in this regard shall be payable to the Contractor, for whatsoever reason including any revision of rates payable to</p>

	<p>the labour due to revision of rates payable in Minimum Wages Act.</p> <p>(b) The Contractor shall pay wages to the workers and staff engaged in this work as per minimum wages act of Government of India, as per the applicable latest amendment</p> <p>(c) The Contractor shall inform the Contractor's Personnel about their liability to pay personal income taxes in the Country in respect of such of their salaries, wages, allowances and any benefits as are subject to tax under the Laws of the Country for the time being in force, and the Contractor shall perform such duties in regard to such deductions thereof as may be imposed on him by such Laws.</p> <p>(d) The Contractor shall, if required by the Employer, deliver to the Engineer or to his office, a return in detail, in such form and at such intervals as the Employer may prescribe, showing the number of labour employed in different categories by the Contractor on the Site.</p> <p>(e) Labour provided by the Contractor, either directly or through sub-Contractors, for the exclusive use of the Employer or the Engineer, shall, for the purpose of this Sub-Clause, be deemed to be employed by the Contractor.</p> <p>(f) In the event of default being made in the payment of any money in respect of wages of any person employed by the Contractor or any of its sub-Contractors of any tier in and for carrying out of this Contract and if a claim therefore is filed in the office of the Labour Authorities and proof thereof is furnished to the satisfaction of the Labour Authorities, the Employer may, failing payment of the said money by the Contractor, make payment of such claim on behalf of the Contractor to the said Labour Authorities and any sums so paid shall be recoverable by the Employer from the Contractor.</p>
6.3 Persons in the Service of Employer	The Contractor shall not recruit, or attempt to recruit, staff and labour from amongst the Employer's Personnel.
6.4 Labour Laws	<p>The Contractor shall comply with all the relevant labour Laws of Country where the Work is being executed, applicable to the Contractor's Personnel, including Laws relating to their employment, health, safety, welfare, immigration and emigration, and shall allow them all their legal rights.</p> <p>The Contractor shall require to comply all applicable Laws enacted by Government of India & Govt. Of Maharashtra applicable & enforceable during the work, including those concerning safety at work.</p>

<p>6.5 Working Hours</p>	<p>No work shall be carried out on the Site on locally recognised days of rest, or outside the normal working hours stated in the Particular Conditions, unless:</p> <ul style="list-style-type: none"> (a) otherwise stated in the Contract, (b) the Engineer gives consent, or (c) the work is unavoidable, or necessary for the protection of life or property or for the safety of the Works, in which case the Contractor shall immediately advise the Engineer. (d) the Works is to be carried out as per the normal working hours as provided in Particular Condition Of Contract and as per directive of local governing body of Country. However, in exceptional and emergent circumstances the Contractor has to work, under running condition of railway traffic, road traffic, crowded commercial area and during night hours or shifts also with limited working hours. Necessary arrangement as per the relevant labour laws and safety protocol shall be made by Contractor at his own cost without charging anything extra to Employer.
<p>6.6 Facilities for Staff and Labour</p>	<p>Except as otherwise stated in the Specification, the Contractor shall provide and maintain all necessary accommodation and welfare facilities for the Contractor's Personnel as per legislative / administrative direction of Country. The Contractor shall also provide facilities for the Employer's Personnel as stated in the Specification / Work Requirement / Particular Condition of Contract of elsewhere in Bid Document.</p> <p>The Contractor shall not permit any of the Contractor's Personnel to maintain any temporary or permanent living quarters within the structures forming part of the Permanent Works.</p>
<p>6.7 Health and Safety</p>	<p>The Contractor shall at all times take all reasonable precautions to maintain the health and safety of the Contractor's Personnel. In collaboration with local health authorities, the Contractor shall ensure that medical staff, first aid facilities, sick bay and ambulance service are available at all times at the Site and at any accommodation for Contractor's and Employer's Personnel, and that suitable arrangements are made for all necessary welfare and hygiene requirements and for the prevention of epidemics.</p> <p>The Contractor shall appoint an accident prevention officer at the Site, responsible for maintaining safety and protection against accidents. This person shall be qualified for this responsibility, and shall have the authority to issue instructions and take protective measures to prevent accidents. Throughout the execution of the Works, the Contractor</p>

	<p>shall provide whatever is required by this person to exercise this responsibility and authority.</p> <p>The Contractor shall send, to the Engineer, details of any accident as soon as practicable after its occurrence. The Contractor shall maintain records and make reports concerning health, safety and welfare of persons, and damage to property, as the Engineer may reasonably require.</p> <p>HIV-AIDS Prevention. The Contractor shall conduct an HIV-AIDS awareness programme via an approved service provider, and shall undertake such other measures as are specified in this Contract to reduce the risk of the transfer of the HIV virus between and among the Contractor's Personnel and the local community, to promote early diagnosis and to assist affected individuals.</p> <p>The Contractor shall throughout the contract (including the Defects Notification Period): (i) conduct Information, Education and Communication (IEC) campaigns, at least every other month, addressed to all the Site staff and labour (including all the Contractor's employees, all Sub Contractors and any other Contractor's or Employer's personnel employees, and all truck drivers and crew making deliveries to Site for construction activities) and to the immediate local communities, concerning the risks, dangers and impact, and appropriate avoidance behaviour with respect to, of Sexually Transmitted Diseases (STD) - or Sexually Transmitted Infections (STI) in general and HIV/AIDS in particular; (ii) provide male or female condoms for all Site staff and labour as appropriate; and (iii) provide for STI and HIV/AIDS screening, diagnosis, counselling and referral to a dedicated national STI and HIV/AIDS programme, (unless otherwise agreed) of all Site staff and labour.</p> <p>The Contractor shall include in the programme to be submitted for the execution of the Works under Sub-Clause 8.3 an alleviation programme for Site staff and labour and their families in respect of Sexually Transmitted Infections (STI) and Sexually Transmitted Diseases (STD) including HIV/AIDS. The STI, STD and HIV/AIDS alleviation programme shall indicate when, how and at what cost the Contractor plans to satisfy the requirements of this Sub-Clause and the related specification. For each component, the programme shall detail the resources to be provided or utilised and any related sub contracting proposed. The programme shall also include provision of a detailed cost estimate with supporting documentation. Payment to the Contractor for preparation and implementation this programme shall not exceed the Provisional Sum dedicated for this purpose.</p>
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	All kind of preventive measures & awareness program regarding checking & treatment of the epidemic / pandemic shall be ensured by Contractor at his cost,
6.8 Contractor's Superintendence	<p>Throughout the execution of the Works, and as long thereafter as is necessary to fulfil the Contractor's obligations, the Contractor shall provide all necessary superintendence to plan, arrange, direct, manage, inspect and test the work.</p> <p>Superintendence shall be given by a sufficient number of persons having adequate knowledge of the language for communications (defined in Sub-Clause 1.4 [Law and Language]) and of the operations to be carried out (including the methods and techniques required, the hazards likely to be encountered and methods of preventing accidents), for the satisfactory and safe execution of the Works.</p>
6.9 Contractor's Personnel	<p>The Contractor's Personnel shall be appropriately qualified, skilled and experienced in their respective trades or occupations. The Engineer may require the Contractor to remove (or cause to be removed) any person employed on the Site or Works, including the Contractor's Representative if applicable, who:</p> <ul style="list-style-type: none"> (a) persists in any misconduct or lack of care, (b) carries out duties incompetently or negligently, (c) fails to conform with any provisions of the Contract, or (d) persists in any conduct which is prejudicial to safety, health, or the protection of the environment. <p>If appropriate, the Contractor shall then appoint (or cause to be appointed) a suitable replacement person.</p>
6.10 Records of Contractor's Personnel and Equipment	The Contractor shall submit, to the Engineer, details showing the number of each class of Contractor's Personnel and of each type of Contractor's Equipment on the Site. Details shall be submitted each calendar month, in a form approved by the Engineer, until the Contractor has completed all work which is known to be outstanding at the completion date stated in the Taking-Over Certificate for the Works.
6.11 Disorderly Conduct	The Contractor shall at all times take all reasonable precautions to prevent any unlawful, riotous or disorderly conduct by or amongst the Contractor's Personnel, and to preserve peace and protection of persons and property on and near the Site.
6.12 Foreign Personnel	The Contractor may bring in to the Country any foreign personnel who are necessary for the execution of the Works to the extent allowed by the applicable Laws. The Contractor shall ensure that these personnel

	<p>are provided with the required residence visas and work permits. The Employer will, if requested by the Contractor, use his best endeavors in a timely and expeditious manner to assist the Contractor in obtaining any local, state, national or government permission required for bringing in the Contractor's personnel..</p> <p>The Contractor shall be responsible for the return of these personnel to the place where they were recruited or to their domicile. In the event of the death in the Country of any of these personnel or members of their families, the Contractor shall similarly be responsible for making the appropriate arrangements for their return or burial.</p>
6.13 Supply of Foodstuffs	The Contractor shall arrange for the provision of a sufficient supply of suitable food as may be stated in the Specification at reasonable prices for the Contractor's Personnel for the purposes of or in connection with the Contract.
6.14 Supply of Water	The Contractor shall, having regard to local conditions, provide on the Site an adequate supply of drinking and other water for the use of the Contractor's Personnel.
6.15 Measures against Insect and Pest Nuisance	The Contractor shall at all times take the necessary precautions to protect the Contractor's Personnel employed on the Site from insect and pest nuisance, and to reduce the danger to their health. The Contractor shall comply with all the regulations of the local health authorities, including use of appropriate insecticide.
6.16 Alcoholic Liquor or Drugs	The Contractor shall not, otherwise than in accordance with the Laws of the Country, import, sell, give, barter or otherwise dispose of any alcoholic liquor or drugs, or permit or allow importation, sale, gift, barter or disposal thereof by Contractor's Personnel.
6.17 Arms and Ammunition	The Contractor shall not give, barter, or otherwise dispose of, to any person, any arms or ammunition of any kind, or allow Contractor's Personnel to do so.
6.18 Festivals and Religious Customs	The Contractor shall respect the Country's recognized festivals, days of rest and religious or other customs.
6.19 Funeral Arrangements	The Contractor shall be responsible, to the extent required by local regulations, for making any funeral arrangements for any of his local employees who may die while engaged upon the Works.

6.20 Prohibition of Forced or Compulsory Labour	The Contractor shall not employ forced labour, which consists of any work or service, not voluntarily performed, that is exacted from an individual under threat of force or penalty, and includes any kind of involuntary or compulsory labour, such as indentured labour, bonded labour or similar labour-contracting arrangements.
6.21 Prohibition of Harmful Child Labour	The Contractor shall not employ children in a manner that is economically exploitative, or is likely to be hazardous, or to interfere with, the child's education, or to be harmful to the child's health or physical, mental, spiritual, moral, or social development. Where the relevant labour laws of the Country have provisions for employment of minors, the Contractor shall follow those laws applicable to the Contractor. Children below the age of 18 years shall not be employed in dangerous work.
6.22 Employment Records of Workers	The Contractor shall keep complete and accurate records of the employment of labour at the Site. The records shall include the names, ages, genders, hours worked and wages paid to all workers. These records shall be summarized on a monthly basis and submitted to the Engineer. These records shall be included in the details to be submitted by the Contractor under Sub-Clause 6.10 [Records of Contractor's Personnel and Equipment].
6.23 Workers' Organisations	In countries where the relevant labour laws recognise workers' rights to form and to join workers' organisations of their choosing without interference and to bargain collectively, the Contractor shall comply with such laws. Where the relevant labour laws substantially restrict workers' organisations, the Contractor shall enable alternative means for the Contractor's Personnel to express their grievances and protect their rights regarding working conditions and terms of employment. In either case described above, and where the relevant labour laws are silent, the Contractor shall not discourage the Contractor's Personnel from forming or joining workers' organisations of their choosing or from bargaining collectively, and shall not discriminate or retaliate against the Contractor's Personnel who participate, or seek to participate, in such organisations and bargain collectively. The Contractor shall engage with such workers' representatives. Workers' organisations are expected to fairly represent the workers in the workforce.

<p>6.24 Non Discrimination and Equal Opportunity</p>	<p>The Contractor shall not make employment decisions on the basis of personal characteristics unrelated to inherent job requirements. The Contractor shall base the employment relationship on the principle of equal opportunity and fair treatment, and shall not discriminate with respect to aspects of the employment relationship, including recruitment and hiring, compensation (including wages and benefits), working conditions and terms of employment, access to training, promotion, termination of employment or retirement, and discipline. In countries where the relevant labour laws provide for non discrimination in employment, the Contractor shall comply with such laws. When the relevant labour laws are silent on non-discrimination in employment, the Contractor shall meet this Sub-Clause's requirements. Special measures of protection or assistance to remedy past discrimination or selection for a particular job based on the inherent requirements of the job shall not be deemed discrimination.</p>
<p>7. Plant, Materials and Workmanship</p>	
<p>7.1 Manner of Execution</p>	<p>The Contractor shall execute Work, carry out the manufacture of Plants and equipment, the production and manufacture of Materials, and all other execution of the Works:</p> <ul style="list-style-type: none"> (a) in the manner (if any) specified in the Contract, (b) in a proper workman like and careful manner, in accordance with recognised good practice, and (c) with properly equipped facilities and non-hazardous Materials, except as otherwise specified in the Contract. (d) The Contractor shall execute the work as per design, drawings and specifications provided for the Works in accordance with the site plans and Work's Requirements. Any design detail, plan, drawing, specifications, notes, annotations, and information required shall be provided in such sufficient format, details, extent, size and scale and within such time as may be required to ensure effective execution of Works and/or as otherwise required by the Engineer. (e) The Contractor shall be fully responsible for the Plants, Materials, goods, workmanship, preparing, developing and coordinating all execution Works to enable that part of the Works to be constructed and/or to be fully operational in accordance with the Contract's requirements.

<p>7.2 Samples</p>	<p>The Contractor shall submit the samples of Materials, and relevant information, to the Engineer for consent prior to using the Materials in or for the Works:</p> <ul style="list-style-type: none"> (a) manufacturer's standard samples of Materials, components, equipment and samples specified in the Contract / Work Requirements / Scope of Work / Bill of quantities, all at the Contractor's cost, and (b) additional samples instructed by the Engineer as a Variation. <p>Each sample shall be labelled as to origin and intended use in the Works.</p>
<p>7.3 Inspection</p>	<p>The Employer's Personnel shall at all reasonable times:</p> <ul style="list-style-type: none"> (a) have full access to all parts of the Site and to all places from which natural Materials are being obtained, and (b) during production, manufacture and construction (at the Site and elsewhere), be entitled to examine, inspect, measure and test the materials and workmanship, and to check the progress of manufacture of Plant and production and manufacture of Materials. <p>The Contractor shall give the Employer's Personnel full opportunity to carry out these activities, including providing access, facilities, permissions and safety equipment. No such activity shall relieve the Contractor from any obligation or responsibility.</p> <p>The Contractor shall give notice to the Engineer whenever any work is ready and before it is covered up, put out of sight, or packaged for storage or transport. The Engineer shall then either carry out the examination, inspection, measurement or testing without unreasonable delay, or promptly give notice to the Contractor that the Engineer does not require to do so. If the Contractor fails to give the notice, he shall, if and when required by the Engineer, uncover the work and thereafter reinstate and make good, all at the Contractor's cost.</p>
<p>7.4 Testing</p>	<p>This Sub-Clause shall apply to all tests specified in the Contract, other than the Tests after Completion (if any).</p> <p>Except as otherwise specified in the Contract, the Contractor shall provide all apparatus, assistance, documents and other information, electricity, equipment, fuel, consumables, instruments, labour, materials, and suitably qualified and experienced staff, as are necessary to carry out the specified tests efficiently. The Contractor shall agree, with the Engineer, the time and place for the specified testing of any Plant, Materials and other parts of the Works.</p>

	<p>The Engineer may, under Clause 13 [Variations and Adjustments], vary the location or details of specified tests, or instruct the Contractor to carry out additional tests. If these varied or additional tests show that the tested Plant, Materials or workmanship is not in accordance with the Contract, the cost of carrying out this Variation shall be borne by the Contractor, notwithstanding other provisions of the Contract.</p> <p>The Engineer shall give the Contractor not less than 24 hours' notice of the Engineer's intention to attend the tests. If the Engineer does not attend at the time and place agreed, the Contractor may proceed with the tests, unless otherwise instructed by the Engineer, and the tests shall then be deemed to have been made in the Engineer's presence.</p> <p>If the Contractor suffers delay and/or incurs Cost from complying with these instructions or as a result of a delay for which the Employer is responsible, the Contractor shall give notice to the Engineer and shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to an extension of time only for any such delay, if completion is or will be delayed, under Sub-Clause 8.4 [Extension of Time for Completion].</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> <p>The Contractor shall promptly forward to the Engineer duly certified reports of the tests. When the specified tests have been passed, the Engineer shall endorse the Contractor's test certificate, or issue a certificate to him, to that effect. If the Engineer has not attended the tests, he shall be deemed to have accepted the readings as accurate.</p> <p>All test shall be carried out at approved laboratories as specified in Particular Condition Of Contract.</p>
<p>7.5 Rejection</p>	<p>If, as a result of an examination, inspection, measurement or testing, any Plant, Materials or workmanship is found to be defective or otherwise not in accordance with the Contract, the Engineer may reject the Plant, Materials or workmanship by giving notice to the Contractor, with reasons. The Contractor shall then promptly make good the defect and ensure that the rejected item complies with the Contract.</p> <p>If the Engineer requires this Plant, Materials or workmanship to be retested, the tests shall be repeated under the same terms and conditions. If the rejection and retesting cause the Employer to incur additional costs, the Contractor shall subject to Sub-Clause 2.5 [Employer's Claims] pay these costs to the Employer.</p>

<p>7.6 Remedial Work</p>	<p>Notwithstanding any previous test or certification, the Engineer may instruct the Contractor to:</p> <ul style="list-style-type: none"> (a) remove from the Site and replace any Plant or Materials which is not in accordance with the Contract, (b) remove and re-execute any other work which is not in accordance with the Contract, and (c) execute any work which is urgently required for the safety of the Works, whether because of an accident, unforeseeable event or otherwise. <p>The Contractor shall comply with the instruction within a reasonable time, which shall be the time (if any) specified in the instruction, or immediately if urgency is specified under sub-paragraph (c).</p> <p>If the Contractor fails to comply with the instruction, the Employer shall be entitled to employ and pay other persons to carry out the work. Except to the extent that the Contractor would have been entitled to payment for the work, the Contractor shall subject to Sub-Clause 2.5 [Employer's Claims] pay to the Employer all costs arising from this failure.</p> <p>The Contractor shall not be released from any liability or obligation under the Contract by reason of any such inspection or testing or witnessing of testing, or by the submission of reports of inspection or testing to the Engineer.</p>
<p>7.7 Ownership of Plant and Materials</p>	<p>Except as otherwise provided in the Contract, each item of Plant and Materials shall, to the extent consistent with the Laws of the Country, become the property of the Employer at whichever is the earlier of the following times, free from liens and other encumbrances:</p> <ul style="list-style-type: none"> (a) when it is incorporated in the Works; (b) when the Contractor is paid the corresponding value of the Plant and Materials under Sub-Clause 8.10 [Payment for Plant and Materials in Event of Suspension]. (c) The plant, goods and material not finally taken over as per GC Clause 10 but payment against which have been made in part or full against Indemnity Bond / Safety Custody/ Bank Guarantee will remain under the Contractor's custody. The Contractor shall be responsible for its safety and will bear all the risks till taken over by the Employer.
<p>7.8 Royalties</p>	<p>Unless otherwise stated in the Specification, the Contractor shall pay all royalties, rents and other payments for:</p> <ul style="list-style-type: none"> (a) natural Materials obtained from outside the Site, and

	<p>(b) the disposal of material from demolitions and excavations and of other surplus material (whether natural or man-made), except to the extent that disposal areas within the Site are specified in the Contract.</p> <p>(c) The Contractor has to pay all royalties to the State (GoM) / Central (GoI) government towards the consumption of natural materials used in the proposed work. The proof of the same shall be submitted to the Employer whenever desired so.</p>
7.9 Workmanship and Quality Control	<p>Within 28 days of the issue of the Notice to Proceed, the Contractor shall submit to the Engineer, for his consent, his proposed Site Quality Plan based on the Outline Quality Plan and the Employer's Requirements. The quality manual should address the quality system as required by ISO 9001 or equivalent standard. Any supplement to the Site Quality Plan shall be submitted at least 14 days before commencement of the relevant work.</p> <p>Upon the Engineer notifying his consent to the Site Quality Plan, or any supplement thereto, the Contractor shall, adhere to the principles and procedures contained in such document, except where the Engineer gives his consent to any amended or varied version thereof. The Contractor shall cause any sub-Contractors to adhere to this Plan.</p> <p>The Contractor shall appoint a suitably qualified and experienced person, not otherwise engaged in the performance of the Contract, to act as manager of the quality assurance system and shall provide such other personnel and resources as required to ensure effective operation of the quality assurance system. The said manager shall carry out audits of the application of the quality assurance system, and ensure effective quality control and delivery of quality assurance.</p> <p>The Contractor shall provide all necessary access, assistance and facilities to enable the Engineer to carry out surveillance visits both on and off the Site to verify that the quality assurance system is being properly and fully implemented. No extra payment shall be made in this regard and the cost of the Work under this element shall be deemed to be included in the Contract Price.</p>
8. Commencement, Delays and Suspension	
8.1 Commencement of Works	<p>Except as otherwise provided in the Particular Conditions of Contract, the Commencement Date shall be the date indicated in the Letter of Acceptance issued after obtaining NOC from funding agency (If required as per guidelines of funding agency)</p> <p>The Contractor shall commence the execution of the Works as soon as is reasonably practicable after the Commencement Date,</p>

	and shall then proceed with the Works with due expedition and without delay.
8.2 Time for Completion	<p>The Contractor shall complete the whole of the Works, and each Section (if any), within the Time for Completion for the Works or Section (as the case may be), including:</p> <ul style="list-style-type: none"> (a) achieving the passing of the Tests on Completion, and (b) completing all work which is stated in the Contract as being required for the Works or Section to be considered to be completed for the purposes of taking-over under Sub-Clause 10.1 [Taking Over of the Works and Sections].
8.3 Programme	<p>The Contractor shall prepare and submit his detailed Programme of Work within 28 days from the date of issue of LOA under Sub Clause 8.1, so as to achieve key dates (as agreed by both parties) of various activities. The Contractor shall complete the work in a phased manner fixing priorities to the different stages of the work as per the requirement of project from time to time.</p> <p>Consent by the Engineer to a Works Programme shall not relieve the Contractor of any of his duties or responsibilities under the Contract, nor in the event that a Works Programme indicates that a Key Date has not or will not be met, constitute any form of acknowledgement that the Contractor is or may be entitled to an extension of time in relation to such Key Date or a Mile Stone.</p> <p>If, at any time, the Engineer gives notice to the Contractor that a programme fails (to the extent stated) to comply with the Contract or to be consistent with actual progress and the Contractor's stated intentions, the Contractor shall submit a revised programme to the Engineer in accordance with this Sub Clause with a request of approval Engineer on valid reasons.</p> <p>Manufacture, Installation and Construction Methods</p> <p>The Contractor shall submit complete documents and information pertaining to the methods of manufacture, installation and construction which the Contractor proposes to adopt or use, (and if applicable such calculations of stresses, strains and deflections and the like that will or may arise in the Works or to the other works comprising the Project or any parts thereof during installation from the use of such methods). The Engineer will then check to see whether, if such methods are adhered to, the Works can be executed in accordance with the Contract and without detriment to the Works (when completed) and to</p>

	<p>other works comprising the Project and in a manner, which minimises disruption to road and pedestrian traffic.</p> <p>The Engineer shall inform the Contractor in writing within 21 days after receipt of the above information;</p> <p>(a) that the Contractor's proposed methods of manufacture, installation and construction have the consent of the Engineer; or</p> <p>(b) in what respects, in the opinion of the Engineer the Contractor's proposed methods of manufacture, installation and construction:</p> <ol style="list-style-type: none"> a. fail to comply with the Employer's Requirements and/or the Definitive Design and/or the Final Design; b. would be detrimental to the Works and/or to the other works comprising the Project; c. do not comply with the other requirements of the Contract; or <p>(c) as to the further documents or information which are required to enable the Engineer to properly assess the proposed methods of manufacture, installation and construction.</p> <p>In the event that the Engineer does not give his consent, the Contractor shall take such steps or make such changes in the said methods or supply such further documents or information as may be necessary to meet the Engineer's requirements and to obtain his consent. The Contractor shall not change the methods of manufacture, installation and construction which have received the Engineer's consent without further review and consent in writing of the Engineer.</p> <p>Notwithstanding the foregoing provisions of this Clause, or that certain of the Contractor's proposed methods of manufacture, installation and construction may be the subject of the consent of the Engineer, the Contractor shall not be relieved of any liability or obligation under the Contract.</p>
8.4 Extension of Time for Completion	<p>The Contractor shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to an extension of the Time for Completion if and to the extent that completion for the purposes of Sub-Clause 10.1 [Taking Over of the Works and Sections] is or will be delayed by any of the following causes:</p> <p>(a) a Variation (unless an adjustment to the Time for Completion has been agreed under Sub-Clause 13.3 [Variation Procedure]) or other substantial change in the quantity of an item of work included in the Contract,</p>

	<p>(b) a cause of delay giving an entitlement to extension of time under a Sub-Clause of these Conditions,</p> <p>(c) exceptionally & unprecedented adverse climatic conditions,</p> <p>(d) Unforeseeable shortages in the availability of personnel or Goods caused by epidemic, pandemic or governmental actions / executive order of local Governing Body, or</p> <p>(e) any delay, impediment or prevention caused by or attributable to the Employer, the Employer's Personnel, or the Employer's other Contractors.</p> <p>If the Contractor considers himself to be entitled to an extension of the Time for Completion, the Contractor shall give notice to the Engineer in accordance with Sub-Clause 20.1 [Contractor's Claims]. When determining each extension of time under Sub-Clause 20.1, the Engineer shall review previous determinations and may increase, but shall not decrease, the total extension of time.</p>
8.5 Delays Caused by Authorities	<p>If the following conditions apply, namely:</p> <p>(a) the Contractor has diligently followed the procedures laid down by the relevant legally constituted public authorities in the Country,</p> <p>(b) these authorities delay or disrupt the Contractor's work, and</p> <p>(c) the delay or disruption was Unforeseeable,</p> <p>then this delay or disruption will be considered as a cause of delay under sub-paragraph (b) of Sub-Clause 8.4 [Extension of Time for Completion].</p>
8.6 Rate of Progress	<p>If, at any time:</p> <p>(a) actual progress is too slow to complete within the Time for Completion, and/or</p> <p>(b) progress has fallen (or will fall) behind the current programme under Sub-Clause 8.3 [Programme],</p> <p>other than as a result of a cause listed in Sub-Clause 8.4 [Extension of Time for Completion], then the Engineer may instruct the Contractor to submit, under Sub-Clause 8.3 [Programme], a revised programme and supporting report describing the revised methods which the Contractor proposes to adopt in order to expedite progress and complete within the Extended Time for Completion, on valid reason of delay.</p> <p>Unless the Engineer notifies otherwise, the Contractor shall adopt these revised methods, which may require increases in the working hours and/or in the numbers of Contractor's Personnel and/or Goods,</p>

	<p>at the risk and cost of the Contractor. If these revised methods cause the Employer to incur additional costs, the Contractor shall subject to notice under Sub-Clause 2.5 [Employer's Claims] pay these costs to the Employer, in addition to delay damages (if any) under Sub-Clause 8.7 below.</p> <p>If the Revised Work Programme submitted by Contractor & agreed by Employer, but at any stage of work, Employer is willing to get the work completed in a compressed time period or change work methodology, then in such case additional costs of revised methods including acceleration measures in compressed time period, instructed by the Engineer to reduce delays resulting from causes listed under Sub Clause 8.4 [Extension of Time for Completion] shall be paid by the Employer as Determined by Engineer, without generating, however, any other additional payment benefit to the Contractor.</p>
8.7 Delay Damages	<p>If the Contractor fails to comply with Sub-Clause 8.2 [Time for Completion], the Contractor shall subject to notice under Sub-Clause 2.5 [Employer's Claims] pay delay damages to the Employer for this default. These delay damages shall be the sum stated in the Particular Condition s, which shall be paid for every day which shall elapse between the relevant Time for Completion and the date stated in the Taking-Over Certificate. However, the total amount due under this Sub-Clause shall not exceed the maximum amount of delay damages (if any) stated in the Particular Condition s.</p> <p>These delay damages shall be the only damages due from the Contractor for such default, other than in the event of termination under Sub-Clause 15.2 [Termination by Employer] prior to completion of the Works. These damages shall not relieve the Contractor from his obligation to complete the Works, or from any other duties, obligations or responsibilities which he may have under the Contract.</p>
8.8 Suspension of Work	<p>The Engineer may at any time instruct the Contractor to suspend progress of part or all of the Works. During such suspension, the Contractor shall protect, store and secure such part or the Works against any deterioration, loss or damage.</p> <p>The Engineer may also notify the cause for the suspension. If and to the extent that the cause is notified and is the responsibility of the Contractor, the following Sub-Clauses 8.9, 8.10 and 8.11 shall not apply.</p>
8.9 Consequences of Suspension	<p>If the Contractor suffers delay and/or incurs Cost from complying with the Engineer's instructions under Sub-Clause 8.8 [Suspension of Work] and/or from resuming the work, the Contractor shall give notice</p>

	<p>to the Engineer and 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) payment of any such Cost, which shall be included in the Contract Price.</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> <p>The Contractor shall not be entitled to an extension of time for, or to payment of the Cost incurred in, making good the consequences of the Contractor's faulty design, workmanship or materials, or of the Contractor's failure to protect, store or secure in accordance with Sub Clause 8.8 [Suspension of Work].</p> <p>However 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> <ol style="list-style-type: none"> 1. provided for in the Contract, or 11. necessary for proper execution of Woks or by reasons of weather condition or by some default on the part of the Contractor, or 111. necessary for the safety of Works or any part thereof or 1v. 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 v. to ensure safety and to avoid disruption of traffic and utilities, as also to permit fast repairs and restoration of any damaged utilities, or v1. on account of work carried out by the Contractor not in accordance with the directions of the Engineer; or v11. on account of any legislative or executive order of Government v111. If the requirement of work ceases. 1x. on account of any other reason which is not attributable to the Employer.
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8.10 Payment for Plant and Materials in Event of Suspension	<p>The Contractor shall be entitled to payment of the value (as at the date of suspension) of Plant and/or Materials which have not been delivered to Site, if:</p> <p>(a) the work on Plant or delivery of Plant and/or Materials has been suspended for more than 28 days, and</p> <p>(b) the Contractor has marked the Plant and/or Materials as the Employer's property in accordance with the Engineer's instructions.</p>
8.11 Prolonged Suspension	<p>If the suspension under Sub-Clause 8.8 [Suspension of Work] has continued for more than 84 days, the Contractor may request the Engineer's permission to proceed. If the Engineer does not give permission within 28 days after being requested to do so, the Contractor may, by giving notice to the Engineer, treat the suspension as an omission under Clause 13 [Variations and Adjustments] of the affected part of the Works. If the suspension affects the whole of the Works, the Contractor may give notice of termination under Sub Clause 16.2 [Termination by Contractor].</p>
8.12 Resumption of Work	<p>After the permission or instruction to proceed is given, the Contractor and the Engineer shall jointly examine the Works and the Plant and Materials affected by the suspension. The Contractor shall make good any deterioration or defect in or loss of the Works or Plant or Materials, which has occurred during the suspension after receiving from the Engineer an instruction to this effect.</p>
<p style="text-align: center;">9. Tests on Completion</p>	
9.1 Contractor's Obligations	<p>The Contractor shall carry out the Tests on Completion in accordance with this Clause and Sub-Clause 7.4 [Testing], after providing the documents in accordance with sub-paragraph (d) of Sub-Clause 4.1 [Contractor's General Obligations].</p> <p>The Contractor shall give to the Engineer not less than 21 days' notice of the date after which the Contractor will be ready to carry out each of the Tests on Completion. Unless otherwise agreed, Tests on Completion shall be carried out within 14 days after this date, on such day or days as the Engineer shall instruct.</p> <p>In considering the results of the Tests on Completion, the Engineer shall make allowances for the effect of any use of the Works by the Employer on the performance or other characteristics of the Works. As soon as the Works, or a Section, have passed any Tests on Completion, the Contractor shall submit a certified report of the results of these Tests to the Engineer.</p>

<p>9.2 Delayed Tests</p>	<p>If the Tests on Completion are being unduly delayed by the Employer, Sub-Clause 7.4 [Testing] (fifth paragraph) and/or Sub-Clause 10.3 [Interference with Tests on Completion] shall be applicable.</p> <p>If the Tests on Completion are being unduly delayed by the Contractor, the Engineer may by notice require the Contractor to carry out the Tests within 21 days after receiving the notice. The Contractor shall carry out the Tests on such day or days within that period as the Contractor may fix and of which he shall give notice to the Engineer.</p> <p>If the Contractor fails to carry out the Tests on Completion within the period of 21 days, the Employer's Personnel may proceed with the Tests at the risk and cost of the Contractor. The Tests on Completion shall then be deemed to have been carried out in the presence of the Contractor and the results of the Tests shall be accepted as accurate.</p>
<p>9.3 Retesting</p>	<p>If the Works, or a Section, fail to pass the Tests on Completion, Sub Clause 7.5 [Rejection] shall apply, and the Engineer or the Contractor may require the failed Tests, and Tests on Completion on any related work, to be repeated under the same terms and conditions.</p>
<p>9.4 Failure to Pass Tests on Completion</p>	<p>If the Works, or a Section, fail to pass the Tests on Completion repeated under Sub-Clause 9.3 [Retesting], the Engineer shall be entitled to:</p> <ul style="list-style-type: none"> (a) order further repetition of Tests on Completion under Sub Clause 9.3; (b) if the failure deprives the Employer of substantially the whole benefit of the Works or Section, reject the Works or Section (as the case may be), in which event the Employer shall have the same remedies as are provided in sub-paragraph (c) of Sub Clause 11.4 [Failure to Remedy Defects]; or (c) Issue a Taking-Over Certificate, if the Employer so requests subjected to following. <p>In the event of sub-paragraph (c), the Contractor shall proceed in accordance with all other obligations under the Contract, and the Contract Price shall be reduced by such amount as shall be appropriate to cover the reduced value to the Employer as a result of this failure.</p> <p>Unless the relevant reduction for this failure is stated (or its method of calculation is defined) in the Contract, the Employer may require the reduction to be (i) agreed by both Parties (in full satisfaction of this failure only) and paid before this Taking-Over Certificate is issued if the work is technically safe & able meet the desired purpose, for which</p> <p>it was constructed / manufactured, or (ii) determined and paid under</p>

	Sub-Clause 2.5 [Employer's Claims] and Sub-Clause 3.5 [Determinations].
9.5 Integrated Testing and Commissioning	<p>Integrated Testing</p> <p>Tests on Completion shall also include Integrated Testing where applicable as per the contract conditions. The Contractor shall, following satisfactory completion of tests on his works, equipment, sub-systems or system, perform, at the direction of the Engineer, programme of tests to verify and confirm the compatibility and complete performance of his works, equipment, sub-systems or system with the works, equipment, sub-systems or system provided by others.</p> <p>Compilation of Test Results</p> <p>The results of the Integrated Testing and Commissioning shall be compiled and evaluated by the Engineer and the Contractor.</p> <p>Re-testing</p> <p>If the Works, or a part thereof, or a Section, fail to pass the Integrated Testing and Commissioning, the Engineer shall require such failed Tests, to be repeated under the same terms and conditions. If such failure and retesting result from a default of the Contractor and cause the Employer to incur additional costs, the same shall be recoverable from the Contractor by the Employer, and may be deducted by the Employer from any monies due, or to become due, to the Contractor.</p> <p>Failure to pass Test</p> <p>If the Works, or a part thereof, or a Section, fail to pass Integrated Testing and Commissioning and the Contractor in consequence proposes to make any adjustment or modification to the Works or a part thereof, or a section, the Engineer may, with the approval of the Employer, instruct the Contractor to carry out such adjustment or modification, at his own cost and to satisfy the requirements of Integrated Testing and Commissioning within such time as the Employer/ Engineer may deem to be reasonable.</p> <p>Statutory Requirements</p> <p>The Contractor along with others shall carry out all statutory tests and trials, under the supervision of the Engineer, necessary for obtaining sanction of the competent authority for opening the system for public carriage of passengers.</p> <p>The Contractor shall, if required by the Employer, deliver to the Engineer or to his office, a return in detail, in such form and at such intervals as the Employer may prescribe, showing the number of labour employed in different categories by the Contractor on the Site.</p>

10. Employer's Taking Over

<p>10.1 Taking Over of the Works and Sections</p>	<p>Except as stated in Sub-Clause 9.4 [Failure to Pass Tests on Completion], the Works shall be taken over by the Employer when (i) the Works have been completed in accordance with the Contract, including the matters described in Sub-Clause 8.2 [Time for Completion] and except as allowed in sub-paragraph (a) below, and (ii) a Taking-Over Certificate for the Works has been issued, or is deemed to have been issued in accordance with this Sub-Clause.</p> <p>The Contractor may apply by notice to the Engineer for a Taking-Over Certificate not earlier than 14 days before the Works will, in the Contractor's opinion, be complete and ready for taking over. If the Works are divided into Sections, the Contractor may similarly apply for a Taking-Over Certificate for each Section.</p> <p>The Engineer shall, within 28 days after receiving the Contractor's application:</p> <ul style="list-style-type: none"> (a) issue the Taking-Over Certificate to the Contractor, stating the date on which the Works or Section were completed in accordance with the Contract, except for any minor outstanding work and defects which will not substantially affect the use of the Works or Section for their intended purpose (either until or whilst this work is completed and these defects are remedied); or (b) reject the application, giving reasons and specifying the work required to be done by the Contractor to enable the Taking-Over Certificate to be issued. The Contractor shall then complete this work before issuing a further notice under this Sub-Clause. <p>If the Engineer fails either to issue the Taking-Over Certificate or to reject the Contractor's application within the period of 28 days, and if the Works or Section (as the case may be) are substantially in accordance with the Contract, the Taking-Over Certificate shall be deemed to have been issued on the last day of that period.</p>
<p>10.2 Taking Over of Parts of the Works</p>	<p>The Engineer may, at the sole discretion of the Employer, issue a Taking-Over Certificate for any part of the Permanent Works.</p> <p>The Employer shall not use any part of the Works (other than as a temporary measure which is either specified in the Contract or agreed by both Parties) unless and until the Engineer has issued a Taking Over Certificate for this part. However, if the Employer does use any part of the Works before the Taking-Over Certificate is issued:</p> <ul style="list-style-type: none"> (a) the part which is used shall be deemed to have been taken over as from the date on which it is used,

	<p>(b) the Contractor shall cease to be liable for the care of such part as from this date, when responsibility shall pass to the Employer, and</p> <p>(c) if requested by the Contractor, the Engineer shall issue a Taking- Over Certificate for this part.</p> <p>After the Engineer has issued a Taking-Over Certificate for a part of the Works, the Contractor shall be given the earliest opportunity to take such steps as may be necessary to carry out any outstanding Tests on Completion. The Contractor shall carry out these Tests on Completion as soon as practicable before the expiry date of the relevant Defects Notification Period.</p> <p>If a Taking-Over Certificate has been issued for a part of the Works (other than a Section), the delay damages thereafter for completion of the remainder of the Works shall be reduced. Similarly, the delay damages for the remainder of the Section (if any) in which this part is included shall also be reduced. For any period of delay after the date stated in this Taking-Over Certificate, the proportional reduction in these delay damages shall be calculated as the proportion which the value of the part so certified bears to the value of the Works or Section (as the case may be) as a whole. The Engineer shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine these proportions. The provisions of this paragraph shall only apply to the daily rate of delay damages under Sub-Clause 8.7 [Delay Damages], and shall not affect the maximum amount of these damages.</p>
10.3 Interference with Tests on Completion	<p>If the Contractor is prevented, for more than 14 days, from carrying out the Tests on Completion by a cause for which the Employer is responsible, the Employer shall be deemed to have taken over the Works or Section (as the case may be) on the date when the Tests on Completion would otherwise have been completed.</p> <p>The Engineer shall then issue a Taking-Over Certificate accordingly, and the Contractor shall carry out the Tests on Completion as soon as practicable, before the expiry date of the Defects Notification Period. The Engineer shall require the Tests on Completion to be carried out by giving 14 days' notice and in accordance with the relevant provisions of the Contract.</p> <p>If the Contractor suffers delay and/or incurs Cost as a result of this delay in carrying out the Tests on Completion, the Contractor shall give notice to the Engineer and 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>After receiving this notice, the Engineer shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine these matters.</p>
10.4 Surfaces Requiring Reinstatement	<p>Except as otherwise stated in a Taking-Over Certificate, a certificate for a Section or part of the Works shall not be deemed to certify completion of any ground or other surfaces requiring reinstatement.</p>
11. Defects Liability	
11.1 Completion of Outstanding Work and Remedying Defects	<p>In order that the Works and Contractor's Documents, and each Section, shall be in the condition required by the Contract (fair wear and tear excepted) by the expiry date of the relevant Defects Notification Period or as soon as practicable thereafter, the Contractor shall:</p> <ul style="list-style-type: none"> (a) complete any work which is outstanding on the date stated in a Taking-Over Certificate, within such reasonable time as is instructed by the Engineer, and (b) execute all work required to remedy defects or damage, as may be notified by (or on behalf of) the Employer on or before the expiry date of the Defects Notification Period for the Works or Section (as the case may be). (c) If a defect appears or damage occurs, the Contractor shall be notified accordingly, by (or on behalf of) the Employer. (d) During the Defects Liability Period the Contractor shall provide, free of cost, rectification/ reconstruction of faulty work. Deploy competent and skilled personnel and maintain adequate stock of spares/ machine/materials so as to promptly fulfil his obligations during the Defects Liability Period as laid down in Particular Conditions and Works Requirements. (e) <u>Maintenance during Defects Liability Period</u> <p>Contractor shall establish an office for the purpose with communication facility so as to facilitate communication for reporting failures and liaison with maintenance staff manning the structure round the clock. The supervisor in-charge should be provided with mobile communication facility to ensure his presence at the site immediately after reporting. Contractor shall ensure restoration/ rectification/ replacement, within reasonable time, to the satisfaction of Engineer.</p>

	<p>The Engineer in case of the delay as deems fit shall be empowered to carry out the maintenance at the risk and cost of the Contractor.</p> <p>(f) Routine Maintenance</p> <p>Submit Monthly status report to the Engineer -in - Charge.</p> <p>(g) Repairs</p> <p>All equipment that requires repairing shall be immediately serviced and repaired.</p> <p>(h) Complaints</p> <p>The Contractor shall receive calls for any and all problems / defect experienced in the operation of the structure, attend to these without delay. A punch list of above defect shall be maintained by Contractor.</p> <p>(i) Maintenance Log Book</p> <p>The Contractor shall maintain a Maintenance Log Book at completed site, the format for which shall be approved by Engineer. In the Maintenance Log book the details about date of Routine Maintenance, Routine Maintenance activities performed, Details of Call - out visit/ complaints and its action taken report shall be maintained</p> <p>(j) A penalty at the rate specified in Particular Conditions, during the OLP period will be imposed, if Defect/ complaint is not attended within 24 hrs from the time and date of issue of notice of defect.</p>
11.2 Cost of Remedying Defects	<p>All work referred to in sub-paragraph (b) of Sub-Clause 11.1 [Completion of Outstanding Work and Remedying Defects] shall be executed at the risk and cost of the Contractor, if and to the extent that the work is attributable to:</p> <p>(a) any design for which the Contractor is responsible,</p> <p>(b) Plant, Materials or workmanship not being in accordance with the Contract, or</p> <p>(c) failure by the Contractor to comply with any other obligation.</p> <p>(d) Improper operation or maintenance during Defect Liability Period, which was attributable to matters for which the Contractor is responsible</p> <p>If and to the extent that such work is attributable to any other cause, the Contractor shall be notified promptly by (or on behalf of) the Employer, and Sub-Clause 13.3 [Variation Procedure] shall apply.</p>
11.3 Extension of Defects	<p>The Employer shall be entitled subject to Sub-Clause 2.5 [Employer's Claims] to an extension of the Defects Notification Period for the Works or a Section if and to the extent that the Works, Section or a major item of Plant (as the case may be, and after taking over) cannot</p>

<p>Notification Period</p>	<p>be used for the purposes for which they are intended by reason of a defect or by reason of damage attributable to the Contractor. However, a Defects Notification Period shall not be extended by more than two years.</p> <p>If delivery and/or erection of Plant and/or Materials was suspended under Sub-Clause 8.8 [Suspension of Work] or Sub-Clause 16.1 [Contractor's Entitlement to Suspend Work], the Contractor's obligations under this Clause shall not apply to any defects or damage occurring more than two years after the Defects Notification Period for the Plant and/or Materials would otherwise have expired.</p>
<p>11.4 Failure to Remedy Defects</p>	<p>If the Contractor fails to remedy any defect or damage within a reasonable time, a date shall be fixed by Engineer (or on behalf of) the Employer, on or by which the defect or damage is to be remedied. The Contractor shall be given reasonable notice of this date, by the Engineer.</p> <p>If the Contractor fails to remedy the defect or damage by this notified date and this remedial work was to be executed at the cost of the Contractor under Sub-Clause 11.2 [Cost of Remedying Defects], the Employer may (at his sole discretion/option):</p> <ul style="list-style-type: none"> (a) carry out the work himself or by others, in a reasonable manner and at the Contractor's cost, but the Contractor shall have no responsibility for this work; and the Contractor shall subject to Sub-Clause 2.5 [Employer's Claims] pay to the Employer the costs reasonably incurred by the Employer in remedying the defect or damage; (b) require the Engineer to agree or determine a reasonable reduction in the Contract Price in accordance with Sub-Clause 3.5 [Determinations]; or (c) if the defect or damage deprives the Employer of substantially the whole benefit of the Works or any major part of the Works, terminate the Contract as a whole, or in respect of such major part which cannot be put to the intended use. Without prejudice to any other rights, under the Contract or otherwise, the Employer shall then be entitled to recover all sums paid for the Works or for such part (as the case may be), plus financing costs and the cost of dismantling the same, clearing the Site and returning Plant and Materials to the Contractor.
<p>11.5 Removal of Defective Work</p>	<p>If the defect or damage cannot be remedied expeditiously on the Site and the Employer gives consent, the Contractor may remove from the Site for the purposes of repair such items of Plant as are defective or damaged. This consent may require the Contractor to increase the</p>

	amount of the Performance Security by the full replacement cost of these items, or to provide other appropriate security.
11.6 Further Tests	<p>If the work of remedying of any defect or damage may affect the performance of the Works, the Engineer may require the repetition of any of the tests described in the Contract. The requirement shall be made by notice within 28 days after the defect or damage is remedied.</p> <p>These tests shall be carried out in accordance with the terms applicable to the previous tests, except that they shall be carried out at the risk and cost of the Party liable, under Sub-Clause 11.2 [Cost of Remedying Defects], for the cost of the remedial work.</p>
11.7 Right of Access	Until the Performance Certificate has been issued, the Contractor shall have such right of access to the Works as is reasonably required in order to comply with this Clause, except as may be inconsistent with the Employer's reasonable security restrictions.
11.8 Contractor to Search	The Contractor shall, if required by the Engineer, search for the cause of any defect, under the direction of the Engineer. Unless the defect is to be remedied at the cost of the Contractor under Sub-Clause 11.2 [Cost of Remedying Defects], the Cost of the search plus profit shall be agreed or determined by the Engineer in accordance with Sub Clause 3.5 [Determinations] and shall be included in the Contract Price.
11.9 Performance Certificate	<p>Performance of the Contractor's obligations shall not be considered to have been completed until the Engineer has issued the Performance Certificate to the Contractor, stating the date on which the Contractor completed his obligations under the Contract.</p> <p>The Engineer shall issue the Performance Certificate within 28 days after the latest of the expiry dates of the Defects Notification Periods, or as soon thereafter as the Contractor has supplied all the Contractor's Documents and completed and tested all the Works, including remedying any defects. A copy of the Performance Certificate shall be issued to the Employer.</p> <p>Only the Performance Certificate shall be deemed to constitute acceptance of the Works.</p>
11.10 Unfulfilled Obligations	After the Performance Certificate has been issued, each Party shall remain liable for the fulfilment of any obligation which remains unperformed at that time. For the purposes of determining the nature and extent of unperformed obligations, the Contract shall be deemed to remain in force.

<p>11.11 Clearance of Site</p>	<p>Upon receiving the Performance Certificate, the Contractor shall remove any remaining Contractor's Equipment, surplus material, wreckage, rubbish and Temporary Works from the Site.</p> <p>If all these items have not been removed within 28 days after receipt by the Contractor of the Performance Certificate, the Employer may sell or otherwise dispose of any remaining items. The Employer shall be entitled to be paid the costs incurred in connection with, or attributable to, such sale or disposal and restoring the Site.</p> <p>Any balance of the moneys from the sale shall be paid to the Contractor. If these moneys are less than the Employer's costs, the Contractor shall pay the outstanding balance to the Employer.</p>
<p style="text-align: center;">12. Measurement and Evaluation</p>	
<p>12.1 Works to be Measured</p>	<p>The Works shall be measured, and valued for payment, in accordance with this Clause. The Contractor shall show in each application under Sub-Clauses 14.3 [Application for Interim Payment Certificates], 14.10 [Statement on Completion] and 14.11 [Application for Final Payment Certificate] the quantities and other particulars detailing the amounts which he considers to be entitled under the Contract.</p> <p>Whenever the Engineer requires any part of the Works to be measured, reasonable notice shall be given to the Contractor's Representative, who shall:</p> <ul style="list-style-type: none"> (a) promptly either attend or send another qualified representative to assist the Engineer in making the measurement, and (b) supply any particulars requested by the Engineer. <p>If the Contractor fails to attend or send a representative, the measurement made by (or on behalf of) the Engineer shall be accepted as accurate.</p> <p>Except as otherwise stated in the Contract, wherever any Permanent Works are to be measured from records, these shall be prepared by the Engineer. The Contractor shall, as and when requested, attend to examine and agree the records with the Engineer, and shall sign the same when agreed. If the Contractor does not attend, the records shall be accepted as accurate.</p> <p>If the Contractor examines and disagrees the records, and/or does not sign them as agreed, then the Contractor shall give notice to the Engineer of the respects in which the records are asserted to be inaccurate. After receiving this notice, the Engineer shall review the records and either confirm or vary them and certify the payment of the undisputed part. If the Contractor does not so give notice to the</p>

	Engineer within 14 days after being requested to examine the records, they shall be accepted as accurate.
12.2 Method of Measurement	<p>Except as otherwise stated in the Contract and notwithstanding local practice:</p> <p>(a) measurement shall be made of the net actual quantity of each item of the Permanent Works, and</p> <p>(b) the method of measurement shall be in accordance with the Bill of Quantities or other applicable Schedules.</p>
12.3 Evaluation	<p>Except as otherwise stated in the Contract, the Engineer shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine the Contract Price by evaluating each item of work, applying the measurement agreed or determined in accordance with the above Sub-Clauses 12.1 and 12.2 and the appropriate rate or price for the item.</p> <p>For each item of work, the appropriate rate or price for the item shall be the rate or price specified for such item in the Contract or, if there is no such item, specified for similar work.</p> <p>Any item of work included in the Bill of Quantities / Scope of work / Employer's Requirement, for which no rate or price was specified shall be considered as included in other rates and prices in the Bill of Quantities /Finance Bid and will not be paid for separately.</p>
12.4 Omissions	<p>Whenever the omission of any work forms part (or all) of a Variation, the value of which has not been agreed, if:</p> <p>(a) the Contractor will incur (or has incurred) cost which, if the work had not been omitted, would have been deemed to be covered by a sum forming part of the Accepted Contract Amount;</p> <p>(b) the omission of the work will result (or has resulted) in this sum not forming part of the Contract Price; and</p> <p>(c) this cost is not deemed to be included in the evaluation of any substituted work;</p> <p>then the Contractor shall give notice to the Engineer accordingly, with supporting particulars. Upon receiving this notice, the Engineer shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine this cost, which shall be included in the Contract Price.</p>
13. Variations and Adjustments	
13.1 Right to Vary	Variations may be initiated by the Engineer at any time prior to issuing the Taking-Over Certificate for the Works, either by an instruction or by a request for the Contractor to submit a proposal.

	<p>The Contractor shall execute and be bound by each Variation, unless the Contractor promptly gives notice to the Engineer stating (with supporting particulars) that (i) the Contractor cannot readily obtain the Goods required for the Variation, or (ii) such Variation triggers a substantial change in the sequence or progress of the Works. Upon receiving this notice, the Engineer shall cancel, confirm or vary the instruction.</p> <p>Each Variation may include:</p> <ul style="list-style-type: none"> (a) changes to the quantities of any item of work included in the Contract (however, such changes do not necessarily constitute a Variation), (a) changes to the quality and other characteristics of any item of work, (b) changes to the levels, positions and/or dimensions of any part of the Works, (d) omission of any work unless it is to be carried out by others, (e) any additional work, Plant, Materials or services associated or part of the Permanent Works, including any associated Tests on Completion, boreholes and other testing and exploratory work, or (f) changes to the sequence or timing of the execution of the Works. <p>The Contractor shall not make any alteration and/or modification of the Permanent Works, unless and until the Engineer instructs or approves a Variation.</p> <p>Any additional work, plant, material or services related to enabling work or site convenience & not a part of Permanent Works shall not be considered as a Variation to assigned work.</p>
<p>13.2 Value Engineering</p>	<p>The Contractor may, at any time, submit to the Engineer a written proposal which (in the Contractor's opinion) will, if adopted, (i) accelerate completion, (ii) reduce the cost to the Employer of executing, maintaining or operating the Works, (iii) improve the efficiency or value to the Employer of the completed Works, or (iv) otherwise be of benefit to the Employer.</p> <p>The proposal shall be prepared at the cost of the Contractor and shall include the items listed in Sub-Clause 13.3 [Variation Procedure].</p> <p>If a proposal, which is approved by the Engineer, includes a change in the design of part of the Permanent Works, then unless otherwise agreed by both Parties:</p> <ul style="list-style-type: none"> (a) the Contractor shall design this part,

	<p>(b) sub-paragraphs (a) to (d) of Sub-Clause 4.1 [Contractor's General Obligations] shall apply, and</p> <p>(c) if this change results in a reduction in the contract value of this part, the Engineer shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine a fee, which shall be included in the Contract Price. This fee shall be half (50%) of the difference between the following amounts:</p> <p>(i) such reduction in contract value, resulting from the change, excluding adjustments under Sub-Clause 13.7 [Adjustments for Changes in Legislation] and Sub-Clause 13.8 [Adjustments for Changes in Cost], and</p> <p>(ii) the reduction (if any) in the value to the Employer of the varied works, taking account of any reductions in quality, anticipated life or operational efficiencies.</p> <p>However, if amount (i) is less than amount (ii), there shall not be a fee.</p>
13.3 Variation Procedure	<p>If the Engineer requests a proposal, prior to instructing a Variation, the Contractor shall respond in writing as soon as practicable, either by giving reasons why he cannot comply (if this is the case) or by submitting:</p> <p>(a) a description of the proposed work to be performed and a programme for its execution,</p> <p>(b) the Contractor's proposal for any necessary modifications to the programme according to Sub-Clause 8.3 [Programme] and to the Time for Completion, and</p> <p>(c) the Contractor's proposal for evaluation of the Variation.</p> <p>(d) The Engineer shall, as soon as practicable after receiving such proposal (under Sub-Clause 13.2 [Value Engineering] or otherwise), respond with approval, disapproval or comments. The Contractor shall not delay any work whilst awaiting a response.</p> <p>(e) Consent of the Engineer & approval of Employer is required on any proposed Variation issued for substantial technical modifications, additional cost or extension of time. Such Variation shall be consolidated in a signed Amendment to Contract agreed by both Parties.</p> <p>(f) Each instruction to execute a Variation, with any requirements for the recording of Costs, shall be issued by the Engineer to the Contractor, who shall acknowledge receipt.</p>

	Each Variation shall be processed in accordance with detailed procedures described in Particular Conditions , unless the Engineer instructs or approves otherwise in accordance with this Clause.
13.4 Payment in Applicable Currencies	If the Contract provides for payment of the Contract Price in more than one currency, then whenever an adjustment is agreed, approved or determined as stated above, the amount payable in each of the applicable currencies shall be specified. For this purpose, reference shall be made to the actual or expected currency proportions of the Cost of the varied work, and to the proportions of various currencies specified for payment of the Contract Price.
13.5 Provisional Sums	<p>Each Provisional Sum shall only be used, in whole or in part, in accordance with the Engineer's instructions, and the Contract Price shall be adjusted accordingly. The total sum paid to the Contractor shall include only such amounts, for the work, supplies or services to which the Provisional Sum relates, as the Engineer shall have instructed. For each Provisional Sum, the Engineer may instruct:</p> <ul style="list-style-type: none"> (a) Work to be executed (including Plant, Materials or services to be supplied) by the Contractor and valued under Sub-Clause 13.3 [Variation Procedure]; and/or (b) Plant, Materials or services to be purchased by the Contractor, from a nominated Sub Contractor (as defined in Clause 5 [Nominated Sub Contractors] or otherwise; and for which there shall be included in the Contract Price: <ul style="list-style-type: none"> (i) the actual amounts paid (or due to be paid) by the Contractor, and (ii) a sum for overhead charges and profit, calculated as a percentage of these actual amounts as stated in the Particular Conditions under Sub-Clause 13.3 [Variation Procedure] <p>The Contractor shall, when required by the Engineer, produce quotations, invoices, vouchers and accounts or receipts in substantiation.</p>
13.6 Daywork	<p>For work of a minor or incidental nature, the Engineer may instruct that a Variation shall be executed on a day work basis. The work shall then be valued in accordance with the Day work Schedule included in the Contract, and the following procedure shall apply. If a Daywork Schedule is not included in the Contract, this Sub-Clause shall not apply.</p> <p>Before ordering Goods for the work, the Contractor shall submit quotations to the Engineer. When applying for payment, the</p>

	<p>Contractor shall submit invoices, vouchers and accounts or receipts for any Goods.</p> <p>Except for any items for which the Daywork Schedule specifies that payment is not due, the Contractor shall deliver each day to the Engineer accurate statements in duplicate which shall include the following details of the resources used in executing the previous day's work:</p> <ul style="list-style-type: none"> (a) the names, occupations and time of Contractor's Personnel, (b) the identification, type and time of Contractor's Equipment and Temporary Works, and (c) the quantities and types of Plant and Materials used. <p>Or</p> <p>Under the provision of unforeseen Schedule provided in Financial Bid / BOQ of Contract.</p> <p>One copy of each statement will, if correct, or when agreed, be signed by the Engineer and returned to the Contractor. The Contractor shall then submit priced statements of these resources to the Engineer, prior to their inclusion in the next Statement under Sub-Clause 14.3 [Application for Interim Payment Certificates].</p>
13.7 Adjustments for Changes in Legislation	<p>The Contract Price shall be adjusted to take account of any increase or decrease in Cost resulting from a change in the Laws of the Country (including the introduction of new Laws and the repeal or modification of existing Laws) or in the judicial or official governmental interpretation of such Laws, made after the Base Date, which affect the Contractor in the performance of obligations under the Contract.</p> <p>If the Contractor suffers (or will suffer) delay and/or incurs (or will incur) additional Cost or saving in cost as a result of these changes in the Laws or in such interpretations, made after the Base Date, the Contractor shall give notice to the Engineer and shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to:</p> <ul style="list-style-type: none"> (a) an extension of time for any such delay, if completion is or likely to be delayed due to Change in Legislation , under Sub-Clause 8.4 [Extension of Time for Completion], and (b) The Contract Price shall be adjusted to take into account any new taxes or any statutory variations, on finished product/item during the contractual completion period shall be to the Employer's account for which the Contractor shall furnish documentary evidence in support of their claims. However, any increase in the cost due to new taxes or change in the existing taxes introduced during the extended contractual completion

	<p>period due to the Contractor's fault shall be to the Contractor's account.</p> <p>(i) Taxes prior to Base date i.e 28 days prior to latest date of submission of Bid is deemed to be inclusive of price quoted by Bidder.</p> <p>(ii) Any change in legislation of any kind of Taxes by Gol or GOM, after Base Date shall be accounted for separately and It is applicable both way (Reimbursement & Deduction)</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> <p>Notwithstanding the foregoing, the Contractor shall not be entitled to an extension of time if the relevant delay has already been taken into account in the determination of a previous extension of time and such Cost shall not be separately paid if the same shall already have been taken into account in the indexing of any inputs to the table of adjustment data in accordance with the provisions of Sub-Clause 13.8 [Adjustments for Changes in Cost].</p>
13.8 Adjustments for Changes in Cost	<p>In this Sub-Clause, "table of adjustment data" means the completed table of adjustment data and factors for local and foreign currencies included in the Particular Condition. If there is no such table of adjustment data in Particular Condition, this Sub-Clause shall not apply.</p> <p>If this Sub-Clause applies, the amounts payable to the Contractor shall be adjusted for rises or falls in the cost of labour, Goods and other inputs to the Works, by the addition or deduction of the amounts determined by the formulae prescribed in this Sub-Clause. To the extent that full compensation for any rise or fall in Costs is not covered by the provisions of this or other Clauses, the Accepted Contract Amount shall be deemed to have included amounts to cover the contingency of other rises and falls in costs.</p> <p>The adjustment to be applied to the amount otherwise payable to the Contractor, as valued in accordance with the appropriate Schedule and certified in Payment Certificates, shall be determined from formulae provided in Particular Conditions.</p> <p>The cost indices or reference prices stated in the Particular Condition s shall be used. If their source is in doubt, it shall be determined by the Engineer.</p> <p>In cases where the "currency of index" is not the relevant currency of payment, each index shall be converted into the relevant currency of payment at the selling rate, established by the central bank of the</p>

	<p>Country, of this relevant currency on the above date for which the index is required to be applicable.</p> <p>Until such time as each current cost index is available, the Engineer shall determine a provisional index for the issue of Interim Payment Certificates. When a current cost index is available, the adjustment shall be recalculated accordingly.</p> <p>If the Contractor fails to complete the Works within the Time for Completion, adjustment of prices thereafter shall be made using either</p> <p>(i) each index or price applicable on the date 49 days prior to the expiry of the Time for Completion of the Works, or (ii) the current index or price, whichever is more favorable to the Employer.</p> <p>The weightings (coefficients) for each of the factors of cost stated in the Particular Condition shall only be adjusted if they have been rendered unreasonable, unbalanced or inapplicable, as a result of Variations.</p>
14. Contract Price and Payment	
14.1 The Contract Price	<p>Unless otherwise stated in the Particular Conditions:</p> <p>(a) the Contract Price shall be agreed or determined under Sub Clause 12.3 [Evaluation] and be subject to adjustments in accordance with the Contract; inclusive of all taxes, duties, royalties and GST</p> <p>(b) the Contractor shall pay all taxes, GST, Stamp Duties, other duties and fees required to be paid by him under the Contract, and the Contract Price shall not be adjusted for any of these costs except as stated in Sub-Clause 13.7 [Adjustments for Changes in Legislation];</p> <p>(c) any quantities which may be set out in the Bill of Quantities or other Schedule are estimated quantities and are not to be taken as the actual and correct quantities:</p> <p style="padding-left: 40px;">(i) of the Works which the Contractor is required to execute, or</p> <p style="padding-left: 40px;">(ii) for the purposes of Clause 12 [Measurement and Evaluation]; and</p> <p>(d) the Contractor shall submit to the Engineer, within 28 days after the Commencement Date, a proposed breakdown of each lump sum price in the Schedules (Applicable to Lump Sum Contract Only). The Engineer may take account of the breakdown when preparing Payment Certificates, but shall not be bound by it.</p>

	<p>Notwithstanding the provisions of subparagraph (b), Contractor's Equipment, including essential spare parts therefor, imported by the Contractor for the sole purpose of executing the Contract shall be exempt from the payment of import duties and taxes upon importation.</p> <p>Further details regarding prevailing taxes is provided in Particular Conditions</p>
14.2 Advance Payment / Mobilization Advance	<p>Deleted</p> <p>The Employer shall make an advance payment, as an interest-free loan for mobilization and cash flow support, when the Contractor submits a guarantee in accordance with this Sub-Clause. The total advance payment, the number and timing of instalments (if more than one), and the applicable currencies and proportions detailed as under:</p> <p>(a) Mobilization Advance :</p> <p>Interest free Mobilization advance shall be 10% of original contract value payable in two equal instalments of 5% (Five Percent) each. in the currencies and proportions in which the Accepted Contract Amount is payable:</p> <p>Mobilization advance shall be paid against acceptable Bank Guarantee issued from a Scheduled Commercial Indian Bank or Schedule Commercial Foreign Bank (Except Cooperative Bank) having business offices in India. The value of Bank Guarantee taken towards security of "Advance Payment" / "Mobilization Advance" shall be 110% of the advance amount requested by the Contractor and valid for 60 Days beyond scheduled completion time. The validity of Advance Bank Guarantee shall be extended as per extended time of contract plus 60 days, if the Advance Amount is not recovered completely.</p> <p>The first installment shall be paid after award of Letter of Acceptance by employer and submission of Performance Guarantee / Security and Advance Bank Guarantee by Contractor.</p> <p>The second installment shall be paid on production of effective and proper utilization of the first installment duly accepted and certified (with or without modification) by the Engineer. The Contractor shall be required to submit the 'Utilization Certificate' of 1st installment along with Bank Guarantee @ 110% of 2nd installment, with his letter of request.</p> <p>The Contractor, once the 50% of mobilization advance has been recovered, shall have a onetime option to reduce the Bank Guarantee for the mobilization advance by the proportion to the amount recovered.</p> <p>(b) Amortization/ Repayment of Advance Payment</p>

	<p>The recovery of the 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 before payment of 60% of Contract Price.</p> <p><u>(c) Interest in case of delay in repayment of Advances</u></p> <p>i. Should there be delay in the progress and completion of work due to reasons attributable to the Contractor, as a result of which it is not possible to recover the advance amount within the assigned time period of completion, then the interest @ MCLR (One Year Rate) +2%, (Marginal Cost of Funds Based Lending Rate) of SBI, shall be recovered from the Contractor on balance advance amount for extended period of work till the re-payments of entire amount completes.</p> <p>ii. MCLR shall be applicable at the prevailing rate on the date of payment of advance amount in Contractor's account.</p> <p>iii. If the contract is terminated due to default of the Contractor, the 'Mobilization Advance' would be deemed as interest bearing advance @ MCLR +2%. The interest will be calculated from the first day of the month in which an advance is paid to the Contractor and it will be calculated up to the last day of the month in which the recovery is made.</p> <p><u>(d) Failure of contractor to repay the Advance Amount</u></p> <p>i. If the Contractor fails to repay the advance amount within the stipulated period of repayment as described above in Sub Clause no. 14.2 (b) or its further extension by Employer, in such events Employer is empowered to encash the Bank Guarantee submitted by Contractor against the Advance Payment.</p> <p>ii. Employer is also empowered to encash the Advance Bank Guarantee, if the Contract is terminated or foreclosed or whatever the reasons and Advance Amount is not repaid by Contractor</p>
<p>14.3 Application for Interim Payment Certificates</p>	<p>The Contractor shall submit a Statement in two copies to the Engineer after the end of each month, in a form approved by the Engineer, showing in detail the amounts to which the Contractor considers himself to be entitled, together with supporting documents which shall include the report on the progress during this month in accordance with Sub-Clause 4.21 [Progress Reports].</p>

	<p>The Statement shall include the following items, as applicable, which shall be expressed in the various currencies in which the Contract Price is payable, in the sequence listed:</p> <ul style="list-style-type: none"> (a) the estimated contract value of the Works executed and the Contractor's Documents produced up to the end of the month (including Variations but excluding items described in sub paragraphs (b) to (g) below); (b) any amounts to be added and deducted for changes in legislation and changes in cost, in accordance with Sub-Clause 13.7 [Adjustments for Changes in Legislation] and Sub-Clause 13.8 [Adjustments for Changes in Cost]; (c) any amount to be deducted for retention, calculated by applying the percentage of retention stated in the Particular Conditions to the total of the above amounts, until the amount so retained by the Employer reaches the limit of Retention Money (if any) stated in the Particular Conditions; (d) any amounts to be added for the advance payment and (if more than one instalment) and to be deducted for its repayments in accordance with Sub-Clause 14.2 [Advance Payment]; (e) any amounts to be added and deducted for Plant and Materials in accordance with Sub-Clause 14.5 [Plant and Materials intended for the Works]; (f) any other additions or deductions which may have become due under the Contract or otherwise, including those under Clause 20 [Claims, Disputes and Arbitration]; and (g) the deduction of amounts certified in all previous Payment Certificates.
14.4 Schedule of Payments	<p><i>(This clause is replaced in PCC)</i></p> <p>If the Contract includes a schedule of payments specifying the instalments in which the Contract Price will be paid, then unless otherwise stated in this schedule:</p> <ul style="list-style-type: none"> (a) the instalments quoted in this schedule of payments shall be the estimated contract values for the purposes of sub-paragraph (a) of Sub-Clause 14.3 [Application for Interim Payment Certificates]; (b) Sub-Clause 14.5 [Plant and Materials intended for the Works] shall not apply; and (c) if these instalments are not defined by reference to the actual progress achieved in executing the Works, and if actual progress is found to be less or more than that on which this schedule of

	<p>payments was based, then the Engineer may proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine revised instalments, which shall take account of the extent to which progress is less or more than that on which the instalments were previously based.</p> <p>If the Contract does not include a schedule of payments, the Contractor shall submit non-binding estimates of the payments which he expects to become due during each quarterly period. The first estimate shall be submitted within 42 days after the Commencement Date. Revised estimates shall be submitted at quarterly intervals, until the Taking-Over Certificate has been issued for the Works.</p>
14.5 Plant and Materials intended for the Works	<p>If this Sub-Clause applies, Interim Payment Certificates shall include, under sub-paragraph (e) of Sub-Clause 14.3,</p> <ul style="list-style-type: none"> (i) an amount for Plant and Materials which have been sent to the Site for incorporation in the Permanent Works, and (ii) a reduction when the contract value of such Plant and Materials is included as part of the Permanent Works under sub-paragraph (a) of Sub-Clause 14.3 [Application for Interim Payment Certificates]. <p>If the lists referred to in sub-paragraphs (b) (i) or (c) (i) below are not included in the Schedules / Accepted Bill of Quantities, this Sub Clause shall not apply.</p> <p>The Engineer shall determine and certify each addition if the following conditions are satisfied:</p> <ul style="list-style-type: none"> (a) the Contractor has: <ul style="list-style-type: none"> (i) kept satisfactory records (including the orders, receipts, Costs and use of Plant and Materials) which are available for inspection, and (ii) submitted a statement of the Cost of acquiring and delivering the Plant and Materials to the Site, supported by satisfactory evidence; <p>and either:</p> <ul style="list-style-type: none"> (b) the relevant Plant and Materials: <ul style="list-style-type: none"> (i) are those listed in the Schedules for payment / Accepted Bill of Quantities (ii) when shipped, (iii) have been shipped to the Country, en route to the Site, in accordance with the Contract; and (iv) are described in a clean shipped bill of lading or other evidence of shipment, which has been submitted to the

	<p>Engineer together with evidence of payment of freight and insurance, any other documents reasonably required, and a bank guarantee in a form and issued by an entity approved by the Employer in amounts and currencies equal to the amount due under this Sub Clause: this guarantee may be in a similar form to the form referred to in Sub-Clause 14.2 [Advance Payment] and shall be valid until the Plant and Materials are properly stored on Site and protected against loss, damage or deterioration by proper Insurance and security;</p> <p>or</p> <p>(c) the relevant Plant and Materials:</p> <ul style="list-style-type: none"> (i) are those listed in the Schedules for payment /Accepted Bill of Quantitiess (ii) when delivered to the Site, and (iii) have been delivered to and are properly stored on the Site, are protected against loss, damage or deterioration with proper insurance & security, and appear to be in accordance with the Contract. <p>(d) The amount to be certified shall be the equivalent of eighty percent (80%) of the Engineer's determination of the cost of the Plant and Materials (including delivery to Site), taking account of the documents mentioned in this Sub-Clause and of the contract value of the Plant and Materials.</p> <p>(e) The currencies for this additional amount shall be the same as those in which payment will become due when the contract value is included under sub-paragraph (a) of Sub-Clause 14.3 [Application for Interim Payment Certificates]. At that time, the Payment Certificate shall include the applicable reduction which shall be equivalent to, and in the same currencies and proportions as, this additional amount for the relevant Plant and Materials.</p>
14.6 Issue of Interim Payment Certificates	<p>No amount will be certified or paid until the Employer has received and approved the Performance Security. Thereafter, the Engineer shall, within 28 days after receiving a Statement and supporting documents, deliver to the Employer and to the Contractor an Interim Payment Certificate which shall state the amount which the Engineer fairly determines to be due, with all supporting particulars for any reduction or withholding made by the Engineer on the Statement if any.</p>

	<p>However, prior to issuing the Taking-Over Certificate for the Works, the Engineer shall not be bound to issue an Interim Payment Certificate in an amount which would (after retention and other deductions) be less than the minimum amount of Interim Payment Certificates (if any) stated in the Particular Conditions. In this event, the Engineer shall give notice to the Contractor accordingly.</p> <p>An Interim Payment Certificate shall not be withheld for any other reason, although:</p> <ul style="list-style-type: none"> (a) if any thing supplied or work done by the Contractor is not in accordance with the Contract, the cost of rectification or replacement may be withheld until rectification or replacement has been completed; and/or (b) if the Contractor was or is failing to perform any work or obligation in accordance with the Contract, and had been so notified by the Engineer, the value of this work or obligation may be withheld until the work or obligation has been performed. <p>The Engineer may in any Payment Certificate make any correction or modification that should properly be made to any previous Payment Certificate. A Payment Certificate shall not be deemed to indicate the Engineer's acceptance, approval, consent or satisfaction.</p>
<p>14.7 Payment</p>	<p>The Employer shall pay to the Contractor:</p> <ul style="list-style-type: none"> (a) the first instalment of the advance payment within 42 days after issuing the Letter of Acceptance or within 21 days after receiving the documents in accordance with Sub-Clause 4.2 [Performance Security] and Sub-Clause 14.2 [Advance Payment], whichever is later; (b) the amount certified in each Interim Payment Certificate within 56 days after the Engineer receives the Statement and supporting documents; or, at a time when the Bank's loan or credit (from which part of the payments to the Contractor is being made) is suspended, the amount shown on any statement submitted by the Contractor within 14 days after such statement is submitted, any discrepancy being rectified in the next payment to the Contractor; and (c) the amount certified in the Final Payment Certificate within 56 days after the Employer receives this Payment Certificate; or, at a time when the Bank's loan or credit (from which part of the payments to the Contractor is being made) is suspended, the undisputed amount shown in the Final Statement within 56 days after the date of notification of the suspension in accordance with Sub-Clause 16.2 [Termination by Contractor].

	<p>d) The Employer may, at its sole discretion, authorise the Engineer to perform the functions of Employer specified in the GC Clause 14.7. The Employer may advise arrangements for direct payment by the Bank. The procedure to be followed for such direct payment by the Bank shall be advised to the Contractor by the Engineer.</p> <p>e) 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.</p> <p>f) In calculating the amount payable to the Contractor for the Rupee portion, for each item, sums of less than Fifty Paise shall be omitted and sums of Fifty Paise and more, up to one Rupee, shall be reckoned as one Rupee. The net payments in foreign currencies, if applicable, shall also be rounded off to 'zero' decimal places.</p> <p>g) All payments to the Contractor for the Rupee portion shall be made by crossed cheque/ RTGS/NEFT or appropriate on line payment method, but no cheque will be issued for an amount of less than Rs. 1000/-. This shall not apply to the final payment.</p> <p>h) All payments to the Contractor for the foreign currency portion shall be through a Letter of Credit. All bank charges of Employer's Banker shall be borne by the Employer and that of Contractor's Banker shall be borne by the Contractor. The charges towards confirmation (if required by the Contractor) shall be borne by the Contractor. Extension of validity of L/C need is not envisaged. However, should be validity of L/C need to be extended, for reasons solely attributable to Employer, the charges for such extension will be borne by the Employer. In all other cases, L/C charges for extension or otherwise shall be borne by the Contractor.</p> <p>Payment procedure shall be as under:</p> <p>i) The Contractor shall submit preferably the monthly bill for payment to the Engineer.</p> <p>ii) Immediately after the submission of bill with all relevant documents / enclosures, 80 % amount of the bill shall be released within 7 working days approximately.</p> <p>iii) The remaining 20% of the bill shall be released after detail scrutiny and subsequent comments / Recommendations by</p>
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	<p>Engineer within 28 days from the date of submission of bill by Contractor.</p> <p>iv) If any adverse comments regarding the workmanship or the quality of the work done in the previous bill is made by the Engineer then appropriate and suitable amount shall be recovered from successive bills.</p> <p>v) Payment of the amount due in each currency shall be made into the bank account, nominated by the Contractor, in the payment country (for this currency) specified in the Contract.</p> <p>vi) The Employer shall pay to the Contractor the amount certified in each Interim Payment Certificate. Each interim payment certificate will have two components;</p> <p style="padding-left: 40px;">(b) Value of the work/goods/services (without taxes/ duties levies/ cess etc.).</p> <p style="padding-left: 40px;">(c) Taxes/ duties levies/cess/GST etc</p>
14.8 Delayed Payment	<p>(a) If the Contractor does not receive payment / certificate for acceptance of payment in accordance with GC Clause 14.7 above, the Contractor shall be entitled to receive interest on the amount unpaid during the period of delay. This period of delay shall be deemed to commence from the first working day after 56 calendar days from the date of issue of the Interim Payment Certificate by the Engineer.</p> <p>(b) The interest shall be calculated at an interest @ MCLR (One Year Rate) (Marginal Cost of Funds Based Lending Rate) of SBI.</p> <p>(c) Rate of MCLR (One Year Rate) shall be applicable of first working day after 56 calendar days from the date of issue of the Interim Payment Certificate by the Engineer.</p> <p>(d) The Contractor shall submit their claim for the interest for the above period of delay along with detailed reasons for the said delays to the Engineer within 14 days of the expiry of the 56 days period. The claimed interest shall be payable to the Contractor only if it is determined by the Engineer that the delays are solely attributable to the Employer.</p> <p>(e) The Contractor shall be entitled to this payment without formal notice or certification, and without prejudice to any other right or remedy.</p>

<p>14.9 Payment of Retention Money</p>	<p>(If applicable & specifically mentioned in Particular Conditions)</p> <p>(a) 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.</p> <p>(b) 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 billed contract value of the Section or part, by the Awarded final Contract Price. Promptly after the latest of the expiry dates of the Defects Notification Periods, the outstanding balance of the Retention Money shall be certified by the Engineer for payment to the Contractor.</p> <p>(d) If a Taking-Over Certificate was issued for a Section, a proportion of the second half of the Retention Money shall be certified and paid promptly after the expiry date of the Defects Notification Period for the Section. This proportion shall be half (50%) of the proportion calculated by dividing the billed contract value of the Section by the awarded final Contract Price.</p> <p>(e) However, if any work remains to be executed under Clause 11 [Defects Liability], the Engineer shall be entitled to withhold certification of the final cost of this work until it has been executed. When calculating these proportions, no account shall be taken of any adjustments under Sub-Clause 13.7 [Adjustments for Changes in Legislation] and Sub-Clause 13.8 [Adjustments for Changes in Cost].</p> <p>(f) Unless otherwise stated in the Particular Conditions, when the Taking-Over Certificate has been issued for the Works and the first half of the Retention Money has been certified for payment by the Engineer, the Contractor shall be entitled to substitute a guarantee, in the form annexed to the Particular Conditions or in another form approved by the Employer and issued by a Scheduled Commercial Indian Bank / Schedule Commercial Foreign bank (Except Cooperative Bank) having business office in India acceptable to the Employer, for the second half of the Retention Money.</p> <p>(g) The Contractor shall ensure that the guarantee is in the amounts and currencies of the second half of the Retention Money and is valid and enforceable until the Contractor has executed and completed the Works and remedied any defects, as specified for the Performance Security in Sub-Clause 4.2.</p> <p>On receipt by the Employer of the required guarantee, the</p>
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	<p>Engineer shall certify and the Employer shall pay the second half of the Retention Money. The release of the second half of the Retention Money against a guarantee shall then be in lieu of the release under the second paragraph of this Sub-Clause. The Employer shall return the guarantee to the Contractor within 21 days after receiving a copy of the Performance Certificate.</p>
<p>14.10 Statement at Completion</p>	<p>Within 84 days after receiving the Taking-Over Certificate for the Works, the Contractor shall submit to the Engineer two copies of a Statement at completion with supporting documents, in accordance with Sub-Clause 14.3 [Application for Interim Payment Certificates], showing:</p> <ul style="list-style-type: none"> (a) the value of all work done in accordance with the Contract up to the date stated in the Taking-Over Certificate for the Works, (b) any further sums which the Contractor considers to be due, and (c) an estimate of any other amounts which the Contractor considers will become due to him under the Contract. Estimated amounts shall be shown separately in this Statement at completion. <p>The Engineer shall then certify in accordance with Sub-Clause 14.6 [Issue of Interim Payment Certificates].</p>
<p>14.11 Application for Final Payment Certificate</p>	<p>Within 56 days after receiving the Performance Certificate, the Contractor shall submit, to the Engineer, two copies of a draft final statement with supporting documents showing in detail in a form approved by the Engineer:</p> <ul style="list-style-type: none"> (a) the value of all work done in accordance with the Contract, and (b) any further sums which the Contractor considers to be due to him under the Contract or otherwise. <p>If the Engineer disagrees with or cannot verify any part of the draft final statement, the Contractor shall submit such further information as the Engineer may reasonably require within 28 days from receipt of said draft and shall make such changes in the draft as may be agreed between them. The Contractor shall then prepare and submit to the Engineer the final statement as agreed. This agreed statement is referred to in these Conditions as the "Final Statement".</p> <p>However if, following discussions between the Engineer and the Contractor and any changes to the draft final statement which are agreed, it becomes evident that a dispute exists, the Engineer shall deliver to the Employer (with a copy to the Contractor) an Interim Payment Certificate for the agreed parts of the draft final statement. Thereafter, if the dispute is finally resolved under Sub-Clause 20.4 [Obtaining Dispute Board's</p>

	<p>Decision] or Sub-Clause 20.5 [Amicable Settlement], the Contractor shall then prepare and submit to the Employer (with a copy to the Engineer) a Final Statement.</p> <p>Before issue of Final Payment Certificate Contractor shall sign & submit a "No Dues Certificate/ No Claim Certificate" in the format provided by Engineer.</p>
14.12 Discharge	<p>When submitting the Final Statement, the Contractor shall submit a discharge which confirms that the total of the Final Statement represents full and final settlement of all moneys due to the Contractor under or in connection with the Contract. This discharge may state that it becomes effective when the Contractor has received the Performance Security and the outstanding balance of this total, in which event the discharge shall be effective on such date.</p>
14.13 Issue of Final Payment Certificate	<p>Within 28 days after receiving the Final Statement and discharge in accordance with Sub-Clause 14.11 [Application for Final Payment Certificate] and Sub-Clause 14.12 [Discharge], the Engineer shall deliver, to the Employer and to the Contractor, the Final Payment Certificate which shall state:</p> <ul style="list-style-type: none"> (a) the amount which he fairly determines is finally due, and (b) after giving credit to the Employer for all amounts previously paid by the Employer and for all sums to which the Employer is entitled, the balance (if any) due from the Employer to the Contractor or from the Contractor to the Employer, as the case may be. <p>If the Contractor has not applied for a Final Payment Certificate in accordance with Sub-Clause 14.11 [Application for Final Payment Certificate] and Sub-Clause 14.12 [Discharge], the Engineer shall request the Contractor to do so. If the Contractor fails to submit an application within a period of 28 days, the Engineer shall issue the Final Payment Certificate for such amount as he fairly determines to be due.</p>
14.14 Cessation of Employer's Liability	<p>The Employer shall not be liable to the Contractor for any matter or thing under or in connection with the Contract or execution of the Works, except to the extent that the Contractor shall have included an amount expressly for it:</p> <ul style="list-style-type: none"> (a) in the Final Statement and also (b) (except for matters or things arising after the issue of the Taking Over Certificate for the Works) in the Statement at completion described in Sub-Clause 14.10 [Statement at Completion].

	However, this Sub-Clause shall not limit the Employer's liability under his indemnification obligations, or the Employer's liability in any case of fraud, deliberate default or reckless misconduct by the Employer.
14.15 Currencies of Payment	<p>The Contract Price shall be paid in the currency or currencies named in the Schedule of Payment Currencies or Particular Conditions. If more than one currency is so named, payments shall be made as follows:</p> <ul style="list-style-type: none"> (a) if the Accepted Contract Amount was expressed in Local Currency only: <ul style="list-style-type: none"> (i) the proportions or amounts of the Local and Foreign Currencies, and the fixed rates of exchange to be used for calculating the payments, shall be as stated in the Schedule of Payment Currencies, except as otherwise agreed by both Parties; (ii) payments and deductions under Sub-Clause 13.5 [Provisional Sums] and Sub-Clause 13.7 [Adjustments for Changes in Legislation] shall be made in the applicable currencies and proportions; and (iii) other payments and deductions under sub-paragraphs (a) to (d) of Sub-Clause 14.3 [Application for Interim Payment Certificates] shall be made in the currencies and proportions specified in sub-paragraph (a) (i) above; (b) payment of the damages specified in the Particular Conditions, shall be made in the currencies and proportions specified in the Schedule of Payment Currencies; (c) other payments to the Employer by the Contractor shall be made in the currency in which the sum was expended by the Employer, or in such currency as may be agreed by both Parties; (d) if any amount payable by the Contractor to the Employer in a particular currency exceeds the sum payable by the Employer to the Contractor in that currency, the Employer may recover the balance of this amount from the sums otherwise payable to the Contractor in other currencies; and (e) if no rates of exchange are stated in the Schedule of Payment Currencies, they shall be those prevailing on the Base Date and determined by the central bank of the Country i.e. Reserve Bank of India
14.16. Recovery of Money due to the Employer	All damages (including, without limitation, liquidated damages), costs, charges, expenses, debts, or sums for which the Contractor is liable to the Employer under any provision of the Contract may be deducted by the Employer from monies due to the Contractor under the Contract

	<p>(including, without limitation, liquidated damages) and the Employer/ Engineer shall have the power to recover any balance not so deducted from monies due to the Contractor under any other contract between the Employer and the Contractor.</p> <p>When the Contractor has assigned to a third party the right to receive monies due, or, to become due, under the Contract to the Contractor or charged such monies in favour of a third party, the Employer's right to deduct damages (including without limitation liquidated damages), costs, charges, expenses, debts or sums for which the Contractor is liable to the Employer from monies due to the Contractor under the Contract shall be limited to the right expressed above.</p>
15. Termination by Employer	
15.1 Notice to Correct	<p>If the Contractor fails to carry out any obligation under the Contract, the Engineer may by notice require the Contractor to make good the failure and to remedy it within a specified reasonable time.</p>
15.2 Termination by Employer	<p>The Employer shall be entitled to terminate the Contract if the Contractor:</p> <ul style="list-style-type: none"> (a) fails to comply with Sub-Clause 4.2 [Performance Security] or with a notice under Sub-Clause 15.1 [Notice to Correct], (b) abandons the Works or otherwise plainly demonstrates the intention not to continue performance of his obligations under the Contract, (c) without reasonable excuse fails: <ul style="list-style-type: none"> (i) to proceed with the Works in accordance with Clause 8 [Commencement, Delays and Suspension], or (ii) to comply with a notice issued under Sub-Clause 7.5 [Rejection] or Sub-Clause 7.6 [Remedial Work], within 28 days after receiving it, (d) subcontracts the whole of the Works or assigns the Contract without the required agreement, (e) becomes bankrupt or insolvent, goes into liquidation, has a receiving or administration order made against him, compounds with his creditors, or carries on business under a receiver, trustee or manager for the benefit of his creditors, or if any act is done or event occurs which (under applicable Laws) has a similar effect to any of these acts or events, or (f) gives or offers to give (directly or indirectly) to any person any bribe, gift, gratuity, commission or other thing of value, as an inducement or reward:

	<p>(i) for doing or forbearing to do any action in relation to the Contract, or</p> <p>(ii) for showing or forbearing to show favour or disfavour to any person in relation to the Contract,</p> <p>or if any of the Contractor's Personnel, agents or Sub-Contractor gives or offers to give (directly or indirectly) to any person any such inducement or reward as is described in this sub-paragraph (f). However, lawful inducements and rewards to Contractor's Personnel shall not entitle termination.</p> <p>In any of these events or circumstances, the Employer may, upon giving 14 days' notice to the Contractor, terminate the Contract and expel the Contractor from the Site. However, in the case of sub paragraph (e) or (f), the Employer may by notice terminate the Contract immediately.</p> <p>(g) In case the Contractor fails to adhere to the agreed programme of work by margin of 10% of the stipulated period or 21 days, whichever is earlier, or fails to complete the Works or parts of the Works within the stipulated or extended period of completion, or is unlikely to complete the whole Work or part thereof within time because of poor record of progress, the Employer at its sole discretion may terminate only part/ limit the scope / de-scope part of the work of the contract also by taking out some part of the total scope of work and may complete or arrange for any other entity through the process of Open/ Limited/ Single Tender/ by calling quotations or any other manner as deemed fit at the risk and cost of the contractor. In such case, the additional financial implications (if any), shall be debited/ recovered from the any monies due to Contractor and/or performance security. Such recovery shall be Limited to 10% (Ten Percent) of the Contract Price.</p> <p>(h) If Contractor submits fake/ forged/ fabricated documents/ false, incorrect, misleading information / data/ design, either during the bidding or thereafter during execution of the work or after completion but before the final bill, the contract can be terminated and appropriate action in terms of forfeiture of Performance Guarantee/ Security Deposit /Retention Money/ EMO/ Bid Security (as the case may be) shall be done and blacklisting of Contractor may be done by Employer.</p> <p>The Employer's decision to terminate the Contract shall not prejudice any other rights of the Employer, under the Contract or otherwise.</p> <p>The Contractor shall then leave the Site and deliver any required Goods, all Contractor's Documents, and other design documents</p>
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	<p>made by or for him, to the Engineer. However, the Contractor shall use his best efforts to comply immediately with any reasonable instructions included in the notice (i) for the assignment of any subcontract, and (ii) for the protection of life or property or for the safety of the Works.</p> <p>After termination, the Employer may complete the Works and/or arrange for any other entities to do so. The Employer and these entities may then use any Goods, Contractor's Documents and other design documents made by or on behalf of the Contractor.</p> <p>The Employer shall then give notice that the Contractor's Equipment and Temporary Works will be released to the Contractor at or near the Site. The Contractor shall promptly arrange their removal, at the risk and cost of the Contractor. However, if by this time the Contractor has failed to make a payment due to the Employer, these items may be sold by the Employer in order to recover this payment. Any balance of the proceeds shall then be paid to the Contractor.</p>
15.3 Valuation at Date of Termination	<p>As soon as practicable after a notice of termination under Sub-Clause 15.2 [Termination by Employer] has taken effect, the Engineer shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine the value of the Works, Goods and Contractor's Documents, and any other sums due to the Contractor for work executed in accordance with the Contract.</p>
15.4 Payment after Termination	<p>After a notice of termination under Sub-Clause 15.2 [Termination by Employer] has taken effect, the Employer may:</p> <ul style="list-style-type: none"> (a) proceed in accordance with Sub-Clause 2.5 [Employer's Claims], (b) withhold further payments to the Contractor until the costs of execution, completion and remedying of any defects, damages for delay in completion (if any), and all other costs incurred by the Employer, have been established, and/or (c) recover from the Contractor any losses and damages incurred by the Employer and any extra costs of completing the Works, after allowing for any sum due to the Contractor under Sub Clause 15.3 [Valuation at Date of Termination]; such recovery shall be limited to 10% (Ten Percent) of the Contract Price. After recovering any such losses, damages and extra costs, the Employer shall pay any balance to the Contractor. (d) On termination of contract due to Contractor's default (except in case of part termination/ de-scoping under para 15.2 (g)) the Performance Security/ Retention Money shall be forfeited/encashed. The balance work shall be got done

	<p>independently at risk and cost of the failed Contractor. The Risk and Cost amount shall be recovered from the Performance Security and any other monies due to the Contractor under this contract or any other contract. However, such recovery shall be Limited to 10% (Ten Percent) of the Contract Price. The failed Contractor shall be debarred from participating in the tender for executing the balance work. If the failed Contractor is a JV or a partnership firm, then every member/partner of such JV or partnership firm shall be debarred from participating in the tender for the balance work either in his/her individual capacity or as a partner of any other JV/partnership firm.</p>
<p>15.5 Employer's Entitlement to Termination for Convenience</p>	<p>The Employer shall be entitled to terminate the Contract, at any time for the Employer's convenience, by giving notice of such termination to the Contractor. The termination shall take effect 28 days after the later of the dates on which the Contractor receives this notice or the Employer returns the Performance Security. The Employer shall not terminate the Contract under this Sub-Clause in order to execute the Works himself or to arrange for the Works to be executed by another Contractor or to avoid a termination of the Contract by the Contractor under Clause 16.2 [Termination by Contractor].</p> <p>After this termination, the Contractor shall proceed in accordance with Sub-Clause 16.3 [Cessation of Work and Removal of Contractor's Equipment] and shall be paid in accordance with Sub-Clause 16.4 [Payment on Termination].</p>
<p>15.6 Corrupt or Fraudulent Practices</p>	<p>If the Employer determines, based on reasonable evidence, that the Contractor has engaged in corrupt, fraudulent, collusive or coercive practices, in competing for or in executing the Contract, then the Employer may, after giving 14 days notice to the Contractor, terminate the Contract and expel him from the Site, and the provisions of Clause 15 shall apply as if such termination had been made under Sub Clause 15.2 [Termination by Employer].</p> <p>Should any employee of the Contractor be determined, based on reasonable evidence, to have engaged in corrupt, fraudulent or coercive practice during the execution of the work then that employee shall be removed in accordance with Sub-Clause 6.9 [Contractor's Personnel].</p> <p>For the purposes of this Sub-Clause:</p>

	<p>(i) "corrupt practice" is the offering, giving, receiving or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party;¹</p> <p>(ii) "fraudulent practice" is any act or omission, including a misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain a financial or other benefit or to avoid an obligation;²</p> <p>(iii) "collusive practice" is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party;³</p> <p>(iv) "coercive practice" is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party;⁴</p> <p>(v) "obstructive practice" is</p> <p>(a) deliberately destroying, falsifying, altering or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a Bank investigation into allegations of a corrupt, fraudulent, coercive or collusive practice; and/or threatening, harassing or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation, or</p> <p>(b) acts intended to materially impede the exercise of the Bank's inspection and audit rights provided for under Sub-Clause 1.15 [Inspections and Audits by the Bank].</p>
<p>16. Suspension and Termination by Contractor</p>	
<p>16.1 Contractor's Entitlement to Suspend Work</p>	<p>If the Engineer fails to certify in accordance with Sub-Clause 14.6 [Issue of Interim Payment Certificates] or the Employer fails to comply with Sub Clause 14.7 [Payment], the Contractor may, after giving not less than 21 days' notice to the Employer, suspend work (or reduce the rate of progress of work) unless and until the Contractor has received the Payment Certificate, reasonable evidence or payment, as the case may be and as described in the notice.</p>

"Another party" refers to a public official acting in relation to the procurement process or contract execution]. In this context, "public official" includes World Bank staff and employees of other organizations taking or reviewing procurement decisions.

"Party" refers to a public official; the terms "benefit" and "obligation" relate to the procurement process or contract execution; and the "act or omission" is intended to influence the procurement process or contract execution.

"Parties" refers to participants in the procurement process (including public officials) attempting to establish bid prices at artificial, non competitive levels.

⁴ "Party" refers to a participant in the procurement process or contract execution.

	<p>The Contractor's action shall not prejudice his entitlements to financing charges under Sub-Clause 14.8 [Delayed Payment] and to termination under Sub-Clause 16.2 [Termination by Contractor].</p> <p>If the Contractor subsequently receives such Payment Certificate, evidence or payment (as described in the relevant Sub-Clause and in the above notice) before giving a notice of termination, the Contractor shall resume normal working as soon as is reasonably practicable.</p> <p>If the Contractor suffers delay and/or incurs Cost as a result of suspending work (or reducing the rate of work) in accordance with this Sub-Clause, the Contractor shall give notice to the Engineer and shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to:</p> <ul style="list-style-type: none"> (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 (b) payment of any such Cost plus profit, which shall be included in the Contract Price. <p>After receiving this notice, the Engineer shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine these matters.</p>
16.2 Termination by Contractor	<p>The Contractor shall be entitled to terminate the Contract if:</p> <ul style="list-style-type: none"> (a) the Engineer fails, within 56 days after receiving a Statement and supporting documents, to issue the relevant Payment Certificate, (b) the Contractor does not receive the amount due under an Interim Payment Certificate within 42 days after the expiry of the time stated in Sub-Clause 14.7 [Payment] within which payment is to be made (except for deductions in accordance with Sub-Clause 2.5 [Employer's Claims]), (c) the Employer substantially fails to perform his obligations under the Contract in such manner as to materially and adversely affect the economic balance of the Contract and/or the ability of the Contractor to perform the Contract, (d) the Employer fails to comply with Sub-Clause 1.6 [Contract Agreement] or Sub-Clause 1.7 [Assignment], (e) a prolonged suspension affects the whole of the Works as described in Sub-Clause 8.11 [Prolonged Suspension], or (f) the Employer becomes bankrupt or insolvent, goes into liquidation, has a receiving or administration order made against him, compounds with his creditors, or carries on business under a receiver, trustee or manager for the benefit

	<p>of his creditors, or if any act is done or event occurs which (under applicable Laws) has a similar effect to any of these acts or events.</p> <p>(g) the Contractor does not receive the Engineer's instruction recording the agreement of both Parties on the fulfilment of the conditions for the Commencement of Works under Sub-Clause 8.1 [Commencement of Works].</p> <p>In any of these events or circumstances, the Contractor may, upon giving 14 days' notice to the Employer, terminate the Contract. However, in the case of sub-paragraph (e) or (f), the Contractor may by notice terminate the Contract immediately.</p> <p>In the event the Bank suspends the loan or credit from which part or whole of the payments to the Contractor are being made, if the Contractor has not received the sums due to him upon expiration of the 14 days referred to in Sub-Clause 14.7 [Payment] for payments under Interim Payment Certificates, the Contractor may, without prejudice to the Contractor's entitlement to financing charges under Sub-Clause 14.8 [Delayed Payment], take one of the following actions, namely (i) suspend work or reduce the rate of work under Sub-Clause 16.1 above, or (ii) terminate the Contract by giving notice to the Employer, with a copy to the Engineer, such termination to take effect 14 days after the giving of the notice.</p> <p>The Contractor's election to terminate the Contract shall not prejudice any other rights of the Contractor, under the Contract or otherwise..</p>
16.3 Cessation of Work and Removal of Contractor's Equipment	<p>After a notice of termination under Sub-Clause 15.5 [Employer's Entitlement to Termination for Convenience], Sub-Clause 16.2 [Termination by Contractor] or Sub-Clause 19.6 [Optional Termination, Payment and Release] has taken effect, the Contractor shall promptly:</p> <ul style="list-style-type: none"> (a) cease all further work, except for such work as may have been instructed by the Engineer for the protection of life or property or for the safety of the Works, (b) hand over Contractor's Documents, Plant, Materials and other work, for which the Contractor has received payment, and (c) remove all other Goods from the Site, except as necessary for safety, and leave the Site.
16.4 Payment on Termination	<p>After a notice of termination under Sub-Clause 16.2 [Termination by Contractor] has taken effect, the Employer shall promptly:</p> <ul style="list-style-type: none"> (a) return the Performance Security to the Contractor,

	<p>(b) pay the Contractor in accordance with Sub-Clause 19.6 [Optional Termination, Payment and Release], and</p> <p>(c) pay to the Contractor the amount of any loss or damage sustained by the Contractor as a result of this termination.</p>
17. Risk and Responsibility	
17.1 Indemnities	<p>The Contractor shall indemnify and hold harmless the Employer, the Engineer, the Designated Contractors, representatives and employees from and against all actions, suits, proceedings, claims, damages, losses, expenses and demands of every nature and description, by reasons of any act or omissions, any negligence, willful act or breach on the Contract by the Contractor or his representative or his employees in the execution of the Works, including professional services provided by the Contractor or in the guarding the same.</p> <p>These indemnification obligations shall include but not be limited to claims, damages, losses, damage proceedings, charges and expenses which are attributable to:</p> <ul style="list-style-type: none"> a) sickness, or disease, or death of, or injury to any person; and b) loss of, or damage to, or destruction of any property (other than the Works) including consequential loss of use; and c) loss, damage or costs arising from the carriage of Plant, Rolling Stock and Materials and/or ownership or chartering of marine vessels by the Contractor, or any sub-contractor of any tier. <p>The Contractor shall also indemnify and save harmless the Employer from and against all claims and proceedings on account of infringements of patents rights, design, trademark name etc as detailed out in the GC.</p> <p>All sums payable by way of compensation under these conditions shall be considered reasonable compensation payable to the Employer, without reference to the actual loss or damage sustained, and whether or not any damage shall have been sustained.</p> <p>The decision of the Engineer as to compensation claimed shall be final and binding.</p>
17.2 Contractor's Care of the Works	<p>The Contractor shall take full responsibility for the care of the Works and Goods from the Commencement Date until the Taking-Over Certificate is issued (or is deemed to be issued under Sub-Clause 10.1 [Taking Over of the Works and Sections]) for the Works, when responsibility for the care of the Works shall pass to the Employer. If a Taking-Over Certificate is issued (or is so deemed to be issued) for</p>

	<p>any Section or part of the Works, responsibility for the care of the Section or part shall then pass to the Employer.</p> <p>After responsibility has accordingly passed to the Employer, the Contractor shall take responsibility for the care of any work which is outstanding on the date stated in a Taking-Over Certificate, until this outstanding work has been completed.</p> <p>If any loss or damage happens to the Works, Goods or Contractor's Documents during the period when the Contractor is responsible for their care, from any cause not listed in Sub-Clause 17.3 [Employer's Risks], the Contractor shall rectify the loss or damage at the Contractor's risk and cost, so that the Works, Goods and Contractor's Documents conform with the Contract.</p> <p>The Contractor shall be liable for any loss or damage caused by any actions performed by the Contractor after a Taking-Over Certificate has been issued. The Contractor shall also be liable for any loss or damage which occurs after a Taking-Over Certificate has been issued and which arose from a previous event for which the Contractor was liable.</p>
17.3 Employer's Risks	<p>The risks referred to in Sub-Clause 17.4 [Consequences of Employer's Risks] below, insofar as they directly affect the execution of the Works in the Country, are:</p> <ul style="list-style-type: none"> (a) war, hostilities (whether war be declared or not), invasion, act of foreign enemies, (b) rebellion, terrorism, sabotage/ lockdown/ lockup by persons other than the Contractor's Personnel, revolution, insurrection, military or usurped power, or civil war, (c) riot, commotion, disorder, strike or lockout/ lockdown by persons other than the Contractor's Personnel, (d) munitions of war, explosive materials, ionising radiation or contamination by radio-activity, within the Country, except as may be attributable to the Contractor's use of such munitions, explosives, radiation or radio-activity, (e) pressure waves caused by aircraft or other aerial devices travelling at sonic or supersonic speeds, (f) use or occupation by the Employer of any part of the Permanent Works, except as may be specified in the Contract, (g) design of any part of the Works by the Employer's Personnel or by others for whom the Employer is responsible, and (h) any operation of the forces of nature which is Unforeseeable or against which an experienced contractor could not reasonably

	<p>have been expected to have taken adequate preventive precautions like epidemic/ pandemic, unprecedented and unpredictable adverse natural conditions.</p> <p>Note: - If any of the above is included or covered under any kind of insurance pertaining to the Contract, it shall be treated as excluded from the employer's risk.</p>
17.4 Consequences of Employer's Risks	<p>If and to the extent that any of the risks listed in Sub-Clause 17.3 above results in loss or damage to the Works, Goods or Contractor's Documents, the Contractor shall promptly give notice to the Engineer and shall rectify this loss or damage to the extent required by the Engineer.</p> <p>If the Contractor suffers delay and/or incurs Cost from rectifying this loss or damage, the Contractor shall give a further notice to the Engineer and shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to:</p> <ul style="list-style-type: none"> (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 (b) payment of any such Cost, which shall be included in the Contract Price, (if not covered under any kind of insurance obtained by contractor for the Work, under any insurance scheme). In the case of sub-paragraphs (f) and (g) of Sub Clause 17.3 [Employer's Risks], Cost plus profit shall be payable. <p>After receiving this further notice, the Engineer shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine these matters.</p>
17.5 Intellectual and Industrial Property Rights	<p>In this Sub-Clause, "infringement" means an infringement (or alleged infringement) of any patent, registered design, copyright, trade mark, trade name, trade secret or other intellectual or industrial property right relating to the Works; and "claim" means a claim (or proceedings pursuing a claim) alleging an infringement.</p> <p>Whenever a Party does not give notice to the other Party of any claim within 28 days of receiving the claim, the first Party shall be deemed to have waived any right to indemnity under this Sub-Clause.</p> <p>The Employer shall indemnify and hold the Contractor harmless against and from any claim alleging an infringement which is or was:</p> <ul style="list-style-type: none"> (a) an unavoidable result of the Contractor's compliance with the Contract, or

	<p>(b) a result of any Works being used by the Employer:</p> <ul style="list-style-type: none"> (i) for a purpose other than that indicated by, or reasonably to be inferred from, the Contract, or (ii) in conjunction with anything not supplied by the Contractor, unless such use was disclosed to the Contractor prior to the Base Date or is stated in the Contract. <p>The Contractor shall indemnify and hold the Employer harmless against and from any other claim which arises out of or in relation to (i) the manufacture, use, sale or import of any Goods, or (ii) any design for which the Contractor is responsible.</p> <p>If a Party is entitled to be indemnified under this Sub-Clause, the indemnifying Party may (at its cost) conduct negotiations for the settlement of the claim, and any litigation or arbitration which may arise from it. The other Party shall, at the request and cost of the indemnifying Party, assist in contesting the claim. This other Party (and its Personnel) shall not make any admission which might be prejudicial to the indemnifying Party, unless the indemnifying Party failed to take over the conduct of any negotiations, litigation or arbitration upon being requested to do so by such other Party.</p> <p>The Contractor shall indemnify the Employer and the Engineer from and against all claims and proceedings on account of infringement (or alleged infringement) of any patent rights, registered designs, copyright, design, trademark, trade name, know-how or other intellectual property rights in respect of the Works, Contractor's Equipment, machines, work method, or Plant, or Materials, or anything whatsoever required for the Works and from and against all claims, demands, proceedings, damages, costs, charges and expenses whatsoever in respect thereof or in relation thereto. The Contractor shall pay all traffic surcharges and other royalties, licence fees, rent and other payments or compensation, if any, for getting stone, sand, gravel, clay or other materials, machine, process, systems, work methods, or Contractor's Equipment required for the Works. The Contractor shall, in the event of infringement of Intellectual Property Rights, rectify, modify or replace at his own cost the Works, Plant or materials or anything whatsoever required for the Works so that infringement no more exist or in the alternative shall procure necessary rights/license so that there is no infringement of Intellectual Property Rights.</p> <p>The Contractor shall be promptly notified of any claim under this Sub Clause made against the Employer. The Contractor shall, at his cost, conduct negotiations for the settlement of such claim, and any litigation or arbitration that may arise from it. The Employer or the Engineer shall not make any admission, which might be prejudicial to</p>
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	<p>the Contractor, unless the Contractor has failed to take over the conduct of the negotiations, litigation or arbitration within a reasonable time after having been so requested. In the event of Contractor failing to act at Engineer's notice, the Employer shall be at full liberty to deduct any such amount of pending claim from any amount due to the Contractor under this Contract or any other Contract.</p> <p>Insofar as the patent, copyright or other intellectual property rights in any Plant, Design Data, plans, calculations, drawings, documents, Materials, know-how and information relating to the Works shall be vested in the Contractor, the Contractor shall grant to the Employer, his successors and assignees a royalty-free, non-exclusive and irrevocable licence (carrying the right to grant sub-licences) to use and reproduce any of the works, designs or inventions incorporated and referred to in such Plant, documents or Materials and any such know how and information for all purposes relating to the Works (including without limitation the design, manufacture, installation, reconstruction, Testing, commissioning, completion, reinstatement, extension, repair and operation of the Works).</p> <p>If any patent, registered design or software is developed by the Contractor specifically for the Works, the title thereto shall vest in the Employer and the Contractor shall grant to the Employer a non exclusive irrevocable and royalty-free licence (carrying the right to grant sub-license) to use, repair, copy, modify, enhance, adapt and translate in any form such Software for his own use.</p> <p>If the Contractor uses proprietary software for the purpose of storing or utilising records the Contractor shall obtain at his own expense the grant of a licence or sub-licence to use such software in favour of the Employer and shall pay such licence fee or other payment as the grantor of such licence may require provided that the use of such software under the licence may be restricted to use relating to the design, construction, reconstruction, manufacture, completion, reinstatement, extension, repair and operation of the Works or any part thereof.</p> <p>The Contractor's permission referred to above shall be given, inter alia, to enable the Employer to disclose (under conditions of confidentiality satisfactory to the Contractor) program and documentation for a third party to undertake the performance of services for the Employer in respect of such programs and documentation.</p> <p>If any software is developed under the Contract or used by the Contractor for the purposes of storing or utilising records over which the Contractor or a third party holds title or other rights, the Contractor shall permit or obtain for the Employer (as the case may require) the</p>
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	<p>right to use and apply that Software free of additional charge (together with any modifications, improvements and developments thereof) for the purpose of the design, manufacture, installation, reconstruction, testing, commissioning, completion, reinstatement, extension, repair, modification or operation of the Works, or any part thereof, or for the purpose of any Dispute.</p> <p>The Employer reserves the right to use other Software on or in connection with the Works.</p>
17.6 Limitation of Liability	<p>Neither Party shall be liable to the other Party for loss of use of any Works, loss of profit, loss of any contract or for any indirect or consequential loss or damage which may be suffered by the other Party in connection with the Contract, other than as specifically provided in Sub-Clause 8.7 [Delay Damages]; Sub-Clause 11.2 [Cost of Remedying Defects]; Sub-Clause 15.4 [Payment after Termination]; Sub-Clause 16.4 [Payment on Termination]; Sub-Clause 17.1 [Indemnities]; Sub-Clause 17.4(b) [Consequences of Employer's Risks] and Sub-Clause 17.5 [Intellectual and Industrial Property Rights].</p> <p>The total liability of the Contractor to the Employer, under or in connection with the Contract other than under Sub-Clause 4.19 [Electricity, Water and Gas], Sub-Clause 4.20 [Employer's Equipment and Free-Issue Materials], Sub-Clause 17.1 [Indemnities] and Sub Clause 17.5 [Intellectual and Industrial Property Rights], shall not exceed the sum resulting from the application of a multiplier (less or greater than one) to the Accepted Contract Amount, as stated in the Particular Conditions, or (if such multiplier or other sum is not so stated) the Accepted Contract Amount.</p> <p>This Sub-Clause shall not limit liability in any case of fraud, deliberate default or reckless misconduct by the defaulting Party.</p>
17.7 Use of Employer's Accommodation /Facilities	<p>The Contractor shall take full responsibility for the care of the Employer provided accommodation and facilities, if any, as detailed in Particular Conditions, from the respective dates of hand-over to the Contractor until cessation of occupation (where hand-over or cessation of occupation may take place after the date stated in the Taking-Over Certificate for the Works).</p> <p>If any loss or damage happens to any of the above items while the Contractor is responsible for their care arising from any cause whatsoever other than those for which the Employer is liable, the Contractor shall, at his own cost, rectify the loss or damage to the satisfaction of the Engineer.</p>

18. Insurance

<p>18.1 General Requirements for Insurances</p>	<p>In this Clause, "Insuring Party" means, for each type of insurance, the Party responsible for effecting and maintaining the insurance specified in the relevant Sub-Clause. Insuring Party is defined in Particular Conditions</p> <p>Wherever the Contractor is the Insuring Party, each insurance shall be effected with insurers and in terms approved by the Employer. These terms shall be consistent with any terms agreed by both Parties before the date of the Letter of Acceptance. This agreement of terms shall take precedence over the provisions of this Clause.</p> <p>The Contractor shall obtain all insurances required in the Contract from Insurance companies operating in India in the name of Employer as a prime beneficiary specified in Particular Conditions</p> <p>Insurances to cover risks within India as well as Marine and Transit Insurances (if applicable) shall invariably be effected with an Indian Insurance Company.</p> <p>Wherever the Employer is the Insuring Party, each insurance shall be effected with insurers and in terms acceptable to the Contractor. These terms shall be consistent with any terms agreed by both Parties before the date of the Letter of Acceptance. This agreement of terms shall take precedence over the provisions of this Clause.</p> <p>If a policy is required to indemnify joint insured, the cover shall apply separately to each insured as though a separate policy had been issued for each of the joint insured. If a policy indemnifies additional joint insured, namely in addition to the insured specified in this Clause, (i) the Contractor shall act under the policy on behalf of these additional joint insured except that the Employer shall act for Employer's Personnel, (ii) additional joint insured shall not be entitled to receive payments directly from the insurer or to have any other direct dealings with the insurer, and (iii) the Insuring Party shall require all additional joint insured to comply with the conditions stipulated in the policy.</p> <p>Each policy insuring against loss or damage shall provide for payments to be made in the currencies required to rectify the loss or damage. Payments received from insurers shall be used for the rectification of the loss or damage.</p> <p>The relevant Insuring Party shall, within the respective periods stated in the Particular Conditions (calculated from the Commencement Date), submit to the other Party:</p> <p>(a) evidence that the insurances described in this Clause have been effected, and</p>
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	<p>(b) copies of the policies for the insurances described in Sub-Clause 18.2 [Insurance for Works and Contractor's Equipment] and Sub Clause 18.3 [Insurance against Injury to Persons and Damage to Property].</p> <p>(c) In event of failure to submit required insurances, penal provision as described in Particular Conditions shall be applicable.</p> <p>When each premium is paid, the Insuring Party shall submit evidence of payment to the other Party. Whenever evidence or policies are submitted, the Insuring Party shall also give notice to the Engineer.</p> <p>Each Party shall comply with the conditions stipulated in each of the insurance policies. The Insuring Party shall keep the insurers informed of any relevant changes to the execution of the Works and ensure that insurance is maintained in accordance with this Clause.</p> <p>Neither Party shall make any material alteration to the terms of any insurance without the prior approval of the other Party. If an insurer makes (or attempts to make) any alteration, the Party first notified by the insurer shall promptly give notice to the other Party.</p> <p>If the Insuring Party fails to effect and keep in force any of the insurances it is required to effect and maintain under the Contract, or fails to provide satisfactory evidence and copies of policies in accordance with this Sub-Clause, the other Party may (at its option and without prejudice to any other right or remedy) effect insurance for the relevant coverage and pay the premiums due.</p> <p>The Insuring Party shall pay the amount of these premiums to the other Party, and the Contract Price shall be adjusted accordingly.</p> <p>Nothing in this Clause limits the obligations, liabilities or responsibilities of the Contractor or the Employer, under the other terms of the Contract or otherwise. Any amounts not insured or not recovered from the insurers shall be borne by the Contractor and/or the Employer in accordance with these obligations, liabilities or responsibilities. However, if the Insuring Party fails to effect and keep in force an insurance which is available and which it is required to effect and maintain under the Contract, and the other Party neither approves the omission nor effects insurance for the coverage relevant to this default, any moneys which should have been recoverable under this insurance shall be paid by the Insuring Party.</p> <p>Payments by one Party to the other Party shall be subject to Sub Clause 2.5 [Employer's Claims] or Sub-Clause 20.1 [Contractor's Claims], as applicable.</p>
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	<p>The Contractor shall be entitled to place all insurance relating to the Contract (including, but not limited to the insurance referred to Clause 18) with insurers from any eligible source country.</p>
<p>18.2 Insurance for Works and Contractor's Equipment</p>	<p>The Insuring Party shall insure the Works, Supplies, Plant, Materials and Contractor's Documents for not less than the full reinstatement cost including the costs of demolition, removal of debris and professional fees and profit. This insurance shall be effective from the date by which the evidence is to be submitted under sub-paragraph (a) of Sub-Clause 18.1 [General Requirements for Insurances], until the date of issue of the Taking-Over Certificate for the Works.</p> <p>The Insuring Party shall maintain this insurance to provide cover until the date of issue of the Performance Certificate, for loss or damage for which the Contractor is liable arising from a cause occurring prior to the issue of the Taking-Over Certificate, and for loss or damage caused by the Contractor in the course of any other operations (including those under Clause 11 [Defects Liability]).</p> <p>The Insuring Party shall insure the Contractor's Equipment for not less than the full replacement value, including delivery to Site. For each item of Contractor's Equipment, the insurance shall be effective while it is being transported to the Site and until it is no longer required as Contractor's Equipment.</p> <p>Unless otherwise stated in the Particular Conditions, insurances under this Sub-Clause:</p> <ul style="list-style-type: none"> (a) shall be effected and maintained by the Contractor as Insuring Party, (b) shall be in the joint names of the Parties, who shall be jointly entitled to receive payments from the insurers, payments being held or allocated to the Party actually bearing the costs of rectifying the loss or damage, (c) shall cover all loss and damage from any cause not listed in Sub Clause 17.3 [Employer's Risks], (d) shall also cover, to the extent specifically required in the bidding documents of the Contract, loss or damage to a part of the Works which is attributable to the use or occupation by the Employer of another part of the Works, and loss or damage from the risks listed in sub-paragraphs (c), (g) and (h) of Sub-Clause 17.3 [Employer's Risks], excluding (in each case) risks which are not insurable at commercially reasonable terms, with deductibles per occurrence of not more than the amount stated in the Particular Conditions (if an amount is not so stated, this sub-paragraph (d) shall not apply), and

	<p>(e) may however exclude loss of, damage to, and reinstatement of:</p> <ul style="list-style-type: none"> (i) a part of the Works which has been already constructed by Employer or other Contractor and is in a defective condition due to a defect in its design, materials or workmanship (but cover shall include any other parts which are lost or damaged as a direct result of this defective condition and not as described in sub-paragraph (ii) below), (ii) a part of the Works which has been already constructed by Employer or other Contractor and is lost or damaged in order to reinstate any other part of the Works if this other part is in a defective condition due to a defect in its design, materials or workmanship, (iii) a part of the Works which has been taken over by the Employer, except to the extent that the Contractor is liable for the loss or damage, and (iv) Goods while they are not in the Country (not reached at site), subject to Sub-Clause 14.5 [Plant and Materials intended for the Works]. <p>(f) The insurance shall be obtained by Contractor as an Insuring Party but the prime beneficiary shall be Employer.</p> <p>(g) The Contractor shall obtain Comprehensive All Risk (CAR) insurance policies taking in to consideration of all risk involved in the contract duly covering Marine/Transit (if applicable) & others risks described in Contract and perceived by contractor as per nature of work for values equivalent to the Contract value. The applicability of CAR shall be specifically mentioned in Particular Conditions.</p> <p>(h) If Contract includes design also, Contractor shall obtain Professional Indemnity Insurance (PII), equivalent to the amount of design cost of the work. The design cost (if design cost is not a separate item in the Financial Bid and work is on Design & Build basis contract or Item of work are composite item inclusive design) shall be declared by Contractor with certificate of Chartered Accountant. Such Professional Indemnity Insurance shall be valid till the period as specified in Particular Conditions.</p> <p>(i) All Insurance policies except Professional Indemnity Insurance shall be valid till the period as specified in Particular Conditions, beyond expiry of OLP. The policy shall include insurance for the complete contract value.</p>
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	<p>If, more than one year after the Base Date, the cover described in sub paragraph (d) above ceases to be available at commercially reasonable terms, the Contractor shall (as Insuring Party) give notice to the Employer, with supporting particulars. The Employer shall then (i) be entitled subject to Sub-Clause 2.5 [Employer's Claims] to payment of an amount equivalent to such commercially reasonable terms as the Contractor should have expected to have paid for such cover, and (ii) be deemed, unless he obtains the cover at commercially reasonable terms, to have approved the omission under Sub-Clause 18.1 [General Requirements for Insurances].</p>
<p>18.3 Insurance against Injury to Persons and Damage to Property</p>	<p>The Insuring Party shall insure against each Party's liability for any loss, damage, death or bodily injury which may occur to any physical property (except things insured under Sub-Clause 18.2 [Insurance for Works and Contractor's Equipment]) or to any person (except persons insured under Sub-Clause 18.4 [Insurance for Contractor's Personnel]), which may arise out of the Contractor's performance of the Contract and occurring before the issue of the Performance Certificate.</p> <p>This insurance shall be for a limit per occurrence of not less than the amount stated in the Particular Conditions, with no limit on the number of occurrences. If an amount is not stated in the Particular Conditions, this Sub-Clause shall not apply.</p> <p>Unless otherwise stated in the Particular Conditions, the insurances specified in this Sub-Clause:</p> <ul style="list-style-type: none"> (a) shall be effected and maintained by the Contractor as Insuring Party, (b) shall be in the joint names of the Parties, (c) shall be extended to cover liability for all loss and damage to the Employer's property (except things insured under Sub-Clause 18.2) arising out of the Contractor's performance of the Contract, and (d) may however exclude liability to the extent that it arises from: <ul style="list-style-type: none"> (i) the Employer's right to have the Permanent Works executed on, over, under, in or through any land, and to occupy this land for the Permanent Works, (ii) damage which is an unavoidable result of the Contractor's obligations to execute the Works and remedy any defects, and

	(iii) a cause listed in Sub-Clause 17.3 [Employer's Risks], except to the extent that cover is available at commercially reasonable terms.
18.4 Insurance for Contractor's Personnel	<p>The Contractor shall effect and maintain insurance against liability for claims, damages, losses and expenses (including legal fees and expenses) arising from injury, sickness, disease or death of any person employed by the Contractor or any other of the Contractor's Personnel.</p> <p>The insurance shall cover the Employer and the Engineer against liability for claims, damages, losses and expenses (including legal fees and expenses) arising from injury, sickness, disease or death of any person employed by the Contractor or any other of the Contractor's Personnel, except that this insurance may exclude losses and claims to the extent that they arise from any act or neglect of the Employer or of the Employer's Personnel.</p> <p>The insurance shall be maintained in full force and effect during the whole time that these personnel are assisting in the execution of the Works. For a Sub Contractor's employees, the insurance may be effected by the Sub Contractor, but the Contractor shall be responsible for compliance with this Clause.</p>
19. Force Majeure	
19.1 Definition of Force Majeure	<p>In this Clause, "Force Majeure" means an exceptional event or circumstance:</p> <ul style="list-style-type: none"> (a) which is beyond a Party's control, (b) which such Party could not reasonably have provided against before entering into the Contract, (c) which, having arisen, such Party could not reasonably have avoided or overcome, and (d) which is not substantially attributable to the other Party. <p>Force Majeure may include, but is not limited to, exceptional events or circumstances of the kind listed below, so long as conditions (a) to (d) above are satisfied:</p> <ul style="list-style-type: none"> (i) war, hostilities (whether war be declared or not), invasion, act of foreign enemies, (ii) rebellion, terrorism, sabotage by persons other than the Contractor's Personnel, revolution, insurrection, military or usurped power, or civil war,

	<ul style="list-style-type: none"> (iii) riot, commotion, disorder, strike or lockout by persons other than the Contractor's Personnel, or Lockdown by Local government (iv) munitions of war, explosive materials, ionising radiation or contamination by radio-activity, except as may be attributable to the Contractor's use of such munitions, explosives, radiation or radio-activity, and (v) natural catastrophes such as earthquake, hurricane, typhoon or volcanic activity. (vi) any operation of the forces of nature which is Unforeseeable or against which an experienced contractor could not reasonably have been expected to have taken adequate preventive precautions like epidemic/ pandemic, unprecedented and unpredictable adverse natural conditions.
19.2 Notice of Force Majeure	<p>If a Party is or will be prevented from performing its substantial obligations under the Contract by Force Majeure, then it shall give notice to the other Party of the event or circumstances constituting the Force Majeure and shall specify the obligations, the performance of which is or will be prevented. The notice shall be given within 14 days after the Party became aware, or should have become aware, of the relevant event or circumstance constituting Force Majeure.</p> <p>The Party shall, having given notice, be excused performance of its obligations for so long as such Force Majeure prevents it from performing them.</p> <p>Notwithstanding any other provslon of this Clause, Force Majeure shall not apply to obligations of either Party to make payments to the other Party under the Contract.</p>
19.3 Duty to Minimise Delay	<p>Each Party shall at all times use all reasonable endeavours to minimise any delay in the performance of the Contract as a result of Force Majeure.</p> <p>A Party shall give notice to the other Party when it ceases to be affected by the Force Majeure.</p>
19.4 Consequences of Force Majeure	<p>If the Contractor is prevented from performing his substantial obligations under the Contract by Force Majeure of which notice has been given under Sub-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 Clause 19.1 [Definition of Force Majeure] 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>
19.5 Force Majeure Affecting Sub Contractor	<p>If any Sub Contractor is entitled under any Contract or agreement relating to the Works to relief from force majeure on terms additional to or broader than those specified in this Clause, such additional or broader force majeure events or circumstances shall not excuse the Contractor's non-performance or entitle him to relief under this Clause.</p>
19.6 Optional Termination, Payment and Release	<p>If the execution of substantially all the Works in progress is prevented for a continuous period of 84 days by reason of Force Majeure of which notice has been given under Sub-Clause 19.2 [Notice of Force Majeure], or for multiple periods which total more than 140 days due to the same notified Force Majeure, then either Party may give to the other Party a notice of termination of the Contract. In this event, the termination shall take effect 7 days after the notice is given, and the Contractor shall proceed in accordance with Sub-Clause 16.3 [Cessation of Work and Removal of Contractor's Equipment].</p> <p>Upon such termination, the Engineer shall determine [As per provision of Sub-clause 3.5 Determination] the value of the work done and issue a Payment Certificate which shall include:</p> <p>(a) the amounts payable for any work carried out for which a price is stated in the Contract;</p> <p>(b) the Cost of Plant and Materials (If specifically provided in Contract to supply under the respective BOO) ordered for the Works which have been delivered to the Contractor, or of which the Contractor is liable to accept delivery: this Plant and Materials shall become the property of (and be at the risk of) the Employer when paid for by the Employer, and the Contractor shall place the same at the Employer's disposal;</p>

	<p>(c) other Cost or liabilities which in the circumstances were reasonably and necessarily incurred by the Contractor in the expectation of completing the Works;</p> <p>(d) the Cost of removal of Temporary Works and Contractor's Equipment from the Site and the return of these items to the Contractor's works in his country (or to any other destination at no greater cost); and</p> <p>(e) the Cost of repatriation of the Contractor's staff and labour employed wholly in connection with the Works at the date of termination.</p>
19.7 Release from Performance	<p>Notwithstanding any other provision of this Clause, if any event or circumstance outside the control of the Parties (including, but not limited to, Force Majeure) arises which makes it impossible or unlawful for either or both Parties to fulfil its or their contractual obligations or which, under the law governing the Contract, entitles the Parties to be released from further performance of the Contract, then upon notice by either Party to the other Party of such event or circumstance:</p> <p>(a) the Parties shall be discharged from further performance, without prejudice to the rights of either Party in respect of any previous breach of the Contract, and</p> <p>(b) the sum payable by the Employer to the Contractor shall be the same as would have been payable under Sub-Clause 19.6 [Optional Termination, Payment and Release] if the Contract had been terminated under Sub-Clause 19.6.</p>
20. Claims, Disputes and Arbitration	
20.1 Contractor's Claims	<p>If the Contractor considers himself to be entitled to any extension of the Time for Completion and /or any additional payment, under any Clause of these Conditions or otherwise in connection with the Contract, the Contractor shall give notice to the Engineer, describing the event or circumstance giving rise to the claim.</p> <p>The notice shall be given as soon as practicable, and not later than 28 days after the Contractor became aware, or should have become aware, of the event or circumstance.</p> <p>If the Contractor fails to give notice of a claim within such period of 28 days, the Time for Completion shall not be extended as well as the Contractor shall not be entitled to additional payment, and the Employer shall be discharged from all liability in connection with the</p>

	<p>claim. Otherwise, the following provisions of this Sub-Clause shall apply.</p> <p>The Contractor shall also submit any other notices which are required by the Contract, and supporting particulars for the claim, all as relevant to such event or circumstance.</p> <p>The Contractor shall keep such contemporary records as may be necessary to substantiate any claim, either on the Site or at another location acceptable to the Engineer. Without admitting the Employer's liability, the Engineer may, after receiving any notice under this Sub Clause, monitor the record-keeping and/or instruct the Contractor to keep further contemporary records. The Contractor shall permit the Engineer to inspect all these records, and shall (if instructed) submit copies to the Engineer.</p> <p>Within 42 days after the Contractor became aware (or should have become aware) of the event or circumstance giving rise to the claim, or within such other period as may be proposed by the Contractor and approved by the Engineer, the Contractor shall send to the Engineer a fully detailed claim which includes full supporting particulars of the basis of the claim and of the extension of time and/or additional payment claimed. If the event or circumstance giving rise to the claim has a continuing effect:</p> <ul style="list-style-type: none"> (a) this fully detailed claim shall be considered as interim; (b) the Contractor shall send further interim claims at monthly intervals, giving the accumulated delay and/or amount claimed, and such further particulars as the Engineer may reasonably require; and (c) the Contractor shall send a final claim within 28 days after the end of the effects resulting from the event or circumstance, or within such other period as may be proposed by the Contractor and approved by the Engineer. <p>Within 42 days after receiving a claim or any further particulars supporting a previous claim, or within such other period as may be proposed by the Engineer and approved by the Contractor, the Engineer shall respond with approval, or with disapproval and detailed comments. He may also request any necessary further particulars, but shall nevertheless give his response on the principles of the claim within the above defined time period.</p> <p>Within the above defined period of 42 days, the Engineer shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine (i) the extension (if any) of the Time for Completion (before or after its expiry) in accordance with Sub-Clause 8.4</p>
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	<p>[Extension of Time for Completion], and/or (ii) the additional payment (if any) to which the Contractor is entitled under the Contract.</p> <p>Each Payment Certificate shall include such additional payment for any claim as has been reasonably substantiated as due under the relevant provision of the Contract. Unless and until the particulars supplied are sufficient to substantiate the whole of the claim, the Contractor shall only be entitled to payment for such part of the claim as he has been able to substantiate.</p> <p>To Determine & settle such claims following methods in the order precedence shall be followed.</p> <ul style="list-style-type: none"> i. Negotiation ii. Dispute Board iii. Amicable Settlement / Conciliation iv. Arbitration
20.2. Negotiation	<p>Upon receipt of Contractor's Claim under the Contract, the engineer shall examine the proposal of claims of the Contractor, ensuring whether it is admissible under provision of Contract and substantiated by sufficient document/ records and information.</p> <p>After examination the Engineer shall record his factual observation and explain the Contractor about the merit of Claim.</p> <p>If claim is admissible the amount of claim shall be discussed with Contractor and effort shall be made to agree the amount of claim by negotiation.</p>
20.3 Appointment of the Dispute Board	<p>If the attempt of Negotiation fails and Engineer or Contractor does not respond within 21 days from the date of negotiation, either Party may consider that the claim is rejected by the Engineer and any of the Parties may refer to the Dispute Board in accordance with detail procedure attached as Annexure-IX-A of Particular Condition</p> <p>The requirements of this Sub-Clause are in addition to those of any other Sub-Clause which may apply to a claim.</p> <p>Disputes shall be referred to a Dispute Board (DB) for decision in accordance with Sub-Clause 20.5 [Obtaining Dispute Board's Decision]. The Parties shall appoint a DB by the date stated in the Particular Conditions.</p> <p>The DB shall comprise, as stated in the Particular Conditions, either one or three suitably qualified persons ("the members"), each of whom shall be fluent in the language for communication defined in the Contract and shall be a professional experienced in the type of construction involved in the Works and with the interpretation of</p>

	<p>contractual documents. If the number is not so stated and the Parties do not agree otherwise, the DB shall comprise three persons.</p> <p>If the Parties have not jointly appointed the DB before the date stated in the Particular Conditions and if the DB is to comprise three persons, each Party shall nominate one member for the approval of the other Party. The first two selected members by parties shall recommend a third member and the Parties shall agree upon the third member, who shall act as chairman.</p> <p>However, if a list of potential members has been agreed by the Parties and is included in the Contract, the members shall be selected from those on the list.</p> <p>The agreement between the Parties and either the sole member or each of the three members shall incorporate by reference the General Conditions of Dispute Board Agreement contained in the Annexure-IX-A of Particular Conditions, with such amendments as agreed between them.</p> <p>The terms of the remuneration of either the sole member or each of the three members, including the remuneration of any expert whom the DB consults, shall be mutually agreed upon by the Parties when agreeing the terms of appointment. Each Party shall be responsible for paying one-half of this remuneration.</p> <p>If at any time the Parties so agree, they may jointly refer a matter to the DB for it to give its opinion. Neither Party shall consult the DB on any matter without the agreement of the other Party.</p> <p>If a member declines to act or is unable to act as a result of death, disability, resignation or termination of appointment, a replacement shall be appointed in the same manner as the replaced person was required to have been nominated or agreed upon, as described in this Sub-Clause.</p> <p>The appointment of any member may be terminated by mutual agreement of both Parties, but not by the Employer or the Contractor acting alone. Unless otherwise agreed by both Parties, the appointment of the DB (including each member) shall expire when the discharge referred to in Sub-Clause 14.12 [Discharge] shall have become effective.</p>
20.4 Failure to Agree on the Composition of the Dispute Board	<p>If any of the following conditions apply, namely:</p> <p>(a) the Parties fail to agree upon the appointment of the sole member of the DB by the date stated in the first paragraph of Sub-Clause 20.3, [Appointment of the Dispute Board],</p>

	<p>(b) either Party fails to nominate a member (for approval by the other Party), or fails to approve a member nominated by the other Party, of a DB of three persons by such date,</p> <p>(c) the Parties fail to agree upon the appointment of the third member (to act as chairman) of the DB by such date, or</p> <p>(d) the Parties fail to agree upon the appointment of a replacement person within 42 days after the date on which the sole member or one of the three members declines to act or is unable to act as a result of death, disability, resignation or termination of appointment,</p> <p>then the appointing entity or official named in the Particular Condition s shall, upon the request of either or both of the Parties and after due consultation with both Parties, appoint this member of the DB. This appointment shall be final and conclusive. Each Party shall be responsible for paying one-half of the remuneration of the appointing entity or official.</p>
20.5 Obtaining Dispute Board's Decision	<p>If a dispute (of any kind whatsoever) arises between the Parties in connection with, or arising out of, the Contract or the execution of the Works, including any dispute as to any certificate, determination, instruction, opinion or valuation of the Engineer, either Party may refer the dispute in writing to the DB for its decision, with copies to the other Party and the Engineer. Such reference shall state that it is given under this Sub-Clause.</p> <p>For a DB of three persons, the DB shall be deemed to have received such reference on the date when it is received by the chairman of the DB.</p> <p>Both Parties shall promptly make available to the DB all such additional information, further access to the Site, and appropriate facilities, as the DB may require for the purposes of making a decision on such dispute. The DB shall be deemed to be not acting as arbitrator(s).</p> <p>Within 84 days after receiving such reference, or within such other period as may be proposed by the DB and approved by both Parties, the DB shall give its decision, which shall be reasoned and shall state that it is given under this Sub-Clause. The decision shall be binding on both Parties, who shall promptly give effect to it unless and until it shall be revised in an amicable settlement or an arbitral award as described below. Unless the Contract has already been abandoned, repudiated or terminated, the Contractor shall continue to proceed with the Works in accordance with the Contract.</p> <p>If either Party is dissatisfied with the DB's decision, then either Party may, within 28 days after receiving the decision, give a Notice of</p>

	<p>Dissatisfaction to the other Party indicating its dissatisfaction and intention to commence arbitration. If the DB fails to give its decision within the period of 84 days (or as otherwise approved) after receiving such reference, then either Party may, within 28 days after this period has expired, give a Notice of Dissatisfaction to the other Party.</p> <p>In either event, this Notice of Dissatisfaction shall state that it is given under this Sub-Clause, and shall set out the matter in dispute and the reason(s) for dissatisfaction. Except as stated in Sub-Clause 20.7 [Failure to Comply with Dispute Board's Decision] and Sub-Clause 20.8 [Expiry of Dispute Board's Appointment], neither Party shall be entitled to commence arbitration of a dispute unless a Notice of Dissatisfaction has been given in accordance with this Sub-Clause.</p> <p>If the DB has given its decision as to a matter in dispute to both Parties, and no Notice of Dissatisfaction has been given by either Party within 28 days after it received the DB's decision, then the decision shall become final and binding upon both Parties.</p>
20.6 Failure to Comply with Dispute Board's Decision	<p>In the event that a Party fails to comply with a final and binding DB decision, then the other Party may, without prejudice to any other rights it may have, refer the failure itself to arbitration under Sub Clause 20.9 [Arbitration]. Sub-Clause 20.5 [Obtaining Dispute Board's Decision] and Sub-Clause 20.6 [Amicable Settlement] shall not apply to this reference.</p>
20.7 Expiry of Dispute Board's Appointment	<p>If a dispute arises between the Parties in connection with, or arising out of, the Contract or the execution of the Works and there is no DB in place, whether by reason of the expiry of the DB's appointment or otherwise:</p> <p>(a) Sub-Clause 20.5 [Obtaining Dispute Board's Decision] and Sub-Clause 20.6 [Amicable Settlement] shall not apply, and</p> <p>(b) the dispute may be referred directly to arbitration under Sub-Clause 20.9 [Arbitration].</p>
20.8 Amicable Settlement / Conciliation	<p>Where a Notice of Dissatisfaction has been given under Sub-Clause 20.5 above, both Parties shall attempt to settle the dispute amicably before the commencement of arbitration. However, unless both Parties agree otherwise, the Party giving a Notice of Dissatisfaction in accordance with Sub-Clause 20.5 above should move to commence arbitration after the fifty-sixth day from the day on which a Notice of Dissatisfaction was given, even if no attempt at an amicable settlement has been made.</p>
20.9 Arbitration	<p>Any dispute between the Parties arising out of or in connection with the Contract not settled amicably in accordance with Sub-Clause 20.6 above and in respect of which the DB's decision (if any) has not</p>

	<p>become final and binding shall be finally settled by arbitration. Arbitration shall be conducted as follows:</p> <p>(a) if the contract is with foreign Contractors,</p> <p>(i) for contracts financed by all participating Banks except under sub paragraph (a) (2) below: international arbitration (1) with proceedings administered by the arbitration institution designated in the Particular Condition s, and conducted under the rules of arbitration of such institution; or, if so specified in the Particular Condition s, (2) international arbitration in accordance with the arbitration rules of the United Nations Commission on International Trade Law (UNCITRAL); or (3) if neither an arbitration institution nor UNCITRAL arbitration rules are specified in the Particular Condition s, with proceedings administered by the International Chamber of Commerce (ICC) and conducted under the ICC Rules of Arbitration; by one or more arbitrators appointed in accordance with said arbitration rules</p> <p>(b) if the Contract is with domestic Contractors, arbitration with proceedings conducted in accordance with the laws of the Employer's country.</p> <p>(c) Matters to be arbitrated upon shall be referred to a sole Arbitrator if the total value of the claim is up to Rs.5 million and to a panel of three Arbitrators if total value of claims is more than Rs.5 million. The Employer shall provide a panel of three arbitrators which may also include Employers officers for the claims up to Rs.5 million and a panel of five Arbitrators which may also include Employer officers for claims of more than Rs.5 million. The Contractor shall have to choose the sole Arbitrator from the panel of three and/or one Arbitrator from the panel of five in case three Arbitrators are to be appointed. The Employer shall also choose one Arbitrator from this panel of five and the two so chosen will choose the third arbitrator from the panel only. The Arbitrator(s) shall be appointed within a period of 30 days from the date of receipt of written notice/ demand of appointment of Arbitrator from either party. Neither party shall be limited in the proceedings before such arbitrator(s) to the evidence nor did arguments put before the Engineer for the purpose of obtaining his decision. No decision given by the Engineer in accordance with the foregoing provisions shall disqualify him from being called as a witness & giving evidence before the arbitrator(s) on any matter, whatsoever, relevant to dispute or difference referred to arbitrator/s. The arbitration proceedings shall be held in</p>
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	<p>Pune only. The language of proceedings that of documents and communication shall be English.</p> <p>(d) The Employer at the time of offering the panel of Arbitrator(s) to be appointed as Arbitrator shall also supply the information with regard to the qualifications of the said Arbitrator nominated in the panel along with their professional experience, phone nos. and addresses to the contractor.</p> <p>(e) The award of the sole Arbitrator or the award by majority of three Arbitrators as the case may be shall be binding on all parties. The award shall be made claim wise and will be a speaking award.</p> <p>The place of arbitration shall be the neutral location specified in the Particular Condition s; and the arbitration shall be conducted in the language for communications defined in Sub-Clause 1.4 [Law and Language].</p> <p>The arbitrators shall have full power to open up, review and revise any certificate, determination, instruction, opinion or valuation of the Engineer, and any decision of the DB, relevant to the dispute. Nothing shall disqualify representatives of the Parties and the Engineer from being called as a witness and giving evidence before the arbitrators on any matter whatsoever relevant to the dispute.</p> <p>Neither Party shall be limited in the proceedings before the arbitrators to the evidence or arguments previously put before the DB to obtain its decision, or to the reasons for dissatisfaction given in its Notice of Dissatisfaction. Any decision of the DB shall be admissible in evidence in the arbitration.</p> <p>Arbitration may be commenced prior to or after completion of the Works. The obligations of the Parties, the Engineer and the DB shall not be altered by reason of any arbitration being conducted during the progress of the Works.</p>
20.10 Sub-Clause Arbitration Fees	The cost of arbitration shall be borne by the respective parties. The cost shall, inter alia, include the fees of the Arbitrator(s) as per rates fixed by the Employer.
20.11 Sub-Clause Jurisdiction of Courts	Where recourse to a Court is to be made in respect of any matter, the jurisdiction of court shall be: High Court of Judicature at Bombay - Bombay Bench.
20.12 Sub-Clause Suspension of Work on	The reference to Conciliation / Arbitration shall proceed notwithstanding that the works shall not then be or be alleged to be complete, provided always that the obligations of the Employer, Engineer and the Contractor shall not be altered by reasons of

Account of Arbitration	arbitration being conducted during the progress of the Works. Neither party shall be entitled to suspend the work or part of the work to which the dispute relates on account of arbitration and payments to the Contractor shall continue to be made in terms of the Contract.
20.13 Sub-Clause Notice of Contractor	<p>a. All notices to the Contractor, shall be served by post or telex or telefax IE-Mail/Registered Post on address of communication provided in bid or further local address for communication by hand to the Contractor or his authorized representatives. In case of notices delivered by post, they will be deemed to have been delivered after 7 days of dispatch.</p> <p>b. The Contractor shall, on award of the Contract, furnish to the Engineer, the name, designation, address and telephone, telex and telefax numbers and e-mail address of his representative referred above.</p>
20.14Sub-Clause Notice to Employer & Engineer	All Notices to the Employer or Engineer shall be served by post or telex or telefax IE-Mail/Registered Post on address of communication provided in bid or any change thereafter or by delivering by hand to the address nominated for the purpose.
20.15Sub-Clause Change of address	Parties to the contract may change the nominated address by employer with a notice to all concerned.

**MAHARASHTRA METRO RAIL CORPORATION LIMITED
(CRF WORKS)**

**BID DOCUMENTS
FOR**

Name of work: Geotechnical Investigation of Underground Section of NS Corridor Phase-I Extension Swargate-Katraj of Pune Metro Rail Project.

TENDER NO. P1Misc-34/2024

Part-III: Conditions of Contract and Contract
Forms Section -IX: Particular Conditions of
Contract (PC)



Maharashtra Metro Rail Corporation Limited

Civil Court Metro Station, Nyayamurti Ranade Path, Pune-
411005, Maharashtra, INDIA

E-mail: tenders.pmrp@mahametro.org
Website: www.punemetrorail.org

Particular Conditions of Contract

The following Particular Conditions shall supplement the GC. Whenever there is a conflict, the provisions herein shall prevail over those in the GC.

S.No	Name	GCC Sub Clause No.	Description
1	Employer's name and address	1.1.2.2 & 1.3	MAHARAHSTRA METRO RAIL CORPORATION LIMITED (Pune Metro Rail Project) Civil Court Metro Station, Nyayamurti Ranade Path, Pune-411005. E-mail id: tenders.pmrp@mahametro.org Website: www.punemetrorail.org e-tender portal https://mahametrorail.etenders.in
2	Engineer's name and address	1.1.2.4 & 1.3	<i>(to be nominated by employer after award of work)</i>
3	Bank's name	1.1.2.11	Equity
4	Borrower's name	1.1.2.12	-
5	Time for Completion	1.1.3.3 & 8.2	02 Months from the date of issue of LOA
6	Defects Notification Period (Defect Liability Period)	1.1.3.7	03 Months (Three Months)
7	Sections	1.1.5.6	Deleted
8	Country	1.1.6.2	India
9	Site	1.1.6.7	Pune Metro Rail Project
10	Climatic Conditions	1.1.6.11	"Climatic Conditions" is defined as follows: Environmental Exposure condition: Earthquake Seismic Zone 11
11	Cost Plus Profit	1.2 (g)	<i>(Not applicable)</i>
12	Electronic transmission	1.3 (a)	Electronic transmission shall be in the form of scanned copy of original documents, Letters, Mail, Post communicated through authorized E-Mail IDs of Parties or uploaded appropriately at E-Tender portal of Maha Metro. (as the case may be)

13	Address for the recipient's communication	1.3(b)	MAHARAHSTRA METRO RAIL CORPORATION LIMITED (Pune Metro Rail Project) Civil Court Metro Station, Nyayamurti Ranade Path, Pune-411005. E-mail id: tenders.pmrp@mahametro.org Website: www.punemetrorail.org e-tender portal https://mahametrorail.etenders.in
14	Governing Law	1.4	Acts and Laws of India
15	Ruling language	1.4	English
16	Language for communications	1.4	English
17	Time for entering in Contract Agreement and relevant forms	1.6	Time for entering in Contract shall be not more than 28 Days from date of issue of LOA Relevant forms are given in Contract Form Section of Bid Document
18	Delayed Drawings or Instructions	1.9(a)	Deleted
19	Applicable Law	1.13	Acts and Laws of India
20	Engineer's Duties and Authority	3.1	The Engineer shall manage, monitor & implement the Contract Agreement on behalf of Employer and obtain the specific approval of the Employer regarding all
			contractual, technical & financial matters associated with work as & when required. The Engineer shall be nominated by Employer after award of work to contractor.
21	Procedure of variation	3.1 (b) (ii)	Provided in subsequent paras below
22	Part of work to be designed by contractor	4.1	As described in Work Requirement & Financial Bid

23	Performance Security	4.2	<p><u>In addition to existing Sub -Clause 4.2 of GCC</u></p> <p>The performance security will be in the form of Bank guarantee of the amount(s) at 10% (Ten percent) of the Accepted Contract Price drawn in favour of Maharashtra Metro Rail Corporation Limited and in the same currency (ies) of the Accepted Contract Price, issued from scheduled commercial bank of Indian or Foreign origin (Except Cooperative Bank) having business office in India. (Latest guidelines issued by GOI in this regard shall be applicable)</p> <p>Once The variation approved under Cl. 13.3 (GCC/PCC) exceeds beyond 25% of the Contract Price, contractor shall submit the additional Performance Security to cover entire amount of approved variation at the rate stated above.</p>
24	(Additional sub-clause) Parent Company Guarantees/ Warranties and Undertakings	4.2 (a)	<p>(Applicable if Contractor is Subsidiary & bidding on behalf of a Parent Company using credential of a Parent Company, which has been specifically permitted by Employer)</p> <p>Within 30 days of the date of Letter of Acceptance of the Bid, the Contractor shall submit to the Employer:</p> <p>(a) An Undertaking in the approved format from a parent company, the identity of which shall have been submitted in writing to the Employer prior to acceptance of the Bid and against which the Employer shall have raised no-objection.</p> <p>(b) A written Guarantee in the approved format from a parent company, the identity of which shall have been submitted in writing to the Employer prior to acceptance of the Bid and against which the Employer shall have raised no objection.</p> <p>(c) A warrantee in the approved format from the Contractor.</p>
			<p>In the event that the Contractor shall comprise two or more members, corporations acting in partnership, joint venture, consortium or otherwise each such member or corporation shall submit a parent company Undertaking and Guarantee.</p> <p>The forms of Contractor warranty shall be in the format given in the Section X: Contract Forms.</p>
25	(Additional sub-clause)	4.2 (b)	<p>Notwithstanding any other provision of the Contract:</p> <p>(a) submission by the Contractor of the requisite</p>

	Failure to submission of Performance Guarantee, Parent Company/ Guarantees, Warranties and Undertakings		<p>Performance security, parent company Undertakings and written parent company Guarantees / warrantees shall be condition precedent to the Contractor's entitlement to any payment, under the Contract; and</p> <p>(b) failure by the Contractor to provide a Performance security or parent company Undertakings or parent company Guarantees / warrantees shall entitle the Employer either to suspend the Works or to terminate the Contract forthwith by notice in writing to that effect, notwithstanding that the Contractor may have been to proceed with the Works, and the Contractor shall not be compensation whatsoever as a consequence of such suspension or termination</p>
26	Subcontractors	4.4	Refer Form-13 of Section- X
27	Progress reports	4.21	In addition to Monthly progress report, employer may ask weekly progress report.
28	Normal working hours	6.5	Normal working hours are 8.00 Hrs. to 17 Hrs. The Contractor, if required, shall carry out work during night hours or in shifts. The Contractor shall not be entitled to any claim in addition to the Accepted Contract Price on account of night/shift working.
28. a	Testing	7.4	<p>In addition to the provisions in the GCC:</p> <p>Wherever, Maha-Metro has in-house testing facility, all testing has to be done in the said facility. In case any specific testing is not possible, the tests are to be done from a laboratory approved by Employer.</p>
29	Commencement of Works	8.1	<p>The Commencement Date shall be:</p> <p>Date given in LOA</p>
30	Delay damages for the Works	8.7	The penalty for delay in work, beyond mentioned completion date/ duration, shall be 0.1% of the contract value per week of delay or part thereof. The maximum value of penalty shall be 10% of the contract amount.
31	Maximum amount of delay damages	8.7	10 % of the Contract Price.
32	Consequences	8.9	<u>Add to Sub Clause 8.9:</u>

	of Suspension		<p>The Contractor shall not be entitled to extra cost (if any), other than provided below incurred by him, except as stated below during the period of suspension of work, if such suspension is:</p> <ol style="list-style-type: none"> Provided for in the Contract, or necessary for proper execution of works or by reasons of weather condition or by some default on the part of the Contractor, or necessary for the safety of Works or any part thereof or 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 to ensure safety and to avoid disruption of traffic and utilities, as also to permit fast repairs and restoration of any damaged utilities. 				
			Sr. No	Suspension Period	Extension of Time	Compensation for the suspension period	Remarks
				Up to 14 days	No	No	Engineer may give extension of time in exceptional circumstances
				15-30 days	yes	No	extension of time as considered proper by the Engineer
				Above 30 days	Yes	<ul style="list-style-type: none"> As per Daily rate of wages for idle labour/ employees. 70% of the rate for hire charges for idle plant and machinery (excluding cost of fuel and lubricants) 15% above all these items to Cover Overhead costs 	Compensation as assessed by the Engineer on submission of documentary proof by the contractor to engineer's satisfaction
				Above 90 days	No	As per Clause no 13.3.4	Contractor may ask for closure of the contract, or
							deletion from the Contract of that part of works which has been suspended

33	Defect Liability	11.1U)	A penalty of Rs.10,000/- per day in DLP period, will be imposed if Defect / complaint is not attended and complied within the time specified in the notice for rectification of the defect.
34	Variation Procedure	13.3	<p>Variation Procedure</p> <p><u>In further addition to existing Sub -Clause 13.3 of GCC</u></p> <p>"Employer's Variation" means a change in the Works Requirements which makes necessary alteration or modification of the Design, quality or scope of Works as described by or referred to in the Works Requirements. Changes to any sequence, method or timing of manufacture, testing and Commissioning including Integrated Testing and Commissioning and changes to any part of the Site or access thereto will not constitute Employer's Variation.</p> <p>An Employer's Variation shall be requested and implemented in accordance with and subject to the following provisions:</p> <p>within 14 days (or such other period as the Engineer may allow) of the Engineer informing the Contractor in writing of the intention to request an Employer's Variation, the Contractor shall notify the Engineer in writing whether in his opinion the Employer's Variation would, if ordered:</p> <ul style="list-style-type: none"> (i) give rise to any entitlement to an extension of time; or (ii) affect the achievement of any Milestone; or (iii) give rise to any entitlement to additional payment; or (iv) affect the warranties of the Contractor set out in Conditions of Contract, <p>and shall submit his proposals as to the terms upon which he would agree to implement the Employer's Variation.</p> <p>The Engineer shall, as soon as practicable after receipt of proposals under sub-clauses 13.2 and / or 13.3, respond with approval, rejection or comments. If the Engineer instructs or approves a Variation, he shall</p> <p>proceed in accordance with Sub-Clause 3.5 to agree or</p>

			<p>determine adjustments to the Contract Price, Time for Completion and Schedule of Payments. After receipt of proposal, it will be the prerogative of the Employer, whether to Instruct and proceed ahead with the variation or drop the proposal in part or full. In that case, no cost of preparing and submitting the proposal will be payable to Contractor. In case, the design part of variation has been completed on submission of same to the Engineer, the Employer decides to abandon the variation, only cost for design to the extent of work done will be paid to the Contractor.</p> <p>Until such time an appropriate rate or price is agreed or determined, the Engineer shall determine a provisional rate or price for the purposes of Interim Payment Certificates as soon as the concerned work commences.</p> <p><u>Detail Procedure for Variation in Quantities & Work</u></p> <p><u>1. Variation of Quantities in Existing BOQ items under the Contract</u></p> <p>The quantities of items shown in the Bill of Quantities are approximate, and liable to vary during the actual execution of the work. Some items /group of items may have to be altered, added or omitted. The Contractor shall be bound to carry out and complete the stipulated work as instructed by the Engineer, irrespective of the magnitude of variations including additions, alterations or omissions in the Bill of Quantities, individual items or Group of Items, specified in the Bill of Quantities.</p> <p>1. At the accepted rates of the Contract for Positive variation in quantities to the extent of 25%, except in the case of foundation works. Unless otherwise specifically provided for in the Bill of Quantities or elsewhere in the Contract, the variation of 25% shall be applicable to a group of items (Each schedule as a whole shall be treated as a Group of Items) mentioned therein and not to individual items. In case of variation in quantities on minus side, contract rates will be payable for executed quantities.</p> <p>11. In case of foundation work, no variation limit applies and Contractor shall carryout the</p>
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			<p>Work, at rates stipulated in the Contract irrespective of any variation.</p> <p>111. In case of earth work, the aforesaid variation limit of 25% shall apply to the gross quantity of earth work and variation in the quantity of individual classifications of soil will not be subject to this limit where any variation can take place.</p> <p>1v. For items against which the quantity given in the Bills of Quantities is "if or as required", there shall be no increase/decrease of rates whatever be the quantity finally executed.</p> <p>v. Variation in the quantity of items individually costing up to 1% of the total contract value, shall be payable at the rates stated in the Contract notwithstanding the magnitude of variation up to 2% of the original Contract Value for each item.</p> <p>v1. In case the variation in the group of items (except the case describe in 1.(v) above), is more than 25% on positive side, the rate for the varied quantity of individual items of that particular group varying beyond 25% shall be negotiated between the Engineer and the Contractor and mutually agreed rates arrived at before actual execution of the extra quantity.</p> <p>2. <u>Variation due to New Items /NS Items</u></p> <p>In all cases where new items of work are involved, for which there are no rates in the accepted Bill of Quantities the Contractor shall give a notice to the Engineer, at least 14 days before the need for their execution arises.</p> <p>1. If Employer/ Engineer finds that any extra items / NS Item, which is not included in the BOQ Schedules of this contract and is required to be executed, it may be done at:</p> <p>a. Latest Schedule of Rate of CPWD - DSR with applicable guidelines and circular / amendments /correction / latest revision / latest publication at the time of execution of the work or</p> <p>b. Latest Schedule of Rate of Maharashtra PWD / MJP with applicable guidelines and circular / amendments /correction / latest revision / latest publication at the time of execution of the work or</p> <p>c. rate for similar items available in Bill of Quantities of the accepted tenders duly</p>
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			<p>updated to current price level at 5% Simple interest per year (in the above sequence).</p> <p>d. No Price Variation shall be applicable on rates of Items derived under "a" or "b" above. Whereas, rates derived under "c" above shall be fixed for the period of 18 months from the issue of Variation Order and shall be reviewed for further period if required.,.</p> <p>11. In case, the above is not possible, following steps are to be followed to arrive rates of such items</p> <p>a. Cost of Materials at current market price, as actually utilised in the final finished Permanent Works, including a reasonable percentage for wastage and transportation.</p> <p>b. Cost of enabling works if any (unless provided for separately) worked out on the above basis but with less stringent quality. Specifications minus salvage value of serviceable material released after completion of work and cost of material released as scrap.</p> <p>c. Cost of labour actually used at the site of work at rates under Payment of Minimum Wages Act for the area of work for each category of worker, further enhanced by a percentage of 10% of the aforesaid rates to account for labour not directly utilised at Site and other ancillary and incidental expenses on labour.</p> <p>d. Hire charges for Plant & Machinery, scaffolding, shuttering, forms, etc. required to be used at the site of the work. The tools used by the various trades shall not be counted as Plant & Machinery for this purpose.</p> <p>e. An amount of 20% of items (i), (ii), (iii) and (iv) above is added as Contractor's overheads, profits and corporate taxes. This percentage shall also apply to estimated cost of Materials supplied free of cost to the Contractor.</p> <p>f. If the said Extra Items /NS Item are executed / supplied by a sub-contractor/ sub agencies complete in all respect on behalf of the</p>
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			Contractor then an amount of 8% shall be added to the billed rate /amount of Sub Contractor / supplier/ sub-agencies and paid to Contractor under a Sub Contract agreement with Contractor.
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			<p>3 (i) In the event of disagreement in respect of determination of rate, the Engineer shall fix such rates or prices as are, in his opinion appropriate and shall notify the Contractor accordingly, with a copy to the Employer. Until such time as rates or prices are agreed or fixed, the Engineer shall determine provisional rates or prices to enable on account payments to the Contractor. Alternatively, in the event of disagreement, the Contractor shall have no claim to execute extra quantities /new items/NS Items and the Engineer shall be free to get such additional quantities beyond 25% and new items / NS Items executed through any other agency appointed by Employer. However, if the Engineer or the Employer so directs, the Contractor shall be bound to carry out any such additional quantities beyond the limits stated above original quantities and or new items / NS Items and the disagreement or the difference regarding rates to be paid for the same shall be settled in the manner laid down under the conditions for the settlement of dispute.</p> <p>3(ii) The Contractor shall furnish sufficient information in terms of rates /prices of the works, equipment /components manufactured by the contractor or sourced from the Vendors/Sub-contractors such as: estimated man-hours, man-hours rates for manufactured items, design costs, basic rate of materials, sub-assemblies, taxes, duties, overheads & profits and inflation rate, so as to establish the reasonableness of the variation price. In assessing work covered by any sub contract, the Engineer shall have, where he deems necessary, access to the original sub contract conditions, rates, prices and details of the variation claimed and may direct the Contractor to provide a copy of the same, to assist in evaluating any Variations.</p> <p>3(iii) Any agreement between the Engineer and the Contractor as to the terms upon which an Employer's Variation may be implemented shall have no contractual or other legal effect, until it is in writing and is signed by the Contractor and the Engineer. The Engineer before signing such</p>
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			agreement shall take prior approval of the
			<p>Employer. The terms of this agreement will be binding upon the Contractor and the Employer. This agreement shall determine the amount which should be added to or deducted from the relevant Cost Centre Amount and/or the revisions (if any) which should be made to the Milestone Payment Schedules as a result of the Variation.</p> <p>3(iv) In the event of the Engineer and the Contractor failing to reach agreement on the revisions to be made to the Cost Centre Amounts, the Engineer shall, with the approval of the Employer, determine the amount which should be added or deducted from the relevant cost centre amount which shall be binding on the contractor. In case the Contractor supplies part/ incomplete information or refuses to supply the required information, Engineer shall determine the cost of Variation based on the information available to him from any sources which in his judgment can be used to determine the case. The Contractor shall proceed with the Work irrespective of whether an agreement between the Engineer and Contractor as to the terms and price of the variation have been reached or not but may submit his Claim if necessary, in accordance with Sub-clause 20 of GCC.</p> <p>3(v) If the Engineer withdraws the request for an Employer's Variation, the Contractor shall have no claim of any kind whatsoever arising out of or in connection with any of the proposals made or any failure to reach agreement. In case the Employer's Variation involves omission of part of the Works, the agreement shall address the issue of reduction in the Contract Price.</p>
35	Provisional Sums (Overhead & Profit)	13.5.(b)(ii)	<p>i. An amount of 20% of items under sub clause 13.3.2(ii) (a), (b), (c) and (d) above is added as a Contractor's overheads, profits and corporate taxes. This percentage shall also apply to estimated cost of Materials supplied free of cost to the Contractor.</p> <p>ii. If the said Extra Items /NS Item are executed / supplied by a sub-contractor / sub agencies</p>

			complete in all respect on behalf of the Contractor
			then an amount of 8% shall be added to the billed rate /amount of Sub-Contractor / supplier/ sub agencies and paid to Contractor under a Sub Contract agreement with Contractor.
36	Base Date	13.7	28 th Day prior to last date of submission of bid
37	Adjustments for Changes in Cost {this clause is not applicable to this tender}	13.8	<p>In continuation to the provisions in GCC, following Procedure shall be adopted to determine the adjustment for change in Cost</p> <p>a) The rates as per the accepted Bill of Quantities / Pricing Document shall be applicable till the completion of the Works and will be varied only to the extent of permissible price variation under this clause, which will be applicable for the Schedules mentioned above from date of commencement of this contract. However, this adjustment shall be to the extent that full compensation for any rise or fall in costs to the Contractor is not covered by the Price Variation formula, the rates in the accepted Bill of Quantities / Pricing Document shall be deemed to include amounts to cover the contingency of such rise or fall in costs. The price variation will be payable only on the Indian currency component (no adjustment for foreign currency component) of the Contract Price as per the following price variation formula. <i>(it is clarified that, Price Adjustment calculated under this clause shall be paid only against the works executed after original completion period and only if the Extension of Time is approved by Maha-Metro for the reasons attributable to Maha-Metro)</i></p> <p>b) Payment as per the Contract shall be subject to adjustment in accordance with the following Price Variation formula, and other terms given herein, to provide for variation in the market rates of inputs like labour, materials and fuel /</p>

energy during the currency of the Contract:

$$V = V_L + V_s + V_e + V_F + V_M$$

Where:

V	Total adjustment on account of all components / factors
	Adjustment on account of labour component $= p * R * \frac{l - l_0}{l_0}$
	Adjustment on account of steel component $= q * R * \frac{W_s - W_{s0}}{W_{s0}}$
	Adjustment on account of cement component $= r * R * \frac{W_c - W_{c0}}{W_{c0}}$
	Adjustment on account of fuel / lubricant component $= s * R * \frac{W_f - W_{f0}}{W_{f0}}$
	Adjustment on account of other materials, machinery and machine tools component $= t * R * \frac{W_m - W_{m0}}{W_{m0}}$
p	Cost coefficient of labour to the total cost = 0.20
q	Cost coefficient of Steel to the total cost = 0.25
r	Cost coefficient of Cement to the total cost = 0.17
s	Cost coefficient of Fuel & Lubricants to the total cost = 0.05
t	Cost coefficient of other Materials, machineries, tools and plants.

				= -0.18	
			Note: $p + q + r + s + t = 0.85$, balance 0.15 shall be the fixed component		
			R	Gross value of the work done by the Contractor for the period of work under consideration, after excluding the cost of any materials supplied free or at fixed rate to the Contractor.	
				Consumer Price Index for Industrial workers (with Base 2016=100), published in the bulletin Labour Bureau of India, as applicable to place / region of work from the base date.	
				Average of monthly Consumer Price Index for Industrial workers (with Base 2016=100), published in Labour Bureau of India, as applicable to place / region from the base date.	
			$\cancel{v/7s_0}$	All India Price Index (with base Oct'2012 = 100) for Reinforcement Bars TMT Fe 500D, issued by CPWD for the month in which the Original Completion period gets over.	
			$\cancel{v/1s}$	<p>All India Price Index (Average) (with base Oct'2012 = 100) for Reinforcement Bars TMT Fe 500D, issued by CPWD for the period of work under consideration.</p> <p>This shall be applicable for all types, all grades and all diameters of reinforcement steel. These indices issued for Delhi shall be applicable for all works of NMRP Phase-2</p>	
			\cancel{Wea}	Wholesale Price Index (with base 2011-12 = 100) for Cement, Lime and Plaster issued by Reserve Bank Of India for the month in which the Original Completion period gets over.	
			\cancel{We}	Wholesale Price Index (Average) (with base 2011-12 = 100) for Cement, Lime and Plaster issued by Reserve Bank Of India for the period of work under consideration	

			W_{t0}	Whole Sale Price Index for Fuel & Power (with base 2011-12 = 100), as published in the RBI Bulletin for the	
				month in which the Original Completion period gets over.	
			W_T	Whole sale Price Index (Average) for Fuel & Power, (with base 2011-12 = 100) as published in the RBI Bulletins for the period of work under consideration	
			W_{mt}	Whole Sale Price Index for Machinery for Mining, Quarrying and construction (with base 2011-12 = 100) as published in the RBI Bulletin, for the month in which the Original Completion period gets over.	
			W_m	Wholesale Price Index (Averages) for Machinery for Mining, Quarrying and construction (with base 2011-12 = 100) as published in the RBI Bulletin for the period of work under consideration	

			<p>c) Period of Work under consideration will mean as under:</p> <p>i. In the case of first "On-account Bill" the period from the months in which the Bid was opened to the month of measurement of first bill.</p> <p>ii. In the case of second and subsequent "On account" and Final bills, the Period from the month of measurement for previous bill to the month of measurement of that bill.</p> <p>iii. Responsibility of arranging the RBI Bulletins as desired by the Employer or the Engineer shall rest with the Contractor.</p> <p>d) Procedure in case of delay in Availability of final RBI indices:</p> <p>Where the final Price Indices are not available in the Reserve Bank of India Bulletins, while making payment towards on-account bills, payment towards Price Variation will be made on provisional basis based on the indices available, to be adjusted in subsequent bills as and when the final indices figures become available.</p> <p>e) Price Variation for Varied Items i.e. extra item / new items/NS Items</p> <p>No price variation clause shall be applicable to any extra item / new items/NS Items not originally included in the accepted Bill of Quantities / Pricing</p>
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			<p>Document and for which the rates are fixed separately under Clause 13 of GCG.</p> <p>f) Adjustment on account of Price Variation:</p> <p>Adjustment on account of Price Variations may be positive (in which case extra amount shall be paid to the Contractor), or negative (in which case the amount of Price Variation shall be recovered from the Contractor). Adjustment on account of Price Variation shall be calculated separately, for each period, between two successive dates of measurements for bills and paid along with each bill or separately as claimed by the Contractor.</p> <p>After verifying the bill, the Engineer shall certify the adjustment amount and advise the same to the Employer along with the 'On Account' bill. Should any extra amount be due to Contractor, the Employer shall pay the same as far as possible within 28 days of certification by Engineer. Any amount due from Contractor on account of negative adjustment shall be recovered from his pending or other bills at the earliest.</p> <p>g) Price Variation during extended period of completion:</p> <p>The price adjustment as worked out above i.e. either increase or decrease will be applicable up to the stipulated date of completion of the work including the extended period of completion where such extension has been granted under Sub Clause 8.4 & 8.5 of GC or it is specifically mentioned that extension is with price variation also. However, where extension has been granted under Sub-Clause 8.7 of GC, price adjustment will be due as follows:</p> <p>In case the indices increase above the indices applicable to a bill made on the last date of original completion period or the extended period under Sub-Clauses 8.4 & 8.5 of GC, the price adjustment for the period of extension under Sub-Clause 8.7 of GC will be limited to the amount payable as per the indices applicable to a bill made on the last date of the original completion period or the extended period under Sub-Clauses 8.4 & 8.5 of GC as the case may be.</p> <p>In case the indices fall below the indices applicable to a bill made on the last date of the original or</p>
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			extended period of completion, then the lower indices will be adopted for Price Adjustment for the period of extension under Clause 8.4 & 8.5 of GC unless the extension has been granted due to Contractor's fault.
38	The Contract Price	14.1	<p><u>Add following to existing clause</u></p> <p>(e)The Contractor shall submit the proof of registrations under various fiscal and labour laws (whichever is applicable as per nature of work) like Income Tax, GST, Profession Tax, Central Excise, Import Export Code, Employee State Insurance, Provident Fund, Maharashtra Labour Welfare Fund, Local Body Tax (as the case may be) and shall submit an undertaking that he will get registered with the competent authority/ies for complying with various laws that are applicable.</p> <p>(f) The Contractor shall be solely responsible to find out and ascertain whether their supplies for Maha Metro 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. After award of the Contract, Employer at the written request of a contractor shall facilitate the contractor for obtaining sponsoring / recommendation letter from the Ministry of Urban Development (MoUD) / GOM for getting themselves registered for availing Project Import benefits. However, the responsibility to avail the concessional benefits under Project Import or otherwise as extended in accordance with the law of the land shall solely rest with the Contractor.</p> <p>(g)Should the Employer, during execution of the contract, obtain a waiver of any taxes, if applicable, in full or part thereof, the Contractor will be advised on the process to be followed to obtain exemption /refund of such taxes, duties etc., from the concerned Authorities. In case of failure by the Contractor to obtain and remit the refund within reasonable time (to be decided by the Employer & intimated to contractor) to the Employer, the same will be recovered by the Employer from the amounts due as payment to the Contractor or as debt due from the Contractor. The decision of the Employer shall be final and binding. If the</p>

			Contractor fails to take the required action to obtain refund or
			<p>exemption, the Employer may take action in accordance with condition of Contract.</p> <p>(h) The Contractor shall maintain meticulous record of all the taxes and duties paid to various department in connection to this work and the same required to be submitted as and when required by the Employer.</p> <p>(i) The Contractor also will have to submit 'No Dues Certificate' for the year/ period as and when required by Employer.</p> <p>(ii) The full and final payment to Contractor will be made only after documents as required above are furnished by him and checked by Employer.</p> <p>(i) Customs and Excise:</p> <p>The Contractor shall submit</p> <ol style="list-style-type: none"> Certificate from Chartered Accountant with regards to payment of Customs / Excise Duty with respect to imports / manufacture of materials for Employer Copy of challans in regard to deposit of tax and Import Documents to be furnished along with the bills. Any duty drawback, export / import incentive, concession / exemption available to the Contractor to be passed on to MAHA-METRO. <p>U) Labour Welfare Fund, ESI, PF and other labour related payments:</p> <ol style="list-style-type: none"> Primary responsibility for payment statutory dues or other dues within stipulated time shall be primary responsibility of the Contractor. Employer at no point of time shall be responsible for the same. Contractors shall certify on annual basis that there are no unpaid dues relating to persons working in Employer's work. Employer has a right to recover any unpaid dues from the Contractor in the event of default at his part. In case of System works where supply of items and execution is separately given in the

			scope of work, then the labour cess at the prevailing rates (currently 1%) shall be applicable for
			<p>execution part of the work only. It will not be applicable for supply schedule of works.</p> <p>(k) Income tax</p> <p>a. All payments shall be subject to TDS provisions in force from time to time.</p> <p>b. The Bidders are expected to submit certificates from competent authorities for lesser/ non-deduction of TDS.</p> <p>(l) Local Body Tax</p> <p>The Contractor shall certify on periodical basis that Local Body tax has been paid on all supplies to MAHA-METRO.</p>
39	Advance Payment/ Mobilization Advance	14.2	<p>Following Shall replace the corresponding provision in GCC</p> <p>The Employer shall make an advance payment, as an interest bearing loan for mobilization and cash flow support, when the Contractor submits a guarantee in accordance with this Sub-Clause. The total advance payment, the number and timing of instalments (if more than one), and the applicable currencies and proportions detailed as under:</p> <p>(a) Mobilization Advance:</p> <p>interest bearing Mobilization advance shall be 10% of original contract value payable in two equal instalments of 5% (Five Percent) each in the currencies and proportions of the Accepted Contract Amount</p> <p>Rate of interest shall be charged at "RBI Bank Rate+2% (Two percent)" simple interest. Interest will be chargeable and calculated on reducing balance method.</p> <p>Mobilization advance shall be paid against acceptable Bank Guarantee issued from a Scheduled Commercial Indian Bank or Schedule Commercial Foreign Bank (Except Cooperative Bank) having business offices in India. The value of Bank Guarantee taken towards security of "Advance Payment" / "Mobilization Advance" shall be 110% of the advance amount requested by the Contractor and valid for 60 Days beyond scheduled completion time. The validity of Advance Bank Guarantee shall be</p>

			<p>extended as per extended time of contract plus 60 days, if the Advance Amount is not recovered completely.</p> <p>The first installment shall be paid after award of Letter of Acceptance by employer and submission of</p>
			<p>Performance Guarantee / Security and Advance Bank Guarantee by Contractor.</p> <p>The second installment shall be paid on production of statement of effective and proper utilization of the first installment along with supporting documents duly accepted and certified (with or without modification) by the Engineer. The Contractor shall be required to submit the 'Utilization Certificate' of 1st installment along with Bank Guarantee @ 110% of 2nd installment, with his letter of request.</p> <p>The Contractor, once the 50% of mobilization advance has been recovered, shall have a onetime option to reduce the Bank Guarantee for the mobilization advance by the proportion to the amount recovered.</p> <p>(b) Amortization / Repayment of Advance Payment</p> <p>Recovery of the 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 mobilisation advance) and shall be recovered by deduction of 20% of the amount of each interim payment until the total of mobilisation advance is recovered before payment of 80% of Contract price or before the expiry of original contract period (or any extension as approved by the Employer for recovery of advance) whichever is earlier.</p> <p>(c) Deleted</p> <p>(d) Failure of contractor to repay the Advance Amount</p> <p>If the Contractor fails to repay the advance amount within the stipulated period of repayment as described above in Sub-Clause no. 14.2 (b) or its further extension by Employer, in such events Employer is empowered to encash the Bank Guarantee submitted by Contractor against the Advance Payment.</p> <p>Employer is also empowered to encash the Advance Bank Guarantee, if the Contract is terminated or</p>

			<p>foreclosed or whatever the reasons and Advance Amount is not repaid by Contractor</p> <p>(e) Advances to be Used only for This Work</p> <p>The advances shall be used by the Contractor strictly for the purpose of the Contract, and for the purpose for which they are paid. Under no circumstances, shall the advances be diverted for other purposes. Any such</p>
			<p>diversion shall be construed as a breach of the Contract and the Contractor shall be asked to return the advance at once. The Contractor shall return the advance in one go without demur. The Employer reserves the right for any other remedy prescribed for breach of Contract in this regard.</p> <p>The Contractor, if required by the Employer shall provide the details of Mobilization advance expended or to be expended.</p>

40	Schedule of Payments	14.4	<p><i>(Following Shall replace the corresponding provision in GCC)</i></p> <p>The contractor must understand clearly that the rates quoted are for completed work and include all costs due to labour, all leads and lifts involved and if further necessitated scaffolding, plant, Machinery, supervision, service works, power, etc. and to include all expenses to cover the cost of night and round the clock work as and when required and no claim for additional payment beyond the prices or rates quoted will be entertained and the tenderers will not entitled subsequently to make any claim on the ground of any representation or on any promise by any person (whether member in the employment of any Public Works Department or not) or on the ground of any failure on this part to obtain all necessary information for the purpose of making his tender and fixing the several prices and rates therein relieve him from any risks or liabilities arising out of the tender. The mode of measurements has been indicated in the specification.</p> <p>A) Running Bill :</p> <p>Only one Payment in a month will be granted by the Engineer-in-charge. Contractor should submit bills to the Engineer -in -charge in appropriate forms. The payment will be entertained by the department.</p> <p>B) Final Bill:</p> <p>The contractor should submit final bill within one month after completion of the work and the bill will be paid within 3 months if it is in order.</p> <p>Disputed item and claims if any shall be</p>
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			<p>excluded from the final bill and settled separately later on.</p> <p>Bills for extra work or for any claim shall be paid separately apart from the Interim bill for the main work. The payment of bills for the main works shall not be withheld for want of decision on the extras or claims not covered in the appendices.</p> <p>Claims for extra work shall be registered within 30 days of occurrences of the event. However, bills for these claims including supporting data/details may be submitted subsequently.</p>
41	Percentage of Retention	14.3 (c)	0% (Zero percentage) (No retention from bill is applicable in this contract)
42	Limit of Retention Money	14.3 (c)	0% (Zero percentage) (No retention from bill is applicable in this contract)
43	Plant and Materials intended for the Works	14.5	Not applicable to this tender
44	Deleted	Deleted	deleted
45	Minimum Amount of Interim Payment Certificates	14.6	0.5% of the Contract Price
46	Payment of retention Money	14.9	Not applicable to this bid
47	Currencies of Payment	14.15	The Contract Price shall be paid in the currency(ies) named in the Contract i.e., INR (Indian Rupees)
48	Currencies of Payment	14.15	In item no. (e) of Sub-Clause 14.15 the "Central Bank of the country" would mean the Reserve Bank of India and the base date will be the date of submission of the bill.
49	Limit of Liability	17.6	100% of the Total Contract Price
50	Use of Employer's	17.7	No accommodation/ facilities shall be provided by employer.

	Accommodation /Facilities		
51	General Requirement for insurance	18.1	The insurance servicing for this contract for CAR and other Insurances are being entrusted to Government Insurance Fund on co-insurance cum-servicing basis with Government owned Insurance companies. The contractor will have to necessarily avail the insurance service as above.
52	Prime beneficiary of Insurance, Insuring Party & Other Party	18.1	Prime beneficiary of Insurance: Maharashtra Metro Rail Corporation Limited Contractor shall be " Insuring Party " Maha- Metro shall be " Other Party "
53	Periods for submission of insurance:	18.1	In addition to the provisions in GCC, following shall be applicable: i. Evidence of insurance 30 days from Commencement Date ii. Submission relevant policies : 60 days from Commencement Date iii. If the Contractor is insuring party & fails to submit the policy of insurance within 60 days or submit the policy for lesser period or does not extend adequately, a penalty for such uninsured period as well as delay beyond 60 days shall be recovered at "per day basis", proportionate to amount of premium payable for the work from any monies due to the Contractor or if the amount is not sufficient the Performance Guarantee shall be retained by Employer till Contractor pays the dues towards renewal of these insurances.
54	Maximum Permissible Deductibles	18.2 (d)	INR 05 Lakhs for each occurrence under CAR insurance Policy
55	CAR Policy	18.2 (g)	Applicable to this work
56	Validity of insurance policies	18.2 (i)	Till 06 (Six) Months beyond the expiry of DLP
57	Insurance against injury to persons and damage to Property	18.3	Upto INR 05 Lakhs per occurrence, with number of occurrences unlimited

58	Insurance for Contractor's Personnel	18.4	<p>Contractor shall obtain Employee's Compensation Policy (Workmen's Compensation Policy) as per Employees Compensation Act 1923</p> <p>The insurance shall be maintained in full force and effect during the whole time that the Contractor's Personnel are assisting in the execution of the Works. For any person employed by a Subcontractor, the insurance may be effected by the Subcontractor, but the Contractor shall be responsible for the Subcontractor's compliance with this Sub-Clause.</p> <p>This shall supersede the provision at 18.2 (i) of GCC only for the purpose of Employee's Compensation Policy</p>
59	<p>Amount of Professional Indemnity Insurance (PII) (for Design Work if applicable)</p> <p>(This Clause is not applicable to this tender)</p>	18.5(PC)	<p>(This Clause is not applicable to this tender)</p> <p>AOA (any one accident) limit equal to 6% of the contract value against Schedule 'B' (Lumpsum Component of Viaduct) of Price Bid in respect of 'design and construct' 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 renewed before its expiry date. In such situation, the performance guarantee 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.</p>
60	Optional-Termination, Payment and Release	19.6	<p>Replace "84 days" and "140 days" mentioned in the sub-clause with "184 days" and "340 days" respectively.</p>
61	Dispute Board	20.3	Annexure-IX-A
62	The Dispute Board shall be comprised of	20.3	Annexure-IX-A
63	List of potential DB sole members	20.3	Shall be nominated by Employer

64	No legal action till Dispute Settlement Procedure is exhausted	20.3	Any and all Disputes shall be settled in accordance with the provisions of Clause 20. No action at law concerning or arising out of any Dispute shall be commenced unless and until all applicable Dispute resolution procedures set out in Clause 20 shall have been finally exhausted in relation to that Dispute or any Dispute out of which that Dispute shall have arisen with which it may be or may have been connected.
65	Appointment (if not agreed) to be made by	20.4	After failure of negotiation/ conciliations of mutual settlements the issues may be referred for arbitration.
65	Notice of Dispute	20.4	For the purpose of Sub-Clause 20.5, a Dispute shall be deemed to arise when one party serves on the other party a notice in writing (hereinafter called a ("Notice of Dispute")) stating the nature of the Dispute provided that no such notice shall be served later than 28 days after the date of issue of Performance Certificate by the Engineer.
66	Two stages for Dispute Resolution	20.5	Disputes shall be settled through two stages: a. Conciliation procedures as established by "The Arbitration and Conciliation Act-1996" (as amended from time to time) and in accordance with this Clause. In the event this procedure fails to resolve the Dispute then; b. Arbitration procedures undertaken as provided by "The Arbitration and Conciliation Act -1996" (as amended from time to time) and in accordance with this Clause.
67	Rules of arbitration	20.9	Rules of Arbitration in accordance with the Arbitration and Conciliation Act 1996 and its amendments further.
68	Place of arbitration	20.9	Pune
69	Conciliation Procedure	20.7 & 20.9	As per Annexure-IX-B

70	Maintaining the Site	Additional Clause	<p>In general, the cleanliness, lighting, safety, security, drinking water, first aid etc. will be the responsibility of the contractor.</p> <p>The Contractor shall be responsible for maintaining the site. The daily sweeping and cleaning of the area under his possession/work shall be his responsibility.</p> <p>In case of repeated aberrations notices by the Engineer, a minimum penalty of Rs. 5000/- shall be imposed for each instance.</p>
71	EIA&SIA (This Clause is not applicable to this tender)	Additional Clause	<p>(This Clause is not applicable to this tender)</p> <p>The Employer will engage suitable agencies for performing Environmental Impact Assessment and Social Impact Assessment due to the Project. These agencies will suggest appropriate monitoring mechanism as well as mitigation measures for implementation by MAHA-METRO. The Contractor will be required to implement these measures as part of its obligation under SHE Manual / other relevant conditions. In case, implementing these measures are beyond the scope of work as detailed in Bidding Documents, the same shall be taken up as a Variation.</p>
72	Interface Requirements	Additional Clause	<p>The Contractor shall be responsible to interface with the other contractors as per the interface table provided in the contract. Employer will supervise/facilitate the coordination between the Contractor and other designated contractors. However, the Contractor will allow for liaison with, and modifications to his design to cater for the work of such other contractors. The list of interface items is indicative only (as per Annexure-VII- 6) and the ultimate responsibility of commissioning lies with the Contractor.</p>
73	Pre-Completion Incentives	Additional Clause	<p>Deleted</p> <p>This clause is not applicable to this tender</p>
74	OHSAS: 18001 (This Clause is not applicable to this tender)		<p>(This Clause is not applicable to this tender)</p> <p>The contractor must obtain Health and Safety Certificate</p> <p>The contractor shall deploy at least two key personnel having Environment expertise of minimum ten years in sites management measure and the second one in social works with min. 10 year experience.</p>
75	Site Mobility		Annexure-IX-C (Not Applicable to this tender)

76	Site Office for Employer		Annexure-IX-C (Not Applicable to this tender)
77	Approved make/vendor		Annexure-IX-D (Not Applicable to this tender)
78	Approved make/vendor (Plumbing)		Annexure-IX-E (Not Applicable to this tender)
79	Approved Laboratory		Any NABL approved laboratories in Pune. All testing to be done at Contractors cost.

80	Key Dates & Penalties		Key dates shall be as per Deliverables mentioned under scope of work, Part-2, Employers requirement
81	Design Requirements (Not Applicable to this tender)		Annexure-IX-H (Not Applicable to this tender)
82	IT/ 5D BIM Requirement of the employers (Not Applicable to this tender)		Annexure -IX-I (Not Applicable to this tender)

Annexure IX-A**A General Conditions of Dispute Board Agreement****1. Definitions**

Each "Dispute Board Agreement" is a tripartite agreement by and between:

- (a) the "Employer";
- (b) the "Contractor"; and
- (c) the "Member" who is defined in the Dispute Board Agreement as being:
 - (i) the sole member of the "DB" and, where this is the case, all references to the "Other Members" do not apply, or
 - (ii) one of the three persons who are jointly called the "DB" (or "Dispute Board") and, where this is the case, the other two persons are called the "Other Members".

The Employer and the Contractor have entered (or intend to enter) into a contract, which is called the "Contract" and is defined in the Dispute Board Agreement, which incorporates this Appendix. In the Dispute Board Agreement, words and expressions which are not otherwise defined shall have the meanings assigned to them in the Contract.

2. General Provisions

Unless otherwise stated in the Dispute Board Agreement, it shall take effect on the latest of the following dates:

- (a) the Commencement Date defined in the Contract,
- (b) when the Employer, the Contractor and the Member have each signed the Dispute Board Agreement, or
- (c) when the Employer, the Contractor and each of the Other Members (if any) have respectively each signed a dispute board agreement.

This employment of the Member is a personal appointment. At any time, the Member may give not less than 70 days' notice of resignation to the Employer and to the Contractor, and the Dispute Board Agreement shall terminate upon the expiry of this period.

3. Warranties

The Member warrants and agrees that he/she is and shall be impartial and independent of the Employer, the Contractor and the Engineer. The Member shall promptly disclose, to each of them and to the Other Members (if any), any fact or circumstance which might appear inconsistent with his/her warranty and agreement of impartiality and independence.

When appointing the Member, the Employer and the Contractor relied upon the Member's representations that he/she is:

- (a) experienced in the work which the Contractor is to carry out under the Contract,
- (b) experienced in the interpretation of contract documentation, and
- (c) fluent in the language for communications defined in the Contract.

**4. General
Obligations of the
Member**

The Member shall:

- (a) have no interest financial or otherwise in the Employer, the Contractor or Engineer, nor any financial interest in the Contract except for payment under the Dispute Board Agreement;
- (b) not previously have been employed as a consultant or otherwise by the Employer, the Contractor or the Engineer, except in such circumstances as were disclosed in writing to the Employer and the Contractor before they signed the Dispute Board Agreement;
- (c) have disclosed in writing to the Employer, the Contractor and the Other Members (if any), before entering into the Dispute Board Agreement and to his/her best knowledge and recollection, any professional or personal relationships with any director, officer or employee of the Employer, the Contractor or the Engineer, and any previous involvement in the overall project of which the Contract forms part;
- (d) not, for the duration of the Dispute Board Agreement, be employed as a consultant or otherwise by the Employer, the Contractor or the Engineer, except as may be agreed in writing by the Employer, the Contractor and the Other Members (if any);
- (e) comply with the annexed procedural rules and with Sub Clause 20.4 of the Conditions of Contract;
- (f) not give advice to the Employer, the Contractor, the Employer's Personnel or the Contractor's Personnel concerning the conduct of the Contract, other than in accordance with the annexed procedural rules;
- (g) not while a Member enter into discussions or make any agreement with the Employer, the Contractor or the Engineer regarding employment by any of them, whether as a consultant or otherwise, after ceasing to act under the Dispute Board Agreement;
- (h) ensure his/her availability for all site visits and hearings as are necessary;
- (i) become conversant with the Contract and with the progress of

the Works (and of any other parts of the project of which the Contract forms part) by studying all documents received which shall be maintained in a current working file;

- U) treat the details of the Contract and all the DB's activities and hearings as private and confidential, and not publish or disclose them without the prior written consent of the Employer, the Contractor and the Other Members (if any); and
- (k) be available to give advice and opinions, on any matter relevant to the Contract when requested by both the Employer and the Contractor, subject to the agreement of the Other Members (if any).

5. General Obligations of the Employer and the Contractor

The Employer, the Contractor, the Employer's Personnel and the Contractor's Personnel shall not request advice from or consultation with the Member regarding the Contract, otherwise than in the normal course of the DB's activities under the Contract and the Dispute Board Agreement. The Employer and the Contractor shall be responsible for compliance with this provision, by the Employer's Personnel and the Contractor's Personnel respectively.

The Employer and the Contractor undertake to each other and to the Member that the Member shall not, except as otherwise agreed in writing by the Employer, the Contractor, the Member and the Other Members (if any):

- (a) be appointed as an arbitrator in any arbitration under the Contract;
- (b) be called as a witness to give evidence concerning any dispute before arbitrator(s) appointed for any arbitration under the Contract; or
- (c) be liable for any claims for anything done or omitted in the discharge or purported discharge of the Member's functions, unless the act or omission is shown to have been in bad faith.

The Employer and the Contractor hereby jointly and severally indemnify and hold the Member harmless against and from claims from which he is relieved from liability under the preceding paragraph.

Whenever the Employer or the Contractor refers a dispute to the DB under Sub-Clause 20.4 of the Conditions of Contract, which will require the Member to make a site visit and attend a hearing, the Employer or the Contractor shall provide appropriate security for a sum equivalent to the reasonable expenses to be incurred by the Member. No account shall be taken of any other payments due or paid to the Member.

6. Payment

The Member shall be paid as follows, in the currency named in the

Dispute Board Agreement:

- (a) a retainer fee per calendar month, which shall be considered as payment in full for:
 - (i) being available on 28 days' notice for all site visits and hearings;
 - (ii) becoming and remaining conversant with all project developments and maintaining relevant files;
 - (iii) all office and overhead expenses including secretarial services, photocopying and office supplies incurred in connection with his duties; and
 - (iv) all services performed hereunder except those referred to in sub-paragraphs (b) and (c) of this Clause.

The retainer fee shall be paid with effect from the last day of the calendar month in which the Dispute Board Agreement becomes effective; until the last day of the calendar month in which the Taking-Over Certificate is issued for the whole of the Works.

With effect from the first day of the calendar month following the month in which the Taking-Over Certificate is issued for the whole of the Works, the retainer fee shall be reduced by one third. This reduced fee shall be paid until the first day of the calendar month in which the Member resigns or the Dispute Board Agreement is otherwise terminated.

- (b) a daily fee which shall be considered as payment in full for:
 - (i) each day or part of a day up to a maximum of two days' travel time in each direction for the journey between the Member's home and the Site, or another location of a meeting with the Other Members (if any);
 - (ii) each working day on Site visits, hearings or preparing decisions; and
 - (iii) each day spent reading submissions in preparation for a hearing.
 - (c) all reasonable expenses including necessary travel expenses (air fare in less than first class, hotel and subsistence and other direct travel expenses) incurred in connection with the Member's duties, as well as the cost of telephone calls, courier charges, faxes and telexes: a receipt shall be required for each item in excess of five percent of the daily fee referred to in sub-paragraph (b) of this Clause;
 - (d) any taxes properly levied in the Country on payments made to the Member (unless a national or permanent resident of the

Country) under this Clause 6.

The retainer and daily fees shall be as specified in the Dispute Board Agreement. Unless it specifies otherwise, these fees shall remain fixed for the first 24 calendar months, and shall thereafter be adjusted by agreement between the Employer, the Contractor and the Member, at each anniversary of the date on which the Dispute Board Agreement became effective.

If the parties fail to agree on the retainer fee or the daily fee, the appointing entity or official named in the Contract Data shall determine the amount of the fees to be used.

The Member shall submit invoices for payment of the monthly retainer and air fares quarterly in advance. Invoices for other expenses and for daily fees shall be submitted following the conclusion of a Site visit or hearing. All invoices shall be accompanied by a brief description of activities performed during the relevant period and shall be addressed to the Contractor.

The Contractor shall pay each of the Member's invoices in full within 56 calendar days after receiving each invoice and shall apply to the Employer (in the Statements under the Contract) for reimbursement of one-half of the amounts of these invoices. The Employer shall then pay the Contractor in accordance with the Contract.

If the Contractor fails to pay to the Member the amount to which he/she is entitled under the Dispute Board Agreement, the Employer shall pay the amount due to the Member and any other amount which may be required to maintain the operation of the DB; and without prejudice to the Employer's rights or remedies. In addition to all other rights arising from this default, the Employer shall be entitled to reimbursement of all sums paid in excess of one-half of these payments, plus all costs of recovering these sums and financing charges calculated at the rate specified in Sub-Clause

14.8 of the Conditions of Contract.

If the Member does not receive payment of the amount due within 70 days after submitting a valid invoice, the Member may (i) suspend his/her services (without notice) until the payment is received, and/or (ii) resign his/her appointment by giving notice under Clause 7.

7. Termination

At any time: (i) the Employer and the Contractor may jointly terminate the Dispute Board Agreement by giving 42 days' notice to the Member; or (ii) the Member may resign as provided for in Clause 2.

If the Member fails to comply with the Dispute Board Agreement, the Employer and the Contractor may, without prejudice to their other rights, terminate it by notice to the Member. The notice shall

take effect when received by the Member.

If the Employer or the Contractor fails to comply with the Dispute Board Agreement, the Member may, without prejudice to his other rights, terminate it by notice to the Employer and the Contractor. The notice shall take effect when received by them both.

Any such notice, resignation and termination shall be final and binding on the Employer, the Contractor and the Member. However, a notice by the Employer or the Contractor, but not by both, shall be of no effect.

8. Default of the Member

If the Member fails to comply with any of his obligations under Clause 4 (a) - (d) above, he shall not be entitled to any fees or expenses hereunder and shall, without prejudice to their other rights, reimburse each of the Employer and the Contractor for any fees and expenses received by the Member and the Other Members (if any), for proceedings or decisions (if any) of the DB which are rendered void or ineffective by the said failure to comply.

If the Member fails to comply with any of his obligations under Clause 4 (e) - (k) above, he shall not be entitled to any fees or expenses hereunder from the date and to the extent of the non compliance and shall, without prejudice to their other rights, reimburse each of the Employer and the Contractor for any fees and expenses already received by the Member, for proceedings or decisions (if any) of the DB which are rendered void or ineffective by the said failure to comply.

9. Disputes

Any dispute or claim arising out of or in connection with this Dispute Board Agreement, or the breach, termination or invalidity thereof, shall be finally settled by institutional arbitration. If no other arbitration institute is agreed, the arbitration shall be conducted under the Rules of Arbitration of the International Chamber of Commerce by one arbitrator appointed in accordance with these Rules of Arbitration.

Annexure IX-B**Conciliation Procedure****No Legal action till Dispute Settlement Procedure is exhausted.**

Any and all Disputes shall be settled in accordance with the provisions of Dispute Resolution Clause. No action at law concerning or arising out of any Dispute shall be commenced unless and until all applicable Dispute Resolution Procedures shall have been finally exhausted in relation to that Dispute or any Dispute out of which that Dispute shall have arisen with which it may be or may have been connected.

Notice of Dispute

For the purpose of this Sub-Clause, a Dispute shall be deemed to arise when one party serves on the other party a notice in writing (hereinafter called a "Notice of Dispute") stating the nature of the Dispute provided that no such notice shall be served later than 30 days after the date of completion of Contract.

Two Stages for Dispute Resolution

Disputes shall be settled through two stages:

- a) Conciliation procedures as established by "The Arbitration and Conciliation Act-1996" & amended by the Arbitration & Conciliation (Amendment) Act, 2015 and any statutory modification or re-enactment thereof and in accordance with this clause. In the event this procedure fails to resolve the Dispute then;
- b) Arbitration procedures undertaken as provided by "The Arbitration and Conciliation Act-1996" & amended by the Arbitration & Conciliation (Amendment) Act, 2015 and any statutory modification or re-enactment thereof and in accordance with this clause.

Conciliation

Within 60 days of receipt of Notice of Dispute, either party shall refer the matter in dispute to conciliation.

Conciliation proceedings shall be initiated within 30 days of one party inviting the other in writing to Conciliation. Conciliation shall commence when the other party accepts in writing this invitation. If the invitation is not accepted, then Conciliation shall not take place. If the party initiating conciliation does not receive a reply within 30 days from the date on which he sends the invitation, he may elect to treat this as a rejection of the invitation to conciliate and inform the other party accordingly.

The Conciliation shall be undertaken by one Conciliator selected from a panel of Conciliators maintained by the Employer. The Conciliator shall assist the parties to reach an amicable settlement in an independent and impartial manner.

Conciliation procedure

The Employer shall maintain a panel of Conciliators, who shall be from serving or retired Engineers of Government Departments, or of Public Sector Undertakings. Out of this panel, a list of three Conciliators shall be sent to the Contractor who shall choose one of them to act as Conciliator and conduct conciliation proceedings in accordance with "The Arbitration and Conciliation Act, 1996" of India & amended by the Arbitration & Conciliation (Amendment) Act, 2015 and any statutory modification or re-enactment thereof. There will be no objection if conciliator so nominated is a serving employee of Maha- Metro who would be Deputy HOD level officer and above. The Employer and the Contractor shall in good faith co-operate with the Conciliator and, in particular, shall endeavour to comply with requests by the Conciliator to submit written materials, provide evidence and attend meetings. Each party may, on his own initiative or at the invitation of the Conciliator, submit to the Conciliator suggestions for the settlement of the dispute. When it appears to the Conciliator that there exist elements of a settlement which may be acceptable to the parties, he shall formulate the terms of possible settlement and submit them to the parties for their observations. After receiving the observations of the parties, the Conciliator may reformulate the terms of a possible settlement in the light of such observations.

If the parties reach agreement on a settlement of the dispute, then may draw up and sign a written settlement agreement. If requested by the parties, the Conciliator may draw up, or assist the parties in drawing up, the settlement agreement. When the parties sign the settlement agreement, it shall be final and binding on the parties and persons claiming under them respectively. The Conciliator shall authenticate the settlement agreement and furnish a copy thereof to each of the parties. As far as possible, the conciliation proceedings should be completed within 60 days of the receipts of notice by the Conciliator.

The parties shall not initiate, during the conciliator proceedings, any arbitral or judicial proceedings in respect of a dispute that is the subject matter of the conciliation proceedings.

Termination of Conciliation proceedings

The conciliation proceedings shall be terminated:

- a) By the signing of the settlement agreement by the parties on the date of agreement;
or
- b) By written declaration of the conciliator, after consultation with the parties, to the effect that further efforts at conciliation are no longer justified, on the date of such declaration; or
- c) By a written declaration of the parties to the conciliator to the effect that the conciliation proceedings are terminated, on the date of declaration; or
- d) By a written declaration of a party to the other party and the conciliator, if appointed, to the effect that the conciliation proceedings are terminated, on the date of declaration.

Upon termination of the conciliation proceedings, the conciliator shall fix the costs of the conciliation and give written notice thereof to the parties. The costs shall be borne equally by the parties unless settlement agreement provides for a different apportionment. All other expenses incurred by a party shall be borne by that party.

Arbitration

If the efforts to resolve all or any of the disputes through conciliation fails, then such disputes or differences, whatsoever arising between the parties, arising out of or relating to construction/ manufacture, measuring operation or effect of the License Agreement or the breach thereof shall be referred to Arbitration in accordance with the following provisions:

- a) Only such dispute(s) or difference(s) in respect of which notice has been made but could not be settled through Conciliation, together with counter claims or set off, given by the employer, shall be referred to arbitration. Other matters shall not be included in the reference.
- b) The Arbitration proceedings shall be assumed to have commenced from the day, a written and valid demand for arbitration is received by Managing Director, Maharashtra Metro Rail Corporation Limited, Pune (MD/Maha Metro).
- c) The disputes so referred to arbitration shall be settled in accordance with the Indian Arbitration & Conciliation Act, 1996 & amended by the Arbitration & Conciliation (Amendment) Act, 2015 and any statutory modification or re-enactment thereof.

Further, it is agreed between the parties as under:

Number of Arbitrations: The Arbitral Tribunal shall consist of:

- i) Sole Arbitrator in cases where the total value of all claims in question added together does not exceed Rs. 3.00 crores;
- ii) 3(Three) Arbitrators in all other cases.

Procedure for Appointment of Arbitrators: The Arbitrators shall be appointed as per following procedure:

- i) In case of Sole Arbitrator: Within 60 days from the day when a written and valid demand for arbitration is received by MD/ Maha Metro, the Employer will forward a panel of 03 names to the Contractor. The Contractor shall have to choose one Arbitrator from the panel of three, to be appointed as Sole Arbitrator within 30 days of dispatch of the request by the Employer. In case the Contractor fails to choose one Arbitrator within 30 days of dispatch of panel of arbitrators by Maha Metro then MD/Maha Metro shall appoint anyone Arbitrator from the panel of 03 Arbitrator as Sole Arbitrator.
- ii) In case of 03 Arbitrators:
 - a) Within 60 days from the day when a written and valid demand for Arbitration is received by MD/Maha Metro, the Employer will forward a panel of 5 names

to the Contractor. The Contractor will then give his consent for any name out of the panel to be appointed as one of the Arbitrators within 30 days of dispatch of the request by the Employer.

- b) Employer will decide the second Arbitrator. MD/ Maha Metro shall appoint the two Arbitrators, including the name of one Arbitrator for whom consent was given by the Contractor, within 30 days from the receipt of the consent for one name of the Arbitrator from the Contractor. In case the Contractor fails to give his consent within 30 days of dispatch of the request of the Employer then MD/Maha Metro shall nominate both the Arbitrators from the panel.
- c) The third Arbitrator shall be chosen by the two Arbitrators so appointed by the parties out of the panel of 05 Arbitrators provided to Contractor or from the larger panel of Arbitrators to be provided to them by Employer at the request of two appointed Arbitrators (if so desired by them) and who shall act as Presiding Arbitrator. In case of failure of the two appointed Arbitrators to reach upon consensus within a period of 30 days from their appointment, then upon the request of either or both parties, the Presiding Arbitrator shall be appointed by the Managing Director/ Maha Metro, Pune.
- d) If one or more of the Arbitrators appointed as above refuses to act as Arbitrator, withdraws from his office as Arbitrator, or vacates his / their office/ offices or is / are unable or unwilling to perform his functions as Arbitrator for any reason whatsoever or dies or in the opinion of the MD/Maha Metro fails to act without undue delay, the MD/Maha Metro shall appoint new Arbitrator/ Arbitrators to act in his/ their place except in case of new Presiding Arbitrator who shall be chosen following the same procedure as mentioned in para (ii) (c) above. Such re-constituted Tribunal may, at its discretion, proceed with the reference from the stage at which it was left by the previous Arbitrator(s).
- e) The Employer at the time of offering the panel of Arbitrator (s) to be appointed as Arbitrator shall also supply the information with regard to the qualifications of the said Arbitrators nominated in the panel along with their professional experience, phone nos. and addresses to the Contractor.

Qualification and Experience of Arbitrators (to be appointed as per sub-clause above): The Arbitrators to be appointed shall have minimum qualification and experience as under:

Arbitrator shall be; a Working/ Retired Officer (not below E-7 grade in a PSU with which Maha -Metro has no business relationship) of any discipline of Engineering or Accounts/ Finance Department, having experience in Contract Management;

Or

A Retired Officer (retired not below the SAG level in Railways) of any Engineering Services of Indian Railways or Indian Railway Accounts Service, having experience in Contract Management; or a Retired Office who should have retired more than 3 years previously

from the date of appointment as Arbitrator (retired not below E-8 grade in Maha Metro or a PSU with which Maha Metro has a business relationship) of any Engineering discipline or Accounts/ Finance Department, having experience in Contract Management or Retired Judge of any High Court or Supreme Court of India or reputed Chartered Accountant & should be member of ICAI, New Delhi. No person other than the persons appointed as per above procedure and having above qualification and experience shall act as Arbitrator.

No new claim shall be added during proceedings by either party. However, a party may amend or supplement the original claim or defence thereof during the course of arbitration proceedings subject to acceptance by Tribunal having due regard to the delay in making it.

Neither party shall be limited in the proceedings before such arbitrator(s) to the evidence or arguments put before the Conciliator for the purpose of obtaining his decision. No decision given by the Conciliator in accordance with the foregoing provisions shall disqualify him from being called as a witness and giving evidence before the arbitrator(s) on any matter, whatsoever, relevant to dispute or difference referred to arbitrator/s. Neither party shall be limited in the proceedings before such arbitrators to the evidence.

It is agreed by both the Parties that in the cases where Arbitral Tribunal is consist of sole Arbitrator, their disputes shall be resolved by fast track procedure specified in sub-section (3) of 29B of the Arbitration and Conciliation (Amendment) Act, 2015 or as amended up to date.

If the Contractor (s) does/do not prefer his/their specific and final claims in writing, within a period of 90 days of receiving the intimation from the Employer/ Conciliator that the final demand is ready, he / they will be deemed to have waived his/their claim(s) and the Employer shall be discharged and released of all liabilities under the License Agreement in respect of these claims.

Arbitration proceedings shall be held at Pune, India and the language of the arbitration proceedings and that of all documents and communications between the parties shall be in English.

The Arbitral Tribunal should record day to day proceedings. The proceedings shall normally be conducted on the basis of documents and written statements. All Arbitration awards shall be in writing and shall state item wise, the sum and detailed reasons upon which it is based. A model time scheduled for conduct of Arbitration proceedings in a period of 180 days/365 days will be made available to Arbitral Tribunal for their guidance (180 days is for fast track Arbitration and 365 days for other Arbitrations). Both the parties should endeavor to adhere to time scheduled for early finalization of Award.

The Award of the sole Arbitrator or the award by majority of three Arbitrators as the case may be shall be binding on all parties. Any ruling on award shall be made by a majority of members of Tribunal. In the absence of such a majority, the views of the Presiding Arbitrator shall prevail.

A party may apply for correction of any computational errors, any typographical or clerical errors or any other error of similar nature occurring in the award of a tribunal and

interpretation of specific point of award to tribunal within 60 days of the receipt of award party may apply to tribunal within 60 days of receipt of award to make an additional award as to claims presented in the arbitral proceedings but omitted from the arbitral award.

Interest on Arbitration Award

Where the arbitral award is for the payment of money, No Interest shall be payable on whole or any part of the money for the period it is accrued, till the date on which the award is made.

Cost of Conciliation/ Arbitration

The fees and other charges of the Conciliator/ Arbitrators shall be as per the scales fixed by the Employer from time to time irrespective of the fact whether the Arbitrator(s) is / are appointed by the Employer or by the Court of law unless specifically directed by Hon'ble Court otherwise on the matter, and shall be shared equally by the Employer and the Contractor. However, the expenses incurred by each party in connection with the preparation, presentation will be borne by itself. The latest scale of fee & other charges shall be fixed by Maha -Metro.

Jurisdiction of Courts

Where recourse to a Court is to be made in respect of any matter, the Court at Pune shall have the exclusive jurisdiction to try all disputes between the parties.

MAHARASHTRA METRO RAIL CORPORATION LIMITED
(PUNE METRO RAIL PROJECT, PHASE-1 Extension)

BID DOCUMENTS

FOR

Name of work: Geotechnical Investigation of Underground Section of NS Corridor
Phase-I Extension Swargate-Katraj of Pune Metro Rail Project.

Tender No. P1Misc-34/2024

PART 3:
CONDITIONS OF CONTRACT AND CONTRACT FORMS
Section XI: SHE Manual



Maharashtra Metro Rail Corporation Limited

**Civil Court Metro Station, Nyayamurti Ranade Path, Pune-
411005, Maharashtra, INDIA**

E-mail: tenders.pmrp@mahametro.org

Website: www.punemetrorail.org

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PART I: SHE MANAGEMNT

1.0 GENERAL

1.1 Scope

- 1.1.1 This document defines the principal requirements of the Employer on Safety, Health, and Environment (SHE) associated with the Contractor / sub-contractor and any other agency to be practiced at construction worksites at all time.

1.2 Definition / languages

- 1.2.1 The Environmental Quality Management Manual (EQM) forms an essential part of the overall Environmental Protection System employed by Maha-Metro for the construction of Pune Metro Rail Project.

1.2.2 Definition & Abbreviations

- a) **“Environment”** means the total surroundings of an organism including water, air and land and other living creatures.
- b) **“Environmental Pollutant”** means any solid, liquid or gaseous substance present in such concentration as may be or tend to be injurious to environment.
- c) **“Environmental Pollution”** means the presence in the environment of any environmental pollutant.
- d) **“Nuisance”** is annoyance, which results from any construction activity that affects the material comfort and quality of life of the inhabitants of the area surrounding the construction site.
- e) **“Monitoring”** is the use of direct or indirect reading field instrumentation to provide information regarding the levels of pollutants released during construction.
- f) **“Construction Site”** is the contract limits for construction. It shall be all the area within the limits of the work as shown on the Plans. Construction Site shall also include staging, and debris disposal areas and transportation routes to and from these areas.
- g) **“Noise”** is any unwanted sound disturbance of the environment around the area of construction operations.
- h) **“Decibel”** is a measure on a logarithmic scale of the magnitude of a particular quantity (such as sound pressure, sound power) with respect to a standardized reference quantity.
- i) **“A - weighted Noise levels”** in Decibels (referenced to 20 micro-Pascal) as measured with A-weighting network of standard sound level meter, abbreviated dB (A).
- j) **“Energy Equivalent Level (L_{eq})”** is the level of a steady noise which has the same energy as the fluctuating noise level integrated over the period of measurement. L_{max} is the maximum Noise Level during the period of measurement. L_{10} and L_{90} are the percentile exceeding levels of sound which is exceeded 10% and 90% of the time of measurement.
- k) **“Waste”** is unwanted surplus substance arising from the application of all construction operations and any substance or article, which is required to be disposed.

- l) **“Suspended Particulate Matter”** is abbreviated as SPM and measured in $\mu\text{g}/\text{m}^3$.
- m) **“Environmental Quality Management Manual”** is abbreviated as **EQM**.
- n) **“Air Monitoring and Control Plan”** is abbreviated as **AMCP**.
- o) **“Noise Monitoring and Control Plan”** is abbreviated as **NMCP**.
- p) **“Ministry of Environment and Forests, Government of India”** is abbreviated as **MOEF**.
- q) **“Central Pollution Control Board”** is abbreviated as **CPCB**.
- r) Notwithstanding the definition of “Site” of Clause 1.1.6.7 of the GCC and in the context of the present specification the ESHS specifications, the word “Worksite(s)” means: The land where work will be carried out, or
 - i. the land necessary for the implantation of Worksite facilities (work camp, workshops, offices, storage areas, concrete production plants) and including special access roads, or
 - ii. quarries for aggregates, rock material and riprap, or
 - iii. borrow areas for sand and other selected material, or
 - iv. stockpiling areas for backfill material or other demolition rubble, or
 - v. any other location, specifically designated in the Contract as a Worksite

The term « Worksite(s) » encompasses any individual Worksite or all Worksites.

1.2.3 In this document:

- i. The use of **“shall”** indicates a mandatory requirement.
- ii. The use of **“should”** indicates a guideline that is strongly recommended.
- iii. The use of **“may”** indicates a guideline that is to be considered.
- iv. **“SHE”** means Safety, Health, and Environment.
- v. **“Employer”** means Maharashtra Metro Rail Corporation Limited or Maha-Metro
- vi. **“Chief Safety Officer”** means an officer nominated by Maha-Metro who is overall responsible for monitoring all SHE functions prescribed in this document.
- vii. **“BOCWA”** means Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Act, 1996
- viii. **“BOCWR”** means Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Central Rules, 1998
- ix. **“DG”** means Director General of Ministry of Labour, Govt. of India.
- x. **“BOCWWCA”** means Building and Other Construction Workers’ Welfare Cess Act, 1996
- xi. **“BOCWWCR”** means Building and Other Construction Workers Welfare Cess Rules 1998
- xii. **“MBOCWR”** means Maharashtra Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Rules, 2003
- xiii. **“Notifications”** (Central and state) – collection of cesses.

xiv. “**CIIBC**” means Chief Inspector of Inspection of Building and Other Constructions of Government of Maharashtra

xv. “**HIRA**” means Hazard Identification and Risk Assessment

1.3 Application of this document

1.3.1 This document applies to all aspects of the Contractor’s scope of work, including all aspects conducted by sub-contractors and all other agencies. There shall be no activity associated to the Contract, which is exempted from the purview of this document.

Pursuant to Clause 4.4 of the GCC, the Contractor is fully liable for all actions, non-compliance and negligence by subcontractors, their representatives, employees, and workers, to the same degree as it would be held liable for its own actions, non-compliance or negligence or that of its own representatives, employees or workers.

1.3.2 The present SHS specifications apply to the Contractor and unless explicitly agreed with the engineer, all subcontractors used for the execution of the works. Pursuant to Clause 4.4 of the GCC, the Contractor is fully liable for all actions, non-compliance and negligence by subcontractors, their representatives, employees and workers, to the same degree as it would be held liable for its own actions, non-compliance or negligence or that of its own representatives, employees or workers.

1.3.3 “The SHE specifications refer to:

- a) Protection of the natural environment (water, air, soil, vegetation, biological diversity) in areas adjacent to the Worksite, access roads, quarries, borrow areas, stockpiling of backfill material, labour camps or storage areas,
- b) Health and safety conditions to be maintained for the Contractor’s personnel and any other person present on the Worksites, or along access routes,
- c) Working practices and the protection of people and populations living near the Worksite, but exposed to the general disturbance caused by works

1.4 Purpose of this document

1.4.1 The objective of these guidelines is to ensure that adequate precautions are taken to avoid accidents, occupational illness, and harmful effects on the environment during construction.

1.4.2 This document:

- i. Describes the SHE interfaces between Employer and the Contractor
- ii. Details the processes by which the Contractor shall manage SHE issues while carrying out the work under the Contract.
- iii. Describes by reference, the practices and procedures as given in the Maha-Metro Project Safety, Health & Environment Manual for best SHE performance.

1.4.3 These requirements shall be read together with **Maha-Metro’s Project SHE Manual** as amended/revised time to time and all amendments/revisions during the execution of the work shall also be applicable, **ISO 45001-2018** Occupational Health and Safety Management System and **ISO 14001: 2015** Environmental Management Systems. Definition of key terms used in these requirements related to **ISO 45001-2018** and **ISO 14001:2015** standards are found in Maha-Metro’s Project SHE Manual.

2.0 ‘SHE’ TARGETS AND GOALS

2.1 The SHE targets, goals and aim for the Works are to achieve:

- (i) Zero total recordable injuries.
- (ii) Zero reportable environmental incidents
- (iii) All personnel inducted in accordance with the approved contractor's SHE plan.
- (iv) Total compliance of conducting inspections and audits as per approved SHE plan
- (v) 100% incident recording and reporting
- (vi) 100% adherence of usage of appropriate PPEs at work
- (vii) Executing construction work with least disturbance to the environment, adjoining road users and traffic.

3.0 COMPLIANCE

3.1 Memorandum of Understanding (MOU)

- 3.1.1 A Memorandum of Understanding placed at Appendix No. 1 shall be executed before the award of Contract by the Contractor with regard to various provisions on Safety, Health, and Environment to be practiced during the construction work.

3.2 Maha-Metro's SHE Policy and Management Systems

- 3.2.1 The construction works shall be undertaken in accordance with Maha-Metro's SHE Policy and Management Systems as amended from time to time provided in Project, SHE Manual.

3.3 Indian statutory requirements

3.3.1 Primary statutory regulations

- 3.3.1.1 Contractor shall develop thorough understanding about Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Act 1996, Central Rules 1998, The Building & Other Construction Workers Welfare Cess Act 1996 and Central Welfare Rules 1998, Maharashtra Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Rules, 2003, Building and Other Construction Workers Welfare Cess act 1996 and Central Rules 1998, Notification [Central & State] – Collection of Cess, not only to satisfy the Inspectors' perspective but the use of legislation as the strong tool for effective SHE management at construction worksites. Contractor is strongly advised to practice the principle of voluntary compliance.

- 3.3.1.2 In order to facilitate the Contractor for better understanding on the various provisions of the above Act and Rules, a tabulated information highlighting the Sections/Rules referring to the corresponding registration of Contractors, maintenance of registers and records, hours of work and wages, cess & welfare, medical facilities, and safety requirements are given in Appendix No. 2. It is an indicative one and not a limiting list.

- 3.3.2 In addition, the construction works shall be undertaken in accordance with all applicable legislation and Indian statutory requirements listed below but not limiting to:

(i)	Indian Electricity Act 2003 and Rules 1956 and its amendments
(ii)	National Building Code, 2005 and its amendments
(iii)	Factories Act, 1948, Maharashtra Government Factories Rules, 1963 and its amendments
(iv)	Motor Vehicles Act as amended in 1994 and The Central Motor Vehicles Rules, 1989
(v)	The Motor Transport Workers Act 1961 & Maharashtra Rules 1965 and its amendments
(vi)	Indian Road Congress Code IRC: SP: 55-2001 'Guidelines on Safety in Road Construction Zones'
(vii)	The Petroleum Act, 1934 and Rules 1976 and its amendments

- (viii) Gas Cylinder Rules, 2003 and its amendments
- (ix) Indian Explosives Act, 1884, along with the Explosives Substance Act 1908 and the Explosives Rules 1983
- (x) The (Indian) Boilers Act, 1923 and its amendments
- (xi) The Public Liability Insurance Act 1991 and Rules 1991 and its amendments
- (xii) Minimum Wages Act, 1948 and The Minimum Wages (Maharashtra Rules) 1961 and its amendments
- (xiii) The Contract Labour (Regulation & Abolition) Act 1970 & The Contract Labour (P&R) (Maharashtra) Rules, 1972 and its amendments
- (xiv) The Child Labour (Prohibition & regulation) Act 1986 and Maharashtra Rules 1994 and its amendments
- (xv) Environment Protection Act, 1986 and Rules 1986 and its amendments
- (xvi) Air (Prevention and control of Pollution) Act, 1981 and its amendments
- (xvii) Water (Prevention and Control of Pollution) Act, 1974 and its amendments
- (xviii) The Noise Pollution (Regulation & Control) Rules, 2000 and its amendments
- (xix) The Maharashtra (Urban Areas) Preservation of Trees Act, 1975 and its amendments
- (xx) Notification on Control of Noise from Diesel Generator (DG) sets, 2002 and its amendments
- (xxi) Recycled Plastic Usage Rules, 1998 and its amendments
- (xxii) Notification, Central Ground Water Board, Act January 1997 and its amendments
- (xxiii) The Manufacturing, Storage, and Import of Hazardous Chemical Rules, 1989 and its amendments
- (xxiv) Chemical Accidents (Emergency Planning, Preparedness and Response) Rules, 1996 and its amendments
- (xxv) The Hazardous Waste (Management, Handling & Trans-boundary Movement) Rules, 2007 and its amendments
- (xxvi) Relevant Rules / Guidelines regarding Preservation of Trees
- (xxvii) Batteries (Management and Handling) Rules and its amendments
- (xxviii) Fly ash utilization notification, Sept 1999 as amended in August 2003 and its amendments
- (xxix) Guidelines of Pune Urban Development Authority
- (xxx) Guidelines of Maharashtra Pollution Control Board

Further, Contractor shall apply and take various clearances from the concerned agencies as presented in Table below: These clearances are indicative and contractor is required to take any other clearance as required for its construction activities.

Table: Key Clearance Required

Permission/ Clearance/Permit	Relevant Acts/Rules	Concerned Agency
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Consent to Establish and Consent to Operate batching plants, casting yards, grouting plant, Hot Mix plant, if any	<ul style="list-style-type: none"> • The Water (Prevention and Control of Pollution) Act, 1974, amended 1988 and • The Air (Prevention and Control of Pollution) Act 1981, amended 1987 	Maharashtra Pollution Control Board (MPCB)
Authorization for generation, handling, storage and transportation hazardous waste	Hazardous and other Wastes (Management & Transboundary Movement) Rules, 2016 and its amendments	Maharashtra Pollution Control Board (MPCB)
Permission for extraction of ground water	Environment (Protection) Act, 1986/Central Ground Water Authority guidelines	Central Ground Water Authority
Pollution Under Control Certificate	Central Motor and Vehicle Act 1988 Vehicular Exhaust Norms, CPCB 2007	Department of Transport, Maharashtra
C&D Waste Management Plan	Construction & Demolition Waste Management Rules, 2016	Local Authority (Municipal Corporation)

3.3.3 Workman Compensation Act, 1923 along with allied Rules

The Contractor shall ensure that all his employees / workmen are covered under 'Workmen Compensation Act' and shall pay compensation to his workmen as and when the eventuality for the same arises.

3.3.4 Notwithstanding the above Act/Rules, there is nothing in those to exempt the Contractor from the purview of any other Act or Rule in Republic of India for the safety of men and materials.

3.3.5 If the requirements stated in this document are less stringent than or in conflict with the country's applicable legislation, the latter shall apply.

3.4 International Standards, Guidelines & ISO Certifications

3.4.1 The Contractor complies with norms, standards and discharge limit values recommended by the specialised international organisations affiliated to the United Nations, as described in relevant clause below.

3.4.2 The specialised international organisations affiliated to the United Nations referred in relevant clause include:

- World Bank, including the IFC and its Environmental, Health and Safety guidelines available from <http://www.ifc.org/ehsguidelines>

For matters not addressed in the IFC above document, the norms, standards, and discharge limit values of the following institutions shall apply:

- World Health Organization (WHO)
- International Labour Organization (ILO) (in particular in pursuance to Clauses 6.20, 6.21, 6.23 and 6.24 of the GCC)
- International Maritime Organization (IMO)

3.4.3 The works should be undertaken in accordance with the applicable international guidelines, standards and specifications on SHE and every contract shall aim to achieve ISO certifications listed below during the currency of the contract:

ISO 45001-2018 : Occupational Health and Safety Management System.
ISO 14001-2015 : Environmental Management Systems.

3.4.4 The process of certification shall start immediately after the award of the work and to be completed within 4 months' timeline. Towards this, the Contractor shall undertake the required steps including appointment of ISO consultant for obtaining the certification on Occupational Health and Safety Management System and Environment Management System. The certification shall be maintained throughout the currency of the contract.

3.1 In case of failure on the part of the Contractor, the Employer at the cost of the Contractor shall do the same.

3.5 Method Statement and Risk Assessment

3.5.1 Method Statement should be submitted by the Contractor. The Method Statement should include activity list, job step, equipment list, HIRA (Hazard Identification and Risk Assessment) etc.

3.5.2 Method statements shall be submitted to the Engineer **Twenty-One (21)** days prior to commencement of task.

3.5.3 Method statements shall incorporate control measures within the process methodology as identified within the risk assessment.

3.5.4 Risk Assessment should be work-site and Situation specific; a Generic format shall not be acceptable.

3.5.5 Risk Register & Hazard Log

(i) A proper record of monitoring and control of Risk Assessment and appropriate control measures shall be maintained at site, which shall be produced when asked for.

(ii) All applicable Method Statement and Standard Operating Procedure confirming to the work and site requirement is an essential control measure. The contractor shall ensure submission of Method Statement along with applicable requisite procedures as part of SHE Plan well in advance as mentioned herein before commencement of work. The Hazard Log with Risk Assessment shall identify future method statement and operational procedures pertaining to specific equipment, operations, and local environmental constraints. OHS&E Plans for execution of work, shall not be accepted without the completed Hazard Log and Risk Register.

4.0 CONTRACTOR ENVIRONMENT HEALTH AND SAFETY POLICY AND PLAN

4.1 The contractor as per rule 39 of the BOCW central rule shall formulate a Safety & Health policy in line with Maha-Metro's policies and display it at conspicuous places at work sites in Hindi and a local language understood by the majority of construction workers. The policy shall contain the following as minimum coverage:

- i. The intention and commitments of the establishment regarding health, safety and environment protection of the workers
- ii. Organisational arrangement made to carry out the policy specifying the responsibilities at different levels of hierarchy
- iii. Responsibilities of the contractors, sub-contractor, transporter or other agencies involved in the construction work
- iv. Techniques and methods for assessment of risk to safety and health and remedial measures
- v. Arrangement for training of works, supervisors or other persons engaged in the construction work
- vi. Other arrangement for making the policy more effective

4.2 Contractor shall revise the policy whenever any modification having implication on the safety and health of the workers is made or any new construction work, substances, or technique are introduced which have implication on health, safety of workers

4.3 Within Eight weeks from date of contract agreement, the Contractor shall submit a detailed and comprehensive Contract specific site Safety & Health Plan. The Safety & Health Plan shall include detailed policies, procedures and regulations which, when implemented, will ensure compliance of the contract provisions as well as statutory regulations. The Safety & Health Plan shall include the following but not be restricted to:

- I. A statement of the Contractor's policy, organization and arrangements for Safety & Health

- II. The name(s) and experience of person(s) within the Contractor's proposed management who shall be responsible for coordinating and monitoring the Contractor's Safety & Health performance;
 - III. The number of Safety & Health staff who shall be employed on the Works, their responsibilities, authority and line of communication with the proposed Contractor's agent;
 - IV. A statement of the Contractor's policy and procedures for identifying and estimating hazards, and the measures for addressing the same;
 - V. A list of Safety & Health hazards anticipated for this Contract and sufficient information to demonstrate the Contractor's proposals for achieving effective and efficient health and safety procedures;
 - VI. A description of the Safety & Health training courses and emergency drills which shall be provided by the Contractor, with an outline of the syllabus to be followed;
 - VII. Details of the safety equipment which shall be provided by the Contractor, including personal protective equipment;
 - VIII. A statement of the Contractor's policy and procedures for ensuring that Contractor's Equipment used on the Project Site are maintained in a safe condition and are operated in a safe manner;
 - IX. A statement of the Contractor's policy and procedures for ensuring that sub- contractors comply with the Contractor's safety plan;
 - X. A statement of the Contractor's disciplinary procedures with respect to Safety & Health related matters;
 - XI. A statement of the Contractor's procedure for reporting and investigating accidents, dangerous occurrences or occupational illnesses;
 - XII. Detailed Standard Operating Procedures (SOP)/Safe Work Procedures (SWP) for every activity likely to be undertaken as well as for use and maintenance of Plant, Machines & Equipment shall be made as part of Safety & Health Plan;
 - XIII. Contract shall formulate format like work permit etc. and made checklist for activity involving risk as well as for using plant & machines/equipment's.
- 4.4 The Contractor shall formulate an Environment Policy in line with Maha-Metro Environment and other policies and display it at conspicuous places at work sites in Hindi and a local language understood by the majority of construction workers.
- 4.5 Within Eight weeks of the notification of acceptance of the tender, contractor shall submit a detailed and comprehensive contract specific site Environmental Plan. The Environment Plan shall include detailed policies, procedures and regulations which, then implemented, will ensure compliance of the contract provisions.

4.6 The site Environment Plan shall include the following but not be restricted to:

- (i) Within the period defined above, the contractor shall submit a draft contract specific Site Environment Plan for the approval of the Maha-Metro/Engineer and a final version prior to the commencement of the works.
- (ii) The site Environment Plan shall provide details of the means (as elaborated in Point No. 3 below) by which the contractor (and all sub-contractors working for the contractor) will implement the recommended mitigation measures and achieve the environmental performance standards defined both in Indian environmental legislation and in this document.
- (iii) The contract specific Site Environmental Plan will contain details of manpower required for environment related works, description of all procedures developed to meet the requirement defined in various sections of this document, to control environment pollution and organizational hierarchy for the effective implementation of the plan. Elements of the plan must address the management of pollution, the monitoring programme and the reporting requirements.
- (iv) Outline of the Site Environmental Plan is given below:

S. No.	SITE ENVIRONMENTAL PLAN OUTLINE
1	GENERAL
(i)	The Environmental Policy of the Contractor is clearly defined in the Site Environmental Plan, which, inter-alia, commits the Contractor to follow national and state environmental legislation and regulations.
(ii)	The person responsible for day-to-day environmental matters is identified and vested with authority to execute the Site Environmental Plan. The Contractor has environmental lines of communication.
(iii)	Procedure is available for Contractor's system of enforcing good environmental practices of its Sub-contractor. By procedure it is implied that the Sub Contractor has been given clear written directions to comply with all requirements mentioned in this document and as applicable.
(iv)	The Site Environmental Plan contains procedures for screening material used in the contract, for their environmental friendliness. This implies that the procedure will comply with MC2 and MC 3 credits of IGBC Green Mass Rapid System (MRTS).
2	ENVIRONMENT FRIENDLY CONSTRUCTION PRACTICES
(i)	The Site Environmental Plan shall contain specific procedures for achieving environmental performance requirements as given in the Employer's requirements on Environment.
(ii)	Procedures for carrying out Aspect/Impact analysis of contractor's proposed works and their effect on environment. This will be cross reference with ISO 14001:2015 (EMS) procedures.

(iii)	Procedures for setting up Objectives and Targets commensurate with Employer's requirement on Environment and how these shall be met.
(iv)	Procedures for formulating Environmental Management Plans and Operational Control Procedures to meet contractual requirements.
(v)	Procedures for offering environmental training and methods for promoting environmental awareness amongst his employees.
(vi)	The Site Environmental Plan must contain details on Air Monitoring and Control Plan which details Mitigation measures / Corrective Action / Preventive Action and Monitoring Schedule.
(vii)	The Site Environmental Plan must contain details on Noise Monitoring and Control Plan which details Mitigation measures / Corrective Action / Preventive Action and Monitoring Schedule.
(viii)	The Site Environmental Plan must contain procedures on prevention and control of water pollution from sanitary surface runoff and process wastewater.
(ix)	The Site Environmental Plan must contain details on procedures for Storage, handling and disposal of waste including, Municipal, C&D, Plastic, Bio-Medical, Chemical and Hazardous wastes.
(x)	The Site Environmental Plan must contain procedures for reuse/recycle of waste, selling to authorized recyclers and records thereof.
(xi)	The Site Environmental Plan must contain procedures for preservation of landscape disturbed due to construction, housekeeping/Environmental Sanitation and traffic management as required under the contract.
(xii)	The Site Environmental Plan must contain procedures for dealing with unforeseen environmental situations under Environmental Emergency.
3	MONITORING, AUDITS AND RECORDS
(i)	The Site Environmental Plan shall contain the environmental monitoring requirements as per the contract requirements.
(ii)	The Contractor keeps records of environmental monitoring and the Site Environmental Plan must contain provision for reporting results of environmental monitoring in a manner as specified in this document.
(iii)	The Site Environmental Plan must contain procedures for carrying out inspections
(iv)	The Site Environmental Plan must contain provisions for submitting monthly Environmental Management reports.
(v)	The Site Environmental Plan must contain procedures for recording environmental complaints and response process.

- 4.7 The Contractor shall, from time to time and as necessary as required by the Employer to produce supplements to the Safety & Health and Environment Plans such that it is at all times a detailed, comprehensive and contemporaneous statement by the Contractor of his site safety industrial health, responsibilities, policies and procedures relating to work on Site. Any and all submissions

of supplements to the Safety & Health and Environment Plans shall be made to the Employer in accordance with the agreed procedures.

- 4.8 If at any time the Safety & Health and Environment plans is, in the Employer's opinion, insufficient or requires revision or modification to ensure the security of the Works and the safety, health and welfare of all workmen upon and visitors to the Site, the Employer may instruct the Contractor to revise the Safety & Health and Environment plans and the Contractor shall within 7 days submit the revised plan to the Employer for review.
- 4.9 Any omissions, inconsistencies and errors in the Safety & Health and Environment Plans or the Employer's acceptance or rejection of the Safety & Health and Environment Plans and/or supplements thereto shall be without prejudice to the Contractor's obligations with respect to site safety, industrial health and environment and shall not excuse any failure by the contractor to adopt proper and recognized safety and environmental practices throughout the execution of the Work.
- 4.10 The Contractor shall adhere to the Safety & Health and Environment Plans and shall ensure, as far as practically possible, that all sub-contractors of all tiers require that contracting parties each have a copy of the Site Safety & Health and Environment Plans and comply with its provisions.
- 4.11 The details of contents to be covered in the site Health & Safety Plan are given in Appendix No. 3.

5.0 DESIGNER'S ROLE

5.1 Designer's role in Safety, Health, and Environment

Designer's primary role includes to minimise the risk to Environment, health and safety of those who are going to construct, maintain, clean, repair, dismantle or demolish the structures and anyone else like adjoining road users/general public, who might be affected by the work.

5.2 General Philosophy

When considering health and safety in designer's work, they shall be expected to do what is reasonable at the time the design is prepared. It may be possible for hazards, which cannot be addressed at the feasibility stage to be looked at during detailed design. In deciding what is reasonably practicable, the risk to health and safety produced by a feature of the design has to be weighed against the cost of excluding the feature. The overall design process does not need to be dominated by a concern to avoid all risks during the construction phase and maintenance. However, a judgement has to be made by weighing up one consideration against another so the cost is counted not just in financial terms, but also those of fitness for purpose, aesthetics, build ability or environmental impact. By applying these principles, it may be possible to make decisions at the design stage, which will avoid or reduce risks during construction work. In many cases, the large number of design considerations will allow a number of equally valid design solutions. What is important is the approach to the solutions of design problems. This should involve a proper exercise of judgement, which takes account of health and safety issues.

5.3 Hierarchy of Risk Control

- 5.1 Designers shall need, so far as reasonably practicable, to avoid or reduce risks by applying a series of steps known as the hierarchy of risk control or principles of prevention and protection. The steps to be adopted shall include the following:
 - (i) consider if the hazard can be prevented from arising so that the risk can be avoided (e.g., alter the design to avoid the risk);

- (ii) if this cannot be achieved, the risk should be combated at source (e.g., ensure the design details of items to be lifted include attachment points for lifting);
- (iii) failing this, priority should be given to measures to control the risk that will protect all people;
- (iv) only as a last resort should measures to control risk by means of personal protection be assumed (e.g., use of safety harnesses).

5.4 Duty to provide health and safety risks in the drawing itself

- 5.1 In case of situations where the designers have carried out the design work and concluded that there are risks, which are not reasonably practicable to avoid, detailed information shall be given about the health and safety risks, which remain. This information needs to be included with the design to alert others to the risks, which they cannot reasonably be expected to know. This is essential for the parties who have to use the design information.
- 5.2 If the designers' basic design assumptions affect health or safety, or health and safety risks are not obvious from the standard design document, the designer shall provide additional information. The information shall include a broad indication of the assumptions about the precautions for dealing with the risks. The information will need to be conveyed in a clear manner; it shall be included on drawings, in written specifications or outline method statements. The level of detail to be recorded will be determined by the nature of the hazards involved and the associated level of risk.

5.5 Employer's approval

- 5.1 Every structure like scaffold, false work, launching girder, earth retaining structures etc. shall have its design calculations included in the method statements in addition to health and safety risks. Employers' designer or his approved proof check consultants as applicable as per the contract conditions shall approve all these designs.
- 5.6 Any non-standard structures like trestles made up of re-bars or structures which are very old, corroded, repaired for many times etc. for which no design calculations can be made accurately from any national standards, shall not be allowed to be used at sites even for short duration.
- 5.7 If any of the above-mentioned clauses are not adhered penalty shall be imposed depending upon the gravity of the unsafe act and or condition.

6.0 CONTRACTOR SHE ORGANISATION

6.1 Education and Experience

- 6.1.1 The Contractor shall appoint the required Environment, Health and Safety personnel as prescribed in General Instruction Maha-Metro/SHE/GI/001 (enclosed at the end) based upon the statutory requirement and establish the SHE organisation based upon the Contract value. The minimum educational qualification and the work experience are given in General Instruction Maha-Metro/SHE/GI/002.
- 6.1.2 The Contractor appoints a person responsible for relations with external stakeholders for the site: local communities, administrative authorities, and representatives of economic activities located within one-hour travel from the Worksite. This person will be based on the Worksite on a permanent basis. Administrations and local authorities will be informed of the existence of this person as of the start of works and will be provided with telephone contact details so as to be able to contact this person if a problem arises during the execution of works or concerning the behaviour of the Contractor's employees outside the Worksite.

- 6.1.3 In order to effectively interact on labour welfare matters with the Employer and the statutory authorities enforcing the labour welfare legislations every Contractor shall employ a duly qualified and experienced full time Labour Welfare Officer.

6.2 Conduct and competency

- 6.2.1 The conduct and functioning of the Contractor SHE personnel shall be monitored by the Employer. Any default or deficiency shall attract penalty as per details given under penalty Clause of this document.
- 6.2.2 The Contractor shall ensure that all personnel are competent to perform the job assigned to them. In the event that the Contractor is unable to demonstrate the competency of any person whose activities can directly impact on the Works' SHE performance, the Employer shall remove that person from the site without any procedural formalities.

6.2.3 Security Guards

Necessary security and checks as required shall be established by the contractor to prevent entry of any unauthorised and unprotected person to the construction site.

6.3 Approval from Employer

- 6.3.1 The name, address, educational qualification, work experience and health condition of each personnel deployed for SHE jobs shall be submitted to the Maha-Metro Environment, Health & Safety department in the format prescribed for the purpose for comments and approval well before the start of the work. Only on approval by the Employer these personnel are authorised to work. In case any of the SHE personnel leaves the Contractor the same shall be intimated to the Employer. The Contractor shall recruit new personnel and fill up the vacancy.

6.4 Responsibility of SHE personnel

- 6.4.1 For all works carried out by the Contractor and his sub-contractors, the responsibility of ensuring the required SHE manpower lies with the main Contractor only. The minimum required manpower indicated by the Employer includes the sub-contractors' work also. It shall be the responsibility of the main Contractor to provide required SHE manpower for all the works executed by all Contractors. Necessary conditions shall be included in all sub-contract documents executed by the main Contractor.

6.5 Employment status of SHE personnel

- 6.5.1 No Contractor shall engage SHE manpower from any outsourcing agencies in which case the effectiveness would be lost. All SHE manpower shall be on the payroll of the main Contractor only and not on the payroll of any subcontractor or outsourcing manpower agencies etc. This condition does not apply to positions like traffic marshals who are engaged almost on a daily requirement basis.

6.6 Reporting of SHE personnel

- 6.6.1 All SHE personnel are to report to the Chief SHE Manager who shall report directly to the Chief Project Manager. The Employer Environment, Health and Safety department shall monitor adherence to this procedure at all times. In case of non-adherence penalty shall be levied as indicated in the penalty clause.

6.7 Inadequate SHE personnel

- 6.7.1 Contractor shall appoint its Chief Safety Manager well before the start of activity for preparatory work like formulation, submission & approval of Safety, Health and Environment Plan, Method Statements, Environment, Health & Safety training facilities, identification & finalization of Agencies for External Safety & Health Audit, ISO certification, Safety & Health Training, Hospital Tie-up etc. The organisation shall grow as the work fronts are made available and adequate Safety & Health manpower shall be ensured as per the contract agreement and site availability. No demobilization of Environment, safety & Health Manpower shall take place without the approval of Maha Metro concerned department and shall be remained filled till final handover of the project to Maha Metro.
- 6.7.2 In case if the Contractor fail to provide the minimum required manpower as illustrated in General Instruction Maha-Metro/SHE/GI/001 or fail to fill up vacancies created within 14 days, the same shall be provided by the Employer at Contractor's cost. Any administrative expenses involved, providing the same like paper advertisement or manpower consultant charges, etc shall also be at the cost of Contractor.

6.8 Prohibition of performance of other duties

- 6.8.1 As per Schedule VIII of BOCWR, no SHE personnel shall be required or permitted to do any work which is unconnected to, inconsistent with or detrimental to the performance of the SHE duties for respective category mentioned in General Information Maha-Metro/SHE/GI/001.

6.9 Facilities to be provided to SHE personnel

- 6.9.1 As per Schedule VIII of BOCWR, the Contractor shall provide all SHE personnel with such facilities, equipment and information that are necessary to enable him to dispatch his duties effectively.
- 6.9.2 The minimum Employer's requirements of such facilities / equipments to be provided for SHE personnel are given in the General Instruction Maha-Metro/SHE/GI/003.

7.0 CONTRACTOR SHE COMMITTEE

- 7.1 All employees should be able to participate in the making and monitoring of arrangements for safety, industrial health and environment at their place of work. The establishment of site SHE committees in which employees and Contractor and sub-contractor management are represented can increase the involvement and commitment of employees. The Contractor shall ensure the formation and monitor the functioning of Contractor SHE committees.

7.2 Guidelines on Terms of Reference, Agenda, MoM of SHE Committee

- 7.2.1 The Guidelines on Terms of Reference, Agenda, Minutes of Meeting of SHE Committee shall be as follows:

- i. To establish company Safety & Health and Environment policies and practices
- ii. To monitor the adequacy of the contractor's site Safety & Health and Environment plans and ensure its implementation
- iii. To review compliance to Safety & Health and Environment legal requirements
- iv. To review Safety & Health and Environment training
- v. To review the contractor's monthly monitoring report consisting Air and Noise monitoring results
- vi. To review the contractor's monthly waste management records
- vii. Review the progress of ISO certification
- viii. To review the contractor's monthly Safety & Health and Environment reports.
- ix. To identify probable causes of accident and unsafe practices in building or other construction work and to suggest remedial measures.

- x. To stimulate interest of Employer and building workers in safety by organizing safety week, safety competition, talks and film-shows on safety, preparing posters or taking similar other measures as and when required or as necessary.
- xi. To go round the construction site with a view to check unsafe practices and detect unsafe conditions, condition of health and welfare amenities and to recommend remedial measures for their rectifications including medical first-aid, occupational health centers and welfare facilities like canteen, rest room, drinking water, toilet/urinals etc.
- xii. Committee team members should perform a site inspection before every committee meetings and to monitor Safety & Health and Environment inspection reports.
- xiii. To bring to the notice of the Employer the hazards associated with use, handling and maintenance of the equipment used during the course of building and other construction work
- xiv. To suggest measures for improving welfare amenities in the construction site and other miscellaneous aspect of safety, health and welfare in building or other construction work.
- xv. To look into the health hazards associated with handling different types of explosives, chemicals and other construction materials and to suggest remedial measures including personal protective equipment.
- xvi. To review the last, SHE committee meeting minutes and to take action against persons/sub-contractors for non-compliance if any.

7.3 Within 14 days of award of Contract, the SHE Committee shall be constituted and notification regarding the same shall be communicated to the members and employees as per the format provided in Form No. SF 001.

7.4 Site SHE Committee meeting shall be conducted at least once in a month with the minimum members listed below:

Chairman	Project Manager
Secretary	Chief SHE Manager (In-charge)
Members	Labour Welfare Officer Sr. Environment Manager iii) In charge of plant and machinery iv) In charge of site electrics v) In charge of stores. vi) Senior Managers/ Engineers heading different sub functions. vii) Sub – contractor's representative viii) Labour Contractor's representative ix) Workers' representative x) Co-contractor representative. xi) Other SHE staffs
Employer's Representatives	Maha-Metro Safety, Health and Environment in charge and other representatives

7.5 Construction SHE Committee meeting shall be conducted at least once in a week with the minimum members listed below:

Chairman	Project Manager
Secretary	Chief SHE Manager (In-charge)
Members	Sr. Environment Manager Labour Welfare Officer

	In charge of plant and machinery In-charge of site electricity Senior Managers / Engineers heading different sub functions Sub- Contractor's representative Labour contractor's representative Workers' representatives Other SHE Staffs
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7.6 Co-contractors' participation

- 7.6.1 In case of depot, station and other contiguous areas where more than one main contractor are working together, the Employer shall instruct the other contractors to join for the monthly SHE committee meeting of the main civil contractor, so as to discuss and decide about the common provision of security, lighting, toilet, drinking water etc. and sharing the maintenance cost of the same etc.
- 7.6.2 The general principle for sharing the cost shall be either based on the Contract value of works executed at the contiguous area or the daily average number of workmen employed by each contractor in the contiguous area.

7.7 Minimum time between two monthly SHE Committee meetings

- 7.7.1 A minimum period of 21 days shall be maintained between any two SHE monthly committee meetings.

7.8 Agenda

- 7.8.1 The Secretary shall circulate the agenda of the meeting at least seven working days in advance of the scheduled date of the meeting to all members.
- 7.8.2 The agenda should broadly cover the following:
- (i) Confirmation of minutes
 - (ii) Chairman's review/overview of site SHE performance / condition
 - (iii) Previous month SHE statistics
 - (iv) Incident and Accident Investigation / dangerous occurrence / near miss report
 - (v) Site SHE inspection
 - (vi) Sub-contractors' SHE issues
 - (vii) Safety presentation by Members
 - (viii) Report from Employer
 - (ix) Presentation on Environment aspects by Contractor's Environment representative which shall include the following:
 - (i) Legal compliance
 - (ii) Air and Noise monitoring results
 - (iii) Monthly waste management record
 - (iv) Progress of ISO certification

- (v) Progress of Green Building Certification
- (vi) Material consumption details (cement, aggregate, water, steel, sand etc)
- (vii) Fly ash consumption details
- (viii) Use of products made from recycled C&D waste products
- (ix) Public Complaints on Environment especially related to Noise, dust and vibration
- (x) Steps taken to improve Environment sanitation at site
- (xi) Steps taken to address Employers instructions on Environment
- (xii) Environmental issues related to site

7.9 Minutes of the meeting

- 7.9.1 The Minutes of the meeting shall be prepared as per the format provided at Form No. SF-002 and sent to all members within 2 working days preferably by mail followed by hardcopy. Safety Committee meeting minutes shall also be displayed in the notice board for wider publicity to all concerned.

7.10 Disciplinary Action

- 7.10.1 The chairman shall inform the members of any outstanding issues in the meeting and in case of repeated offence/ non-compliance by some members or other co/sub contractors and propose suitable disciplinary action including provisions of monetary penalty as per the relevant contract clauses, the Employer shall ensure that the same is implemented.

8.0 ID CARD AND FIRST DAY AT WORK, SHE ORIENTATION TRAINING

- 8.1 The Contractor shall ensure that all personnel working at the site receive an induction SHE training explaining the nature of the work, the hazards that may be encountered during the site work and the particular hazards attached to their own function within the operation. The training shall cover the contents as given in the General Instruction Maha-Metro/SHE/GI/004.

- 8.2 All personnel shall be issued a photo identity card of size 85mm x 55mm duly signed by the authorized representative of the Contractor before they are engaged for any work as per the format given in the General Instruction Maha-Metro/SHE/GI/005

- 8.2.1 Starting work sessions are organised for each employee and shall cover as a minimum:

- a) Rules of precedence
- b) Safety rules on Worksite
- c) Protection of areas adjacent to Worksite
- d) Risks relating to sexually transmitted diseases (Clause 6.7 of the GCC)
- e) Basic health: combating malaria (if prevalent) and waterborne diseases, improving hygiene
- f) Emergency response procedures or evacuation

- 8.2.2 Technical training:

- a) Training in the skills needed for tasks requiring a work permit
- b) Training in first aid and transporting the injured in order to achieve the targets defined in relevant clause on the number of first aid officers per shift.
- c) Ability to drive on rough ground.

- 8.3 Contractor shall also issue personnel SHE handbook in a language known to the workers, which provides information on SHE and emergency procedures that all personnel working on contract are required to know and the need to follow. Contractor shall ensure that this is distributed, and its content introduced to all personnel working at the site.

- 8.4 All personnel shall be issued with a temporary ID Cards on completion of Contractor's' induction. The temporary ID shall be signed by the Human Resource Manager of contractor or their appointed representative, with the validity period of one week, and after expiry of which the temporary ID Card shall be replaced with a permanent ID Card with photograph.
- 8.5 No Individuals shall be permitted to enter work site without a valid ID Card.
- 8.6 The contractor shall ensure proper accounting and records of issued and cancelled ID Cards. These ID cards shall be maintained strictly for any checks and inspections. On the expiry of the validity, new ID Card shall be issued. The expired/cancelled ID Cards shall be properly destroyed, and records shall be maintained by the contractor.

9.0 SHE TRAININGS

- 9.1 The behaviour of people at all levels of the Contractor is critical for SHE performance. To achieve a more participative approach and sharing of Safety functions by site teams, the contractor shall ensure that all site staff engaged for project execution is Safety trained.
- 9.2 The Contractor shall organise quality SHE training to engage Managers, supervisors and other personnel in behavioural change and improve safety performance and effective compliance of labour welfare provisions. The attendance for the same shall be maintained and produced on demand of Maha Metro.
- 9.3 The Contractor shall analyse the training requirements for all the employees and initiate a training program to demonstrate that all persons employed, including subcontractors, are suitably qualified, competent and fit. This will include:
- i. Detailed Job descriptions for all personnel, to include their specific Safety & Health and Environment responsibilities
 - i. Specification of qualifications, competency and training requirements for all personnel
 - ii. Assessment and recording of training needs for all personnel, including subcontractors' employees in the workforce, vendor representatives and site visitors
 - iii. A system for assessing new hirers e.g. previous training
 - iv. A means of confirming that the system is effective
 - v. A matrix and schedule of training requirements, covering general, task– specific and Safety & Health and Environment-related training, showing the training frequency and interval between refresher courses
 - vi. Timely, competent delivery of training courses
- 9.4 The Contractor shall arrange behavioural-based training programmes for all the executives to identify, recognise and eliminate unsafe act and unsafe conditions.
- 9.5 The minimum Employer's requirement of training needs for various categories of employees are given in General Instruction Maha-Metro/SHE/GI/006
- 9.6 The contents of SHE training to Managers/Supervisors as given in General Instruction Maha-Metro/SHE/GI/007 shall be conducted.
- 9.7 The refresher-training programme to all employees shall be conducted once in six months for a minimum duration of 24 (3X8 hrs) working hours.
- 9.8 Toolbox talk as given in the Employer's Project SHE Manual shall be conducted to all high-risk workmen every day.

9.9 On-the spot practical skill development training on height safety including scaffold safety, crane safety, welding safety, electrical safety, traffic safety for marshals shall also be conducted to all foremen/ workmen who were associated to the concerned jobs.

9.10 Every employee including workman shall take safety Oath daily without fail.

9.11 All vehicle drivers including heavy vehicle operators shall be trained on defensive driving at training institute recognized by Maharashtra State Road Transport Corporation / Government of Maharashtra, or any other driving institute registered under Motor Vehicles Act.

9.12 All the above listed training programmes except at Clause 9.11 shall be organised by the Contractor only after taking approval from the Maha Metro for the training faculty / organisation, content, and durations.

9.13 In case of failure on the part of the Contractor to provide all the above-mentioned training programs to all employees in time, the same shall be provided by the Employer through accredited agencies if required by formulating a common scheme to all contractors. Any administrative expenses and training fee towards the same shall be at the cost of the Contractor.

9.14 The Contractor detail in the training programme the actions and ESHS training for subcontractors and other members of the joint venture when applicable.

9.16 Records of all training conducted shall be maintained and made available for inspection and monitoring.

10.0 SHE INSPECTIONS

10.1 The Contractor shall evolve and administer a system of conducting SHE inspections and other risk management analysis on a periodical basis.

10.2 The purpose of SHE inspection is to identify any variation in construction activities and operations, machineries, plant and equipment and processes against the SHE Plan and its supplementary procedures and programs.

10.3 Following SHE inspections program shall be adopted:

- i. Planned General Inspection
- ii. Routine Inspection
- iii. Specific Inspection
- iv. Other Inspection

10.3.1 Planned General Inspection

10.3.1.1 Planned general inspection are performed at predetermined intervals and it usually involves the representation from both Contractor and the Employer.

10.3.1.2 Inspections that will be classified under this inspection program are:

- i. Monthly contractor and sub-contractors site Safety, Health and Environment Committee Inspection.

- ii. Weekly Safety, Haelth and Environment inspection by construction supervisors (Contractors and Sub-contractors)
- iii. Daily safety inspection by contractor site Safety, Haelth and Environment team.

10.3.2 Routine Inspection

10.3.2.1 Routine inspections are often referring to the inspection of work site, equipment and temporary structures performed by site and equipment operators and temporary structure erectors.

Inspections that will be classified under this inspection program are:

- i. Daily Inspection of plant and equipment by operator
- ii. Weekly Inspection of scaffold by scaffolding supervisor
- iii. Monthly Inspection of electrical hand tools by competent electrical supervisor
- iv. Quarterly Inspection of temporary electrical systems by competent electrical supervisor
- v. Wages, PF and ESI related records
- vi. Half-yearly inspection of lifting machinery, lifting appliances, equipment and gears by Govt. approved competent person.

10.3.2.2 The list mentioned above is not exhaustive. Contractor may add additional categories. Contractors' Site SHE Manager will ensure that a system of routine inspections are carried out periodically to all plants, equipment, powered tools, and any other temporary structures that will pose a hazard to operators and workmen.

10.3.3 Specific Inspection

10.3.3.1 Specific inspections are performed on activities without a predetermined date. Competent supervisors usually perform inspections for ensuring an activity whether it is executed in accordance to a general set of rules; method statement submitted or developed procedures. The following are examples that will be commonly performed as required on the construction site:

- i. Inspection performed before a heavy lifting operation.
- ii. Inspection performed before and after the entry of person into a confined space.
- iii. Inspection performed before and after a welding and gas cutting operation.
- iv. Inspection of formwork before concreting by formwork erector.

10.3.3.2 The list mentioned above is not exhaustive. The contractor shall ensure that a competent supervisor inspects all high-risk processes and activities.

10.3.4 Other Inspection

Other inspections include the following:

- i. Mandatory Inspections by Labour Department of Government.
- ii. Maha-Metro Health & Safety management team

10.4 Environmental Inspection

10.4.1 The contractor shall evolve and administer a system of conducting Environment inspections on a periodic basis. The purpose of Environment inspection is to identify any variation in construction activities and operations, machineries, plant and equipment and processes against the Site Environment Plan and its supplementary procedures and programs. Following Environment inspections program shall be adopted.

- i. Planned General Inspection
- ii. Other Inspection

10.4.2 Planned General Inspection Planned general inspections are performed at predetermined intervals and it usually involves the representatives from both Contractor and the Employer. Inspections that will be classified under this inspection program are:

- i. Monthly contractor and sub-contractors site SHE committee inspection
- ii. Weekly/ daily site inspection by Contractor's Environment team

10.4.3 Other Inspections: Other inspections include the following:

- I. Maha-Metro Environment Management team
- II. Inspections by Central Pollution Control Board, /Maharashtra Pollution Control Board, Ministry of Environment and Forest and Climate Change, National Green Tribunal etc.

10.4.4 The contractor shall prepare all required Environmental inspection checklists for all activities, operations and equipment. Checklists will be prepared based on the Indian standards, rules and regulations and Employer's requirements. The formats provided in the General Instruction Maha-Metro/SHE/GI/14 shall be referred.

10.4.5 All inspection records and reports will be properly kept and filed for audit purpose.

10.4.6 Whenever employer's representative conducts an inspection, contractor shall depute its representative to accompany him/her.

10.4.7 Conformity report shall be submitted by the contractor within 1 week of submission of inspection report to the employer.

10.4.8 In case of non-conformity of items, the Employer shall take necessary steps including stoppage of work and or imposing penalty for getting the item implemented.

10.4.9 Whenever employer's representative conducts an inspection, contractor shall depute its representative to accompany him/her.

11.0 SHE AUDITS

11.1 General

11.1.1 The purpose and scope of SHE audit is to assess potential risk, liabilities, and the degree of compliance of construction Safety, Health & Environmental plan and its supplementary procedures and programs against applicable and current SHE legalisation regulations and requirements of the Employer.

11.1.2 Project Manager holds the ultimate responsibility in ensuring implementation of SHE audit program during the construction work.

11.2 Monthly Audit Rating Score (MARS)

11.2.1 Monthly Audit Rating Score (MARS) will be performed once in a month. A team consisting of Project Manager and Employer representative based on the pre-designed score-rating format will conduct it. The details of the pre-designed monthly audit score rating formats are given in the Project SHE Manual.

11.2.2 This Monthly SHE Audit Rating Score (MARS) report will enable the Employer to evaluate the general compliance by the Contractor with the Conditions of Contract, the Employer's Project SHE Manual and the Contractor's site specific SHE Plan.

11.2.3 Monthly Audits will be conducted in accordance with Maha-Metro Guidelines. The Project Manager accompanied by the Employer's Representatives shall carry out the Audit. The Contractor's senior manager and SHE in-charge should also be invited to attend.

11.2.4 Timing

The Monthly Audit Rating Score (MARS) should be conducted at least 7 days prior to the scheduled date of Monthly SHE Committee meeting.

11.2.5 Evaluation

11.2.5.1 The numerical scoring has been weighed on a 1-10 scale. The audit team will use their observations noted in evaluating the points to be awarded against each of the elements of the audited section. Wherever some topics and sub-topics are not applicable the score rating need not be given. The overall audit ratings shall be achieved by:

$$\text{Overall Audit Rating} = \frac{\text{Actual Score Achieved}}{\text{Max Possible Score}} * 100$$

11.2.5.2 The criticality of the required actions for the respective sections of the Audit will be classified as:

SN	Score	Description	Action
1	< 60%	Immediate	Require Contractor to rectify within 24 hours
2	< 75%	Improvement Necessary	Contractor rectification within 7 days and confirmed in writing to Employer
3	< 90%	Improvement Desirable	Contractor rectification within one month and confirmed in writing to Employer

11.2.6 Report

A copy of each Audit Report will be sent to Employer and to all subcontractors, with whom it will then be discussed in detail at the Monthly health and safety Committee Meeting in order to ensure that any corrective actions are agreed upon.

11.3 Monthly Electrical Safety Audit

11.3.1 A team comprising of Contractor's senior SHE (Electrical) engineer and Employer's Representative shall conduct monthly electrical safety audit covering the following and submit the report to Employer:

- I. Electrical accidents investigation findings and remedy
- II. Adequacy of power generation and power requirements
- III. Power distribution and transmission system in place
- IV. Updated electrical single line diagram showing the current condition of power source and distribution including the IP44 DBs arrangement.
- V. Electrical protection devices – selection, installation and maintenance.
- VI. Earth or ground connection and earth pit maintenance details
- VII. Education and training of electrical personnel undertaken
- VIII. Routine electrical inspection details
- IX. Electrical maintenance system and register.

- X. Name plate details of major electrical equipment
- XI. Classified zones in the site, if any.

11.4 External Health and Safety Audit

11.4.1 External Health & Safety audits are to be conducted by external agencies having excellent competency in Health and Safety with the prior approval of the Employer.

11.4.2 Areas of competence of Audit team:

11.4.2.1 Practical understanding of BOCW Act and Rules, statutory requirements on health/medical and welfare of workmen, construction hazards and its prevention and control, traffic management, electrical safety, rigging, safety of construction equipment and construction environment management.

11.4.2.2 Audit shall be conducted as per the guidelines of ISO, ILO, and national standards. Audit report shall also be presented as per the above formats.

11.4.3 External Health and Safety audits shall be conducted on a quarterly basis throughout the currency of the Contract.

11.4.4 **Targets of Health & Safety Audit:** The contents and coverage of the external audit shall include the following items

11.4.4.1 Safety and Health management

- I. Safety & Health Organization
- II. Safety & Health policy and plan
- III. SHE Committee
- IV. Safety & Health orientation
- V. Safety & Health training
- VI. Safety & Health inspection
- VII. Safety & Health communication and motivation
- VIII. Safety & Health submittals to the employer
- IX. Safety & Health promotional and awareness program
- X. Incident reporting and investigation
- XI. Onsite/Offsite Emergency preparedness plan
- XII. Hazard identification and Risk Assessment

11.4.4.2 Technical

- I. Work Method Statements
- II. Operational Control Procedures / Safe operating procedures
- III. Working at Height
- IV. Hand tools and Power tools
- V. Electrical Safety
- VI. Fire prevention and control
- VII. Housekeeping

- VIII. Overhead protection
- IX. Slipping, Tripping, Cutting, Drowning and Falling hazard
- X. Lifting appliances and Gear, Tools and Tackles
- XI. Lifting and Launching operation
- XII. Construction plant and machinery
- XIII. Machine and area guarding
- XIV. Material handling
- XV. Hot Work
- XVI. Demolition
- XVII. Excavation and Tunneling
- XVIII. Work Permit System
- XIX. Traffic Management
- XX. Chemical Handling
- XXI. Dangerous and Harmful Environments
- XXII. Maintenance matrix of Mechanical and Electrical Machines / Equipment's
- XXIII. Working on or under water
- XXIV. Working near or under High Tension line
- XXV. Personal Protective Equipment's
- XXVI. Visitors at Site
- XXVII. Occupational Health and Welfare measures
- XXVIII. All statutory Forms, returns under various statutes

11.4.5 Audit Documents

11.4.5.1 Contractor shall make the below listed documents available for the review by the Audit team.

- i. Safety & Health policy
- ii. Safety Inspections
- iii. Safety & Health organization chart
- iv. Annual Safety & Health objectives / programs
- v. Accident / near miss statistics and analysis
- vi. Safety & Health Training program / records for all personnel
- vii. Operation and Maintenance manual of all equipments including Safe operating procedures for various activities, checklists etc.
- viii. Records of test and examination of all lifting appliances and gears, plant and machines
- ix. Medical records for all personnel
- x. Risk identification, assessment and control details
- xi. On-site emergency plans and records of Mock Drills
- xii. Records of work permits
- xiii. Record of monitoring of flammable and explosive substances at work place
- xiv. Maintenance and testing of firefighting equipment's
- xv. All statutory Registers, Forms, Returns under various statutes

- xvi. First Aid, Medical facilities and other welfare measures
- xvii. Material Safety Data Sheets
- xviii. Housekeeping inspection records
- xix. Minutes of SHE committee meetings
- xx. Maintenance procedure of Plant & machines
- xxi. Calibration & Testing records
- xxii. Records of previous Audits
- xxiii. Safety inspection records

11.4.6 Audit Preparation

- i. Audit team members are required to gather information by observations through interviews and by checks of hardware and documentation.
- ii. Audit team shall prepare checklist to cover all parts based on SHE legislations rules and regulations and Maha-Metro requirements.
- iii. Audit team members shall verify the facts and findings leading to the identified gaps and weakness.
- iv. Audit leader has overall responsibility for reaching a conclusion.

11.4.7 Reporting

11.4.7.1 Audit report shall be prepared and directly sent to the Employer within 7 days of conducting the audit with a copy to the contractor.

11.4.8 Report contents

- i. **Executing summary:** Based on the finalized checklists as written the findings to the Employer by the audit team members, the audit leader will compile a concise and accurate summary of observations and findings.
- ii. **Introduction:** This will contain basic information regarding the facilities or organization audited, the specific audit dates (inclusion of those for preparation and post-audit activities).
- iii. **Principal positive findings:** This will contain the summary of positive aspects as observed by the auditors. It will also contain highlights of those issue, which may warrant dissemination as best practice regarding methodology used or achievement.
- iv. **Audit Findings:** All audit findings as detailed in the audit checklists shall be grouped together as priority 1 and 2 as detailed below in a separate listing.
 - A. **Priority 1:** Actions to rectify gaps or weakness should generally be implemented within 2 – weeks, if risk potential is high or unacceptable.
 - B. **Priority 2:** Actions should be generally implemented or rectified with a maximum of 3 – 4 weeks, if not rectified would create a likelihood of minor injury or business loss.

11.4.9 Conformity Report & Action by Employer

11.4.9.1 The auditor shall inspect the site after 14 days of conducting initial audit for checking the adequacy of implementation of items maintained under priority 1 by the Contractor and shall submit a conformity / non-conformity report to the Employer with a copy to the contractor.

11.4.9.2 The auditor shall again inspect after 28 days of conducting initial audit for checking the adequacy of implementation of items mentioned under priority 2 by the Contractor and shall submit a conformity / non-conformity report to the Employer with a copy to the Contractor.

11.4.9.3 In case of non-conformity of items mentioned by auditor, the Employer shall take necessary steps including stoppage of work and or imposing any penalty for getting the item implemented.

11.4.9.4 Failure of Contractor to conduct External SHE Audit

11.4.9.5 If the Contractor fails to conduct the external, SHE audit in time, the Employer at the cost of Contractor shall get it done.

11.5 Environmental Audit

11.5.1 Contractor's Environmental Audit

11.5.1.1 The purpose and scope of environmental audit is to assess the degree of compliance of environmental plan and its supplementary procedures and programs against applicable and current environment legislations and requirements of the employer.

11.5.1.2 The employer may undertake regular audits at monthly/quarterly intervals of the contractor's onsite practices and procedures as a means of assessing the ongoing performance of the contractor.

11.5.1.3 Monthly/quarterly audits will be conducted in accordance with Maha-Metro SHE guidelines. The contractor's Project Manager, Chief SHE/Senior Environment Manager accompanied by Maha-Metro Environment department shall carry out the audit.

11.5.1.4 A checklist of environmental requirements will be prepared amended as necessary, throughout the construction phase to focus on areas of frequent non-compliance and to reflect the potential impacts associated with specific activities within the construction programme.

11.5.1.5 The criteria against which the review will be undertaken will be derived from (but not limited to):

- a) The appropriate approaches, procedures and commitments given by the contractor in the 'Site Environmental Management Plan'
- b) The clauses contained within the Employer's Requirement on Environment.
- c) The allocation of responsibility for fulfilling environmental requirement and the effective lines of communication with regard to environmental issues;
- d) Compliance with procedure established to enable and effective response to environmental incident, exceedance or non-compliance;
- e) The extent and accuracy of record-keeping related to environmental performance indicators;
- f) The effectiveness of ensuring high levels of awareness with regard to environmental requirements; and
- g) The effectiveness of environmental management activities including the speed and effectiveness of responses to complaints.

11.5.1.6 The criteria against which the audits will be undertaken shall be derived from the clauses within the Employer's Requirements contract-specific Site Environmental Plan and previous site inspection results.

11.5.1.7 A copy of each Audit Report will be sent to Maha-Metro Environment Department and to all subcontractors, with whom it will then be discussed in detail at the Monthly SHE Committee Meeting in order to ensure that any corrective actions are agreed upon.

11.5.2 External Environmental Audit

11.5.2.1 External Environmental audits are to be conducted by external agencies that are competent in formulating of Environmental Management measures for construction sector shall be engaged with prior approval from the Environment Department of Maha-Metro.

11.5.2.2 The audit team shall undertake regular audits at quarterly intervals, of the contractor's onsite practices and procedures as a means of assessing the on going performance of the contractor.

11.5.2.3 A checklist of Environmental requirements will be prepared and amended as necessary, throughout the construction phase to focus on areas of frequent non-compliance and to reflect the potential impacts associated with specific activities within the construction programme.

11.5.2.4 Areas of competence of Audit team/Auditors

- a) Environmental auditors shall have a regular and qualified degree in Environment and have excellent understanding of environmental issues, knowledge of environmental requirements at construction sites, and shall have demonstrable experience of at least five years in environment management issues.

11.5.2.5 Audit shall be conducted as per the requirements laid out in the conditions of contract on environment, as the case may be.

11.5.2.6 External Environmental audits shall be conducted on a quarterly basis throughout the currency of the contract.

11.5.2.7 Audit Documents:

11.5.2.7.1 Contractor shall make the below listed documents available for the review by the Audit team

- a) Environmental policy
- b) Site Environment Plan
- c) Environmental Rules and Regulation
- d) Environmental organization chart
- e) Annual Environmental objectives / programs
- f) Environment Training program / records for all personnel
- g) Environment monitoring and management reports
- h) Environmental submittals to the employer
- i) Environmental monitoring reports
- j) Environmental sanitation records
- k) Minutes of SHE committee meetings

11.5.2.8 Reporting:

11.5.2.8.1 Audit report shall be prepared and directly sent to the Employer within 7 days of conducting the audit with a copy to the contractor.

11.5.2.9 Report contents:

- i) **Executing summary** - the audit leader will compile a concise and accurate summary of observations and findings.
- ii) **Introduction** - this will contain basic information regarding the facilities or organization audited, the specific audit dates (inclusion of those for preparation and post-audit activities).
- iii) **Principal positive findings** - This will contain the summary of positive aspects as Observed by the auditors. It will also contain highlights of those issue, which may warrant dissemination as best practice regarding methodology used or Achievement.
- iv) **Audit Findings** - All audit findings as detailed in the audit checklists shall be grouped together as priority 1 and 2 as detailed below in a separate listing.
 - a. **Priority 1:** Actions to rectify gaps or weakness should generally be implemented within two-weeks time, if risk potential is high or unacceptable.
 - b. **Priority 2:** Actions should be generally implemented or rectified with a maximum of 3 – 4 weeks, if not rectified would create a likelihood of minor injury or business loss.

11.5.2.10 Conformity Report & Action by Employer

- 11.5.2.10.1 The auditor shall inspect the site after 14 days of conducting initial audit for checking the adequacy of implementation of items maintained under priority 1 by the contractor and shall submit a conformity/non-conformity report to the Employer with a copy to the contractor.
- 11.5.2.10.2 The auditor shall again inspect after 28 days of conducting initial audit for checking the adequacy of implementation of items mentioned under priority 2 by the contractor and shall submit a conformity/non-conformity report to the Employer with a copy to the contractor.
- 11.5.2.10.3 In case of non-conformity of items mentioned by auditor, the Employer shall take necessary steps including stoppage of work and or imposing any penalty for getting the item implemented.
- 11.5.2.10.4 Failure of contractor to conduct External Environmental Audit:- If the contractor fails to conduct the external Environment audit in time, the Employer at the cost of contractor shall get it done.

12.0 SHE COMMUNICATIONS

- 12.1The Contractor shall take every effort to communicate the Safety, Occupational health and Environment management measures through posters campaigns / billboards / banners / glow signs being displayed around the work site as part of the effort to rise safety awareness amongst to the work force. Posters should be in Hindi, English and other suitable language deemed appropriate. Posters / billboards / banners/ glow signs should be changed at least once in a month to maintain the impact.
- 12.2The Contractor shall also observe important days as listed in General Instruction Maha-Metro/SHE/GI/008 and printing and displaying safety signage and posters as listed in General Instruction Maha-Metro/SHE/GI/009
- 12.3The list indicated are the minimum requirements of the Employer and the Contractor is encouraged to further the SHE communication activities by formulating suitable reward schemes for safety performers and any other activities, which deem fit for the purpose.

13.0SHE SUBMITTALS TO THE EMPLOYER

13.1 The Contractor's SHE management should send the following reports to the Employer periodically:

- i) Daily Reporting of total number of workmen (as given in Clause 13.2)
- ii) Monthly Environment, Health and Safety Report (as given in Clause 13.3)
- iii) SHE Committee Meeting Minutes (as given in relevant clause)
- iv) SHE Inspection Reports
- v) External Environment Audit report
- vi) External Health & Safety Audit Report
- vii) Monthly Audit Rating Score (MARS) and Electrical Safety Audit Report etc.

13.2 Daily Reporting of total number of workmen

13.2.1 The Contractor shall report to the Employer the total number of workmen engaged by all including any subcontractor within 2 hours of starting of any shift in any day. This reporting shall be the primary duty of the Chief SHE Manager of the Contractor and reporting shall be through tele-fax / email. The onus of checking the receipt of the same by the Employer lies with the Contractor. If the information is not received or received more than 2 hrs after starting of the shift, penalty shall be levied as per relevant clause.

13.3 Monthly SHE Report

13.3.1 The Contractor shall prepare a monthly SHE reports consisting of the following and submit 3 copies within 7th of next month to the Employer as specified in the Project SHE Manual.

Monthly Health & Safety Report consisting of the followings:	
I.	Monthly Accident Statistics
II.	Monthly accident / incident details category wise.
III.	SHE committee details
IV.	Details of Safety & Health training conducted in the month
V.	Safety & Health Inspection and Compliance status
VI.	Brief details of Safety & Health internal audit like Electrical audit, MARS etc.
VII.	Safety & Health Communication activities undertaken in the month including the number of posters displayed and balance availability in stock.
VIII.	Toolbox talks details
IX.	PPE details: Quantity purchased, issued to the workmen and stock available.
X.	Details on lighting poles, welding and cutting equipment's and inspection of Ladders, Hoists, Lifting appliances, tools & tackles etc.
XI.	Monthly site illumination monitoring results including emergency power back up
XII.	Housekeeping
XIII.	Barricade lighting and maintenance details
XIV.	No of critical excavations
XV.	Health & Welfare activities, Statutory Registers and returns
XVI.	Safety walk conducted by Contractors' Project Manager in the month
XVII.	Safety & Health Activities Planned for next month

XVIII.	Maintenance schedule of plant and machines
Monthly Environmental Report shall include (but not limited to) the followings:	
I.	Executive summary
II.	Brief mention of construction activities
III.	Monitoring report of Air, noise, water, soil and DG set stack quality
IV.	Waste Management Record i.e. quantity generated and disposed of all types of wastes for the month and cumulative quantities
V.	Details of C&D waste produce procured and consumed
VI.	Details of Water Consumption for the month and cumulative consumption
VII.	Details of fly ash consumption for the month and cumulative consumption
VIII.	Raw materials consumption for the month and cumulative consumption
IX.	Weekly Environment Inspection checklist
X.	Details of environmental training imparted
XI.	Point wise compliance of Maha-Metro comments made on previous Monthly Environmental Report

14.0 ACCIDENT REPORTING AND INVESTIGATION

14.1 Reporting to Employer

14.1.1 All accidents, “near miss” and dangerous occurrences shall immediately be informed verbally to the Employer. This will enable the Employer to reach to the scene of accident / dangerous occurrences to monitor/assist any rescue work and/or start conducting the investigation process so that the evidences are not lost.

14.1.2 Reports of all accidents (fatal / injury) and dangerous occurrences shall also be sent within 24 hours as per approved format.

14.1.3 No accident / dangerous occurrences are exempted from reporting to the Employer.

14.1.4 Any wilful delay in verbal and written reporting to the Employer shall be penalised as per relevant clause.

14.1.5 Near Miss

An incident or a situation with clear potential for an undesirable outcome to occur, even though no actual negative consequences happened. In other words, it is an event with potential to cause injury, property damage, environmental release, or an adverse community reaction. Generally, the following events are some examples of near miss when:

- i) A person trips over an object and falls to the ground but did not get injured
- ii) A person has to dive or jump out of the way to avoid a collision with a motorized vehicle, a moving object like a suspended part on a conveyor or from an uncontrolled suspended load;
- iii) A person has to jump from a falling ladder;
- iv) An object with significant mass falls from a distance of sufficient height that would cause injury to a person if they were struck;
- v) A machine part becomes a projectile;
- vi) A person works on a piece of equipment that he/EHS believes is de-energized and that equipment starts up putting that person in jeopardy;

- vii) A low-speed collision occurs and an occupant of that vehicle is not wearing a seat belt and is not injured.
- viii) Stored energy unexpectedly releases which could cause injury if a person were struck or contacted, e.g., a high-tension spring (like your garage door spring) breaks or a pocket of steam releases;
- ix) Any steps of the vessel entry procedure are omitted in a vessel entry;
- x) Any emergency equipment (fire extinguisher, Scott Air Pack, Oxygen sensor, eye wash, etc) fails to operate properly when called on in an emergency.

If Protective Equipment is called for and worn and it prevents an injury, then in this case it would not be a near miss. As an example, a mechanic is wearing a hard hat in a barricaded area where hard hats must be worn and a 100gram bolt falls from a height of 2 meters and strikes his hard hat and no injury occurs. That would not be a near miss. But if he were not wearing a hardhat and the bolt falls a meter away, then it would be a near miss.

14.1.6 Each non-conformity will be documented by a digital photograph with captions to provide a visual illustration, explicitly indicating the location, date of inspection and the non-conformity in question.

14.2 Reporting to Government organisations

14.2.1 In addition to the above verbal and written reporting to the Employer, as per Rule 210 of BOCWR, notice of any accident to a worker at the building or construction site that:

- i) causes loss of life; or
- ii) disables a worker from working for a period of 48 hours or more immediately following the accident;
- iii) shall forthwith be sent by telegram, telephone, fax, or similar other means including special messenger within four hours in case of fatal accidents and 72 hours in case of other accidents, to:
 - a. the Regional Labour Commissioner, wherein the Contractor has registered the firm/work
 - b. the board with which the worker involved was registered as a beneficiary;
 - c. Director General and
 - d. the next of kin or other relative of the worker involved in the accident;

14.2.2 Further, notice of accident shall be sent in respect of an accident which:

- i) causes loss of life; or
- ii) disables the injured worker from work for more than 10 days to
 - a. the officer-in-charge of the nearest police station;
 - b. the District Magistrate or, if the District Magistrate by order so desires, to
 - c. the Sub-Divisional Magistrate

14.2.3 In case of an accident-causing minor injury, first-aid shall be administered and the injured worker shall be immediately transferred to a hospital or other place for medical treatment.

14.2.4 Where any accident-causing disablement that subsequently results in death, notice in writing of such death, shall be sent to the authorities mentioned in Clause 14.2.1 and 14.2.2 above within 72 hours of such death.

14.2.5 Reporting of dangerous occurrences

14.2.5.1 The following classes of dangerous occurrences shall be reported to the Inspector having jurisdiction, whether or not any disablement or death caused to the worker, namely:

- a. collapse or failure of lifting appliances, or hoist, or conveyors, or similar equipment for handling of building or construction material or breakage or failure of rope, chain, or loose gears; or overturning of cranes used in construction work;
- b. falling of objects from height;
- c. collapse or subsidence of soil, tunnel, pipe lines, any wall, floor, gallery, roof or any other part of any structure, launching girder, platform, staging, scaffolding or means of access including formwork;
- d. explosion of receiver or vessel used for storage of pressure greater than atmospheric pressure, of any gas or gases or any liquid or solid used as building material;
- e. fire and explosion causing damage to any place on construction site where building workers are employed;
- f. spillage or leakage of any hazardous substance and damage to their container;
- g. collapse, capsizing, toppling or collision of transport equipment;
- h. leakage or release of harmful toxic gases at the construction site;

14.2.6 In case of failure of launching girder, lifting appliance, loose gear, hoist or building and other construction work, machinery and transport equipment at a construction site, such appliances, gear, hoist, machinery or equipment and the site of such occurrence shall, as far as practicable, be kept undisturbed until inspected by the Authorities;

14.2.7 Every notice given for fatal accidents or dangerous occurrences shall be followed by a written report to the concerned Authorities under Section 39 of BOCWA and the Director General in the specified Form XIV of BOCWR.

14.3 Accident investigation

14.3.1 General

14.3.1.1 Investigations should be conducted in an open and positive atmosphere that encourages the witnesses to talk freely. The primary objective is to ascertain the facts with a view to prevent future and possibly more serious occurrences.

14.3.1.2 Accidents and Dangerous Occurrences which result in death, serious injury or serious damage must be investigated by the Contractor immediately to find out the cause of the accident/occurrence so that measures can be formulated to prevent any recurrence.

14.3.1.3 Near misses and minor accidents should also be investigated by the Contractor as soon as possible as they are signals that there are inadequacies in the safety management system.

14.3.1.4 Procedure of incident investigation

14.3.1.4.1 It is important after any accident or dangerous occurrence that information relating to the incident is gathered in an organised way. The following steps shall be followed:

- a. take photographs and make sketches
- b. examine involved equipment, workplace or material and the environmental conditions
- c. interview the injured, eye-witnesses and other involved parties
- d. consult expert opinion where necessary
- e. identify the specific Contractor or sub-contractor involved.

f.

14.3.1.5 Having gathered information, it is then necessary to make an analysis of incident

- a. establish the chain of events leading to the accident or incident
- b. find out at what stage the accident took place
- c. consider all possible causes and the interaction of different factors that led up to the accident, and identify the most probable cause. The cause of an accident should never be classified as carelessness. The specific act or omission that caused the accident must be identified.

14.3.1.6 The next stage is to proceed with the follow-up action

- a. report on the findings and conclusions
- b. formulate preventive measures to avoid recurrence
- c. publicise the findings and the remedial actions taken

14.4 Employers' independent incident investigation

14.4.1 In case of fatal / dangerous occurrence the Employer shall also conduct independent investigation. Contractor and his staff shall extend necessary co-operation and testify about the accident.

14.4.2 The Contractor shall take every effort to preserve the scene of accident till the Employer completes the investigation.

14.4.3 All persons summoned by the Employer in connection to witness recording shall obey the instructions without delay. Any wilful suppression of information by any person shall be removed from the site immediately and / or punishable as per relevant penalty clause.

15.0 EMERGENCY PREPAREDNESS PLAN

15.1 The Contractor shall prepare as required under Rule 36 of BOCWR, an Emergency Response Plan for all work sites as a part of the Contractor SHE Plan. The plan shall integrate the emergency response plans of the Contractor and all other subcontractors. The Emergency Response Plan shall detail the Contractor's procedures, including detailed communications arrangements, for dealing with all emergencies that could affect the Site. This include where applicable, injury, sickness, evacuation, fire, chemical spillage, severe weather and rescue.

15.2 The Contractor shall ensure that an Emergency Response Plan is prepared to deal with emergencies arising out of:

- i) Fire and explosion
- ii) Collapse of lifting appliances and transport equipment
- iii) Collapse of building, sheds, or structure etc.
- iv) Gas leakage or spillage of dangerous goods or chemicals
- v) Bomb threatening, Criminal or Terrorist attack
- vi) Drowning of workers
- vii) Landslides getting workers buried floods, Earthquake, storms, and other natural calamities.

15.3 Arrangements shall be made for emergency medical treatment and evacuation of the victim in the event of an accident or dangerous incident occurring, the chain of command and the responsible persons of the Contractor with their telephone numbers and addresses for quick communication shall be adequately publicized and conspicuously displayed in the workplace.

- 15.4 Contractors shall require to tie-up with the hospitals and fire stations located in the neighbourhood for attending to the casualties promptly and emergency vehicle kept on standby duty during the working hours for the purpose.
- 15.5 Contractor shall conduct an onsite emergency mock drill once in every month for all his workers and his subcontractor's workers.
- 15.6 It shall be the responsibility of the Contractor to keep the Local Law & Order Authorities informed and seek urgent help, as the case may be, so as to mitigate the consequences of an emergency. Prompt communication to Maha-Metro, telephonically initially and followed by a written report, shall be made by the Contractor.
- 15.7 Necessary interfacing and coordination with other working contractors shall be insured by the contractors through the Nodal Officer in charge of the site.

16.0 EXPERTS / AGENCIES FOR SHE SERVICES

- I. Contractors may utilise the services of experts/agencies empanelled under Rule 250 of BOCWR for the purpose of training, internal audit and any other SHE services with prior approval of the Employer.
- II. As an aide to contractors, a list of experts/agencies and the offered service are given in General Instruction Maha-Metro/SHE/GI/010 for ready reference. In addition to it if the Contractor would like to use any expert/agencies' services for any SHE activities the same can also be allowed provided that they are competent and meet to the general requirements of Employer. In every case prior approval of the Employer is mandatory.
 - a.

PART II: SAFETY

17.0 HOUSEKEEPING

- 17.1 Housekeeping is the act of keeping the working environment cleared of all unnecessary waste, thereby providing a first-line of defence against accidents and injuries.
- 17.2 Contractor shall understand and accept that improper housekeeping is the primary hazard in any construction site and ensure that a high degree of housekeeping is always maintained. Indeed "Cleanliness is indeed next to Godliness"
- 17.3 Housekeeping is the responsibility of all site personnel, and line management commitment shall be demonstrated by the continued efforts of supervising staff towards this activity.
- 17.4 General Housekeeping shall be carried out by the Contractor and ensured at all times at Work Site, Construction Depot, Batching Plant, Labour Camp, Stores, Offices, and toilets / urinals. Towards this the Contractor shall constitute a special group of housekeeping personnel as per General Instruction Maha-Metro/SHE/GI/001. This group shall ensure daily cleaning at work sites and surrounding areas and maintain a register as per the approved format by the Employer.
- 17.5 Adequate time shall be assigned to ensure that good housekeeping is maintained. Team of housekeeping squad shall carry out this.
- 17.6 The Contractor shall be responsible to provide segregated containers for disposal of debris at required places and regular cleaning of the same.
- 17.7 Full height fence, barriers, barricades etc. shall be erected around the site in order to prevent the surrounding area from excavated soil, rubbish etc, which may cause inconvenience to and endanger the public. The barricade especially those exposed to public shall be aesthetically maintained by regular cleaning and painting as directed by the Employer. These shall be maintained in one line and level.
- 17.8 The structure dimension of the barricade, material and composition, its colour scheme, Maha-Metro logo and other details shall be in accordance with specifications laid down in tender document.
- 17.9 All stairways, passageways and gangways shall be maintained without any blockages or obstructions. All emergency exits passageways, exits fire doors, break-glass alarm points, fire fighting equipment, first aid stations, and other emergency stations shall be kept clean, unobstructed and in good working order.
- 17.10 Lumber with protruding nails shall be bent or removed and properly stacked.
- 17.11 All surplus earth and debris are removed/disposed off from the working areas to officially designated dumpsites. Trucks carrying sand, earth and any pulverized materials etc. in order to avoid dust or odour impact shall be covered while moving. The tyres of the trucks leaving the site shall be cleaned with water, wherever the possibility of spillage on carriageways meant for regular road traffic exists.
- 17.12 No parking of trucks/trolleys, cranes and trailers etc. shall be allowed on roads, which may obstruct the traffic movement. All truck drivers should generally be accompanied by a Cleaner.

- 17.13 Roads shall be kept clear and materials like: pipes, steel, sand boulders, concrete, chips, and brick etc. shall not be allowed on the roads to obstruct free movement of road traffic.
- 17.14 Water logging or bentonite spillage on roads shall not be allowed. If bentonite spillage is observed on road endangering the safety of road users, the Contractor shall be penalised as per relevant clause.
- 17.15 Proper and safe stacking of material are of paramount importance at yards, stores, and such locations where material would be unloaded for future use. The storage area shall be well laid out with easy access and material stored / stacked in an orderly and safe manner.
- 17.16 Flammable chemicals / compressed gas cylinders shall be safely stored.
- 17.17 Unused/surplus cables, steel items and steel scrap lying scattered at different places within the working areas shall be removed to identified locations(s).
- 17.18 All wooden scrap, empty wooden cable drums and other combustible packing materials, shall be removed from work place to identified location(s).
- 17.19 Empty cement bags and other packaging material shall be properly stacked and removed.
- 17.20 The Contractor shall ensure that all his sub-contractors maintain the site reasonably clean through provisions related to house keeping.
- 17.21 Cover many general issues around safety management, but not establishing rules of procedure.
- 17.21.1 Rules of procedure are established by the Contractor for Worksites, addressing the following: safety rules, zero tolerance for substance abuse (refer relevant clause), environmental sensitivity of areas around the Worksites, the dangers of STDs and HIV/AIDS and respect for the beliefs and customs of the populations and community relations generally.
- 17.21.2 The rules are clearly displayed at the different Worksites and posted in the Contractor's vehicles and machinery driving cabs.
- 17.21.3 The rules confirm the Contractor's commitment to implementing the ESHS provisions provided for in the Contract.
- 17.21.4 New employees and existing members of personnel are made aware and acknowledge their understanding of the rules of procedure and the associated provisions. Rules of procedure document are initialed by all employees prior to the start of works.
- 17.21.5 Pursuant to Clauses 6.9 and 6.11 of the GCC, the rules of procedure include a list of acts considered as serious misconduct and which result in dismissal by the Contractor should an employee repeatedly commit the offence despite awareness of the rules of procedure, and this is without prejudice to any legal action by the public authority for non-compliance with applicable regulations:
- I. Drunkenness during working hours, leading to risks for the safety of local inhabitants,
 - II. customers, users and personnel,
 - III. Punishable statements or attitudes, and sexual harassment in particular,
 - IV. Violent behavior,
 - V. Intentional damage to the assets and interests of others, or the environment,

- VI. Repeated negligence or imprudence leading to damage or prejudice to the environment the population or properties, particularly breaching provisions intended to prevent the spreading of STD and AIDS,
- VII. Drug use,
- VIII. Possession and/or consumption of meat or any other part of an endangered animal or
- IX. plant as defined in the Washington convention (CITES) and national regulations

17.21.6 Serious misconduct, such as organization of sex trade (pimping), committing pedophilia, physical aggression, drug trafficking, deliberate and severe pollution, trading and/or trafficking in all or part of protected species, will lead to immediate dismissal as of the first report of misconduct is detected, in application of the rules of procedure and labour laws.

17.21.7 The employer establishes a record for each case of serious misconduct, and a copy will be provided to the employee in question, indicating all action taken to terminate the misconduct by the employee in question and to bring the attention of other members of personnel to the type of incident detected. This record will be provided to the Engineer as an attachment to the monthly report

17.22 Joint Interphase safety walks

17.22.1 It is the responsibility of the civil contractor CSM to arrange weekly or as and when required joint interphase safety walks with all the concerned civil and system contractors CSM and site team to highlight various SHE related issues.

17.23 OHE Charging & Train movements during construction phase

17.23.1 One of the high risk activity during the construction stage is overhead OHE charging and train movement for signal and trains testing. All the concerned contractors Project manager and CSM have to give necessary safety clearance for the same in writing. There shall be no obstruction and/or infringements for the same.

18.0 WORKING AT HEIGHT

18.1 Definitions

18.1.1 “**access**” and “**egress**” include ascent and descent.

18.1.2 “**Fragile surface**” means a surface, which would fail if any reasonably foreseeable loading were to be applied to it.

18.1.3 “**line**” includes rope, chain, or webbing

18.1.4 “**Personal fall protection**” means:

- I. a fall prevention, work restraint, work positioning, fall arrest or rescue system, other than a system in which the only safeguards are collective safeguards; or
- II. rope access and positioning techniques;

18.1.5 “**Work at height**” means:

- I. work in any place, including a place at or below ground level;

- II. obtaining access to or egress from such place while at work, except by a staircase in a permanent workplace, where, if protective measures were not taken, a person could fall a distance liable to cause personal injury;

18.1.6 **"Work equipment"** means any machinery, appliance, apparatus, tool or installation for use at work (whether exclusively or not) and includes:

- I. a guard-rail, toe-board, barrier, or similar collective means of protection
- II. a working platform
- III. a net, airbag, or other collective safe guard for arresting falls
- IV. personal fall protection system
- V. ladders

18.1.7 **"Working platform"** means:

- I. any platform used as a place of work or as a means of access to or egress from a place of work;
- II. includes any scaffold, suspended scaffold, cradle, mobile platforms, trestle, gangway, gantry and stairway which is so used.

18.2 Organisation and planning

The Contractor shall ensure that work at height is:

- I. properly planned for any emergencies and rescue
- II. appropriately supervised; and
- III. carried out in a manner, which is reasonably practicable safe.

18.3 The Contractor shall ensure that work at height is carried out only when the weather conditions do not jeopardise the health or safety of persons involved in the work.

18.4 Competence

The Contractor shall ensure that no person engages in any activity, including organization, planning and supervision, in relation to work at height or work equipment for use in such work unless he is competent to do so or, if being trained, is being supervised by a competent person.

18.5 Avoidance of risks from work at height

The Contractor shall ensure that work is not carried out at height where it is reasonably practicable to carry out the work safely otherwise than at height.

18.6 Where work is carried out at height, the Contractor shall take suitable and sufficient measures as given below to prevent, so far as is reasonably practicable, any person falling a distance liable to cause personal injury.

- i) his ensuring that the work is carried out:
 - A. from an existing place of work; or
 - B. (In the case of obtaining access or egress) using an existing means, complying to the requirements as given in relevant clause.

Where it is reasonably practicable to carry it out safely and under appropriate ergonomic conditions; and

- ii) Where it is not reasonably practicable for the work to be carried out in accordance with sub-paragraph (a), his providing sufficient work equipment for preventing, so far as is reasonably practicable, a fall occurring.

18.7 Where the measures taken under Clause 18.6 do not eliminate the risk of a fall occurring, every Contractor shall:

- i) So far as is reasonably practicable, provide sufficient work equipment to minimise:
 - a. The distance and consequences; or
 - b. Where it is not reasonably practicable to minimise the distance, the consequences, of a fall; and
- ii) Without prejudice to the generality of Clause 18.4, provide such additional training and instruction or take other additional suitable and sufficient measures to prevent, so far as is reasonably practicable, any person falling a distance liable to cause personal injury.

18.8 Selection of 'work equipment' for work at height

- i) The Contractor, in selecting work equipment for use in work at height, shall:
 - a. Give collective protection measures priority over personal protection measures; and
 - b. Take account of:
 - 1. The working conditions and the risks to the safety of persons at the place where the work equipment is to be used;
 - 2. In the case of work equipment for access and egress, the distance to be negotiated;
 - 3. The distance and consequences of a potential fall;
 - 4. The duration and frequency of use;
 - 5. The need for easy and timely evacuation and rescue in an emergency; and
 - 6. Any additional risk posed by the use, installation, or removal of that work equipment or by evacuation and rescue from it;
- ii) The Contractor shall select work equipment for work at height which:
 - (a) has characteristics including dimensions which:
 - 1) Are appropriate to the nature of the work to be performed and the foreseeable loadings; and
 - 2) Allow passage without risk; and
 - (b) Is in other respects the most suitable work equipment, having regard in particular to the purposes specified in Clause 18.5 and 18.6.

18.9 Fragile surfaces

18.9.1 The Contractor shall ensure that no person at work passes across or near, or working on, from or near, a fragile surface where it is reasonably practicable to carry out work safely and under appropriate ergonomic conditions without his doing so.

18.9.2 Where it is not reasonably practicable to carry out work safely and under appropriate ergonomic conditions without passing across or near, or working on, from or near, a fragile surface, every Contractor shall:

- I. ensure, so far as is reasonably practicable, that suitable and sufficient platforms, coverings, guard rails or similar means of support or protection are provided and used so that any foreseeable loading is supported by such supports or borne by such protection;
- II. where a risk of a person at work falling remains despite the measures taken under the preceding provisions of this regulation, take suitable and sufficient measures to minimise the distances and consequences of his fall.

18.9.3 Where any person at work may pass across or near, or work on, from or near, a fragile surface, every Contractor shall ensure that:

- (i) prominent warning notices are so far as is reasonably practicable affixed at the approach to the place where the fragile surface is situated; or
- (ii) where that is not reasonably practicable, such persons are made aware of it by other means.

18.10 Falling objects

18.10.1 The Contractor shall, wherever necessary to prevent injury to any person and damage to the property of third party, take suitable and sufficient steps to prevent, so far as is reasonably practicable, the fall of any material or object.

18.10.2 where it is not reasonably practicable to comply with the requirements of Clause 18.9, every Contractor shall take suitable and sufficient steps to prevent any person being struck by any falling material or object which is liable to cause personal injury & damage to the property of third party.

18.10.3 The Contractor shall ensure that no material or object is thrown or tipped from height in circumstances where it is liable to cause injury to any person and the property of third party.

18.10.4 Every Contractor shall ensure that materials and objects are stored in such a way as to prevent risk to any person arising from the collapse, overturning or unintended movement of such materials or objects.

18.11 Danger areas

18.11.1 Without prejudice to the preceding requirements of these Regulations, every Contractor shall ensure that,

- (i) Where a workplace contains an area in which, owing to the nature of the work, there is a risk of any person at work;
 - a. falling a distance; or
 - b. being struck by a falling object,

which is liable to cause personal injury, the workplace is so far as is reasonably practicable equipped with devices preventing unauthorised persons from entering such area; and

- (ii) such area is clearly indicated.

18.12 Inspection of work equipment

18.12.1 The Contractor shall ensure that, where the safety of work equipment depends on how it is installed or assembled, it is not used after installation or assembly in any position unless it has been inspected in that position.

18.12.2 The Contractor shall ensure that work equipment exposed to conditions causing deterioration which is liable to result in dangerous situations is inspected

- (i) at suitable intervals; and
- (ii) each time that exceptional circumstances which are liable to jeopardise the safety of the work equipment have occurred,

to ensure that health and safety conditions are maintained and that any deterioration can be detected and remedied in good time.

18.12.3 Without prejudice to Clause 18.12.1, the Contractor shall ensure that a working platform

- (i) used for construction work; and
- (ii) from which a person could fall 2 metres or more,

is not used in any position unless it has been inspected in that position or, in the case of a mobile working platform, inspected on the site, within the previous 7 days.

18.12.4 The Contractor shall ensure that the reports of all inspections are properly maintained and shown to the Employer as and when required.

18.12.5 In this clause "inspection",

- (i) means such visual or more rigorous inspection by a competent person as is appropriate for safety purposes; and
- (ii) includes any testing appropriate for those purposes,

18.13 Inspection of places of work at height

The Contractor shall so far as be reasonably practicable ensure that the surface and every parapet, permanent rail or other such fall protection measure of every place of work at height are checked on each occasion before the place is used.

18.14 Duties of persons at work

18.14.1 Any workmen employed by the Contractor shall report to the supervisor about any defect relating to work at height which he knows is likely to endanger the safety of himself or another person.

18.14.2 Every workman shall use any work equipment or safety device provided to him for work at height by the Contractor, in accordance with:

- (i) any training in the use of the work equipment or device concerned which have been received by him; and
- (ii) the instructions respecting that use which have been provided to him by the Contractor as per the requirements of the Employer

18.15 Requirements for existing places of work and means of access or egress at height

Every existing place of work or means of access or egress at height shall:

- (i) be stable and of sufficient strength and rigidity for the purpose for which it is intended to be or is being used;
- (ii) where applicable, rest on a stable, sufficiently strong surface;

- (iii) be of sufficient dimensions to permit the safe passage of persons and the safe use of any plant or materials required to be used and to provide a safe working area having regard to the work to be carried out there;
- (iv) possess suitable and sufficient means for preventing a fall;
- (v) possess a surface which has no gap
 - a. through which a person could fall;
 - b. through which any material or object could fall and injure a person; or
 - c. giving rise to other risk of injury to any person, unless measures have been taken to protect persons against such risk;
- (vi) be so constructed and used, and maintained in such condition, as to prevent, so far as is reasonably practicable:
 - a. the risk of slipping or tripping; or
 - b. any person being caught between it and any adjacent structure;
- (vii) where it has moving parts, be prevented by appropriate devices from moving inadvertently during work at height.

18.16 Requirements for guardrails, toe-boards, barriers and similar collective means of protection

- (i) Unless the context otherwise requires, any reference in this section to means of protection is to a guardrail, toe-board, barrier or similar collective means of protection.
- (ii) Means of protection shall
 - a. be of sufficient dimensions, of sufficient strength and rigidity for the purposes for which they are being used, and otherwise suitable;
 - b. be so placed, secured and used as to ensure, so far as is reasonably practicable, that they do not become accidentally displaced; and
 - c. be so placed as to prevent, so far as is practicable, the fall of any person, or of any material or object, from any place of work.
- (iii) In relation to work at height involved in construction work
 - a. the top guard-rail or other similar means of protection shall be at least 950 millimetres above the edge from which any person is liable to fall;
 - b. toe-boards shall be suitable and sufficient to prevent the fall of any person, or any material or object, from any place of work; and
 - c. any intermediate guardrail or similar means of protection shall be positioned so that any gap between it and other means of protection does not exceed 470 millimetres.
- (iv) Any structure or part of a structure which supports means of protection or to which means of protection are attached shall be of sufficient strength and suitable for the purpose of such support or attachment.

18.17 Requirements for all Working Platforms

- (i) Every working platform requires a supporting structure for holding it

- (ii) Any surface upon which any supporting structure rests shall be stable, of sufficient strength and of suitable composition safely to support the supporting structure, the working platform and any loading intended to be placed on the working platform.

- (iii) Stability of supporting structure

Any supporting structure shall

- a. be suitable and of sufficient strength and rigidity for the purpose for which it is being used;
- b. in the case of a wheeled structure, be prevented by appropriate devices from moving inadvertently during work at height;
- c. in other cases, be prevented from slipping by secure attachment to the bearing surface or to another structure, provision of an effective anti-slip device or by other means of equivalent effectiveness;
- d. be stable while being erected, used, and dismantled; and
- e. when altered or modified, be so altered, or modified as to ensure that it remains stable.
- f. Have suitable base plates and properly footed thereby.

- (iv) Stability of working platforms

A working platform shall

- a. be suitable and of sufficient strength and rigidity for the purpose or purposes for which it is intended to be used or is being used;
- b. be so erected and used as to ensure that its components do not become accidentally displaced so as to endanger any person;
- c. when altered or modified, be so altered, or modified as to ensure that it remains stable; and
- d. be dismantled in such a way as to prevent accidental displacement.

- (v) Safety on working platforms

A working platform shall

- a. be of sufficient dimensions to permit the safe passage of persons and the safe use of any plant or materials required to be used and to provide a safe working area having regard to the work being carried out there;
- b. possess a suitable surface and, in particular, be so constructed that the surface of the working platform has no gap
 1. through which a person could fall;
 2. through which any material or object could fall and injure a person; or
 3. giving rise to other risk of injury to any person, unless measures have been taken to protect persons against such risk; and
- c. be so erected and used, and maintained in such condition, as to prevent, so far as is reasonably practicable
 1. the risk of slipping or tripping; or
 2. any person being caught between the working platform and any adjacent structure.

- (vi) Loading

A working platform and any supporting structure shall not be loaded so as to give rise to a risk of collapse or to any deformation, which could affect its safe use.

(vii) Additional requirements for scaffolding

Strength and stability calculations for scaffolding shall be carried out unless

- a. a note of the calculations, covering the structural arrangements contemplated, is available; or
- b. it is assembled in conformity with a generally recognised standard configuration.

(viii) Depending on the complexity of the scaffolding selected, a competent person shall draw up an assembly, use and dismantling plan. This may be in the form of a standard plan, supplemented by items relating to specific details of the scaffolding in question.

(ix) A copy of the plan, including any instructions it may contain, shall be kept available for the use of persons concerned in the assembly, use, dismantling or alteration of scaffolding until it has been dismantled.

(x) The dimensions, form and layout of scaffolding decks shall be appropriate to the nature of the work to be performed and suitable for the loads to be carried and permit work and passage in safety.

(xi) While a scaffold is not available for use, including during its assembly, dismantling or alteration, it shall be marked with general warning signs in accordance with and be suitably delineated by physical means preventing access to the danger zone.

(xii) Scaffolding may be assembled, dismantled, or significantly altered only under the supervision of a competent person and by persons who have received appropriate and specific training in the operations envisaged which addresses specific risks which the operations may entail and precautions to be taken, and more particularly in:

- a. understanding of the plan for the assembly, dismantling or alteration of the scaffolding concerned;
- b. safety during the assembly, dismantling or alteration of the scaffolding concerned;
- c. measures to prevent the risk of persons, materials or objects falling;
- d. safety measures in the event of changing weather conditions which could adversely affect the safety of the scaffolding concerned;
- e. permissible loadings;
- f. any other risks which the assembly, dismantling or alteration of the scaffolding may entail.

18.18 Requirements for collective safeguards for arresting falls

(i) Collective safeguard is a safety net, airbag or other collective safeguard for arresting falls

(ii) A safeguard shall be used only if

- a. a risk assessment has demonstrated that the work activity can so far as is reasonably practicable be performed safely while using it and without affecting its effectiveness;
- b. the use of other, safer work equipment is not reasonably practicable; and
- c. a sufficient number of available persons have received adequate training specific to the safeguard, including rescue procedures.

(iii) A safeguard shall be suitable and of sufficient strength to arrest safely the fall of any person who is liable to fall.

(iv) A safeguard shall:

- a. in the case of a safeguard which is designed to be attached, be securely attached to all the required anchors, and the anchors and the means of attachment thereto shall be suitable and of

sufficient strength and stability for the purpose of safely supporting the foreseeable loading in arresting any fall and during any subsequent rescue;

- b. in the case of an airbag, landing mat or similar safeguard, be stable; and
- c. in the case of a safeguard, which distorts in arresting a fall, afford sufficient clearance.

- (v) Suitable and sufficient steps shall be taken to ensure, so far as practicable, that in the event of a fall by any person the safeguard does not itself cause injury to that person.

18.19 Requirements for personal fall protection systems

- (i) A personal fall protection system shall be used only if
 - a. a risk assessment has demonstrated that
 - 1. the work can so far as be reasonably practicable be performed safely while using that system; and
 - 2. the use of other safer work equipment is not reasonably practicable; and
 - b. the user and a sufficient number of available persons have received adequate training specific to the operations envisaged, including rescue procedures.
- (ii) A personal fall protection system shall
 - a. be suitable and of sufficient strength for the purposes for which it is being used having regard to the work being carried out and any foreseeable loading;
 - b. where necessary, fit the user;
 - c. be correctly fitted;
 - d. be designed to minimise injury to the user and, where necessary, be adjusted to prevent the user falling or slipping from it, should a fall occur; and
 - e. be so designed, installed, and used as to prevent unplanned or uncontrolled movement of the user.
- (iii) A personal fall protection system designed for use with an anchor shall be securely attached to at least one anchor, and each anchor and the means of attachment thereto shall be suitable and of sufficient strength and stability for the purpose of supporting any foreseeable loading.
- (iv) Suitable and sufficient steps shall be taken to prevent any person falling or slipping from a personal fall protection system.
- (v) All fall protection system should be inspected weekly as a minimum.

18.20 Requirements for Ladders

- (i) Every Contractor shall ensure that a ladder is used for work at height only if a risk assessment has demonstrated that the use of more suitable work equipment is not justified because of the low risk and
 - a. The short duration of use; or
 - b. Existing features on site, which he cannot alter.
- (ii) Only metal ladders shall be allowed. Bamboo ladders are prohibited.
- (iii) Any surface upon which a ladder rests shall be stable, firm, of sufficient strength and of suitable composition safely to support the ladder so that its rungs or steps remain horizontal, and any loading intended to be placed on it.

- (iv) A ladder shall be so positioned as to ensure its stability during use
- (v) A suspended ladder shall be attached in a secure manner and so that, with the exception of a flexible ladder, it cannot be displaced and swinging is prevented.
- (vi) A portable ladder shall be prevented from slipping during use by:
 - a. securing the stiles at or near their upper or lower ends;
 - b. an effective anti-slip or other effective stability device; or
 - c. any other arrangement of equivalent effectiveness.
- (vii) A ladder used for access shall be long enough to protrude sufficiently above the place of landing to which it provides access, unless other measures have been taken to ensure a firm handhold.
- (viii) No interlocking or extension ladder shall be used unless its sections are prevented from moving relative to each other while in use.
- (ix) A mobile ladder shall be prevented from moving before it is stepped on.
- (x) Where a ladder or run of ladders raises a vertical distance of 9 metres or more above its base, there shall, where reasonably practicable, be provided at suitable intervals sufficient safe landing areas or rest platforms.
- (xi) Every ladder shall be used in such a way that
 - a. a secure handhold and secure support are always available to the user; and
 - b. the user can maintain a safe handhold when carrying a load unless, in the case of a step ladder, the maintenance of a handhold is not practicable when a load is carried, and a risk assessment has demonstrated that the use of a stepladder is justified because of
 - 1. the low risk; and
 - 2. the short duration of use.
- (xii) Ladders should be inspected weekly for any damage or corrosion.

18.21 Detailed requirements for Scaffolding

18.21.1 Scaffold General

This procedure provides general information about the competent person, erection, inspection, and use of both welded-frame and tube-and-coupler scaffolds.

- (i) Scaffolds are intended to provide safe working positions at elevations. To eliminate fall exposures, scaffolds must have complete handrails, mid-rails, and decking. Do not use fall arrest equipment as a substitute for handrails, mid-rails, or a complete deck.
- (ii) Before erecting scaffolds, consider all nearby or overhead hazardous energy sources such as electrical, mechanical, pneumatic, thermal, and chemical.
- (iii) Welded-frame scaffolds are made of basic prefabricated end frames, cross-bracing, and frame-connecting devices to hold the parts firmly in place. Tube and-coupler and system scaffolds are made of various lengths of tubing clamped together by special patented couplers to support working platforms of various shapes.
- (iv) All complete scaffolds will have a top handrail approx. 1.1 meter above the platform, mid rail approx. 0.6 meter above the platform and a toe plate 10 cm tall from the platform.
- (v) Do not inter mix scaffold components manufactured by different manufacturers unless the component parts fit together without force or modification.

- (vi) Bamboo components are not permitted on Maha-Metro Sites.

Competent person: one who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt, corrective measures to eliminate those.

Qualified person: one who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, has successfully demonstrated his or her ability to solve or resolve problems related to the subject matter, the work, or the project.

18.21.2 Erecting Scaffolds

- (i) Only employees who have been trained by and are under the supervision of a competent person will erect scaffolds. The Maha-Metro Project Safety Manager must approve scaffolds higher than 50 feet (15 meters) above the base plates.
- (ii) Where fall hazards cannot be eliminated, use fall-arrest systems while erecting, modifying, and dismantling scaffolds. It is the responsibility of the competent person to determine the feasibility and type of fall-arrest system to be used.
- (iii) Set scaffold legs on base plates placed on foundations or mudsills that are adequate for supporting the maximum intended loads. Scaffold boards and
- (iv) masonry blocks are not appropriate scaffold foundations. The total load on a scaffold consists of the sum of the weight of the workers and materials on a scaffold plus the weight of the scaffold.
- (v) Install adjusting screws only between the base plate and the vertical frame section. Never use adjusting screws together with casters. Do not extend adjusting screws beyond 12 inches (30 centimetres).
- (vi) The position and number of braces used on a scaffold not only restricts the amount of side movement, but also determines the strength of the scaffold. Never use cross-braces as substitutes for handrails or mid rails.
- (vii) When the height of a scaffold exceeds three times the smallest width of the base, secure it to the building or structure at every other lift and every 9 meters horizontally. The scaffold should be secured by both ties and braces to prevent movement Equip scaffold working platforms with handrails approximately one-meter high, mid rails, and toe boards, all secured rigidly. Working platforms should be completely decked with safety planks, manufactured scaffold decking, or laminated wooden planks.
- (viii) To allow access to the working platform of a tubular welded frame scaffold, the ladder built into the end frames can be used if it has been specifically designed and constructed by the manufacturer for the purpose of access.
- (ix) Employees engaged in erecting or dismantling tubular-welded frame scaffolds may use the end-frame horizontal members for access provided they are parallel, level, and are not more than 22 inches apart vertically. Hook-on attachable ladders shall be installed as soon as scaffold erection has progressed to a point that permits safe installation and use. Consideration should be given to breaking the ladder at approximately 6-meter intervals. Retractable or vertical lifelines should be used for fall protection while climbing more than 20-feet.
- (x) When portable straight or extension ladders are used for access to tube-and coupler scaffolds, the 4-to-1 slope should be maintained to avoid a horizontal tube interfering with the use of the ladder.

- (xi) Scaffold users should be able to step off the scaffold access ladder directly onto the working platform. Provide entry gates for scaffolds to eliminate the need for users to climb over handrails.
- (xii) Tag or otherwise identify scaffolds that should not be occupied or that require particular safety precautions. The tag should indicate special requirements, the date of erection, and the signature of the competent person.
- (xiii) Scaffolds and their components must be capable of supporting, without failure, at least four times the maximum intended load. Materials should be evenly distributed on platforms and not concentrated in one small area.
- (xiv) During erection of scaffolds, the electrical clearances shall be maintained as per the tabulation mentioned herein in this document

18.21.3 Scaffold Inspection

- (i) A competent person shall visually inspect all components of the scaffold for defects prior to each shift's use and following any occurrence that could affect the scaffold's structural integrity. Defective components will be immediately discarded.
- (ii) Before erecting and while dismantling scaffolds, inspect all components. Scaffold components should be straight and free from bends, kinks, dents, and severe rusting. Immediately discard defective components. Inspections should include an evaluation of the following components:
 - a. Handrails, mid-rails, toe boards, cross-bracing and steel tubing for nicks and other damage, especially near the centre span, and for signs that welding arcs may have struck the equipment
 - b. weld zones on the scaffold frame for cracks
 - c. the end of tubing for splits or cracks
 - d. manufactured decks for loose bolts or rivet connections and bent, kinked, or dented frames
 - e. safety planks for rot, cracks, cuts, and other external damage
 - f. tie rods or bolts and angle iron cleats
 - g. cams, springs, threaded connection, toggle pins, or other quick-connecting devices
 - h. Casters for rough rolling surfaces, "sticky" swivels, and defective locking mechanisms.
- (iii) Scaffold Inspection Tag, Boards, identifying that the scaffold is "Safe for Use" or "Scaffolds Under Construction" must be attached to all scaffolds.

18.21.4 Scaffold Training

- (i) Employees involved in the erection, dismantling, moving, repairing, etc., of scaffolding shall receive training from a competent person. The purpose of the training is to recognize any hazards associated with the work in question. Training shall consist of:
 - a. The nature of scaffold hazards
 - b. The correct procedures for erecting, disassembling, moving, operating, repairing, inspecting, and maintaining the type of scaffold.
 - c. The design criteria, maximum intended load-carrying capacity, and intended use of the scaffold.
- (ii) Employees who perform work while on a scaffold shall be trained by a qualified person so they will recognize hazards associated with the type of scaffold being used and understand the procedures to control those hazards. Training will cover the following topics as necessary:
 - a. The nature of any electrical hazards, fall hazards, and falling object hazards in the work area.
 - b. The correct procedures for dealing with electrical hazards and for erecting, maintaining, and disassembling the fall protection systems and falling object protection systems used.

- c. The proper use of the scaffold and the proper handling of materials on the scaffold.
- d. The maximum intended load and the load-carrying capacities of the scaffolds used.

18.21.5 Suspended Scaffolding

Swinging stages, toothpicks, boatswain chairs, float, and needle beams require special approval prior to use.

Attach and secure safety harness before stepping on these scaffolds and do not remove until clear of the scaffold. Tie off to independent lifeline or building structure. One lifeline per person.

18.22 Provision of safety nets

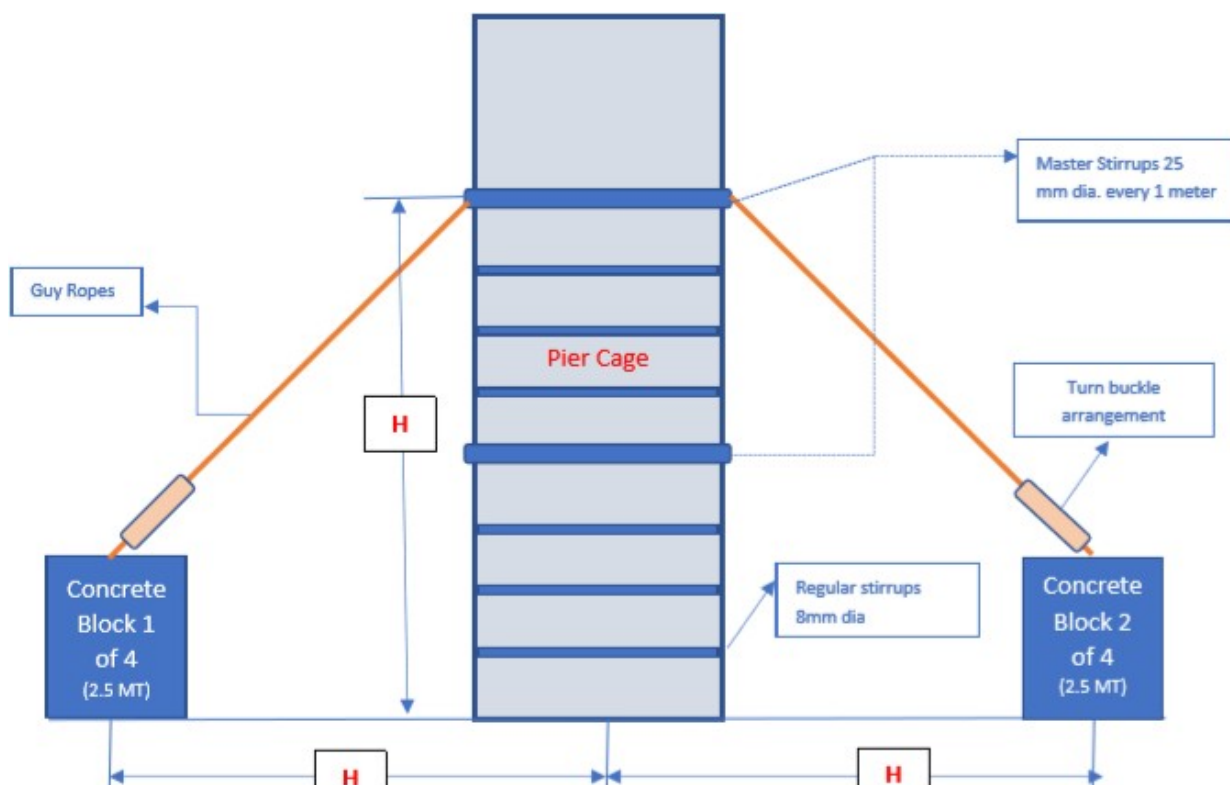
Garware make/Equivalent to safety nets have to be provided at all the locations where there is free fall of men/materials from the site to the live road or ground floor. Double/Triple layer safety nets has to be provided without fail

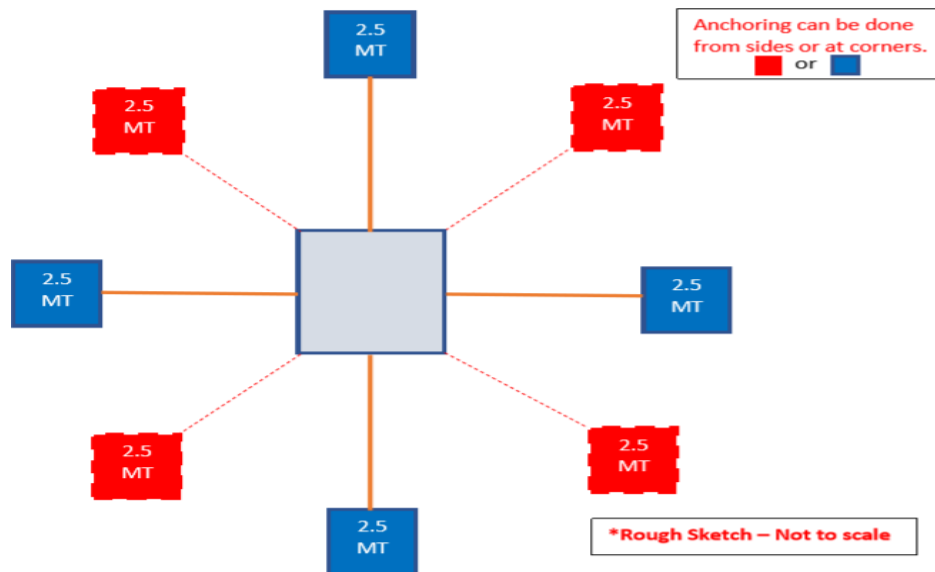
18.23 Pier Reinforcement Cage Protection

Tying of Pier reinforcement should be done as per sketch A. wherever due to space constraint, it is desirable that two cranes should be used; one to hold the pier reinforcement and the other one to erect the shuttering.

1. 25mm dia. master stirrup to be installed every 1 m height, in addition to regular stirrups.
2. Master stirrup need to be used to anchor the pier cage with guy ropes at four sides. Concrete blocks (2.5 MT) shall be placed in such a way that the guy ropes make an angle of 45° with the ground. (refer attached sketch A)
3. For all pier reinforcement / shuttering works more than 6m height, advance RFI along with safety inspection checklist must be raised for permission of GC personnel for de-staging of support and placement of shuttering

Typical Sketch A - Pier cage - Concrete blocks placement & anchorage method





19.0 OVERHEAD PROTECTION

- 19.1 All contractors shall provide overhead protections as per Rule 41 of BOCWR.
- 19.2 Overhead protection should be erected along the periphery of every building which is under construction and the building height shall be 15m or above after construction.
- 19.3 Overhead protection shall be minimum 2m wide and the outer edge shall be 150mm higher than the inner edge and an angle not more than 20° to its horizontal sloping into the building.
- 19.4 Overhead protection shall not be erected more than a height of 5m from the base of the building.
- 19.5 Areas of inadvertent hazard of falling of material shall be guarded or barricaded or roped-off thereby by the Contractor.

20.0 SLIPPING, TRIPPING, CUTTING, DROWNING AND FALLING HAZARDS

As per Rule 42 of BOCWR:

- 20.1 All places should be free from dust, debris or similar materials.
- 20.2 Sharp projections or any protruding nails or similar objects shall be suitably guarded or shall even be avoided to make the place safe to work.
- 20.3 Contractor shall not allow workmen to work or use platforms, scaffolds/passageways or any walkways, which has water, or oil or similar substances spilt and has a slipping hazard, unless it is cleaned off or covered or sanded or saw dusted or make it safe with any suitable material.
- 20.4 When workers are exposed to areas where fall into water is possible, the Contractor shall provide suitable and adequate equipment for saving the workers from drowning and rescuing from such hazard. If the Employer considers, the Contractor shall provide well-equipped boat or launch, manned with trained personnel at the work place.
- 20.5 Open side or opening where worker, equipment, vehicle or lifting appliance may fall at a building or outside shall be guarded suitably except in places of free access by reasons of nature of work.

- 20.6 Suitable safety net shall be provided at places of material / man falling is possible in accordance with national standards.
- 20.7 The collapse of formwork in the construction industry has the potential for severe injury and death. The four stages of the use of formwork (erection, adjustment, concrete placement and dismantling) all need to be managed in a risk assessment framework. Implementing suitable control measures can eliminate or reduce the potential for events such as the collapse of formwork. Suitable control measures include:
- I. keeping the documentation for the formwork at the workplace;
 - II. following the formwork documentation;
 - III. planning to ensure that all elements of the process are conducted in a safe manner – e.g., ensuring operators such as crane operators, concrete placers are suitably licensed and trained, appropriate personal protective equipment is used etc;
 - IV. erecting the formwork on foundations which will support the loads to be imposed on the formwork;
 - V. not erecting formwork near excavation;
 - VI. ensuring materials used in the erection of formwork are not defective;
 - VII. securing loose material which may be dislodged as a result of inclement weather;
 - VIII. inspecting the formwork assembly before and during the placement of concrete;
 - IX. not attaching equipment to the formwork assembly unless specifically designed for this purpose; and not using a stripping process which may cause damage to the permanent structure.

21.0 LIFTING APPLIANCES AND GEAR

- 21.1 Lifting appliances means a crane, hoist machinery, derrick, winch, gin pole, sheer legs, jack, hoist drum, slewing machinery, slewing bearing fasteners, lifting machinery sheaves, pulley blocks, hooks or other equipment used for lifting materials, objects or building workers and lifting gears means ropes, chain slings, shackles, hooks, lifting lugs, wire ropes, lifting eyebolts and eyenuts and other accessories of a lifting appliance.
- 21.2 No machine shall be selected to do any lifting on a specific job until its size and characteristics are considered against:
- I. the weights, dimensions, and lift radius of the heaviest and largest loads
 - II. the maximum lift height, the maximum lift radius and the weight of the loads that must be handled at each lifting operation.
 - III. Proper mockup without load trials shall be carried out for heavy duty lifting operations by crane before resorting to the actual lifting of the load.
 - IV. the number and frequency of lifts to be made and maintained in Lifting Register.
 - V. how long the crane will be required on site to be ensured by lifting team.
 - VI. the type of lifting to be done (for example, is precision placement of loads important?)
 - VII. the type of carrier required (this depends on ground conditions and machine capacity in its operating quadrants) capacity is normally greatest over the rear, less over the side, and non-existent over the front
 - VIII. whether loads will have to be walked or carried
 - IX. whether loads will have to be suspended for lengthy periods

- X. the site conditions, including the ground where the machine will be set up, access roads and ramps it must travel, space for erection and any obstacles that might impede access or operation.
 - XI. Method Statement with attached Risk Assessment, Lifting Plan, lifting method drawing/sketch and the list of Competent Lifting Team/Responsible Person shall be submitted to employer well in advance as mentioned herein before at Clause 3.5.2.
 - XII. Pre-lifting Toolbox-Talk must be conducted before lifting operation with listed Lifting team ensuring their roles and responsibilities in lifting operation.
- 21.3 The Contractor shall ensure that a valid certificate of fitness issued as per Clause 21.5 is available for all lifting appliances including synchronised mobile jacks, pre-stressing hydraulic jacks, jacks fitted with launching girders etc. and Employer's approval before inducting to the site. Only after obtaining the approval from the Employer any lifting appliances and gear shall be used.
- 21.4 The laminated photocopies of fitness certificate issued by competent person, the Employers' approval letter, the operators' photo, manufacturer's load chart and competency certificate shall always be either kept in the operator cabin or pasted on the visible surface of the lifting appliances.
- 21.5 All lifting appliances and loose gears shall be clearly marked for its safe working load and identification by stamping or other suitable means.
- 21.6 The Contractor shall also maintain a register containing a system of identification of all tools and tackles, its date of purchase, safe working load, competent person date of examination etc.
- 21.7 Test and periodical examination of lifting appliances and gears
- 21.7.1 All lifting appliances including all parts and gears thereof, whether fixed or movable shall be thoroughly tested and examined by a competent person once at least in every six months or after it has undergone any alterations or repairs liable to affect its strength or stability. Within the validity, if the lifting appliances are shifted to a new site, re-examination by the same competent person for ensuring its safety shall also be done.
- 21.7.2 Contractors can utilise the services of any competent person as defined in Factories Act, 1948 and approved by Chief Inspector of Factories with the permission of the Employer.
- 21.7.3 All alarms and signals like Automatic Safe Load Indicators (ASLI), boom angle indicators, boom extension indicators, over lift boom alarm, swing alarm, hydraulic safety valves, mechanical radius indicators, load moment indicators etc. shall be periodically examined and maintained always in working condition.
- 21.8 Automatic Safe Load Indicators
- 21.8.1 As stipulated in relevant Rule of GBOCWR 2003, no lifting appliances gear or any other material handling appliance is used, if:
- (i) the Inspector having jurisdiction is not satisfied with reference to a certification of test or examination or to an authenticated record maintain as provided under these rules; and
 - (ii) in the view of such Inspector, the lifting appliance, lifting gear or any other material handling appliance is not safe for use in building or other construction work; and
 - (iii) no pulley block is used in building or other construction work unless the safe working load and its identification are clearly marked on such block.

21.8.2 All lifting appliances and gears, like cranes, hydras etc, if so constructed that the safe working load may be varied by raising or lowering of the jib or otherwise shall be attached with an automatic indicator of safe working loads approved by Bureau of Indian standards/ International certifying bodies which gives a warning to the operator and arrests further movements of the lifting parts.

21.9 Qualification of operator of lifting appliances and of signaller etc.

21.9.1 The Contractor shall not employ any person to drive or operate a lifting machine like crane, hydra etc whether driven by mechanical power or otherwise or to give signals to work as a operator of a rigger or derricks unless he:

- (i) is above twenty-one years of age and possesses a valid heavy transport vehicle driving licence as per Motor Vehicle Act and Rules.
- (ii) is absolutely competent and reliable
- (iii) possesses the knowledge of the inherent risks involved in the operation of lifting appliances by undergoing a formal training at any institution of national importance acceptable to Employer
- (iv) is medically examined periodically as specified in Schedule VII of BOCW Rules.

21.10 General requirements of appliances

21.10.1 Out-of level

One of the most severe effects of being out-of fit level is that side loads develop in the boom. Because of side loads all mobile cranes lose capacity rapidly as the degree of out-of-level increases and therefore control of out-of-level is of utmost importance.

21.10.2 Boom

- (i) The boom is one of the more critical elements of the crane and must be in perfect condition at all time. No boom section with a bent lattice member shall be allowed
- (ii) All welds shall be crack and corrosion free
- (iii) No member of the boom shall be bent
- (iv) All telescopic boom shall be free from cracks, rust, flaking or cracked paint, bulges, greases or varnishes

21.10.3 The sweep area (work area) of the construction machinery shall be always free from obstructions.

21.10.4 All hydraulic piping and fittings shall be maintained leak proof.

21.10.5 The operator cab shall posses good and safe:

- (i) structure, windows, and windshield wipers
- (ii) Drivers chair and foot rest
- (iii) Control handles
- (iv) Cab instrumentation
- (v) Telecommunication
- (vi) Cab out fitting
- (vii) wind indicator with an adjustable set point shall be in a position representative for the wind on the crane. The indicator shall give continuous information regarding constant speeds and gusts.

21.11 Mandatory rigging requirements

21.11.1 Rigging shall be done under experienced and qualified rigger only.

21.11.2 The primary requirement in rigging shall be to assess the weight of load before attempting any lift.

21.11.3 All hooks shall be fitted with Master Rings having certificate of fitness from the competent person, so that the hooks are subjected to balanced vertical loading only.

21.11.4 Only four legged slings shall be allowed which includes master link (ring), intermediate master link (ring) if necessary, chain / wire rope sling, sling hook or other terminal fitting.

21.11.5 Hand spliced slings up to 32mm diameter shall not be used at site for any lifting purpose.

21.11.6 No load shall be slewed over public areas without stopping the pedestrians and road traffic first.

21.11.7 Requirements of outriggers

- (i) All outriggers shall be fully extended and at all tyres are clear of the ground
- (ii) Heavy duty blocking having large bearing area shall be necessary to prevent sinking of floats

21.11.8 All loads shall have tag-lines attached in order to ensure that the load can be controlled at all times.

21.11.9 No close working to any live overhead power line is permitted without the operation of a strict Permit to Work.

21.11.10 Minimum lighting is to be ensured at all lifting operations.

21.11.11 Usage of First-Generation Hydra is STRICTLY PROHIBITED in Pune Metro project, if found violated, penalty shall be imposed without any warning letter.

21.11.12 Crane used for lifting operations shall not be older than 10 years, in case of tyre mounted and 15 years in case of crawler mounted.

21.12 Failure to do any of the above shall attract penalty from the Employer as per relevant clause

22.0 LAUNCHING OPERATION

22.1 As launching operation is one of the riskiest jobs, the Contractor shall take utmost precaution at all stages like; planning, establishing casing yard, casting segments, transporting segments, fabrication and erection of launching girders, launching of segments, pre-stressing, auto launching of girders and dismantling of launching girders.

22.2 The Contractor shall prepare a comprehensive Method Statement for the launching operation, adhering to the SHE conditions laid down in conditions of contract on SHE and Project SHE Manual. Particular reference shall be made to the provisions on working at height. As the entire process of launching has to be undertaken at an elevated level, the safety of workers and the girder is paramount important. The following general guidelines shall be adhered throughout the launching operation.

- (i) Necessary 'working platforms' and fall protection anchorage arrangement shall be provided in the launching girder itself.
- (ii) Provisions for mounting light fittings shall also be made available in the launching girder.

- (iii) The casting yard shall be established ensuring the provision given in Clause 38.0
- (iv) The workmen engaged in fabrication of reinforcement, concreting the segment shall be provided with necessary PPEs including compulsory hand protection gloves.
- (v) Casting and curing of segment shall be undertaken under the direct supervision of the responsible engineer of the Contractor.
- (vi) Trucks with valid registration, licence, safe worthiness certificate, Employer's approval certificate, and pollution under check certificate shall only be used for transport of segments.
- (vii) All vehicle drivers including heavy vehicle operators shall be trained on defensive driving at training institute recognized by Maharashtra State Road Transport Corporation / Government of Maharashtra, or any other driving institute registered under Motor Vehicles Act.
- (viii) Drivers shall also have undergone proper medical examination as per relevant clause mentioned under 'Medical Facilities.'
- (ix) The segments shall be rigidly secured to the truck with necessary wooden wedges and necessary red indicators/safety tapes provided so that the vehicle is clearly seen by other road users both in day / night time. Further, necessary arrangements / modification should be made in the trailer and Engineer / Employer approval shall be obtained before the transportation starts.
- (x) Every launching girder shall have a responsible engineer on duty all the time.
- (xi) All the time from erection to dismantling the area between the two piers wherein launching is in progress shall always be barricaded.
- (xii) Unloading of segments from trucks, lifting of segments, shifting of segments, gluing shall be done under the direct supervision of the approved engineer of the Contractor.
- (xiii) Auto launching shall be done only after approval from the Employer. After every auto launching the stability of launching girder shall be ensured.
- (xiv) The vertical deflection of launching girder shall be monitored at all critical stages like with/without loads and after every auto launching.
- (xv) A register containing all important operational details from erection to dismantling of launching girders shall be maintained and made available to Employer whenever called for.
- (xvi) Test certificate for all lifting gears including Macalloy bars shall be maintained at a location closer to the launching girder itself so that it can be referred during all inspections.
- (xvii) Adequate lighting at all time shall be ensured in the entire area of operation.
- (xviii) Access to drinking water & toilet shall be ensured to all workmen engaged for launching process.
- (xix) Proper access ladders/stairways shall be maintained for safe ascending / descending of workmen / engineers.

22.3 Non-adherence to any of the clauses mentioned above shall be viewed seriously by the Employer and penalty levied as per relevant clause.

23.0 CONSTRUCTION MACHINERY

23.1 Construction machineries may include dumpers and dump trucks, lift trucks and telescopic handlers piling rigs, vibro hammers, rail welding equipments, mobile elevating work platforms, cranes, tipper lorries, lorry loaders, skip wagons, 360° excavators, 180° backhoe loaders, crawler tractors, scrapers, graders, loading shovels, trenchers, side booms, pavers, planers, chippers, road rollers, locomotives, tankers and browsers, trailers, hydraulic and mechanical breakers etc.

23.2 Safe worthiness certificate

23.2.1 Every construction equipment shall be in sound mechanical working condition and certified by either competent person under Factories Act or manufacturers' warranty in case of brand new equipments or authorized persons / firms approved by Employer before induction to any site.

23.2.2 Every such certificate shall have the date of purchase, main overhauling undertaken in the past, any accident to the equipment, visual examination details, critical components safety check, list of safety devises and its working condition, manufacturer's maintenance checklist, past projects wherein the equipments were used etc as its minimum content.

23.3 Reverse Horns and reverse cameras

All Vehicles shall be fitted with audible reverse alarms and reverse cameras, maintained in good working condition. Reversing shall be done only when there is adequate rear-view visibility or under the directions of a banks man

23.4 General operating procedures

- (i) Drivers entering site shall be instructed to follow the safe system of work adopted on site. These shall be verbal instructions or, preferably, written instructions showing the relevant site rules, the site layout, delivery areas, speed limits, etc.
- (ii) No passengers shall be carried, unless specific seating has been provided in accordance with the manufacturers' recommendations.
- (iii) Working on gradients beyond any equipments capability shall not be allowed.
- (iv) Prevention of dumper and dump truck accidents should be managed by providing wheel stops at a sufficient distance from the edges of excavations, spoil heaps, pits, etc.
- (v) The manufacturer's recommended bucket size must not be exceeded in excavators.
- (vi) If excavators operating on a gradient which cannot be avoided, it must be ensured that the working cycle is slowed down, that the bucket is not extended too far in the downhill direction, and that travel is undertaken with extreme caution. A large excavator must never be permitted to travel in a confined area, or around people, without a banks man to guide the driver, who should have the excavator attachment close in to the machine, with the bucket just clear of the ground. On wheeled excavators, it is essential that the tyres are in good condition and correctly inflated. If stabilizing devices are fitted, they should be employed when the machine is excavating.
- (vii) When the front shovel of the 180° backhoe loaders is being employed, the backhoe attachment shall be in its "travel" position, with the safety locking device in place.
- (viii) When operating the backhoe in poor ground conditions, the stabilisers tend to sink into the surface of the ground, reducing stability. Therefore, frequent checks shall be made for the stability of the machine. The loading shovel should always be lowered to the ground to stabilise the machine when the backhoe is employed.

- (ix) The netting operation of the skip wagons should be carried out prior to lifting the skip to reduce the risks of working on the rear platform.
- (x) If a tractor dozer is employed on clearing scrub or felling trees, it shall be provided with adequate driver protection.
- (xi) When two or more scrapers are working on the same job, a minimum distance of at least 25m shall be kept between them.
- (xii) In case of hydraulic breakers, hydraulic rams and hoses shall be in good working condition

23.5 All wood working machines shall be fitted with suitable guards and devices such as top guard, riving knife, push stick, guards for drive belts and chains, and emergency stop switch easily accessible by the operator.

23.6 Requirements related to use of Bulldozers

23.6.1 General

- (i) Be careful when working near the edge of banks, ditches, cuts, or fills, or near overhanging material. The vibration and weight of the machine may cause the edge to give way or overhanging material to fall.
- (ii) Before starting work, ensure that an observer is present when plant is required to work in water where the depth may endanger the operator.
- (iii) Avoid obstacles such as rocks or logs. If forced to cross them, use extreme caution, and change to the lowest gear.
- (iv) Ease up to the balance point and ease down to minimise the jolt on contact with the other side.
- (v) When receiving a wire rope on a drum or through Sheaves, operators should disengage the master clutch, idle the engine, and lock the brakes.

NOTE: All operators should stop engines before working with ropes wound on front-mounted drums.

23.6.2 Clearing Operations

- (i) When clearing trees, watch out for dead branches in treetops.
- (ii) Dozer operators should make sure that all persons are standing clear before pushing over trees, dozing rocks or rolling logs.
- (iii) A long rope should be used to pull over large dead trees. (Make sure in advance that a falling tree will clear the machine and operator).
- (iv) In excavation work, operators should be alert to dangers from overhanging dirt and rocks. In such cases, dozers should be equipped with the relevant overhead protection.

23.7 Requirements related to use of Excavators

- (i) When excavating trenches, place the excavated material at a distance of one and a half times the depth of the trench from the edge of that trench. Where this is not practicable, place excavated materials at least one (1) metre from the edge of the trench.
- (ii) Ensure the ground beneath the machine is not undercut.

- (iii) Watch boom clearance when travelling. Uneven ground may cause the boom to weave and collide with obstructions.
- (iv) Avoid jerky slewing or sudden braking. These can make the machine unstable and overload machine components.
- (v) Ensure the operator has the appropriate restricted operator's licence if the excavator is to be used in the crane mode.
- (vi) When an excavator is used in the crane mode, check that the lifting weight is well within the approved lifting capacity for the machine. This lifting capacity shall be clearly and permanently marked on each machine.
- (vii) Only operate attachments while stationary, as operation during travelling may starve one of the track drive motors and result in an unintended turn.
- (viii) Consider implementing a 'Permit to Work' system, particularly when working near power lines or underground power for example: - that the height of power lines is known; - that the underground location is known; and - visible measure, such as tiger tails, are put in place.

23.8 Requirements related to use of Trucks

23.8.1 General

- (i) Drive defensively
- (ii) Obey road signs
- (iii) Never race with other vehicles
- (iv) When following another vehicle, always allow enough distance to stop safely.
- (v) One truck length for every 10 km per hour of truck speed should be the minimum distance between vehicles.
- (vi) Reversing is the most hazardous truck operation. Reversing alarms, which are fitted on some trucks, are effective in warning persons of the danger. Reverse trucks only when they are under the direction of a signaller or when satisfied that the way is clear and will remain clear.
- (vii) Be cautious of spillage from loaded units and any hazards the spillage might present to people on the ground and to the tyres of other plant.
- (viii) Trucks sometimes fall over a tip head because the driver backs over the edge or the edge collapses under the weight of the truck.
- (ix) Use a protective beam or timber baulk or back under the control of a signaller in order to avoid this happening.
- (x) Principal Contractors should provide an earth mound to at least half the wheel diameter. This is a known control that is also used in the mining industry.
- (xi) Where ground conditions are soft, or the tip head is likely to subside, dump loads back from the edge and have a dozer move the material over the edge.

23.8.2 Loading

- (i) Never enter or leave the cab during loading.
- (ii) Watch for and avoid other vehicles, personnel, and rock outcrops on entering or leaving the loading area.
- (iii) Stay a safe distance from trucks ahead at the loading point, and follow the directions of the signaller or loader operator before moving into the loading position.
- (iv) Move off when signalled that loading is complete.
- (v) Load material, e.g., timber, so that it does not project beyond the truck body and present a hazard to other plant, people, or structures.
- (vi) Where material is to be transported on a public road, maintain a distance of 1.2 metre or more beyond the front or rear of the vehicle, or 150 mm on either side, shall have a visible red flag or object fastened to the projecting end.
- (vii) Unusually wide or long loads require a permit from the Police Department.

- (viii) Secure loads at the lowest possible level on the tray with ropes or chains, and take special care when the truck is to travel over rough terrain.
- (ix) Truck operators are responsible for giving load placement requirements to crane operators before loading operations begin.
- (x) The load should be placed so that it will remain stable during loading, unloading and travelling.

23.8.3 Unloading

- (i) Lower truck bodies before leaving the dump area.
- (ii) Only raise truck bodies to unload materials on surfaces where the vehicle will remain stable and upright.
- (iii) Never raise truck bodies to within a specified distance of overhead power line.
- (iv) Take special care when tipping a load or spreading screenings on a road.
- (v) With the tray up, trucks are less stable and are more likely to roll over, particularly on hilly sections or roads with surface irregularities or steep shoulders.
- (vi) Check that the raised tray will not foul overhead power lines or telephone wires.
- (vii) Never place part of your body under a raised truck body unless the truck body is securely propped.

23.8.4 Transporting personnel

- (i) Trucks shall not be used to transport personnel unless they are specifically designed to do so.
- (ii) Where a bus is employed for the transportation of personnel, the bus shall: -be enclosed; have seats which are attached to the vehicle; have a safe means of access and exit; and, have two means of exit in case of emergency.
- (iii) Drivers transporting personnel should be alert, dependable and careful.
- (iv) Relevant safety rules include: never allow passengers to ride with their arms outside the vehicle; only start the vehicle after everyone is seated; persons should only get on or off the vehicle when it is stationary; tools, plant or gear should be stored in a compartment separate from passengers, i.e., compartments that are designed for storage and transportation and are separate from where personnel are seated.
- (v) All items stored in this compartment should be secured against movement; and ensure that exhaust fumes do not enter the passengers' compartment.

23.8.5 Towing

- (i) When towing another vehicle, take the following precautions: ensure the towing cable is undamaged and has a safe working load adequate for the job.
- (ii) Slings, straps, or chains which are used for towing should not be used for lifting any gear or materials and should be identified as such, e.g., slings and chains, etc. should be tagged "not for use in hoisting operations";
- (iii) Before reversing, ensure everyone is clear. Get help from a signalman if the rear view is obstructed;
- (iv) Attach the towing cable securely to the machines at the points recommended by the manufacturer.
- (v) If these are not known, ensure fixing points are selected that will not damage the tow cable or the machine;
- (vi) check what brakes are operational on the towed vehicle. There is unlikely to be any power assistance available for the brake system. Do not rely on parking brakes as a means of control;
- (vii) When moving off, take up the slack carefully. Do not jerk the cable, and keep it taut to avoid damage;
- (viii) keep towing speed down and as constant as possible;
- (ix) Keep clear of the area between the towing vehicle and the towed vehicle; and attach a warning sign on the rear of the towed vehicle or machine which reads "Vehicle Under Tow".

- (x) Working of heavy mobile equipments in marshy soil, must ensure to keep two nos. of 25 mm thick MS Plates at the base (track chain) of the respective machine to avoid collapse of the same with sand bags at the ground.

23.9 Penalty

If any of the above clauses are not adhered, penalty shall be imposed as per relevant clause depending upon the gravity of the unsafe act and or condition.

24.0 MACHINE AND GENERAL AREA GUARDING

- 24.1 The Contractor shall ensure at the construction site all motors, cogwheels, chains and friction gearing, flywheels, shafting, dangerous and moving parts of machinery are securely fenced or legged. The fencing of dangerous part of machinery is not removed while such machinery is in motion or in use.

25.0 MANUAL LIFTING AND CARRYING OF EXCESSIVE WEIGHT

- 25.1 The Contractor shall ensure at his construction site of a building or other construction work that no building worker lifts by hand or carries overhead or over his back or shoulders any material, article, tool, or appliances exceeding in weight as said below as per Rule 38 of BOCWR, unless aided by another building worker or device.

Person	Maximum weight in kg
Adult man	55
Adult woman	30

- 25.2 No building worker aided by other building worker shall lift or carry weight higher than or exceeding the sum of total of maximum limits set out for each building worker separately as mentioned in the table above.

26.0 SITE ELECTRICITY

- 26.1 Competency of Electrical personnel

- 26.1.1 The Contractor shall employ qualified and competent electrical personnel as specified in General Instruction Maha-Metro/SHE/GI/001.

- 26.2 Assessment of power

- 26.2.1 The Contractor shall assess the size and location of the electrical loads and the manner in which they vary with time during the currency of the Contract.

- 26.2.2 The Contractor shall elaborate as to how the total supply is to be obtained / generated. The details of the source of electricity, earthing requirement, substation / panel boards, distribution system shall be prepared and necessary approval from Employer obtained before proceeding of the execution of the job.

- 26.2.3 The main Contractor shall take consideration, the requirements of the sub / petty contractors' electric power supply and arrive at the capacity of main source of power supply from diesel generators.

- 26.2.4 As the sub / petty contractors' small capacity generators create more noise and safety hazard, no small capacity diesel generators shall be allowed for whatsoever the type of job to be executed under this contract.

- 26.2.5 If any unsafe noise making small capacity diesel generators are found used by sub / petty contractors the main contractor shall only be penalised.

- 26.3 Work on site

The Contractor shall also submit electrical single line diagram, schematic diagram and the details of the equipment for all temporary electrical installation and these diagrams together with the temporary electrical equipment shall be submitted to the Employer's for necessary approval. Failure to do so shall invite penalty as per relevant clause.

26.4 Strength and capability of electrical equipment

No electrical equipment shall be put into use where its strength and capability may be exceeded in such a way as may give rise to danger.

26.5 Adverse or hazardous environments

Electrical equipment, which may reasonably foreseeably be exposed to:

- a) Mechanical damage;
- b) the effects of the weather, natural hazards, temperature, or pressure;
- c) the effects of wet, dirty, dusty, or corrosive conditions; or
- d) any flammable or explosive substance, including dusts, vapours, or gases,

shall be of such construction or as necessary protected as to prevent, so far as is reasonably practicable, danger arising from such exposure.

26.6 Distribution system

26.6.1 The Contractor shall provide distribution system for control and distribution of electricity from a main AC supply of 50Hz for typical appliances:

- a) Fixed plant – 400V 3 phase
- b) Movable plant fed via trailing cable over 3.75 kW – 400V, 3 phase
- c) Installation in site buildings – 230V single phase
- d) Fixed flood lighting – 230V single phase
- e) Portable and hand tools – 115V single phase
- f) Site lighting - 115V single phase
- g) Portable hand lamps – 115V single phase

26.7 Electrical protection circuits

26.7.1 Precautions shall be taken, either by earthing or by other suitable means, to prevent danger arising when any conductor (other than a circuit conductor) which may reasonably foreseeable become charged as a result of either the use of a system, or a fault in a system, becomes so charged. A conductor shall be regarded as earthed when conductors of sufficient strength and current-carrying capability to discharge electrical energy to earth connect it to the general mass of earth.

If a circuit conductor is connected to earth or to any other reference point, nothing which might reasonably be expected to give rise to danger by breaking the electrical continuity or introducing high impedance shall be placed in that conductor unless suitable precautions are taken to prevent that danger.

26.7.2 Appropriate electrical protection shall be provided for all circuits, against over load, short circuit, and earth fault current.

26.7.3 The Contractor shall provide sufficient ELCBs (maintain sensitivity 30 mA) / RCCBs for all the equipments (including Potable equipments), electrical switchboards, distribution panels etc. to prevent electrical shocks to the workers.

26.7.4 All protection devices shall be capable of interrupting the circuit without damage to any equipments and circuits in case of any fault may occur.

26.7.5 Rating of fuses and circuit breakers used for the protection of circuits should be coordinate with equipment power ratings.

26.7.6 Protection against lightning shall be ensured to all equipment kept in open at sites.

26.8 Cables

26.8.1 Cables shall be selected after full consideration of the condition to which they shall be exposed and the duties for which they are required. Supply cable up to 3.3 kV shall be in accordance with BS 6346.

26.8.2 For supplies to mobile or transportable equipment where operating of the equipment subjects the cable to flexing, the cable shall conform to any of these codes BS 6007 / BS 6500 / BS 7375.

26.8.3 Flexible cords with a conductor cross sectional area smaller than 1.5 mm² shall not be used and insulated flexible cable shall conform to BS 6500 and BS 7375.

26.8.4 Where low voltage cables are to be used, reference shall be made to BS 7375. The following standards shall also be referred to particularly for underground cables BS 6346 and BS 6708

26.8.5 Cables buried directly in the ground shall be of a type incorporating armour or metal sheath or both. Such cables shall be marked by cable covers or a suitable marking tape and be buried at a sufficient depth to avoid their being damaged by any disturbance of the ground. Cable routes shall be marked on the plans kept in the site electrical register.

26.8.6 Cabling passing under the walk way and across way for transport and mobile equipment shall be laid in ducts at a minimum depth of 0.6 meters.

26.8.7 Cables that need to cross open areas, or where span of 3m or more are involved, a catenary wire on poles or other supports shall be provided for convenient means of suspension. Minimum height shall be 6m above ground.

26.8.8 Cables carrying a voltage to earth in excess of 65V other than supply for welding process shall have metal armour or sheath, which has been effectively earthed and monitored by the contractor. In case of flexible and trailing cables such earthed metal sheath and/or armour should be in addition to the earth core in the cable and shall not be used as the protective conductor.

26.8.9 Armoured cables having an over-sheath of polyvinyl chloride (PVC) or an oil resisting and flame retardant compound shall be used whenever there is a risk of mechanical damage occurring

26.9 Plugs, socket-outlets, and couplers

26.9.1 The Contractor shall ensure plugs, socket-outlets, and couplers available in the construction site as "splash proof" type. The minimum degree of Ingress Protection should be of IP44 in accordance with BS EN 60529.

26.9.2 Only plugs and fittings of the weatherproof type shall be used and they should be colour coded in accordance with the Internationally recognised standards for example as detailed as follows:

- i) 110 volts: Yellow
- ii) 240 volts: Blue
- iii) 415 volts: Red

26.10 Connections

26.10.1 Every joint and connection in a system shall be mechanically and electrically suitable for use to prevent danger. Proper cable connectors as per national/international standards shall only be used to connect cables.

26.10.2 No loose connections or tapped joints shall be allowed anywhere in the work site, office area, stores, and other areas. Penalty as per relevant clause shall be put in case of observation of any tapped joints.

26.11 Portable and hand-held equipments

The Contractor shall ensure the use of double insulated or all-insulated portable electrical hand equipment may be used without earthing (i.e., two core cables), but they shall still be used only on 110V because of the risk of damage to trailing leads.

26.12 Other equipments:

26.12.1 All equipment shall have the provision for major switch/cut-off switch in the equipment itself.

26.12.2 All non-current carrying metal parts of electrical equipment shall be earthed through insulated cable

26.12.3 Isolate exposed high-voltage (over 415 Volts) equipment, such as transformer banks, open switches, and similar equipment with exposed energized parts and prevent unauthorised access.

26.12.4 Approved perimeter markings shall be used to isolate restricted areas from designated work areas and entryways and shall be erected before work begins and maintained for entire duration of work. Approved perimeter marking shall be installed with either red barrier tape printed with the words "DANGER—HIGH VOLTAGE" or a barrier of yellow or orange synthetic rope, approximately 1 to 1.5 meter above the floor or work surface.

26.13 Work on or near live conductors

No person shall be engaged in any work activity on or so near any live conductor (other than one suitably covered with insulating material so as to prevent danger) that danger may arise unless:

- a) it is unreasonable in all the circumstances for it to be dead; and
- b) it is reasonable in all the circumstances for him to be at work on or near it while it is live; and
- c) suitable precautions (including where necessary the provision of suitable protective equipment) are taken to prevent injury.

26.14 Inspection and Maintenance

26.14.1 All electrical equipment should be permanently numbered and a record kept of the date of issue, date of last inspection and recommended inspection period.

26.14.2 Fixed installations shall be inspected at least at three monthly intervals; routine maintenance being carried out in accordance with equipment manufactures recommendations.

27.0 LIGHTING

27.1 The Contractor shall provide sufficient site lighting, of the right type and at the right place for it to be properly effective. Lighting ought not to introduce the risk of electric shock. Therefore, 230V supplies should be used for those fittings, which are robustly installed, and well out of reach e.g., flood lighting or high-pressure discharge lamps.

27.2 Selection of Luminaries

The Contractor shall select the luminaries as per the area requirement indicated below:

SN	Type	of	Area of Requirement	Luminaries
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	Lighting		
1	Area Lighting	Workmen and vehicles to move about in safely.	Shovel type: non-symmetrical Symmetrical or non-symmetrical tungsten halogen
2	Beam flood lighting	Concentrated light over an area from a relatively great distance.	Portable flood light (Conical beam) Wide angle flood (fan shaped beam) Medium or narrow angle flood (Conical beam)
3	Dispersive lighting	Lighting for indoor	Dispersive (Mercury florescent) Cargo cluster Florescent trough
4	Walkway lighting	Lighting for stairways, ladder ways, corridors, scaffold access routes, etc.	Well glass unit Bulkhead unit (tungsten filament) Bulk head unit (Florescent)
5	Local lighting	Lighting on sites and fittings are generally accessible to operatives	PAR (Parabolic Aluminised Reflector) lamp cluster Festoons (with or without shades) Adjustable florescent work lamp Portable flood lamp (mounted on own cable drum)

- 27.3 The Contractor shall ensure that luminaries should always be placed so that no person is required to work in their own shadow and so that the local light for one person is not a source of glare for the others. Strongly made clamps should be available for attaching luminaries to poles and other convenient supports.
- 27.4 Luminaries should be robust, resistant to corrosion and rain proof especially at the point of the cable entry.
- 27.5 The correct type of lamp for each luminary should always be used and when lamps need to be replaced it shall be in accordance with the supply voltage.
- 27.6 Lamp holders not fitted with a lamp should be capped off.
- 27.7 The Contractor shall take every effort to illuminate the work site as per the Employer's requirement illustrated in General Instruction Maha-Metro/SHE/GI/011.

28.0 HAND TOOLS AND POWER TOOLS

28.1 General

- 28.1.1 The Contractor is wholly responsible for the safe condition of tools and equipment used by his employees and that of his sub-contractors.
- 28.1.2 Use of short / damaged hand tools shall be avoided and the Contractor shall ensure all his hand tools used at his worksite are safe to work with or stored and shall also train his employees (including his sub-contractors) for proper use thereby.
- 28.1.3 All hand tools and power tools shall be duly inspected before use for safe operation.
- 28.1.4 All hand tools and power tools shall have sufficient grip and the design specification on par with national/international standards on anthropometrics.

28.2 Hand tools

- 28.2.1 Hand tools shall include saws, chisels, axes and hatches, hammers, hand planes, screw drivers, crow bars, nail pullers.
- 28.2.2 The Contractor shall ensure that,

- a) For crosscutting of hardwood, saws with larger teeth points (no. of points per inch) shall be preferred to avoid the saw jumping out of the job.
- b) Mushroom headed chisels shall not be used in the worksite where the fragments of the head may cause injury.
- c) Unless hatchet has a striking face, it shall be used as a hammer.
- d) Only knives of retractable blades shall be used in the worksite.
- e) No screwdrivers shall be used for scraping, chiselling, or punching holes.
- f) A pilot hole shall always be driven before driving a screw.
- g) Wherever necessary, usage of proper PPEs shall be used by his employees.

28.3 Power tools

28.3.1 Power tools include drills, planes, routers, saws, jackhammers, grinders, sprayers, chipping hammers, air nozzles and drills.

28.3.2 The Contractor shall ensure that:

- (i) Electric tools are properly grounded or / and double insulated.
- (ii) GFCIs/ RCCBs shall be used with all portable electric tool operated especially outdoors or in wet condition.
- (iii) Before making any adjustments or changing attachments, his workers shall disconnect the tool from the power source.
- (iv) When operating in confined spaces or for prolonged periods, hearing protection shall be required. The same shall also apply to working with equipments, which gives out more noise as mentioned in Clause 43.0 of this document.
- (v) Tool is held firmly and the material is properly secured before turning on the tool.
- (vi) All drills shall have suitable attachments respective of the operations and powerful for ease of operation.
- (vii) When any work / operation needs to be performed repeatedly or continuously, tools specifically designed for that work shall be used. The same is applicable to detachable tool bit also.
- (viii) Size of the drill shall be determined by the maximum opening of the chuck in case of drill bit.
- (ix) Attachments such as speed reducing screwdrivers and buffers shall be provided to prevent fatigue and undue muscle strain to his workers.
- (x) Stock should be clamped or otherwise secured firmly to prevent it from moving.
- (xi) Workers shall never stand on the top of the ladder to drill holes in walls / ceilings, which can be hazardous, instead standing on the fourth or fifth rung shall be recommended.
- (xii) Electric plane shall not be operated with loose clothing or long scarf or open jacket.
- (xiii) Safety guards used on right angle head or vertical portable grinders must cover a minimum of 180° of the wheels and the spindle / wheel specifications shall be checked.
- (xiv) All power tools / hand tools shall have guards at their nip points.
- (xv) Low profile safety chain shall be used in case of wood working machines and the saw shall run at high rpm when cutting and also correct chain tension shall be ensured to avoid "kickback".

- (xvi) Leather aprons and gloves shall be used as an additional personal protection auxiliary to withstand kickback.
- (xvii) Push sticks shall be provided and properly used to hold the job down on the table while the heels move the stock forward and thus preventing kickbacks.
- (xviii) Air pressure is set at a suitable level for air actuated tool or equipment being used. Before changing or adjusting pneumatic tools, air pressure shall be turned off.
- (xix) Only trained employees shall use explosive actuated tools and the tool shall also be unloaded when not in use.
- (xx) Usage of such explosive actuated tools shall be avoided in case of places where explosive/flammable vapours or gases may be present.
- (xxi) Explosive actuated tools and their explosives shall be stored separately and be taken out and loaded only before the time of immediate use.
- (xxii) Misfired cartridges of explosive actuated tools must be placed in a container of water and be removed safely from the project.
- (xxiii) No worker shall point any power operated / hand tool to any other person especially during loading / unloading.

29.0 WELDING, GOUGING AND CUTTING

- 29.1 Gas cylinders in use shall be kept upright on a custom-built stand or trolley fitted with a bracket to accommodate the hoses and equipment or otherwise secured. The metal cap shall be kept in place to protect the valve when the cylinder is not connected for use.
- 29.2 Hose clamp or clip shall be used to connect hoses firmly in both sides of cylinders and torches.
- 29.3 All gas cylinders shall be fixed with pressure regulator and dial gauges
- 29.4 Non-return valve and Flashback arrester shall be fixed at both end of cylinder and torch.
- 29.5 Domestic LPG cylinders shall not be used for Gas welding and Cutting purpose.
- 29.6 DCP or CO2 type Fire Extinguisher not less than 5 kg shall be fixed at or near to welding process zone in an easily accessible location. Fire Extinguisher should confirm to IS 2190: 1992.
- 29.7 Use firewatchers if there is a possibility of ignition unobserved by the operator (e.g., on the other side of bulkheads).
- 29.8 Oxygen cylinders and flammable gas cylinders shall be stored separately, at least 6.6 meters (20 feet) apart or separated by a fire proof, 1.5 meters (5 feet) high partition. Flammable substances shall not be stored within 15 meters of cylinder storage areas.
- 29.9 Transformer used for electrical arc welding shall be fixed with Ammeter and Voltmeter and also fixed with separate main power switch.
- 29.10 Welding grounds and returns should be securely attached to the work by cable lugs, by clamps in the case of stranded conductors, or by bolts for strip conductors. The ground cable will not be attached to equipment or existing installations or apparatus.
- 29.11 Use a low voltage open circuit relay device if welding with alternating current in constricted or damp places.

- 29.12 Take precautions against the risk of increased fume hazards when welding with chrome containing fluxed consumables or high current metal inert gas (MIG) or tungsten inert gas (TIG) processes.
- 29.13 Avoid being in contact with water or wet floors when welding. Use duckboards or rubber protection.
- 29.14 All electrical installations shall meet the IS: 5571: 1997 and NFPA 70 for gas cylinder storage area and other hazardous areas.
- 29.15 The current for Electric arc welding shall not exceed 300 A on a hand welding operation.
- 29.16 Fire blankets are to be used at all the times while hot works are in progress in order to arrest the free fall of welding spatters

30.0 DANGEROUS AND HARMFUL ENVIRONMENT

30.1 A confined space is any space that:

- i) Is large enough and so configured that a worker can bodily enter (any portion of the body) and perform assigned work,
- ii) Has limited or restricted mean for entry and/or exit,
- iii) Is not designed for continuous occupancy
- iv) Contains or has the potential to contain a hazardous atmosphere,
- v) Contains a material that has the potential for engulfing an entrant,
- vi) Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross section, or
- vii) Contains other recognized serious safety or health hazard.

30.2 Contractors must ensure all confined spaces are identified and managed using documented site confined space management methods.

30.3 As per BOCWR Rule 40:

- (i) When internal combustion engines are to be used into a confined space or excavation or tunnel or any other workplace where neither natural or artificial ventilation system is inadequate to keep carbon monoxide below 50ppm, exposure of building workers shall be avoided unless suitable measures are taken and provided by the Contractor.
- (ii) No worker shall be allowed into any confined space or tank or trench or excavation wherein there is given off any dust, fumes / vapours or other impurities which is likely to be injurious or offensive, explosive, or poisonous or noxious or gaseous material or other harmful articles unless steps are carried out by the Contractor and certified by the responsible person to be safe.

30.4 Dangerous Substances: -

30.4.1 A substance is considered dangerous if one or several of its properties render it dangerous. The Contractor identifies and manages dangerous substances planned for use on the Worksite in the manner described in the present Clause.

30.4.2 The transport to the Worksite and use of dangerous substances requires prior authorisation from the Engineer.

30.4.3 Details of risks and related prevention and protection measures are included in the health and safety plan.

30.4.4 The Contractor obtains all necessary authorisations and/or licenses for the storage and use of dangerous substances from local authorities. A copy of the authorisations is provided to the Engineer.

30.4.5 For each dangerous substance used, the Contractor will implement the recommendations described (i) in the Material Safety Data Sheets (MSDS), and (ii) by the Globally Harmonized System of Classification and Labelling of Chemicals established by the United Nations for hazardous chemicals.

30.4.6 Copies of MSDSs are kept on the Worksite and made available to personnel. The Contractor provides the Engineer with copies of all MSDSs.

30.4.7 Storage of dangerous substances

Storage areas are designed and equipped by the Contractor based, not only on the chemical and physical properties of the products, but also on the types of containers stored, the number of people requiring access, and the quantities of the substance used.

Pursuant to SHE Clause 53.11, the Contractor anticipates and plans for the storage and management of hazardous waste.

Storage areas for dangerous substances are subject to strict rules, which are regularly checked by the SHE manager appointed. The rules include the following as a minimum:

- a) Access to the storage area is limited to trained and authorised individuals.
- b) An inventory is maintained up-to-date.
- c) MSDSs must be available for all stored dangerous substances, and the substances must be clearly labelled.
- d) A strict and methodical storage system is implemented (storage plan posted, large or heavy packaging may not be stored at heights, equipment and tools may not be stored in the dangerous substance storage room).
- e) Compliance with product expiry dates and implementation of a disposal procedure for substances which are not needed, or which have expired.
- f) Entrances, exits and access to emergency equipment are always kept clear.

Storage areas are clearly identified with warning signs at the entrance. The Contractor displays the storage plan (location of the different products, maximum inventory), a summary of labelling system and information on chemical incompatibilities.

Chemicals which could react together (leading to explosions, fire, projections, or the emission of dangerous gases) are physically separated.

Products that react violently with water are stored so as to prevent contact with water, even in the event of flooding.

Inflammable products are always stored separately in a dedicated area with adequate ventilation.

Buildings used to store large quantities of dangerous substances are isolated from other buildings to avoid the spreading of fire. Such buildings are constructed using solid and non-combustible building materials and are equipped with evacuation systems and the appropriate firefighting equipment. Access to the buildings is clear, allowing for rapid evacuation in the event of an accident. The electrical systems are reduced to the essential minimum, and access points are equipped with adequate lighting (300 lux).

All storage areas are equipped with secondary retentions. Each storage area acts as a general secondary retention. Suitable absorbents (neutralising and non-combustible) are available in the storage area to clean up any spills and leaks.

The Contractor maintains the storage area at a suitable temperature for dangerous substances to prevent overpressure and bursting of containers.

31.0 FIRE PREVENTION, PROTECTION AND FIGHTING SYSTEM

- 31.1 The Contractor shall ensure that construction site is provided with fire extinguishing equipment sufficient to extinguish any probable fire at construction site. An adequate water supply is provided at ample pressure as per national standard.
- 31.2 Recharging of fire extinguishers and their proper maintenance should be ensured and as a minimum should meet Indian National Standards.
- 31.3 All drivers of vehicles, foreman, supervisors, and managers shall be trained on operating the fire extinguishers and fire fighting equipment.
- 31.4 The Contractor shall also consider the provision of adequate fire fighting arrangements within the underground and tunnelling operations including the provision of Fire Service compatible hose connections and emergency lighting.
- 31.5 As per the GBOCW Rules 2003, all lifting appliances' driver cabin should be provided with a suitable portable fire extinguisher.
- 31.6 Combustible scrap and other construction debris should be disposed off site on a regular basis. If scrap is to be burnt on site, the burning site should be specified and located at a distance no less than 12 metres from any construction work or any other combustible material.
- 31.7 Every fire, including those extinguished by Contractor personnel, shall be reported to the Employer representatives.
- 31.8 Emergency plans and Fire Evacuation plans shall be prepared and issued. Mock drills should be held on a regular basis to ensure the effectiveness of the arrangements and as a part of the programme, the Telephone Number of the local fire brigade should be prominently displayed near each telephone on site.

32.0 CORROSIVE SUBSTANCES

As per BOCWR Rule 44, corrosive substances including alkalis and acids shall be stored and used by a person dealing with such substances at a building / construction site in a manner that it does not endanger the building worker and suitable PPE shall be provided by the Contractor to the worker during such handling and work. In case of spillage of such substances on building worker, the Contractor shall take immediate remedial measures.

33.0 DEMOLITION

- 33.1 The Contractor shall ensure that:

- (i) all demolition works be carried out in a controlled manner under the management of experienced and competent supervision.
- (ii) the concerned department of the Government or local authority be informed, and permission obtained wherever required. Media shall also be informed regarding this concern.
- (iii) all glass or similar materials or articles in exterior openings are removed before commencing any demolition work and all water, steam, electric, gas and other similar supply lines are put-off and such lines so located or capped with substantial coverings so as to protect it from damage and to afford safety to the building workers and public.
- (iv) examine the walls of all structures adjacent to the structure to be demolished to determine thickness, method of support to such adjacent structures
- (v) no demolishing work be performed if the adjacent structure seems to be unsafe unless and until remedial measures like sheet piling, shoring, bracing, or similar means be ensured for safety and stability for adjacent structure from collapsing.
- (vi) debris / bricks and other materials or articles shall be removed by means of:

- (a) chutes
- (b) buckets or hoists
- (c) through openings through floors or
- (d) any other safe means

- (vii) no person other than building workers or other persons essential to the operation of demolition work shall be permitted to enter a zone of demolition and the area be provided with substantial barricades.

33.2 Damages to people and property.

33.2.1 Pursuant to Clauses 4.14 and 17.1 of the GCC, the Contractor is responsible for damages to people and property caused by the execution of the works or the procedures used for execution.

33.2.2 The Engineer is informed of any damage caused to people, or the property of individuals, other than the Contractor's personnel, within 6 hours of the event, regardless of the value of the prejudice.

33.2.3 Housing existing before the start of the works, located within a minimum radius of 800 m around the perimeter of the quarries and within a minimum radius of 500 m around the other Worksites that will be subject to blasting, will be examined by a bailiff unless agreed upon otherwise with the Engineer.

33.2.4 The bailiff's sworn statement is prepared and provided to the Engineer with the SEPP.

33.2.5 Should any problems be detected due to the intensity of blasting, the Engineer is entitled to request that the Contractor carry out seismic measurements of the intensity of the vibrations induced by the blasting, at variable distances from the blasting points, under the supervision of the Engineer, and at the cost of the Contractor.

34.0 EXCAVATION

34.1 Excavation: The Contractor shall ensure:

- (i) where any construction building worker engaged in excavation is exposed to hazard of falling or sliding material or article from any bank or side of such excavation which is more than one 1.5 m above his footing, such worker is protected by adequate piling and bracing against such bank or side.
- (ii) where banks of an excavation are undercut, adequate shoring is provided to support the material or article overhanging such bank.
- (iii) excavated material is not stored at least 0.65 m from the edge of an open excavation or trench and banks of such excavation or trench are stripped of loose rocks and the banks of such excavation or trench are stripped of loose rocks and other materials which may slide, roll or fall upon a construction building worker working below such bank.
- (iv) metal ladders and staircases or ramps are provided, as the case may be, for safe access to and egress from excavation where, the depth of such excavation exceeds 1.5 m and such ladders, staircases or ramps comply with the IS 3696 Part 1&2 and other relevant national standards.
- (v) trench and excavation are protected against falling of a person by suitable measures if the depth of such trench or excavation exceeds 1.5 m and such protection is an improved protection in accordance with the design and drawing of a professional engineer, where such depth exceeds 4m.

34.2 Tunnelling

34.2.1 The Contractor shall inform in writing to the Director General within 30 days, prior to the commencement of any tunnelling work.

34.2.2 The Contractor shall appoint a responsible person for safe operation for tunnelling work as per Rule 121 & 125 of BOCWR.

34.2.3 The contractor shall ensure:

- (i) every compressed air system in a tunnel is provided with emergency power supply for maintaining continued supply of compressed air as per Rule 155 of BOCWR
- (ii) watertight bulkhead doors are installed at the entrance of a tunnel to prevent flooding.
- (iii) reliable and effective means of communication such as telephone or walkie-talkie are provided and maintained for arranging better effective communication at an excavation or tunnelling work as per Rule 136 of BOCWR.
- (iv) all portable electrical hand tools and inspection lamp used in underground and confined space at an excavation or tunnelling work is operated at a voltage not exceeding 24V.
- (v) only flame proof equipment of appropriate type as per IS: 5571:2000 and or other relevant national standard is used inside the tunnel
- (vi) petrol or LPG of any other flammable substances are not used, stored inside the tunnel except with prior approval from Employer, and also no oxy-acetylene gas is used in a compressed air environment in excavation or tunnelling.
- (vii) adequate number of water outlets provided for fire fighting purpose, an audible fire alarm and adequate number and types of fire extinguishers are provided and maintained.
- (viii) temperature in any working chamber in an excavation or tunnelling work where workers employed does not exceed 29°C as per Rule 165 of BOCWR.
- (ix) all working areas in a free air tunnel are provided with ventilation system as approved by the Director General and the fresh air supplied in such tunnel is not less than 6 m³/min for each worker employed in tunnel as per Rule 153 of BOCWR.

34.3 Piling

34.3.1 General Precautions

There are certain hazards which are common to all types of piling, and the following precautions are necessary:

- i) prior to piling, all underground services should be located and made safe. A check should be made to ensure there are no cellars, underground water courses or ground conditions which might cause hazards; there should be a firm level base for the crane, or crane mats provided;
- ii) when working on piling operations one must wear a safety helmet, and ear and eye protection where necessary;
- iii) All cranes, lifting appliances and lifting gear must have appropriate certificates of testing and thorough examination, and should be large enough for the job;
- iv) particular attention should be paid to the risk of damage to lifting gear from sharp edges;

- v) Cranes used for raising or lowering workers must be fitted with a dead man's handle and lowering should be done under power; you must be carried in properly constructed cages which cannot spin or tip;
- vi) piling contractors should be asked to provide a written method statement setting out the precautions relevant to the type of piling they are to employ;
- vii) Induction training and information for you as supervisor or operative should be specifically related to the method statement.

34.3.2 Bored Piles

Workers may need to enter a borehole for inspection or for clearing out in undercuts, and there are certain precautions which must be taken prior to entry:

- (i) the borehole should be at least 75 cm in diameter;
- (ii) the borehole should be treated as a confined space and the precautions which are advised elsewhere to ensure a satisfactory atmosphere must be closely followed;
- (iii) waste material from the borehole should be kept clear of the borehole;
- (iv) Descent into a borehole should be in properly designed skips, chains or cages fitted with an anti-spin device. The power source of the lifting appliance should be kept running throughout the time someone is underground;
- (v) while a worker is working down a borehole, he/she must wear a safety harness;
- (vi) all workers concerned must be trained and competent in rescue from deep boreholes, and emergency rescue drills should be carried out at regular intervals;
- (vii) A banksman who can see workers in the borehole should be present at all times;
- (viii) There must be adequate lighting at safe reduced voltage and a means of communication from the borehole.
- (ix) Wherever possible, the need for workers to enter pile boreholes should be avoided by the use of television cameras and other techniques for remote inspection.

34.4 Warning signs and notices

The Contractor shall ensure that:

- (i) suitable warning signs or notices, required for the safety of building workers carrying out the work of an excavation or tunnelling, shall be displayed or erected at conspicuous places in Hindi and in a language understood by majority of such building workers at such building such excavation or tunnelling work
- (ii) such warning signs and notices with regard to compressed air working shall include
 - (a) the danger involved in such compressed air work
 - (b) fire and explosion hazard
 - (c) the emergency procedures for rescue from such danger or hazards.

35.0 WORK PERMIT SYSTEM

- 35.1 The Contractor shall develop a Work Permit system, which is a formal written system used to control certain types of work that are potentially hazardous. A work permit is a document, which specifies the work to be done, and the precautions to be taken. Work Permits form an essential part of safe systems of work for many construction activities. They allow work to start only after safe procedures have been defined and they provide a clear record that all foreseeable hazards have been considered. Permits to Work are usually required in high-risk areas as identified by the Risk Assessments.
- 35.2 A permit is needed when construction work can only be carried out if normal safeguards are dropped or when new hazards are introduced by the work. Examples of high-risk activities include but are not limited to:
 - (i) Entry into confined spaces
 - (ii) Work in close proximity to overhead power lines and telecommunication cables.

- (iii) Hot work
- (iv) To dig where underground services may be located
- (v) Work with heavy moving machinery
- (vi) Working on electrical equipment
- (vii) Work with radioactive isotopes
- (viii) Heavy lifting operations and lifting operations closer to live power line

35.3 The permit-to-work system should be fully documented, laying down:

- (i) How the system works;
- (ii) The jobs it is to be used for;
- (iii) The responsibilities and training of those involved; and
- (iv) How to check its operation;

35.4 A Work Permit authorisation form shall be completed with the maximum duration period not exceeding 12 hours.

35.5 A copy of each Permit-to-Work shall be displayed, during its validity, in a conspicuous location in close proximity to the actual works location to which it applies.

36.0 TRAFFIC MANAGEMENT

36.1 The basic objective of the following guidelines is to lay down procedures to be adopted by Contractor to ensure the safe and efficient movement of traffic and also to ensure the safety of workmen at construction sites.

36.2 All construction workers should be provided with high visibility jackets with reflective tapes as most of viaduct /tunnelling and station works or either above or under right-of-way. The conspicuity of workmen at all times shall be increased so as to protect from speeding vehicular traffic.

36.3 The guiding principles to be adopted for safety in construction zone are to:

- (i) Warn the road user clearly and sufficiently in advance.
- (ii) Provide safe and clearly marked lanes for guiding road users.
- (iii) Provide safe and clearly marked buffer and work zones
- (iv) Provide adequate measures that control driver behaviour through construction zones.

36.4 Legal permission

36.4.1 In all cases, the Contractor shall employ proper precautions. Wherever operations undertaken are likely to interfere with public traffic, specific traffic management plans shall be drawn up and implemented by the Contractor in consultation with the approval of local police authorities and/or the concerned metropolitan/civil authorities as the case may be.

36.4.2 Such traffic management plans shall include provision for traffic diversion and selection of alternative routes for transport of equipment. If necessary, the Contractor shall carry out road widening before commencement of works to accommodate the extra load.

36.5 The primary traffic control devices used in work zones shall include signs, delineators, barricades, cones, pylons, pavement markings and flashing lights.

36.6 The road construction and maintenance signs which fall into the same three major categories as do other traffic signs, that are Regulatory Signs, Warning Signs and Direction (or guidelines) Signs shall only be used. The IRC: 67 (Code of Practice for Road Signs) provide a list of traffic signs. The size, colours and placement of sign shall confirm to IRC: 67.

36.7 Regulatory signs

Regulatory signs impose legal restriction on all traffic. It is essential, therefore, that they are used only after consulting the local police and traffic authorities.

36.8 Warning signs

36.8.1 Warning signs in the traffic control zone shall be utilised to warn the drivers of specific hazards that may be encountered.

36.8.2 The Contractor shall place detour signage at strategic locations and install appropriate warning signs. In order to minimize disruption of access to residences and business, the Contractor shall maintain at least one entrance to a property where multiple entrances exist.

36.8.3 A warning sign as given in General Instruction Maha-Metro/SHE/GI/012 shall be installed at all secondary road which merges with the primary road where the construction work is in progress at sufficient distance before it merges with the primary road so as to alert the road users regarding the 'Metro Work in Progress'.

36.8.4 Materials hanging over / protruded from the chassis / body of any vehicle especially during material handling shall be indicated by red indicator (red light/flag) to indicate the caution to the road users.

36.9 Delineators

The delineators are the elements of a total system of traffic control and have two distinct purposes:

- (i) To delineate and guide the driver to and along a safe path
- (ii) As a taper to move traffic from one lane to another.

36.9.1 These channelizing devices such as cones, traffic cylinders, tapes and drums shall be placed in or adjacent to the roadway to control the flow of traffic. These should normally be retro-reflectors complying with IRC: 79 - Recommended Practice for Road Delineators.

36.9.2 Traffic cones and cylinders

Traffic cones of 500mm, 750mm and 1000mm high and 300mm to 500mm in diameter or in square shape at base and are often made of plastic or rubber and normally have retro-reflectorised red and white band shall be used wherever required.

36.9.3 Drums

Drums about 800mm to 1000mm high and 300mm in diameter can be used either as channelizing or warning devices. These are highly visible, give the appearance of being formidable objects and therefore command the respect of drivers.

36.9.4 Barricades

- (i) Full height fence, barriers, barricades etc. shall be erected around the site in order to prevent the working area from the risk of accidents due to speedy vehicular movement. Same the way barricades protect the road users from the danger due to construction equipment and other temporary structures.
- (ii) The structure dimension of the barricade, material and composition, its colour scheme, Maha-Metro logo and other details shall be in accordance with specifications laid down in tender document.
- (iii) All barricades shall be erected as per the design requirements of the Employer, numbered, painted and maintained in good condition and also Barricade in-charge maintains a barricade register in site.

- (iv) All barricades shall be conspicuously seen in the dark/night time by the road users so that no vehicle hits the barricade. Conspicuity shall be ensured by affixing retro reflective stripes of required size and shape at appropriate angle at the bottom and middle portion of the barricade at a minimum gap of 1000mm. In addition, minimum one red light or red light blinker should be placed at the top of each barricade.

36.9.5 The Contractor shall ensure that all his construction vehicles plying on public roads (like dump trucks, trailers, etc.) have proper license to ply on public roads from the State Transport Authority. Drivers holding proper valid license as per the requirements of Motor Vehicles Act shall drive these vehicles.

36.9.6 The Contractor shall not undertake loading and unloading at carriageways obstructing the free flow of vehicular traffic and encroachment of existing roads by the contractor applying the excuse of work execution.

36.9.7 Tow away vehicle

The Contractor shall make arrangements by keeping tow away van / manpower to tow away any breakdown vehicle in the traffic flow without losing any time at his cost.

36.9.8 Cleaning of roads

The Contractor shall ensure the cleanliness of roads and footpaths by deploying proper manpower for the same. The Contractor shall have to ensure proper brooming, cleaning washing of roads and footpaths on all the time throughout the entire stretch till the currency of the contract including disposal of sweepage.

36.9.9 The Contractor defines the characteristics of its fleet of vehicles and site machinery in the WESMP.

36.9.9.1 The Contractor defines the itineraries used on a map for each route between the different Worksites and obtains the validation of the Engineer. The Contractor requests that the Employer obtain the authorisations of the competent administrative authorities if public roads are used.

36.9.9.2 Within one month of the start of works, the Contractor informs the administrative authorities of areas crossed by the Contractor's vehicles, of the itinerary and characteristics (frequency of passing, size and weight of trucks, materials carried) of the Contractor's fleet of vehicles.

36.9.9.3 If public roads are used, and unless approved otherwise by the Engineer, the Contractor mandates a bailiff to make a sworn report regarding the state of the road prior to use by the Contractor's vehicles. The report is annexed to the W-ESMP.

36.9.9.4 The Contractor describes in the W-ESMP expected traffic created by its fleet of vehicles (frequency of trips between Worksites, working hours, convoys).

36.9.9.5 Unless specified otherwise in the Contract or instructed otherwise by the Engineer, heavy vehicles (i.e. with a GVWR of more than 3.5 tons) may not be used at night between 22:00 and 06:00.

36.9.9.6 Speed limits

36.9.9.6.1 The Contractor takes action to limit and check the speed of all vehicles and machinery used to execute the works.

- 36.9.9.6.2 The maximum speed of all machinery and vehicles of the Contractor comply with the lowest of the following: the speed limit defined according to the Employer's country regulations or the following limits.
- a) 10 km/h within the Worksites.
 - b) 30 km/h in villages or hamlets, from 100m before the first house.
 - c) 50 km/h in towns.
 - d) 80 km/h on unpaved roads outside of towns, villages, hamlets and camps.
- 36.9.9.6.3 Pursuant to Clause 4.15 of the GCC, and in coordination with the competent Employer's country authorities, the Contractor provides and installs signs for the fleet of vehicles along public roads, when public signs are inadequate.
- 36.9.9.6.4 The Contractor provides each of its drivers with a map at the appropriate scale of the roads authorised for the execution of the works, clearly indicating the maximum speeds authorised, and ensures their understanding.
- 36.9.9.6.5 The Contractor implements a real-time GPS location solution for each of its vehicles and permanently remote monitor of the position and speed of each vehicle.

37.0 WORK ADJACENT TO LIVE RAILWAYS

- 37.1 Whenever work is to be conducted in close proximity to the live railways then the following measures shall need to be addressed:
- (i) The rules provided for in the Railway's manual should be followed.
 - (ii) No persons are allowed to encroach onto the railway unless the owner has given specific authority.
 - (iii) Adequate protection in accordance with the railway owner's requirements shall be followed. (Provision of Block Inspectors, Flagmen and Lookouts)
 - (iv) All persons shall wear high visibility clothing at all times.
 - (v) Any induction training requirements of the railways shall be strictly observed

38.0 BATCHING PLANT AND CASTING YARD LAYOUT

- 38.1 The batching plant / casting yard shall be effectively planned for smooth flow of unloading and stacking the aggregates reinforcements and cement, batching plant, transport of concrete, casting the segment, stacking the segment and loading the segments to the trucks. As far as possible the conflicts should be avoided.
- 38.2 Required permission (CTE and CTO) from Maharashtra Pollution Control Board shall be obtained prior to establishing and commissioning of the batching plant and conditions of the CTE and CTO shall be complied.
- 38.3 The batching plant area shall be barricaded for wind breaking and shall be made as a compulsory PPE zone
- 38.4 If in case of material unloading area is not maintainable as PPE zone, the same shall be segregated properly and made as a non-PPE zone with appropriate barrications.
- 38.5 Electrical system shall also be suitably planned so that location of diesel generator, if any, location of DBs, routing of cables and positioning of area lighting poles/masts does not infringe on any other utility and pose danger.
- 38.6 Drainage shall be effectively provided and waste water shall be disposed after proper treatment
- 38.7 Time office, canteen, drinking water, toilet and rest place shall be suitably located for the easy access to workers. All the facilities shall be properly cleaned and maintained during the entire period of operation.

- 38.8 Manual handling of cement shall be avoided to a larger extent. Whenever it is absolutely necessary the workmen shall be given full body protection, hand protection and respiratory protection as a basic measure of ensuring better health.
- 38.9 The PPEs provided to cement handling workmen shall conform to international standards.
- 38.10 Access roads and internal circulation roads shall be well laid and maintained properly at all time.
- 38.11 Non-adherence to any of the above provision shall be penalised as per relevant penalty clause.
- 38.12 Approval of the batching plant to be taken from CPCB/MPCB/Local Municipal Corporation.

39.0 PERSONAL PROTECTIVE EQUIPMENTS (PPEs)

- 39.1 The Contractor shall provide required PPEs to workmen to protect against safety and / or health hazards. Primarily PPEs are required for the following protection
- (i) Head Protection (Safety helmets)
 - (ii) Foot Protection (Safety footwear, Gumboot, etc)
 - (iii) Body Protection (High visibility clothing (waistcoat/jacket), Apron, etc)
 - (iv) Personal fall protection (Full body harness, Rope-grap fall arrester, etc)
 - (v) Eye Protection (Goggles, Welders glasses, etc)
 - (vi) Hand Protection (Gloves, Finger coats, etc)
 - (vii) Respiratory Protection. (Nose mask, SCBAs, etc.)
 - (viii) Hearing Protection (Ear plugs, Ear muffs, etc)
- 39.2 The PPEs and safety appliances provided by the Contractor shall be of the standard as prescribed by Bureau of Indian Standards (BIS). If materials conforming to BIS standards are not available, the Contractor as approved by the Employer shall procure PPE and safety appliances.
- 39.3 All construction workers should be provided with high visibility jackets with reflective tapes confirming to the requirement specified under BS EN 471: 1994 as most of viaduct /tunnelling and station works are executed either above or under right-of-way. The conspicuity of workmen at all times shall be increased so as to protect them from speeding vehicular traffic.
- 39.4 The Contractor shall provide safety helmet, safety shoe and high visibility clothing for all employees including workmen, traffic marshal and other employees who are engaged for any work under this contract as per the following requirement.

All employees of the Contractor including workmen	Traffic marshals
Hard hat with company Logo	Hard hat with reflective tape
Safety boots	Safety boots
Hi-visibility waistcoat covering upper body and meeting the following requirements as per BS EN 471:1994:	Hi-visibility jacket covering upper body and meeting the following requirements as per BS EN 471:1994:
(a) Background in fluorescent orange-red in colour	(a) Background in fluorescent orange-red in colour
(b) Two vertical green strips of 5cm wide on front side, covering the torso at least 500 cm ²	(b) Jackets with full-length sleeves with two bands of retro reflective material, which shall be placed at the same height on the garment as those of the torso. The upper band shall encircle the upper part of the sleeves between the elbow and the shoulder; the bottom of the lower band shall not be less than 5cm from the bottom of the sleeve.
(c) Two diagonal strips of 5 cm wide on back in an 'X' pattern covering at least 570cm ²	
(d) Horizontal strips not less than 5cm wide running around the bottom of the vertical strip in front and 'X' pattern at back.	
(e) The bottom strip shall be at a distance of 5cm from the bottom of the vest.	
(f) Strips must be retro reflective and fluorescent	

All employees of the Contractor including workmen	Traffic marshals
(g) Waistcoat shall have a side adjustable fit and side and front tear-away feature on vests made of nylon.	(a) Two vertical green strips of 5cm wide on front side, covering the torso at least 500 cm ² (d) Two diagonal strips of 5 cm wide on back in an 'X' pattern covering at least 570cm ² (e) Horizontal strips not less than 5cm wide running around the bottom of the vertical strip in front and 'X' pattern at back. (f) The bottom strip shall be at a distance of 5cm from the bottom of the vest. (g) Strips must be retro reflective and fluorescent.

39.4.1 Colour coding for helmets

Safety Helmet Colour Code (Every Helmet should have the LOGO* affixed /painted)	Person to use
White	Maha-Metro staffs
Grey	All Designers, Architect, Consultants, etc.
Violet	Main Contractors (Engineers / Supervisors)
Blue	All Sub-contractors (Engineers / Supervisors)
Red	Electricians (Both Contractor and Sub-contractor)
Green	Safety Professionals (Both Contractor and Sub-contractor)
Orange	Security Guards / Traffic marshals
Yellow	All workmen/Drivers/Operators
White (with "VISITOR" sticker)	Visitors

Note: LOGO*

- (i) Logo shall have its outer dimension 2" *2" and shall be conspicuous
- (ii) Logo shall be either painted or affixed
- (iii) No words shall come either on Top / Bottom of Logo

Logo of the corresponding main contracting company for their employees and sub-contracting company for their employees shall only be used.

- 39.5 In addition to the above any other PPE required for any specific jobs like, welding and cutting, working at height, tunnelling etc shall also be provided to all workmen and also ensure that all workmen use the PPEs properly while on the job.
- 39.6 The Contractor shall not pay any cash amount in lieu of PPE to the workers/sub-contractors and expect them to buy and use during work.
- 39.7 The Contractor shall at all time maintain a minimum of 10% spare PPEs and safety appliances and properly record and show to the Employer during the inspections. Failing to do so shall invite appropriate penalty as per the provisions of the contract.
- 39.8 It is always the duty of the Contractor to provide required PPEs for all visitors. Towards this required quantity of PPEs shall be kept always at the security post.
- 39.9 Warning to Safety offenders
- i) A warnings cards shall be issued by nominated person of Maha-Metro to Contractor staff or worker in case of serious violation.

- ii) Yellow card shall be issued on first safety offence/violation. A sticker to be pasted on his helmet and his identity card shall be stamped for two weeks during which he will be under observation. The warning cards shall be withdrawn by the same nominated person after satisfactory completion of two weeks of period.
- iii) Red card shall be issued in case of repeat safety violation carried out in two weeks by the same person or if he repeats safety violation more than three times in a year. Such Red card holders shall be withdrawn from site and attend a repeat Safety Training for min. three days before re-induction. The person shall be demobilised in case of second Red Card issue.

40.0 VISITORS TO SITE

- 40.1 No visitor is allowed to enter the site without the permission of the Employer. All authorised visitors should report at the site office. Contractor shall provide visitor's helmet (White helmet with visitor sticker) and other PPEs like Safety Shoe, reflective jacket, respiratory protection etc. as per requirement of the site.
- 40.2 All Visitors shall be accompanied at all times by a responsible member of the site personnel.
- 40.3 The Contractor shall be fully responsible for all visitors' safety and health within the site.

40.4 Complaint Response Process

- 40.4.1 Inquiries, complaints, and requests for information can be expected from a wide range of individuals and organizations both private and government. The majority of complaints are likely to be received by Maha-Metro, although the site offices are also likely to be contacted.
- 40.4.2 The objective of complaint process is to ensure that public and agency complaints are addressed and resolved consistently and expeditiously.
- 40.4.3 The Contractor's Site Manager will be notified immediately on receipt of complaint that may relate to environmental impacts. The Site Manager will immediately inform the Engineer and through him the Maha-Metro.
- 40.4.4 Field investigation should determine whether the complaint has merit, and if so, action should be taken to address the impact.
- 40.4.5 The outcome of the investigation and the action taken shall be documented on a complaint performa prepared by the Contractor and approved by the Engineer in advance of the works.
- 40.4.6 Where possible, a formal response to each complaint received shall be prepared by the Contractor within seven days in order to notify the concerned person(s) that action has been taken.

40.5 Completion of the EQM Programme

- 40.5.1 The construction of Project will be undertaken as a series of individual construction contracts with necessarily different construction program and completion dates.
- 40.5.2 The Engineer shall maintain an overview of the 'impact causing potential' of each site or contract and monitoring parameter with a view to maintaining the most cost-effective use of the environmental resources dedicated to the Project.
- 40.5.3 Termination of EQM should focus on the percentage contract completion status and on the basis of a history of environmental impact arising from the site over a representative period of monitoring.
- 40.5.4 Justifiable application for termination of EQM shall be put forward by the Contractor to the Engineer, as necessary throughout the construction period.

PART III: OCCUPATIONAL HEALTH AND WELFARE

41.0 PHYSICAL FITNESS OF WORKMEN

- 41.1 The Contractor shall ensure that his employees / workmen subject themselves to such medical examination as required under the law or under the contract provision and keep a record of the same.
- 41.2 The Contractor shall not permit any employee / workmen to enter the work area under the influence of alcohol or any drugs.

42.0 MEDICAL FACILITIES

42.1 Medical Examination

- 42.1.1 The Contractor shall arrange a medical examination of all his employees including his sub-contractor employees employed as drivers, operators of lifting appliances and transport equipment before employing, after illness or injury, if it appears that the illness or injury might have affected his fitness and, thereafter, once in every two years up to the age of 40 and once in a year, thereafter.
- (i) The Contractor shall maintain the confidential records of medical examination or the physician authorized by the Employer.
 - (ii) No building or other construction worker is charged for the medical examination and the cost of such examination is borne by Contractor employing such building worker.
 - (iii) The medical examination shall include:
 - a. Full medical and occupational history
 - b. Clinical examination with particular reference to:
 - (i) General Physique;
 - (ii) Vision: Total visual performance using standard orthorator like Titmus Vision Tester should be estimated and suitability for placement ascertained in accordance with the prescribed job standards.
 - (iii) Hearing: Persons with normal must be able to hear a forced whisper at twenty-four feet. Persons using hearing aids must be able to hear a warning shout under noisy working conditions.
 - (iv) Breathing: Peak flow rate using standard peak flow meter and the average peak flow rate determined out of these readings of the test performed. The results recorded at pre-placement medical examination could be used as a standard for the same individual at the same altitude for reference during subsequent examination.
 - (v) Upper Limbs: Adequate arm function and grip
 - (vi) Spine: Adequately flexible for the job concerned.
 - (vii) Lower Limbs: Adequate leg and foot concerned.
 - (viii) General: Mental alertness and stability with good eye, hand and foot coordination.
 - c. Any other tests which the examining doctor considers necessary
- 42.1.2 If the Contractor fails to get the medical examination conducted as mentioned above, the Employer will have the right to get the same conducted by through an agency with intimation to the Contractor and deduct the cost and overhead charges.

42.2 Occupational Health Centre

The Contractor shall ensure at a construction site an occupational health centre, mobile or static is provided and maintained in good order. Services and facilities as per the scale lay down in Schedule X of BOCWR. A construction medical officer appointed in an occupational health centre, possess the qualification as laid down in Schedule XI of BOCWR.

42.3 Ambulance van and room

The Contractor shall ensure at a construction site of a building or other construction work that an ambulance van and room are provided at such construction site or an arrangement is made with a nearby hospital for providing such ambulance van for transportation of serious cases of accident or sickness of workers to hospital promptly and such ambulance van and room are maintained in good repair and is equipped with standard facilities specified in Schedule IV and Schedule V of BOCWR.

42.4 First-aid boxes

The Contractor shall ensure at a construction site one First-aid box for 100 workers provided and maintained for providing First-aid to the building workers. Every First-aid box is distinctly marked "First-aid" and is equipped with the articles specified in Schedule III of BOCWR.

42.5 HIV/ AIDS prevention and control

- 42.5.1 The Contractor shall adopt the Employer's Policy on "HIV / AIDS Prevention and Control for Workmen Engaged by Contractors" and the copy of the policy is given in Appendix No. 4.
- 42.5.2 The Employer will engage a professional agency for implementing the guidelines laid down in the policy and communicate to the Contractor.
- 42.5.3 The Contractor shall extend necessary support to the appointed agency by deputing the workmen to attend the awareness creation programmes.
- 42.5.4 The Contractor shall also extend necessary organizational support to the appointed agency for the effective implementation of the Employers' workplace policy on HIV/AIDS for workmen of the Contractors.
- 42.5.5 As laid down in the policy the Contractor shall identify peer educators (1 for every 100 workers) and refer them for professional training to the Employers' appointed agency for the purpose.
- 42.5.6 The peer educators on completion of the training shall serve as the focal point for any information, education, and awareness campaign among the workmen throughout the contract period.
- 42.5.7 The peer educators will be paid a monthly honorarium as fixed by the Employer for rendering his services in addition to his regular duty.
- 42.5.8 The total number of peer educators (1 for 100 workers) shall always be maintained by the Contractor.
- 42.5.9 In case if these peer educators leave the Contractor by creating vacancy, then the Contractor at his own expense train the new replacement peer educator from the Employers' appointed agency for the purpose.
- 42.5.10 It is suggested to the Contractor that due care should be taken to select the peer educators from among the group of workmen so that they remain with the Contractor throughout the contract period.

42.6 Prevention of mosquito breeding

42.6.1 Measures shall be taken to prevent mosquito breeding at site. The measures to be taken shall include:

- (i) Empty cans, oil drums, packing and other receptacles, which may retain water shall be deposited at a central collection point and shall be removed from the site regularly.
- (ii) There should not be accumulation of still water at any site, in case of still water, it should be covered by earth and levelled.
- (iii) Contractor's equipment and other items on the site, which may retain water, shall be stored, covered, or treated in such a manner that water could not be retained.
- (iv) Water storage tanks shall be provided.

42.6.2 Posters in Hindi and English, which draw attention to the dangers of permitting mosquito breeding, shall be displayed prominently on the site.

42.6.3 The Contractor at periodic interval shall arrange to prevent mosquito breeding by fumigation / spraying of insecticides. Most effective insecticides shall include SOLFAC WP 10 or Baytex, The Ideal Larvicide etc.

42.7 Alcohol and drugs

42.7.1 The Contractor shall ensure at all times that no employee is working under the influence of alcohol / drugs which are punishable under Government regulations.

42.7.2 Smoking at public worksites by any employee is also prohibited as per Government regulations.

42.7.3 Any person suspected by the Engineer to be under the influence of alcohol or controlled substances is immediately suspended from his position by the Contractor, pending the results of medical tests.

42.8 Access to health care

42.8.1 The Contractor guarantees access to health care as defined in Clause 29 for all personnel in case of accident or illness occurring during the execution of the works, i.e.:

- a) Medical check ups: initial (recruitment), annual and upon returning to work after sick leave;
- b) Screening, vaccinations and preventive healthcare;
- c) General healthcare during the execution of the works;
- d) Medical assistance in the event of an accident and assistance for emergency evacuations

42.8.2 Subcontractor personnel, other contractors, the Employer or the Engineer, present at the Worksite, must never be refused medical assistance, under the pretext that they are not directly employed by the Contractor. The Contractor may however define a unit rate cost per medical act for personnel, other than its own personnel, display this rate in the healthcare centre and forward the information to the Engineer.

42.8.3 In the event of accident or serious illness, medical personnel must be trained, available and equipped with the necessary material, medicines and consumables to provide first aid for the patient, stabilise their condition, until the patient is:

- a) a) either treated or discharged, or
- b) b) hospitalized at the camp or in a larger hospital, or
- c) c) evacuated to a medical centre which is well equipped for intensive care, if necessary.

43.0 NOISE & VIBRATIONS

43.1 The Contractor shall consider noise as an environmental constraint in his design, planning and execution of the Works and provide demonstrable evidence of the same on Employer's request. The Contractor shall, at his own expense, take all appropriate measures to ensure that work carried out by the Contractor and by his sub-Contractors, whether on or off the Site, will not cause any unnecessary or excessive noise which may disturb the occupants of any nearby dwellings, schools, hospitals, or premises with similar sensitivity to noise.

43.1.1 Without prejudice to the generality of the foregoing, noise level reduction measures shall include the following:

- a) The Contractor shall ensure that all powered mechanical equipment used in the Works shall be effectively sound reduced using the most modern techniques available including but not limited to silencers and mufflers.
- b) The Contractor shall construct acoustic screens or enclosures around any parts of the Works from which excessive noise may be generated.

43.1.2 The Contractor shall ensure that noise generated by work carried out by the Contractor and his sub-Contractors during daytime and night time shall not exceed the maximum permissible noise limits, whether continuously or intermittently. The same may be varied from time to time by and at the sole discretion of the Employer. In the event of a breach of this requirement, the Contractor shall immediately re-deploy or adjust the relevant equipment or take other appropriate measures to reduce the noise levels and thereafter maintain them at levels which do not exceed the said limits. Such measures may include without limitation the temporary or permanent cessation of use of certain items of equipment.

43.2 Control Requirements

43.2.1 Construction material should be operated and transported in such a manner as not to create unnecessary noise as outlined below;

- I. Perform Work within the procedures outlined herein and comply with applicable codes, regulations, and standards established by the Central and State Government and their agencies.
- II. Keep noise to the lowest reasonably practicable level. Appropriate measures will be taken to ensure that construction works will not cause any unnecessary or excessive noise, which may disturb the occupants of any nearby dwellings, schools, hospitals, or premises with similar sensitivity to noise. Use equipment with effective noise-suppression devices and employ other noise control measures as to protect the public.
- III. Schedule and conduct operations in a manner that will minimize, to the greatest extent feasible, the disturbance to the public in areas adjacent to the construction activities and to occupants of buildings in the vicinity of the construction activities.
- IV. The Contractor shall submit to the Employer a Noise Monitoring and Control Plan (NMCP) under contract specific Site Environmental Plan. It shall include full and comprehensive details of all powered mechanical equipment, which he proposes to use during daytime and night time, and of his proposed working methods and noise level reduction measures. The NMCP shall include detailed noise calculations and vibration levels to demonstrate the anticipated noise generation and vibrations by the Contractor.

- V. The NMCP prepared by the Contractor shall guide the implementation of construction activity. The NMCP will be reviewed on a regular basis and updated as necessary to assure that current construction activities are addressed. It may appear as a regular agenda item in project coordination meetings, if noise is an issue at any location in the contract.

43.3 Occupational Noise

- I. Protection against the effects of occupational noise exposure should be provided when the sound levels exceeds the threshold values.
- II. When employees are subjected to sound levels exceeding, feasible administrative or engineering controls should be utilized.
- III. If such controls fail to reduce sound levels within the levels of the table, personal protective equipment shall be provided and used to reduce sound levels within the levels of the table.
- IV. When the daily noise exposure is composed of two or more periods of noise exposure of different levels, their combined effect should be considered, rather than the individual effect of each. Exposure to different levels for various periods of time shall be computed according to the formula and sample computation.

43.4 Vibration Level

43.4.1 In locations where the alignment is close to historical / heritage structures, the contractor shall prepare a monitoring scheme prior to construction at such locations. This scheme for monitoring vibration level at such historical / heritage sites shall be submitted to Employer for his approval. This scheme shall include:

- I. Monitoring requirements for vibrations at regular intervals throughout the construction period.
- II. Pre-construction structural integrity inspections of historic and sensitive structures in project activity.
- III. Information dissemination about the construction method, probable effects, quality control measures and precautions to be used.
- IV. The vibration level limits at work sites adjacent to the alignment shall conform to the permitted values of peak p velocity

44.0 VENTILATION AND ILLUMINATION

44.1 Ventilation

44.1.1 The Contractor shall ensure at a construction site of a building or other construction work that all working areas in a free tunnel are provided with ventilation system as approved by the DG/CIIBC and the fresh air supply in such tunnel is not less than 6m³/min for each building worker employed underground in such tunnel and the free air flow movement inside such tunnel is not less than 9m/min.

44.1.2 The oxygen level shall not be less than 19.5% in the working environment.

44.2 Illumination

44.2.1 The Contractor shall take every effort to illuminate the work site as per the Employer's requirement illustrated in General Instruction Maha-Metro/SHE/GI/011.

- 44.2.2 The Contractor shall conduct a monthly illumination monitoring by lux meter for all the locations and the report shall be sent to the Employer within 7th of the next month and the same shall be reviewed during the monthly SHE committee meeting.

45.0 RADIATION

- 45.1 The use of radioactive substances and radiating apparatus shall comply with the Government regulatory requirements and all subsidiary legislation
- 45.2 Operations involving ionising radiation shall only be carried out after having been reviewed without objection by the Employers representative and shall be carried out in accordance with a method statement.
- 45.3 Each area containing irradiated apparatus shall have warning notices and barriers, as required by the Regulations, conspicuously posted at or near the area.
- 45.4 Radioactive substances will be stored, used, or disposed shall be strictly in accordance with the Government Enactments.
- 45.5 The Contractor shall ensure that all site personnel and members of the public are not exposed to radiation.

46.6 Asbestos

Asbestos fibres are naturally occurring and extremely aerodynamic. Because of this, almost everyone is exposed to asbestos. Asbestos fibres can become a health risk if inhaled at high concentrations over extended periods of time. Asbestos is only dangerous if it becomes airborne. As long as asbestos-containing materials are not damaged, the asbestos fibres do not become airborne, and do not pose a health hazard to building occupants.

As a preventive action, no asbestos containing material will be used during any of the site activity mitigate the hazard

46.7 Lead-Based Paint

Lead-based paint is a source of lead poisoning. Ingestion and inhalation of lead dust that is created as lead-based paint chips and peels, or from improper sanding or scraping of lead-based painted surfaces can lead to exposure.

Paints and other chemicals used for painting should be stored in a proper contained area. Empty Paint containers, waste paint brushes, clothes stained with paint shall be disposed as per prevailing regulations.

46.0 WELFARE MEASURES FOR WORKERS

46.1 Latrine and Urinal Accommodation

- 46.1.1 The Contractor shall provide one latrine seat for every 20 workers up to 100 workers and thereafter one for every additional 50 workers. In addition, one urinal accommodation shall be provided for every 100 workers.
- 46.1.2 When women are employed, separate latrine and urinals accommodation shall be provided on the same scale as mentioned above.
- 46.1.3 Latrine and urinals shall be provided as per Section 33 of BOCWA and maintained as per Rule 243 of BOCWR and shall also comply with the requirements of public health authorities

46.1.4 Moving sites

In case of works like track laying, the zone of work is constantly moving at elevated level or at underground level. In such cases mobile toilets with proper facility to drain the sullage shall be provided at reasonably accessible distance.

- 46.1.5 In case if the Contractor fail to provide required number of urinals and latrines or fail to maintain it as per the requirements of Public Health laws, the Employer shall have the right to provide/maintain through renowned external agencies at the cost of the Contractor.

46.2 Canteen

In every workplace wherein not less than 250 workers are ordinarily employed, the Contractor shall provide an adequate canteen conforming to Section 37 of BOCWA, Rule 244 of BOCWR and as stipulated in Rule 247 of BOCWR the changes for food stuff shall be based on 'no profit no loss' basis. The price list of all items shall be conspicuously displayed in such canteen.

46.3 Serving of tea and snacks at the workplace

As per Rule 246 of BOCWR, at a building or other construction work where a workplace is situated at a distance of more than 200 m from the canteen provided under Rule 244(1) of BOCWR, the Contractor employing building works shall make suitable arrangement for serving tea and light refreshment to such building works at such place. Proper Housekeeping should be maintained at such locations where tea and snacks are served.

46.4 Drinking water

- 46.4.1 As per Section 32 of BOCWA the Contractor shall make in every worksite, effective arrangements to provide sufficient supply of wholesome drinking water with minimum quantity of 5 litres per workman per day. Quality of the drinking water shall conform to the requirements of national standards (**IS 10500**) on Public Health.
- 46.4.2 While locating these drinking water facilities due care shall be taken so that these are easily accessible within a distance of 200m from the place of work for all workers at all location of work sites.
- 46.4.3 All such points shall be legible marked "Drinking Water" in a language understood by a majority of the workmen employed in such place and such point shall be situated within six metres of any washing places, urinals, or latrines.

46.5 Labour Accommodation

The Contractor shall provide free of charges as near as possible, temporary living accommodation to all workers conforming to provisions of Section 34 of BOCWA. These accommodations shall have cooking place, bathing, washing and lavatory facilities

46.6 Creches

In every workplace where in more than 50 female workers are ordinarily employed, there shall be provided and maintained a suitable room for use of children under age of 6 yrs, conforming to the provisions of Section 35 of BOCWA.

46.7 Heat Stress

Contractors/Subcontractors shall establish the necessary programs to ensure that project employees work safely in heat stress conditions. The reduction of adverse health effects can be accomplished by engineering controls, work practices, training, acclimatization, monitoring, water and electrolyte balance and the recognition and treatment of heat stress emergencies.

46.8 First aid

The Contractor ensures that at least one first aid officer is present at all times during working hours, per shift for 10 to 50 workers present, and one extra first aid officer for each additional 100 workers allocated to the shift.

The Contractor equips the Worksite with a communication system exclusively for the purposes of communication with the first aid services. Information on how to communicate with the first aid services is clearly indicated near the communications equipment.

46.9 Pandemic (National Disaster as Covid-19/Omicron etc.)

1. All the workmen shall be sensitized on the hygiene and other work requirements like social distancing before being engaged for the work.
2. Body temperature need to be monitored by infrared thermometer before being engaged for the work
3. Work area need to be displayed with COVID-19 symptoms, Do's & Don'ts issued by local authorities.

46.9.1 Safety Motivational & Awareness Campaign:

1. Posters about COVID-19 for workplace must be displayed to help staffs and workers to stay informed, have accurate information, and know how to perform in working area to protect themselves and other.
2. Initiatives / Campaigns must be organised to protect the employees and labours against the risk of coronavirus infection. This is applied to both indoor (Labour Camps, Accommodation's) and outdoor accommodation.
3. All areas in the premises including Office, stores Labour camps shall be disinfected completely with the use of approved disinfectant mediums.
4. The workmen welfare facilities including Labour accommodations, Rest areas, Toilet facilities, drinking water facilities shall be inspected for adequate precautions especially from Hygiene and social distancing point of view, by the Contractor to ensure their adequacy.

46.9.2 Reporting of Covid-19

1. A Daily report regarding COVID-19 status must be sent to Maha-Metro for updating of Positive cases, suspected cases, and their control measures to face the challenge and threat posed by the growing pandemic of COVID-19.
2. On daily basis, COVID-19-Follow-up & reporting system must be carried out to the latest numbers on Covid tests, Covid cases status (Negative or Positive), hospitalizations, and patient outcomes from contractors ends.

46.9.3 The following reports must be submitted by the contractors on daily basis who will further scrutinize, compile and forward to Maha metro and to local authorities (as directed by Maha metro).

1. Details of workmen who is get affected by Covid-19 Virus.
2. Status of health of affected workmen and submit the health report by medical expert.
3. Details of Workmen engaged who are from outside Maharashtra
4. Emergency Preparedness & Response report

46.9.4 General Precautionary measures

1. Ensure Social Distancing by Restriction in gathering of 5 or more in workplaces and public places. Large meeting to be prohibited and large gathering of more than 10 people in workplaces is discouraged. Seating arrangement shall be at least 6 feet from each other.
2. Wearing face-cover/mask at public places & workplaces
3. Spitting in workplaces / public places shall be punishable with fine.
4. Ban on liquor, Gutka, and tobacco in workplaces
5. Temperature screening during entry and exit to be done.
6. Sanitizers and hand wash facility shall be made available at convenient places at worksites
7. Staggered lunch breaks to ensure social distancing
8. Persons above 65 years, persons with co-morbidities, parents of children below the age of 5 should be encouraged to work from home.
9. Daily Sanitize/disinfect the workplace
10. Vehicles with 30-40% passenger capacity
11. 2/4 (depending on the size) will be allowed to travel in lifts/hoists
12. Restrict / Ban non -essential visitors
13. List of authorized hospitals/clinics nearby areas to treat COVID 19 to be executed.

46.9.5 Isolation Room/Quarantine Centre

The Contractor shall provide an Isolation Room/ Quarantine Centre if some one found symptoms of virus or get affected positive.

PART- IV ENVIRONMENTAL MANAGEMENT

47.0 ENVIRONMENTAL MANAGEMENT

Environmental Management is an essential part of the overall Environmental protection system employed by Maha Metro for the construction of Pune Metro Rail project and shall apply to all contract packages i.e. Civil, Track, E&M and System contracts subject to activities involved in respective packages.

48.0 TOPSOIL CONSERVATION

- 48.1 The contractor shall ensure that adequate measures are taken for the prevention of erosion of the topsoil during the construction phase.
- 48.2 The contractor should maintain the record of topsoil quantity excavated from construction from all locations where vegetation existed prior to construction. The record shall include photographic evidence of the topsoil quantity excavated.
- 48.3 Top soil should be stripped to a depth of 20 cm from the areas to be disturbed, it should be stockpiled to a maximum height of 40 cm in designated areas, covered or stabilized with temporary seeding for erosion prevention and should be reapplied to site during plantation of the proposed vegetation. Topsoil should be separated from subsoil, debris and stones larger than 50mm diameter. The stored topsoil may be used as finished grade for planting areas.

49.0 FELLING OF TREES & TREE PRESERVATION

- 49.1 The contractor shall identify the number and type of trees that are required to be felled as a result of construction of works and facilities related to Pune Metro Project and inform the Employer.
- 49.2 All trees and shrubbery, which are not specifically required to be cleared or removed for construction purposes, shall be preserved and shall be protected from any damage that may be caused by Contractor's construction operations and equipment. The contractor shall not fell, remove or dispose of any tree or forest produce in any land handed over to him for the construction of works and facilities related to Pune Metro except with the previous permission obtained from the Forest Department or other Competent Authority.
- 49.3 The contractor shall ensure that no tree, existing or otherwise, shall be harmed and damage to roots during trenching, placing backfill, driving or parking heavy equipment, dumping of trash, oil, paint, and other materials detrimental to plant health.
- 49.4 The contractor shall avoid cut and fill in the root zones.
- 49.5 Special care shall be exercised where trees or shrubs are exposed to injuries by construction equipment, blasting, excavating, dumping, chemical damage or other operation and the Contractor shall adequately protect such trees by use of protective barriers or other methods approved by the Employer. Trees shall not be used for anchorage.
- 49.6 Trees should be protected around 1m periphery by providing tree guard and no construction or storage of materials shall be carried out within its premise.

50.0 FLY ASH

- 50.1 The contractor shall use fly ash as a percentage substitution of cement, in concrete for certain structures and works as prescribed in the latest MoEF&CC fly ash notification dated September 1999 and its subsequent amendments.
- 50.2 As per the notification, only fly ash based products shall be used for construction such as cement or concrete, fly ash bricks or blocks or tiles or clay fly ash bricks, block or tiles or cement fly ash

bricks or bricks or blocks or similar products or a combination or aggregate of them. The contractor shall provide details of usage of such products to employer.

- 50.3 In all such uses of Fly Ash, the contractor shall maintain a detailed record of usage of Fly Ash. The contractor shall also collect related details and provide to the Employer.

51.0 CONTAMINANT OF AIR POLLUTION

51.1 At Construction Site

- 51.1.1 The Contractor shall erect barricades securely around all construction work sites during the entire phase of construction activity, to contain dust within the site area and also to reduce air turbulence caused by passing traffic.
- 51.1.2 Barricades are to be installed on either side of the road or at the centre of the road median.
- 51.1.3 Barricades are also required at work sites around the periphery of which are located residential or commercial property.
- 51.1.4 The barricades shall be safely secured to the ground to prevent from toppling. There shall be no gap between bottom of barrier and ground/road. The barrier shall be placed at all times till there is likelihood of dust escaping from the site or material being stored at the site.
- 51.1.5 In case of construction work located near residential or commercial properties, the contractor shall erect barricade of suitable approved material around the entire construction site of height not more than 10m or 1/3rd of building height whichever is less, having acoustic properties, apart from providing relief from dust. There should be no gap in the enclosure erected by the barrier except at entry and exit to or from site.
- 51.1.6 The barricading material if used as noise barrier shall conform to have following acoustic properties:

Table 1.1 Properties of Noise Barrier

Barrier type	Absorptive
Life span	At least 3-4 years
NRC	More than 0.75
Insertion Loss	10 dBA

- 51.1.7 The barrier material shall be light weight, weatherproof, fire resistant and easy to maintain. The supporting frames and mountings should also be light weight and easy to install.
- 51.1.8 Before the start of work, the Contractor shall provide wet automated wheel washing facility with two stage sedimentation tank at the exit of Batching Plant, Casting Yard, and Underground stations. It shall also be provided at off the road elevated stations. At other locations i.e. viaduct, on the road elevated stations etc. where there are space restrictions, the contractor shall adopt dry wheel cleaning mechanism with prior approval from employer. If work site contains multiple exits, then wheel washing facility shall be provided for all these exits where vehicle carrying construction materials or trucks or vehicles or plant/machinery transit from construction site on to live public roads. The wheel wash shall be located as close to the exit gate, as possible. However, care to be taken to ensure that the surface from wheel wash to exit gate is either bitumen or concrete paved. The contractor shall ensure the wheel washing facility remains functional till the end of contract.
- 51.1.9 At such facility, high-pressure water jets will be directed at the wheels of vehicles to remove all spoil and dirt. Water shall be pumped through an electrically operated pump set, to hydrants attached with rubber hoses, by activation of push button located at the hydrant, allowing for up to 10 minutes of wash time.

- 51.1.10 Wheel washing facility shall be provided with efficient drainage, incorporating silt traps to prevent any excessive build-up of water. These facilities should include water re-circulation mechanism to minimise water consumption.
- 51.1.11 At the wheel wash facility, water, dirt, gravel etc. shall be drained into precast trench drains with removable grated cover. This dirty water shall flow, through a piping, into solids separator and from there to oil separator before final discharge.
- 51.1.12 At each construction site including batching plant and casting yard, the Contractor shall provide storage facilities for dust generating materials which shall be closed containers/bins or wind protected shelters or mat covering or walled or any combination of the above to the satisfaction of the Employer. Suitable sprinkling system shall be installed and operationalized in this area. The quality of water for sprinkling shall be the same as used for concrete batching.
- 51.1.13 The contractor shall not store any construction material/debris/soil outside barricaded area.
- 51.1.14 Soil, sand, aggregate, debris of any kind and all dust prone material that is stored at site will be fully covered with tarpaulin or hessian cloth in all respects with proper anchorage so that it does not disperse in the air in any form.
- 51.1.15 The dust emissions from the construction site should be completely controlled and all precautions taken in that behalf.
- 51.1.16 The Contractor shall use nozzle based mist system at construction sites such as elevated station, underground station, launching shaft, depot, retrieval shaft, batching plant & casting yard as required to suppress dust.
- 51.1.17 Nozzle based mist system shall also be used during the delivery and handling of sand and aggregate and other similar materials, when dust is likely to be generated.
- 51.1.18 At sites where the sprinkling is to be carried out manually, sprinkling will be carried out at a frequency of at least thrice a day or as directed by engineer in charge. For dust suppression contractor shall use, STP treated water or RO reject or treated water from sedimentation tank. Use of fresh water to be refrained.
- 51.1.19 Stockpiles of sand and aggregate greater than 20m³, used for concrete manufacturing, shall be enclosed on three sides, with walls extending above the height of stockpile and two (2) meters beyond the front of the stockpile. The contractor shall provide sprinkler system in sand and aggregate storage area and the water for sprinkling shall be of the same quality as used for concrete batching.
- 51.1.20 Areas within the site such as casting yard and batching plant, where there is a regular movement of vehicles shall have an approved hard surface (PCC) that is kept clear of loose surface material.
- 51.1.21 Unless the Employer has given consent otherwise, the Contractor shall restrict all motorised vehicles on the site to a maximum speed of 10 kilo-meter per hour and vehicles shall move on designated path.
- 51.1.22 The contractor shall use wet-jet in grinding and stone cutting works with two stage sedimentation tank facility to recycle/re-use the water. The water from the final chamber of sedimentation tank shall be reused.
- 51.1.23 In the event recorded PM10 level is greater than the base line/Limit levels, the Employer may direct the Contractor to take effective remedial measures including, but not limited to, reviewing dust sources and modifying working procedures.

51.1.24 Where the recorded baseline levels exceed the ambient air quality standards, then at such locations the baseline level shall be considered as limit level. Contractor shall take all effective remedial measures to contain the levels to their limit level as a result of his activities.

51.1.25 If the measures to control air pollution are found to be ineffective, the employer may issue stop work order till the time remedial measures are found to be effective to the satisfaction of employer.

51.1.26 At the Batching plant the following additional conditions shall be complied with:

- a) The contractor shall not install Star Batcher Concrete Batching Plant for manufacturing/producing concrete.
- b) Inside the batching plant, ground surface must be paved with Cement Concrete. The plant shall have proper drainage system with outlet connected to two stage sedimentation tank. No dust shall be allowed to deposit on road inside Batching plant.
- c) The contractor shall procure cement through bulker instead of conventional cement bags.
- d) Continuous dust/wind breaking barricades of height at least 6 meters around the batching plant shall be constructed of suitable material which will act as boundary wall.
- e) If the batching plant is located near the residential area, then the boundary wall shall be acoustically treated to act as noise barrier also. In such event the property of boundary wall cum noise barrier will conform to specification given in para 51.1.6 above.
- f) The contractor shall provide sufficient number of openings in the cement godown/cement feeding area with industrial grade exhaust fans with ducting system. The ducts shall be connected to a container filled with water.
- g) The contractor shall cover the conveyor belt used for carrying aggregate.
- h) Nozzle based mist system shall be used during the delivery and handling of sand and aggregate and other similar materials, when dust is likely to be generated and to dampen all stored materials.
- i) The contractor shall provide and ensure dust masks (proper PPEs) to all workers/labour/staff working at batching plant.
- j) The Contractor shall undertake at all times the prevention of dust nuisance as a result of his activities.
- k) The Contractor shall frequently clean and water the concrete batching plant and crushing plant sites and ancillary areas to minimise any dust emission.

51.1.27 Minimum stack height of DG set shall be as given in Central Pollution Control Board (CPCB) Emission Regulations Part IV: COINDS/26/1986- 87 and Emission Standards for Diesel Engines (Engine Rating more than 0.8 MW (800 KW) which were notified by the Environment (Protection) Third Amendment Rules 2002, vide G.S.R. 489 (E), dated 9th July, 2002 at serial no. 96, under the Environment (Protection) Act, 1986 and its amendments.

51.1.28 Consent for height of stacks of Diesel Engines with rating more than 800 KW shall be obtained by the Contractor from statutory Government agency. Where the calculated height of stack is obtrusive and does not blend with the neighbourhood, the contractor could provide either alternative source of power or provide a solution that is acceptable to the employer. This may include but not limited to providing appropriate cladding for the stack.

51.1.29 Contractor's transport vehicles and other equipments shall conform to emission standards fixed by Statutory Agencies of Government of India or the State Government from time to time. The contractor shall carry out periodical checks and undertake remedial measure including replacement, if required so as to ply within permissible norms.

51.1.30 Contractor shall provide green net for dust control at construction sites i.e stations, viaduct, depot, batching plant, casting yard, at the top of barricade boards near residential/commercial

and sensitive areas. These should be of sufficient height and firmly secured so as to prevent escape of dust to residential/ commercial and industrial areas.

51.1.31 To avoid dust generation during drilling and grinding, it is preferred to use drilling machine, angle grinder and floor grinder connected to a vacuum cleaner. The dust collected in the vacuum cleaner should be disposed off without causing air pollution.

51.1.32 All Air Conditioner's shall confirm the ozone depleting substances (Regulation and Control) Rules, 2000.

51.1.32 The Contractor shall protect structures, utilities, pavements roads and other facilities from disfiguration and damage as a result of his activities. Where this is not possible, the contractor shall restore the structures, utilities, pavements, roads and other facilities to their original or better, failing which the rectification/restoration work shall be carried out at the risk and cost of the contractor.

51.2 During Handling of excavated earth

51.2.1 Storage of Excavated earth should be such that it's maximum height shall be 0.5 m below the barricading height.

51.2.2 Excavated earth shall be covered with tarpaulin sheets which are firmly secured to the ground, as long as it is stored at site.

51.2.3 If the excavated material is to be stored for long duration, dust containment measures like growing grass should be adopted.

51.3 During Transport of Material/muck/soil/C&D Waste (Debris)

51.3.1 The Contractor shall take precautions to minimise visible particulate matter from being deposited upon public roadways as a direct result of his operations. Toe dust along the barricade shall be cleaned regularly at least once a day.

51.3.2 The vehicle carrying construction materials and construction debris of any kind should be cleaned in all respect before it is permitted to ply on the road.

51.3.3 The contractor shall take precaution against spillage of concrete on road from transit mixer by providing collection bag at end point discharge chute

51.3.4 Any deposition of material/muck/soil on public streets due to construction should be promptly removed by manual sweeping, or by deploying electro – mechanical devices.

51.3.5 Trucks carrying construction material, excavated earth and debris shall be fully covered and protected so as to ensure that these materials do not get dispersed into the air or atmosphere, in any form whatsoever or fall off the vehicle. Such trucks carrying construction material shall not be permitted to leave the site until this requirement is met.

51.4 At Dumping Sites

51.4.1 The dumping sites should be temporarily barricaded by the contractor or as per provisions in the Employer's Requirements on Construction. The contractor shall provide wheel cleaning mechanism at the exit gate of dumping site.

51.4.2 The Contractor shall place excavated materials in the dumping / disposal areas approved by Employer.

51.4.3 The Contractor shall place material in a manner that will minimise dust generation. Material shall be stabilised each day by watering or other acceptable dust suppression techniques.

51.4.5 The heights from which materials are dropped shall be the minimum practical height to limit fugitive dust generation.

- 51.4.6 The Contractor shall stockpile material in the Employer designated locations with suitable slopes. Access to the site shall be regulated for entry of men, material and machine.
- 51.4.7 The contractor should cover the surface with grass to prevent dust generation during summer months and erosion in rainy period.
- 51.4.8 The Contractor shall provide water sprinkling at any time that it is required for dust control use.
- 51.4.9 Sufficient equipment, water, and personnel shall be available at dumping sites at all time to minimise dust formation and to prevent nuisance.
- 51.4.10 Dust control activities shall continue even during work stoppages.

52.0 CONTAINMENT OF WATER POLLUTION AND CONSERVATION OF WATER

- 52.1 The Contractor shall provide digital water meters at all the bore wells, inlets and outlets of RO plants, dewatering outlets, municipal water delivery points and other suitable locations to record the accurate figures of water extraction and consumption for various purposes and submit the details. The contractor shall obtain necessary permission for extracting ground water from relevant government agency.
- 52.2 At underground construction site and dumping sites, temporary drainage works shall be maintained, removed and reinstated as necessary and all other necessary precautions should be taken for avoidance of damage by flooding and silt.
- 52.3 Temporary open storage of excavated materials from cut and cover and tunnelling work used for backfill at site should be covered with tarpaulin which is firmly secured to ground.
- 52.4 Polymer slurry or other grouts used in diaphragm wall construction piling and other concrete works shall be collected in a separate slurry collection system. If reuse is not practicable then it shall only be disposed off at nearest landfill site after obtaining permission from agency owning the landfill and under the conditions imposed by the agency concerned, or to a different disposal location as advised by the Employer. Record of disposal of Polymer slurry at landfills or elsewhere shall be maintained by the contractor and reported in the contractor's Monthly Environment Report to be shown to employer when requested.
- 52.5 Beneath the hopper of Batching Plant, the slope of the surface shall be maintained in a such a way that the slurry from Batching Plant shall enter into sedimentation tank. The area should be cleaned regularly to avoid slush generation.
- 52.6 Any mud slurry from drilling, tunnelling, diaphragm wall construction or grouting etc. shall not be discharged into the drainage system unless treatment is carried out that will remove silt, mud particles etc. The Contractor shall provide treatment facilities as necessary to prevent the discharge of contaminated ground water.
- 52.7 The Contractor is not allowed to discharge water from the site without the approval of the Employer. The Contractor must comply with the requirements of the Central Ground Water Board for discharge of water arising from dewatering. Any water obtained from dewatering systems installed in the works must be either re-used for construction purposes or recharged to the ground or pumped into the nearest water body/park or supplied to concerned authority with prior permission of the Employer. In case, the dewatered water is required to be used for reuse in construction or recharge, the Contractor must submit his proposals for prior approval of Employer along with, his proposed locations of dewatering.
- 52.8 Roof top run-off from casting yard and batching plants as well as water from curing (if, any) should be conserved through properly designed rainwater harvesting structures via adequately designed sand/silt removal facilities such as sand traps, silt traps or sediment basins. Excess discharge should be discharged into storm drains.

- 52.9 Perimeter channels/drains shall be constructed in casting yard and batching plant. Silt removal facilities, channels and manholes should be maintained and the deposited silt and grit should be removed regularly, to ensure that these facilities are functioning properly at all times.
- 52.10 Oil separator/interceptors shall be provided to prevent the release of oil and grease into the drainage system. These shall be cleaned on a regular basis. Area which is storing admixtures/oils should be connected to a drainage system with a oil & grease trap. Spillage of material during transfer should be avoided by using appropriate /design mechanism for such transfer.
- 52.11 Measures should be taken to minimize the ingress of rainwater into trenches. If excavation of trenches in wet seasons is necessary, they should be dug and backfilled in short sections. Rainwater pumped out from trenches or foundation excavation should be discharged into storm drains via silt removal facilities.
- 52.12 Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris from getting into the drainage system. Discharge of surface run-off into sewers must always be prevented in order not to unduly overload the sewerage system.
- 52.13 The drainage system should cover the entire area of Casting Yard/ Batching Plant. The drainage system shall be designed in such a way that it should have sufficient capacity to hold the runoff of the catchment area.
- 52.14 Waste water from Reverse Osmosis (RO) plant shall be used only for dust suppression, wheel washing and road washing. It shall not be drained into public sewers or storm water drainage system.
- 52.15 The Contractor may discharge wastewater arising from site offices, canteens or toilet facilities constructed by him into sewers after obtaining prior approval of agency controlling the system.
- 52.16 The Contractor shall provide adequate precautions to ensure that no spoil, wastewater, spills or debris of any kind is pushed, washed, falls or deposited on land adjacent to the site perimeter including public roads or existing stream courses water bodies (Natural /artificial), ground water and drains within or adjacent to the site. In the event of any spoil, wastewater, spills and debris from construction works being deposited or any silt washed down to any area, then all such spoil, wastewater, spills debris or material and silt shall be immediately removed and the affected land and areas restored to their natural state by the Contractor to the satisfaction of the Employer.

53.0 CONTAINMENT OF NOISE AND VIBRATION

- 53.1 Construction often generates community noise/vibration complaints despite the limited time frame over which it takes place. Complaints typically arise from interface with people's activity, especially when community has no clear understanding of the extent or duration of construction.
- 53.2 This situation underscores the need for early identification and assessment of potential problem areas. An assessment of the potential for complaints can and should be made.
- 53.3 If done timely, such assessment can aid contractor in allowing changes in construction approach and reduce noise mitigation cost before the construction plans are finalised.
- 53.4 The contractor shall conform to ambient air quality standards/Baseline results with respect to noise.
- 53.5 The Employer will monitor noise level at site before the start of work and share the values with contractor. Thereafter, the contractor will employ necessary engineering control to ensure that noise levels do not exceed preconstruction noise.
- 53.6 Where there are no ambient noise measurements, the noise levels from construction activities shall be limited to levels measured near the construction site as given in table below:

Table 1.2.: Allowable Construction Noise

S. No	Land Use	Maximum Noise Levels (Leq- 5min)
1	Industrial	75

2	Residential and Other areas	65
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53.7 To the extent required to meet the noise limits, the Contractor shall use reasonable efforts to include noise reduction measures listed below to minimize construction noise emission levels. Noise reduction measures – include, but not limited to the following:

- i. Acoustic barriers should be placed near construction sites. The properties of acoustic barrier are given in Table 1.1.
- ii. Minimize the use of impact devices, such as jackhammers, and pavement breakers. Equip noise producing equipment such as jackhammers and pavement breakers with acoustically attenuating shields or shrouds recommended by the manufacturers thereof, to meet relevant noise limitations.
- iii. Pneumatic impact tools and equipment used at the construction site shall have intake and exhaust mufflers recommended by the manufacturers thereof, to meet relevant noise limitations.
- iv. Provide mufflers or shield panelling for other equipment, including internal combustion engines, recommended by manufacturers thereof.
- v. Use construction equipment manufactured or modified to dampen noise and vibration emissions, such as:
 1. Use hydraulic tools instead of pneumatic impact tools.
 2. Maximize physical separation, as far as practicable, between noise generators and noise receptors such as locating stationary equipment so as to minimize noise and vibration impact on community.
 3. Use of electric powered equipment instead of diesel-powered equipment.
- vi. Schedule work to avoid simultaneous activities that generate high noise levels.

53.8 The contractor shall provide enclosures for stationary equipment and noise barriers around particularly noisy areas on site depending upon the land use.

53.9 To the extent feasible, configure the construction site in a manner that keeps noisier equipment and activities as far as possible from noise sensitive locations and nearby buildings. Plant and equipment known to emit noise in one direction should where possible, be oriented in a direction away from noise sensitive receptor and reduce the number of plant and equipment operating in critical areas close to noise sensitive receptors.

53.10 Schedule truck loading, unloading, and hauling operations so as to minimize noise impact near noise sensitive locations and surrounding communities.

53.11 Other measures that the contractor may adopt to mitigate noise include:

- a) Minimize noise intrusive impacts during most noise sensitive hours.
- b) Plan noisier operations during times of highest ambient noise levels
- c) Keep noise levels relatively uniform; avoid excessive and impulse noises.
- d) Equipment and plant should not to be kept idling when not in use.
- e) Use only well-maintained plant & equipment at site, which should be serviced regularly.
- f) Shall maintain equipment such that parts of vehicles and loads are secured against vibrations and rattling
- g) Conduct truck loading, unloading and hauling operations in a manner such that noise and vibration are kept to a minimum.
- h) Route construction equipment and vehicles carrying soil, concrete or other materials over streets that will cause least disturbance to residents in vicinity of work.
- i) Avoid operating truck on streets that pass by schools during school hours

- j) Select truck routes for muck disposal in such a way that noise from heavy-duty trucks will have minimal impact on sensitive land uses (e.g., residential) and submit the proposed routes to the Employer for approval.
- 53.12 If back-up alarms are used on construction equipment, their noise level near noise sensitive receptors such as residences, schools, hospitals and similar areas where silence is essential, should be regulated, especially at night time. Visual alarms shall preferably be used during night time operation.
- 53.13 The contractor shall make efforts to bring down the noise levels due to the DG set, outside his premises, within the ambient noise requirements by proper setting and control measures.
- 53.14 Installation of a DG set must be strictly in compliance with the recommendations of the DG set manufacturer. The contractor shall ensure that all necessary permissions/ approvals/consent is obtained from relevant authorities before installation and operation of Generator set.
- 53.15 A proper routine and preventive maintenance procedure for the DG set should be set and followed in consultation with the DG set manufacturer which would help prevent noise levels of the DG set from deteriorating with use.
- 53.16 The maximum permissible sound pressure level for new diesel generator (DG) sets (upto 1000 KVA) manufactured on or after the 1st July,2003 shall be 75 dB(A) at 1 metre from the enclosure surface. The diesel generator sets should be provided with integral acoustic enclosure at the manufacturing stage itself.
- 53.17 Noise limit for DG sets not covered by above paragraph shall be as follows:
- a) Noise from DG set shall be controlled by providing an acoustic enclosure or by treating the room acoustically, at the user's end.
 - b) The acoustic enclosure or acoustic treatment of the room shall be designed for minimum 25 dB (A) insertion loss or for meeting the ambient noise standards, whichever is on the higher side (if the actual ambient noise is on the higher side, it may not be possible to check the performance of the acoustic enclosure/acoustic treatment. Under such circumstances the performance may be checked for noise reduction up to actual ambient noise level, preferably, in the night time). The measurement for Insertion Loss may be done at different points at 0.5 m from the acoustic enclosure/room, and then averaged.
 - c) The DG set shall be provided with proper exhaust muffler with insertion loss of minimum 25 dB(A)
- 53.18 If the measures to control noise pollution are found to be ineffective, the employer may issue stop work order till the time remedial measures are found to be effective to the satisfaction of employer.
- 53.19 Vibration consists of rapidly fluctuating motions with an average motion of zero. During vibration the oscillatory waves propagate from the source through the ground to adjacent buildings. Vibration from construction projects is caused by general equipment operations is usually highest during pile driving, soil compacting, jack hammering and construction related demolition activities.
- 53.20 The following steps may be taken by the contractor to reduce construction vibration:
- A. Design considerations and project layout:**
 - 1. Route heavily loaded trucks away from residential streets.
 - 2. If possible, select street with fewest homes, if no alternatives are available.
 - 3. Operate earthmoving equipment on the construction lot as far away from vibration sensitive sites as possible.
 - B. Sequence of operations:**

1. Phase demolition, earthmoving and ground-impacting operations so as not to occur the same time period. Unlike noise, the total vibration level produced could be significantly less when each vibration source operates separately.
2. Avoid night time activities. People are more aware of vibration in their homes during the night time hours.

C. Alternative construction methods:

1. Avoid impact pile driving where possible in vibration-sensitive areas.
2. Drilled piles or the use of a sonic or vibratory pile driver causes lower vibration levels where the geological conditions permit their use.
3. Select demolition methods not involving impact, where possible. For example, sawing bridge decks into sections that can be loaded onto trucks results in lower vibration levels than impact demolition by pavement breakers, and milling generates lower vibration levels than excavation using clam shell or chisel drops.
4. Avoid vibratory rollers and packers near sensitive areas.

54.0 WASTE MANAGEMENT

54.1 General: The following types of waste are most likely to be encountered during execution of contract:

1. General refuse
2. C&D waste
3. Hazardous waste
4. E-waste
5. Bio medical waste
6. Plastic waste
7. Batteries Waste

54.1.1 Disposal of waste as per legal requirement is found in the table below:

Table 1.3: Construction Wastes – Type and Disposal

S.No	Waste Type	Legal requirement for handling, storage & disposal
1.	General refuse	Solid Waste Management Rules, 2016 and its amendments
2.	Vegetation / Timber etc.	The Maharashtra (Urban Areas) Preservation of Trees Act, 1975 and its amendments
3.	Construction and Demolition (C&D) waste	Construction and Demolition Waste Management Rules, 2016 and its amendments and/or any suitable means acceptable to Maha-Metro/Engineers
4.	Hazardous waste	Hazardous and Other Wastes (Management & Trans-boundary Movement) Rules, 2016 and its amendments
5	Electronic waste	E-waste (Management) Rules, 2016 and its amendments
7.	Bio-medical waste	Bio-medical waste Management Rules, 2016 and its amendments
8.	Chemical waste	Manufacture, Storage and handling of hazardous chemical rules 1989 and its amendments
9.	Plastic Waste	Plastic Waste management Rules, 2016 and its amendments

- 54.1.2 In addition to above, excavated earth and metal scrap is likely to be generated in large quantity. The excavated material comprises mainly soil and rock. Soil may be used for backfill at locations as directed by employer.
- 54.1.3 The contractor is required to develop, institute and maintain a Waste Management Programme (WMP) during the construction of the project for his works. This WMP shall be a part of Contractor's site Environmental Management Plan. Data sheet to be provided under WMP. However, the WMP should be prepared and submitted to the Engineer for approval. A Waste Management Plan specific for handling and disposal of C&D waste shall be prepared separately by the contractor as per the provisions of C&D Waste Management Rules, 2016 or any other means acceptable to the engineers.
- 54.1.4 A mechanism is required to ensure that designated areas for the segregation and temporary storage of reusable, recyclable and waste materials are incorporated into the WMP.
- 54.1.5 The Contractor shall handle waste in a manner that ensures they are held securely without loss or leakage thus minimizing potential for pollution following all legal requirements for handling and storage. The Contractor shall maintain and clean waste storage areas regularly.
- 54.1.6 The contractor shall strictly manage transportation and disposal of all waste complying all legal/statutory requirements.
- 54.1.7 The contractor shall make available Material Supply Data Sheet (MSDS) for material/chemicals/substances used, for which these are available to the Employer when requested.

54.2 General Refuse

- 54.2.1 This category of waste is generated from living camps, offices, workshops, kitchen, and other work areas. Such type of waste includes food scraps (solids + liquids), Paper, Cardboard, Plastics (recyclable bottles, other), Glass (different colours), Aluminium and other cans, Wooden boxes, crates etc.
- 54.2.2 The Contractor shall provide at site, metal or heavy-duty plastic 'Refuse Containers' with tight fitting lids for disposal of all garbage or trash associated with food. The containers shall not have openings that allow access by rodents.
- 54.2.3 To keep the area free of litter and garbage, specific locations shall be designated for consuming food and snacks to prevent random disposal of waste. All waste shall be deposited in the refuse containers. Suitable all-weather signage shall be prominently displayed for compliance of these requirements.
- 54.2.4 The refuse containers shall be kept upright with their lids shut. These containers shall be emptied at least once daily by the Contractor to maintain site sanitation. There shall be different containers for each category of waste.
- 54.2.5 General refuse should be stored in enclosed bins or units separate from construction and chemical wastes. A waste collector should be employed by the contractor to remove general refuse from the site on a daily basis to minimise odour, pest and litter impacts.
- 54.2.6 Handling and disposal of general refuse should cope with the peak construction workforce during the construction period. The refuse should be stored and transported in accordance with good environment practice and disposed at licensed landfills.
- 54.2.7 Respective Waste with residual value is to be disposed off by selling to recyclers. The remaining can be disposed off through collection and disposal by local municipal agency.
- 54.2.8 Office waste can be reduced through recycling of paper if volumes are large enough to warrant collection.

54.2.9 Burning of refuse at construction site is not permitted. Dumping of any type of waste is strictly prohibited along any of the river bed.

54.2.10 Colour Coded Dustbin in suitable numbers at each working area shall be used for segregation of waste during collection. The waste management plan should clearly quantify and identify the number and locations of different types of dustbins that will be provided at each working site. Colour coding of dustbins shall be as per given Table:

Table 1.4 - Colour Coding of Dust Bins

Type of Waste	Colour
Wet/Organic/ Bio-Degradable Waste	Green Bins with lids
Dry/Recyclable waste (excluding Bio-medical waste/ hazardous waste)	Blue
Bio-Medical waste	As per Bio-medical waste Management Rules, 2016
E-Waste	Black
Hazardous Waste	Fluorescent yellow colour background written in RED words as 'HAZARDOUS WASTES' and 'HANDLE WITH CARE' in Hindi, English and vernacular language
COVID Waste	Yellow

54.3 Construction and Demolition Waste

54.3.1 Construction and Demolition waste" means the waste comprising of building materials, debris and rubble resulting from construction, re- modelling, repair and demolition of any civil structure.

54.3.2 Construction & Demolition (C&D) waste shall be stored at a designated area.

54.3.3 The C&D waste shall be disposed off in a manner in compliance with the procedure given in the Construction & Demolition Waste Management Rules, 2016. or any other means with prior approval of Maha-Metro/Engineer.

54.3.4 The contractor shall be responsible for collection, segregation and storage of construction and demolition waste, as directed or notified by the concerned local authority in consonance with the Construction & Demolition Waste Management Rules, 2016.

54.3.5 The contractor shall ensure that other waste does not get mixed with this waste and is stored and disposed separately.

54.3.6 The contractor shall dispose C&D waste only at authorized processing facilities/pre approved dumping locations and ensure that there is no littering or deposition of construction and demolition waste so as to prevent obstruction to the traffic or the public or drains.

54.3.7 Disposal of C&D waste along the river bed, natural drainage and wet land is strictly prohibited and the contractor shall be fined for non compliance of this requirement.

54.3.8 The requirement of concrete/RCC/PCC waste disposal, generated from the entire contract shall be either when 15 Tonnes of C&D waste has been generated or such C&D waste has been stored for 15 days (irrespective of quantity), of the two whichever is earlier.

- 54.3.8 Proper record keeping has to be maintained for all disposed C&D waste. The contractor shall submit the C&D waste record through Monthly Environment Report.

54.4 Hazardous Waste Management

- 54.4.1 Generally, the hazardous waste from construction site includes used oil, grease, oil filters etc. A comprehensive list of hazardous waste is found in Hazardous waste management and handling rules 2016. If encountered or generated as a result of Contractor's activity, then waste classified as hazardous under the "Hazardous and Other Wastes (Management & Transboundary Movement) Rules, 2016 shall be disposed off in a manner in compliance with the procedure given in the rules under the aforesaid act.
- 54.4.2 Chemicals classified as hazardous chemicals under "Manufacture, Storage and Import of Hazardous Chemical Rules, 1989 and amendments of Environment (Protection) Act, 1986 shall be disposed off in a manner in compliance with the procedure given in the rules under the aforesaid act.
- 54.4.3 The contractor shall identify the nature and quantity of hazardous waste generated as a result of his activities. The contractor shall obtain authorization for handling, storage of hazardous waste from the concerned pollution control board/committee. The contractor shall file annual return in prescribed format with the concerned pollution control board/ committee and forward a copy of receipt to employer.
- 54.4.4 The contractor shall provide and maintain a separate hazardous waste storage area for a) flammable, ignitable, reactive and b) Non- compatible wastes with suitable opening, Flame proof Electrical fittings should be at 15 m distance between the storage sheds. The storage yards should be provided with proper peripheral drainage system connected with the sump so as to collect any accidental spills.
- 54.4.5 The storage area for Hazardous waste shall:
- a) Be clearly labelled and used solely for the storage of chemical waste;
 - b) Be enclosed on at least three sides;
 - c) Have an impermeable floor and bunding of capacity to accommodate 110% of the volume of the largest container or 20% by volume of the hazardous waste stored in that area, whichever is greater;
 - d) Have adequate ventilation;
 - e) Be covered to prevent rainfall entering and
 - f) Be arranged so that incompatible materials are adequately separated
- 54.4.6 Outside the storage area, the contractor shall place a 'display board', which will display quantity and nature of hazardous waste, on date. Hazardous Waste needs to be stored in a secure place.
- 54.4.7 It shall be the responsibility of the contractor to ensure that hazardous wastes are stored, based on the composition, in a manner suitable for handling, storage and transport. The labelling and packaging is required to be easily visible and be able to withstand physical conditions and climatic factors
- 54.4.8 Lubricants including oil and grease generated from operation of the TBM/other Machaneries/vehicles should be disposed off as a hazardous waste.
- 54.4.9 Drip pans of suitable size and numbers shall be used to collect oil leakages and spills. The area shall be cleaned after completion of maintenance /repair and generated waste disposed off in approved manner.
- 54.4.10 The contractor shall follow the manifest and approach only Authorised Recyclers of Hazardous Waste for disposal of Hazardous Waste, under intimation to the Employer.

54.5 Chemical Waste

- 54.5.1 The contractor should ascertain if some paints and solvents are classified as chemical waste and, if used on site, shall be subject to the stringent requirements of the Waste Disposal of Chemical Waste. Empty paint cans shall be recycled or collected as waste.
- 54.5.2 Any dry paint waste should be swept up (broomed / vacuumed) and collected in containers for disposal.
- 54.5.3 Containers used for the storage of chemical waste shall:
- a) Be suitable for the substances they are holding, resistant to corrosion, maintained in good condition, and securely closed.
 - b) Be of adequate capacity and
 - c) Display a label in English and Hindi/Marathi as to the contents, quantity and safe method of disposal in accordance with instructions contained in Material Safety Data Sheet (MSDS).
- 54.5.4 The storage area for chemical waste shall:
- a) Be clearly labelled and used solely for the storage of chemical waste;
 - b) Be enclosed on at least three sides;
 - c) Have an impermeable floor and bunding of capacity to accommodate 110% of the volume of the largest container or 20% by volume of the chemical waste stored in that area, whichever is greater;
 - d) Have adequate ventilation;
 - e) Be covered to prevent rainfall entering and
 - f) Be arranged so that incompatible materials are adequately separated.
- 54.5.5 Disposal of chemical waste shall be through a licensed waste collector duly authorized by the MoEF & CC or State Pollution Control Board as the case may be under intimation to the Employer.
- 54.5.6 No lubricants, oils, solvents or paint products shall be allowed to discharge into water courses, either by direct discharge, or as contaminants carried in surface water runoff from the construction site.
- 54.5.7 In sum, even though the exact quantities of chemical waste that will be generated per contract are expected to be small, still, because of the potential environmental and health & safety hazard that these chemicals pose, they must be handled, stored and disposed of appropriately, in accordance with the law.

54.6 Metal Scrap

- 54.6.1 Steel and other metals should be recovered from the construction waste and recycled as far as practical.
- 54.6.2 The contractor shall have a separate scrap yard with hard surface
- 54.6.3 Disposal of scrap shall be through a licensed waste collector/recycler under intimation to the Employer.

54.7 Polymer Slurry

- 54.7.1 Polymer slurries or other grouts used in diaphragm wall construction, piling and other concrete works should be collected in a separate slurry collection system.
- 54.7.2 If reuse is not practicable then it should be disposed off at nearest landfill site after obtaining permission from agency owning the landfill and under the conditions imposed by the agency concerned, or to a different disposal location as advised by the Employer.
- 54.7.3 Some Polymer slurry shall be used in diaphragm wall, bore-pile or to support the cutting face during maintenance of the TBM. This should be reconditioned and reused wherever practicable.

- 54.8.3 However, it may not be possible for re-use when it is extracted along with rock waste when tunnelling resumes following each intervention period. In this case the polymer will be mixed with rock and drained as usual before sending to the final disposal site.

55.0 ENVIRONMENTAL MONITORING

55.1 GENERAL

- 55.1.1 The Contractor shall carry out the monitoring of Air, DG stack, Noise, Vibration and ground water to assess the impact on environment during construction.
- 55.1.2 In addition, soil monitoring shall be carried out at underground station till no excavation is required. Representative sensitive receivers in the vicinity of the works shall be monitored for noise and air quality impacts. Vibration monitoring shall be carried out as and when directed by the employer.
- 55.1.3 The Environmental monitoring shall be carried out by a MoEF recognised agency/lab with the prior approval of Maha Metro Environment Department. This approval can be withdrawn at any time if the quality of output of the laboratory/agency is found not satisfactory by Maha Metro Environment Department.
- 55.1.4 The contractor shall release the payment due to the monitoring agency within 2 months of the submission of bills failing which the Employer may deduct the payment from RA bills and directly pay to the engaged monitoring agency.
- 55.1.5 The contractor shall submit the method statement for the environmental monitoring with the prior approval of Maha Metro Environment Department.

55.2 Air Monitoring

- 55.2.1 For carrying out air monitoring the contractor shall appoint agency duly approved by Maha Metro Environment department with intimation to the employer. The contractor shall provide 220V AC power point, safety and security of monitoring equipment and suitable access at each monitoring point. Monitoring stations should be free from local obstructions or sheltering.
- 55.2.2 The monitoring shall be carried out till handing over of the site to the employer or as approved by Maha Metro Environment Department.
- 55.2.3 Ambient Air Quality Standards have been notified by the CPCB vide Gazette Notification dated 16th November 2009 and its amendments. These standards have to be referred by the Contractor for Limit Levels of PM10 and PM2.5 and other Parameters in ambient air which may be followed in estimating the pollution level caused by Contractor's activities.
- 55.2.4 Contractor will undertake baseline monitoring to establish background levels. Action Level of the Contractor shall be based on the results of baseline monitoring programme.
- 55.2.5 Where the Employer determines that the recorded PM10 & PM2.5 levels are significantly greater than the Limit levels, the Employer may direct the Contractor to take effective remedial measures including, but not limited to, reviewing dust sources and modifying working procedures.
- 55.2.6 Where the recorded baseline levels exceed the ambient air quality standards, then at such locations the limit level is the recorded baseline. Contractor shall take all effective remedial measures to contain the levels to their baseline value as a result of his activities. The action level may be varied by and at the sole discretion of the Maha Metro.
- 55.2.7 The Contractor should inform the Maha Metro of all steps taken to investigate cause of exceedance and immediate action taken to avoid further exceedance through written reports and proposals for action.

- 55.2.8 The contractor shall ensure calibration of monitoring instruments and their respective calibrators shall be carried out in accordance with the manufacturer's requirement to ensure they perform to the same level of accuracy as stated in the manufacturer's specifications.
- 55.2.9 The Contractor shall keep records of air quality monitoring (including location, date, time) and shall be available for review by the Employer. The Contractor shall submit a copy of monitoring results through the Monthly Environment Report (MER) to the Employer.
- 55.2.10 PM10 monitoring shall be done using Respirable Dust Sampler (RDS) and for PM2.5 either cyclone or impactor shall be used. Monitoring shall be done as per CPCB methodology
- 55.2.11 All the parameters as mentioned in Table 1.5 shall be monitored at following locations:
- a) Depot, Batching Plant and Casting Yard
 - b) Elevated Stretch (Station and Viaduct)
 - c) Underground Station (at ground level)
 - d) Tunnel (only PM 2.5) Additionally, the contractor shall also carry out monitoring of PM2.5 at those locations where PM10 monitoring is carried out.
- 55.2.12 Following guidelines to be followed while monitoring, the RDS sampler to be placed such that:
- a) The entry point of air should be at 2.5 ± 0.5 m above the ground.
 - b) The sampler to be placed near to the receptor at least 2.5-3.0 m away from barricades/obstruction.
 - c) Ensure flow rate of $1.15 \text{ m}^3/\text{m}$.
 - d) The location will be finalized by environmental engineer at site in consultation with Maha Metro Environment deptt.
 - e) Elevated stretch: PM10 & 2.5 and other parameters monitoring to be carried out at every elevated station at a height of 2.5 ± 0.5 m. In the viaduct, monitoring to be performed at one location per 1 km in consultation with Maha Metro Environment department.
 - f) Underground Station: PM10& 2.5 and other parameters monitoring to be conducted at 2.5 ± 0.5 m above the ground. The specifications to be as per elevated stations

55.3 Noise Monitoring

- 55.3.1 Noise monitoring shall be carried out at ambient air monitoring locations in 15 days till site is handed over to the employer or The monitoring location shall be near to boundary of construction site and or as directed by the employer. Construction noise measurements shall coincide with daytime and night time periods of maximum noise generating construction activities.
- 55.3.2 Contractor will undertake baseline monitoring to establish background levels. Action Level of the Contractor shall be based on the results of baseline monitoring programme.
- 55.3.3 The Contractor shall submit a copy of monitoring results. The results should represent a comparison of data in form of bar charts for evaluation of trends and comparison with noise emission standards.
- 55.3.4 Where the Employer determines that the recorded Noise level is significantly greater than the acceptable levels, the Employer may direct the Contractor to take effective remedial measures including, but not limited to, reviewing noise sources and modifying working procedures.
- 55.3.5 Monitoring shall be carried out for day and night separately.
- 55.3.6 The noise monitoring parameters are L_{max} , L_{min} , L_{eq} , L_{90} , L_{50} & L_{10} . All the parameters will be reported separately for day time and night time.
- 55.3.7 The contractor shall ensure calibration of noise monitoring instrument and its calibration shall be carried out in accordance with the manufacturer's requirement to ensure it perform to the same level of accuracy as stated in the manufacturer's specifications.

55.3.8 Type I/II integrating sound level meter with free -field microphone and tripod stand of 1 to 1.5 m height shall be used for noise monitoring. The microphone of the instrument shall be near the receptor.

55.3.9 The minimum requirements to the specifications of sound level meter are given in BIS: 9779-1981 and its latest amendment. Measurement frequency of 31.5 Hz to 8000 Hz. Noise measurements shall be reported in dB(A). Sound Level Meter should be Type-I/II with A, C & Z weighing and measured sound values should also be suitably presented for quick comparison and interpretation.

55.4 Vibration

55.4.1 Steady State Vibration on any pre-identified site or building shall be measured on any foundation or intermediate storey of any building, as directed by the employer or his representative.

55.4.2 Vibration measurements shall be made preferably in velocity mode (PPV) or acceleration (dBv / vdB) in X-Y-Z directions with the help of a measurement system calibrated in an NABL accredited laboratory/equivalent. The transducer used for measurements should be firmly fixed on to the measurement surface as per internationally accepted measurement practices. Precautions should be taken to ensure that the mounting methods do not affect the accuracy of measurement results. The accelerometer shall be fixed firmly to the vibrating surface with the help of special wax or through magnetic mounts.

55.4.3 The measured vibration values should be accurate within an overall measurement uncertainty of $\pm 10\%$ over the frequency range 1Hz – 100 Hz.

55.4.4 The data should be presented in suitable single number quantities like VdB or PPV values as per current international practices so that the final values are comparable directly with the accepted norms for structural integrity, human comfort etc.

55.5 Ground Water

55.5.1 The employer may require the contractor to monitor surface/ ground water/drinking water, for which requirements of IS 10500:2012 or its latest amendments shall be followed for sampling and testing (physical and chemical parameters).

55.5.2 Frequency of such monitoring at Stations, viaduct, batching plants, casting yard, Labour camps shall be once in 3 months.

55.6 Soil

55.6.1 The contractor shall carry out soil testing at all elevated, underground stations and working Sites. The frequency of testing shall be once in 3 months. The parameters of monitoring shall be Lead (Pb), Cadmium (Cd), Chromium (Cr6+), Mercury (Hg), Arsenic (As) and cyanide (CN). The sample collection, testing shall be as per relevant APHA standard.

55.7 Environmental Monitoring Programme

55.7.1 The various parameters, monitoring locations and Frequency of monitoring are presented in Table below:

Table 1.5: Summary of contractor's Environmental Monitoring Programme

Parameters	Locations	Frequency
Air		

Parameters	Locations	Frequency
PM2.5, PM10, Sox, Nox, Co, Pb, Ni, As, O3 (μm^3)	Station, Viaduct, depot, Batching plant, Casting yard Inside the Tunnel and in underground stations	Once in 15 days for 24hrs
PM10 Sox, Nox, Co, Pb, (μm^3)	DG Sets	Once in 1 month
Noise		
Day Time (6 AM – 10PM) Lmax, Lmin, Leq, L10, L90, L50 Night Time (10PM – 6AM) Lmax, Lmin, Leq, L10, L90, L50	Station, Viaduct, depot, Batching plant, Casting yard etc.	Once a 15 days for 24hrs (Separately for day time and night time)
Ground Water/Drinking water		
Colour, odour, Taste, Turbidity, pH, toatad Hardness, Calcium, Ammonia, Residual Free Chlorine, Fluoride, Total Dissolved Solids, Magnesium (Mg), Copper (Cu), Sulphide (H_2S), Sodium, Potassium, Chloride, Nitrogen, Phosphorus, Organic Matter, Heavy Metals (Mercury, Cadmium, Arsenic, Cyanide, Lead, Chromium), Oil & Grease, Total Coliform, E.Coli, etc.	Station, Viaduct, Depot, Batching Plant and Casting Yard, Labour Camp	Once in 3 months
Soil		
pH, Conductivity, Boron, Nitrogen, Calcium (Ca), Sodium (Na), Potassium (K), Zinc (Zn), Organic carbon, Magnesium (Mg), Phosphorus, iron (Fe), Lead (Pb), Cadmium (Cd), Chromium (Cr^{6+}), Mercury (Hg), Arsenic (As) and cyanide (CN).	At elevated & underground stations	Once in 3 months
Vibration		
Vibration in mm/s or VdB.	At elevated & underground stations	During complaints or as directed by

56.0 ENVIRONMENTAL SANITATION

- 56.1 Environmental Sanitation refers to providing for a clean, hygienic, safe and aesthetically pleasing work area, as far as possible. It is also referred to as good housekeeping.
- 56.2 The Contractor shall constitute a special group of housekeeping personnel in charge of each work section. Contractor's Environment officer shall be responsible for Environmental sanitation/housekeeping at their respective site.

- 56.3 Housekeeping is the responsibility of all site personnel, and line management commitment shall be demonstrated by the continued efforts of supervising staff towards this activity.
- 56.4 General Housekeeping shall be the responsibility of site In-Charge and monitored by the housekeeping manager at all worksite, construction Depot, Batching Plant, Labour Camp, Stores, Offices and toilets / urinals. Towards this the contractor shall constitute a special group of housekeeping personnel. This group shall ensure daily cleaning at work sites and surrounding areas and maintain a register. Contractor's Environment officer shall be responsible for Environmental sanitation / housekeeping.
- 56.5 Each section of work site shall maintain the site reasonably clean, keep free from obstruction and properly store any construction equipment, tools, and materials. Any wreckage, rubbish shall be temporarily stored in wreckage and rubbish bins. These wreckage and rubbish bins shall be cleaned at frequent intervals. Special housekeeping group will ensure daily cleaning work at the site and its surrounding areas.
- 56.6 The Contractor's designated department will impart the necessary introduction/awareness and education to labours on housekeeping. This will be done through toolbox talks.
- 56.7 Every individual would be responsible for environmental sanitation in his area i.e.
- A. **At Work Site:** All workers should clean their workplace after completion of their job. Supervisor should ensure good environmental sanitation of their respective work area through their workers. Environment Managers shall ensure sanitation in their area through their supervisors. Contractor's designate department will monitor this activity through environment manager as well as site supervisor.
 - B. **Labour Camp:** All workers should be responsible to maintain good sanitation and hygienic condition in their respective rooms/dormitories. The Contractor should ensure the availability of dustbins at required place and regular cleaning of rooms, kitchens, toilet blocks and dustbins. Safe disposal of all waste materials should also be ensured. Arrangement for regular fumigation should be made by the contractor.
 - C. **At Store:** Proper access and stacking shall be ensured at the Stores. A list will display daily stock of materials. All work material should be stored in clearly marked containers or at designated storage area.
 - D. **At Office:** Everyone is responsible to maintain sanitation of their work station. Disposal of waste materials (i.e. stationary, cigarette buds, tea bags etc.) must be in dustbin only.
- 56.8 Adequate Time shall be assigned to ensure that good housekeeping is maintained. This shall be carried out by team of housekeeping squad.
- 56.9 The contractor shall be responsible to provide segregated containers for disposal of debris at required places and regular cleaning of the same.
- 56.10 Full height fence, barriers, barricade etc. shall be erected around the site in order to prevent the surrounding area from excavated soil, rubbish etc, which may cause inconvenience to and endanger the public. The barricade especially those exposed to public shall be aesthetically maintained by regular cleaning and painting as directed by the employer. These shall be maintained in one line and level. Measures shall be adopted to ensure that seepage from site shall not go on road / public areas.
- 56.11 The structure dimension of the barricade, material and composition, its colour scheme, Maha Metro Logo and other details shall be in accordance with specification laid down in tender document.
- 56.12 All surplus earth and debris are removed/disposed off from the working areas to officially designated dumpsites. Trucks carrying sand, earth and any pulverized materials etc. in order to avoid dust or odour impact shall be covered while moving. The tyres of the trucks leaving the site

shall be cleaned with water, wherever the possibility of spillage on carriageways meant for regular road traffic exists.

56.13 No parking of trucks/trolleys, cranes and trailers etc. shall be allowed on roads, which may obstruct the traffic movement.

56.14 Roads shall be kept clear and material like: pipes, steel, sand boulders, concrete, chips and brick etc. shall not be allowed on the roads to obstruct free movement of road traffic.

56.15 Proper and safe stacking of material are of paramount importance at yards, stores and such locations where material would be unloaded for future use. The storage shall be well laid out with easy access and material stored/stacked in an orderly and safe manner.

56.16 Flammable chemicals / compressed gas cylinders shall be safely stored.

56.17 Unused/surplus cables, steel items and steel scrap lying scattered at different places within working areas shall be removed to identified locations.

56.18 All wooden scrap, empty wooden cable drums and other combustible packing material, shall be removed from workplace to identified locations.

56.19 Empty cement bags and other packaging material shall be properly stacked and removed.

56.20 The contractor shall ensure that all his sub-contractors maintain the site reasonably clean through provision related to housekeeping.

56.21 Debris shall be handled and disposed off in such a manner that it does not create any hazards to the site personnel. Debris shall not be accumulated to form a hazard and should be kept sufficiently moist to bring down the dust level within permissible limit.

56.22 Debris or other material shall not be thrown inside or outside the site premises from any height. The debris or waste material shall be disposed off at regular interval and as soon as the work has been completed.

57.0 AVOIDANCE OF NUISANCE

57.1 The Contractor shall take all precautions to avoid any nuisance arising from his operations. This shall be accomplished, wherever possible by suppression of nuisance at source rather than abatement of the nuisance once generated.

57.2 Following site clearing and before construction, the Contractor shall remove all trash, debris and other weeds.

57.3 The Contractor shall ensure that the workplace is free of trash, garbage, debris and weeds.

57.4 Light used for construction can illuminate adjacent areas in undesired ways. Such lighting and glare shall be prevented from striking adjacent areas, where feasible, through directional shielding.

57.5 The other measures include but not limited to:

- a) Careful positioning of construction equipment.
- b) Eliminating the possibility of stockpiles of material from being visible to public.
- c) Strategically placing high visibility site markings at construction sites indicating facilities, offices and stores.
- d) Adequate and properly managed parking of vehicles at construction depots and batching plants.

57.6 Measures shall be taken to prevent Mosquito breeding at site. The measures to be taken shall include, but not limited to, the following:

- a) Construction run-off shall not be allowed to stagnate at work sites specially at construction depots and batching plant locations, by executing an efficient drainage system and / or levelling of low-lying areas.

- b) Empty cans, oil drums, packing and other receptacles which may retain water shall be deposited at a central collection point and shall be removed from site regularly.
- c) Still waters shall be treated at least once every week with eco-friendly chemical in order to prevent mosquito breeding; contractor's equipment and other items on the site, which may retain water, shall be stored, covered or treated in such a manner that water could not be retained.
- d) All coolers should be scrubbed and cleaned once a week and mopped, dry before refilling and if cannot be emptied, put one tablespoon of temephos / petrol or Authority approved chemicals.
- e) Collection of stagnant water should not be allowed inside or around construction sites / office premises/ project sites / parking area/ labour camps and if the same does not take place a little quantity of kerosene/ petrol/ diesel or chemical approved by local authorities may be put in such stagnant wastewater collection.
- f) Ensure that over head and other water tanks / containers are kept closed properly with lid and overflow pipe/ air vent are covered with wire mesh.
- g) Unused/ broken bottles, plastic cups, pots and tyres etc that can hold water should not be left in open in all contractor's premises.
- h) Provision of access to roof tops and over head tanks in all contractor's offices to facilitate checking of mosquito breeding.

58.0 ARCHAEOLOGICAL AND HISTORICAL PRESERVATION

- 58.1 The contractor shall seek to accommodate archaeological and historical preservation concerns that may arise due to the construction of the project especially in close vicinity of such areas where such monuments may be located.
- 58.2 The contractor shall consult the Archaeological Survey of India (ASI) and other parties, on the advice of the Employer, to identify and assess construction effects and seek ways to avoid, minimize or mitigate adverse effects on such monuments.
- 58.3 Adverse effects may include reasonably foreseeable effects caused by the construction that may occur later in time, be farther removed in distance or those that alter, howsoever temporarily, the significance of the structure.
- 58.4 Where the alignment, runs within the prohibited/regulated zone of the monuments, Employer will apply for No Objection Certificate (NOC) from Director of Archaeology Archaeological Survey of India as per provision of National Monuments and Archaeological Sites and Remains (Amendment & Validation Act 2010).

59.0 LANDSCAPE AND GREENERY

- 59.1 As far as is reasonably practicable, the Contractor shall maintain ecological balance by preservation of trees and defacing of natural landscape.
- 59.2 The Contractor shall, so conduct his construction operations, as to prevent any avoidable destruction, scarring or defacing of natural surroundings in the vicinity of work.
- 59.3 Where destruction, scarring, damage or defacing may occur as a result of operations relating to Permanent or Temporary works, the same shall be repaired, replanted or otherwise corrected at Contractor's expense. All work areas shall be smoothened and graded in a manner to conform to natural appearance of the landscape as directed by the Employer.
- 59.4 Contractor shall clear the construction site of all scarp, dust, C&D waste and restore the site as per initial condition at the end of contract.

60.0 ENERGY MANAGEMENT

- 60.1 The Contractor shall use and maintain equipment so as to conserve energy and shall be able to produce demonstrable evidence of the same upon Employer's request.

60.2 Measures to conserve energy include but not limited to the following:

1. Use of energy efficient motors and pumps
2. Use of energy efficient lighting, which uses energy efficient luminaries
3. Adequate and uniform illumination level at construction sites suitable for the task
4. Proper size and length of cables and wires to match the rating of equipment
5. Use of energy efficient air conditioners

60.3 The Contractor shall design site offices maximum daylight and minimum heat gain. The rooms shall be well insulated to enhance the efficiency of air conditioners and the use of solar films on windows may be used where feasible.

61.0 ENVIRONMENTAL SITE INSPECTION

61.1 Site inspection shall be undertaken by the Contractor's Project Manager along with Environmental team to inspect the construction activities in order to ensure that appropriate environmental protection and pollution control measures are properly followed and implemented. The frequency of site inspection shall be at least once a week.

61.2 The Contractor shall, submit to the Employer a contract specific comprehensive Environment Inspection checklist as requirement of Site Environmental Plan.

61.3 The area of inspection shall not be limited to environmental compliance within the site but areas outside the site which are likely to be affected, directly or indirectly by activities at site.

61.4 Results of inspection shall be discussed with Employer and his recommendations on better environmental protection shall be notified to the Contractor for taking immediate action and rapid resolution of identified non-compliance.

61.5 If any significant environmental problems are identified or if there is an environmental complaint towards any activity performed by contractor, shall be investigated by the Engineer along with the contractor and report on the same shall be submitted to the employer.

61.6 In addition, the Environment Department of Maha-Metro shall conduct surveillance audit of construction sites, in case of non compliance/violation of environmental conditions, penalties shall be levied in writing.

61.7 The results of monthly environmental inspection shall be discussed in monthly SHE committee meeting.

61.8 Reporting under the Environmental Management plan will contain the adopted mitigation measures for each potential activity and results of monitoring and inspection programmes.

61.9 In Site Environmental Plan, the Contractor shall prepare and submit monthly Environmental Management Reports in accordance with Employer's Requirements.

61.10 The Monthly Environment Management reports shall continue to be submitted till entire duration of contract and its extension.

62.0 IGBC GREEN MRTS RATING REQUIREMENTS

62.1 The Contractor shall, submit all the required documents/certificates/photographs to the Employer required for IGBC Green MRTS Rating which is broadly classified under following categories:

- A. Site Selection and Planning
- B. Water Efficiency
- C. Energy Efficiency
- D. Material Conservation
- E. Indoor Environment and Comfort

- 62.2 An indicative list of documents required for IGBC green MRTS certification has been provided in the general instruction Maha-Metro/SHE/GI/13

PART - V: PENALTY AND AWARDS

63.0 PENALTIES TO BE CHARGED/RECOVERED FROM THE CONTRACTOR

- 63.1 Maha-Metro is committed to provide and maintain Occupational Safety & Health in its all-project work activities, and intends to promote its image as a Safety Conscious Organisation. The unsafe conditions/acts at work place may cause accidents with serious injuries or fatalities to workmen and even to public, which will damage the reputation of Maha-Metro and hamper the project. Most of the accidents are avoidable and caused preliminarily due to Contractors' negligence. Hence Maha-Metro shall recover the cost of damages from the Contractors for every reportable incident (fatality / injury).
- 63.2 The work of metro construction is mostly executed on the right-of-way (movement of civil traffic) and densely populated business/residential areas. These work sites are more sensitive being in contact with public and may lead to serious accidents/damages. Any unsafe act / unsafe condition when observed by public/critics, attracts media adversely and further tarnishing on Maha-Metro's reputation. If such unsafe practices continue, and if not checked, and not penalised, may lead to serious irreversible damages/losses to the organisation. For the strict promotion of Occupational Safety & Health at the site of work and to avoid any safety violation with increased Safety Consciousness. Maha-Metro is empowered to levy penalties on any Safety violation.
- 63.4 The following table indicates the Safety, Health violation (unsafe act / unsafe condition) and charges/penalties to be recovered from contractors.

SN	Topic	Unsafe Act/Unsafe condition	Range of Levels	Deductible Amount
1	SHE Policy & Plan	i) SHE policy.	L1→L2	L1- Rs 5,000 per single violation, compounded to a maximum of Rs 25,000 at any single instance.
		a) non-compliance of clause 4.1		L2- Rs 10,000 per single violation, compounded to a maximum of Rs 50,000 at any single instance.
		ii) SHE plan	L1→L2	L1- Rs 50,000 per single violation, compounded to a maximum of Rs 1,00,000 at any single instance. L2- Rs 1,00,000 per single violation, compounded to a maximum of Rs 2,00,000 at any single instance.
		a) Not as per Employers' content and coverage (Clause 4.3,4.6)		
		b) Delay in submission (Clause 4.3, 4.5)		
		c) Not updated as per Employer's instruction as per Clause 4.8		
		d) Copies not provided to all required supervisors/engineers		
2	SHE Organisation	Not complying to the minimum manpower requirements as mentioned in General Instruction Maha-Metro/SHE/GI/001(Clause 6.1.1)	L1→L2	L1- Rs 50,000 per month for first month and Rs 1,00,000 for subsequent months. L2- Rs 1,50,000 per month for first month and Rs 3,00,000 for subsequent months.

		Not filling up the vacancies created due to SHE personnel leaving the Contractor within 14 days. (Clause 6.7.2)		L1- Rs 50,000 for first month and Rs 1,00,000 for subsequent months. L2- Rs 1,50,000 for first month and Rs 3,00,000 for subsequent months.
		SHE organisation not provided with required Audiovisual and other equipments as per General Instruction.Maha-Metro /SHE/GI/09		L1- Rs 25000 for first violation and Rs 50000 for subsequent violations. L2- Rs 75000 for first violation and Rs 150000 for subsequent violations.
		Employing through outsourcing agencies and SHE personal are not in the payroll of the main Contractor. (Clause 6.5.1)		
		Disobedience / Improper conduct of any SHE personnel. (Clause 6.2)		
		Chief SHE Manager not reporting directly to CPM of Contractor. (Clause 6.6)		
3	SHE committee	Failed to formulate or conduct SHE Committee meeting for any month (Clause 7.4)	L1→L2	L1- Rs 50000 for the first violation and Rs 200000 for the subsequent violations. L2- Rs 250000 for the first violation and Rs 500000 for the subsequent violations.
		Contractor and Sub-contractor representatives not attending SHE Committee meetings (Clause 7.10)		L1- Rs 5,000 to the contractor of the member who had not attended the meeting for first violation and Rs 25,000 for subsequent violations. L2- Rs 10,000 to the contractor of the member who had not attended the meeting for first violation and Rs 50,000 for subsequent violations.
		Failed to conduct Site inspection before conducting SHE Committee meeting (Clause 7.2.1 (xi))		L1-Rs 25,000 for first violation and Rs 50,000 for subsequent violations.
		Failed to send SHE Committee Meeting minutes or Agenda to Employer in time (Clause 7.8.1, 7.9.1)		L2-Rs 50,000 for first violation and Rs 1,00,000 for subsequent violations.
		Non-adherence of Clause 7.7.1		
		Non-adherence of Clause 7.9		
4	ID card	Non-adherence of Clause 8.1, 8.2 and 8.3	L1→L2	L1- Rs 25,000 for first violation and Rs 50,000 for subsequent violations. L2- Rs 1,00,000 for first violation and Rs 2,00,000 for subsequent violations.
5	SHE Training	Not complying to the requirements as mentioned in conditions of contract on SHE and project SHE manual with regard to:		

		a) Induction training not given (Clause 8.1)	L1→L2	L1- Rs 50,000 for first violation on and Rs 1,00,000 for subsequent violations. L2- Rs 1,00,000 for first violation on and Rs 2,00,000 for subsequent violations.
		b) Supervisor / engineer / manager training not conducted as per Clause 9.6		
		c) Refresher training as per Clause 9.7 and 9.11 not conducted		
		d) Tool-box talk not conducted as per Clause 9.8		
		e) Skill development training not conducted as Clause 9.9		
		f) Daily Safety Oath not conducted as per Clause 9.1		
		g) Top management behaviour based SHE training conducted (Clause 9.4)		
6	SHE Inspection	i) Not complying to the requirements as mentioned in conditions of contract on SHE and project SHE manual as per Clause 10.0	L1→L2	L1- Rs 50000 for first violation on and Rs 100000 for subsequent violations. L2- Rs 1,00,000 for first violation on and Rs 2,00,000 for subsequent violations.
		ii) Non-compliance of clause 10.3 & 10.4		
7	SHE audit	Internal Audit: MARS	L1→L2	
		i) Not conducted as per SHE Plan (Clause 11.2.1) ii) Report not sent to Employer (Clause 11.2.6) iii) Action not taken for any month (Clause 11.2.4)		L1- Rs 50,000 for first violation on and Rs 75,000 for subsequent violations. L2- Rs 1,00,000 for first violation on and Rs 2,00,000 for subsequent violations.
		External Audit		
		i) Not conducted as per SHE Plan (Clause 11.4.3 and 11.5.2.2)		L1-Rs 1,00,000 for first violation and Rs 2,00,000 for subsequent violations.
		ii) Report not sent to Employer (Clause 11.4.7 and 11.5.2.8.1)		L2-Rs 2,00,000 for first violation and Rs 4,00,000 for subsequent violations.
8	SHE Communication	Important days to be observed for SHE awareness as furnished by Employer not observed (Clause 12.2)	L1→L2	L1- Rs 10,000 for first violation and Rs 25,000 for subsequent violations. L2- Rs 50,000 for first violation and Rs 1,00,000 for subsequent violations.
		Posters as furnished by Employer not printed and displayed (Clause 12.2)		L1- 50,000 per contract L2- 1,00,000 per contract

9	SHE Submittals	Non compliance of Clause 13.1	L1→L2	<p>L1- Rs 50,000 for first violation on and Rs 1,00,000 for subsequent violations.</p> <p>L2- Rs 1,00,000 for first violation on and Rs 2,00,000 for subsequent violations.</p>
		Non compliance of Clause 13.2		L1-Rs 25,000 for first violation and Rs 50,000 for subsequent violations.
		Non compliance of Clause 13.3		L2-Rs 1,00,000 for first violation and Rs 2,00,000 for subsequent violations.
10	Injury and Incidence reporting	Fatal accidents	L3	L3- Rs 5,00,000 penalty and enforcement of embargo for first fatality, and Rs 10,00,000 penalty and enforcement of embargo for every subsequent fatality.
		Injury accident	L2→L3	<p>L2- Rs 75,000 for first grievously injured person and Rs 1,50,000 for every subsequent grievously injured person (Grievous Injury as defined by Workmen Compensation Act).</p> <p>L3- Rs 2,00,000 for first grievously injured person and Rs 4,00,000 for every subsequent grievously injured person</p>
		Abnormal delay in reporting accidents or wilful suppression of information about any accidents / dangerous occurrence as per Clause 14.1.4	L2→L3	<p>L2-Rs 75,000 for first violation and Rs 1,50,000 for subsequent violations.</p> <p>L3-Rs 2,00,000 for first violation and Rs 4,00,000 for subsequent violations.</p>
		Non-compliance of the Clause 14.4 The contractor shall create a fund to cater, from which in any case of fatal accident or permanent disability, payments will be made to the aggrieved party over and above the statutory requirements.	L2→L3	<p>L2- Rs 50,000 for first violation on and Rs 1,00,000 for subsequent violations.</p> <p>L3- Rs 1,50,000 for first violation on and Rs 3,00,000 for subsequent violations.</p>

		The contractor shall create a fund to cater, from which in any case of fatal accident or permanent disability, payments will be made to the aggrieved party over and above the statutory requirements.		
11	Emergency preparedness Plan	Non-compliance of the Clause 15.1, 15.2, 15.3, 15.4, 15.5 and 15.6	L2→L3	L2- Rs 1,00,000 for non-compliance of any of the clauses. L3- Rs 2,00,000 for non-compliance of any of the clauses.
12	Housekeeping	Housekeeping maintenance register not properly maintained up to date (Clause 17.4)	L1→L2	L1- Rs 10,000 per single violation Compounded to a maximum of Rs 1,00,000 at any single instance. L2- Rs 20,000 per single violation Compounded to a maximum of Rs 2,00,000 at any single instance.
		Surrounding areas of drinking water tanks / taps not hygienically cleaned / maintained (Clause 17.4)		
		Office, stores, toilet / urinals not properly cleaned and maintained. (Clause 17.4)		
		Required dustbins at appropriate places not provided / not cleaned. (Clause 17.6)		
		Stairways, gangways, passageways blocked. (Clause 17.9)		
		Lumber with protruding nails left as such (Clause 17.10)		
		Openings unprotected (Clause 17.7)		
		Excavated earth not removed within a reasonable time.(Clause 17.15)		
		Truck carrying excavated earth not covered / tyres not cleaned. (Clause 17.11)		
		Vehicles / equipments parked / placed on roads obstructing free flow of traffic (Clause 17.13)		
		Unused surplus cables / steel scraps lying scattered (Clause 17.17)		
		Wooden scraps, empty wooden cable drums lying scattered (Clause 17.18)		
		Water stagnation leading to mosquito breeding (Clause 42.6.1)		
13	Working at Height / Ladders and Scaffolds	Not using or anchoring Safety Belt (Clause 18.9)	L2→L3	L1-Rs 10,000 per single violation Compounded to a maximum of Rs 1,00,000 at any single instance. L2-Rs 20,000 per single violation
		Not using Safety Net (Clause 18.18)		
		Absence of life line or anchorage		

		point to anchor safety belt (Clause 18.19)	L1→L2 L1→L2 L2→L3	Compounded to a maximum of Rs 2,00,000 at any single instance. L3-Rs 30,000 per single violation Compounded to a maximum of Rs 3,00,000 at any single instance.
		Non-compliance of Clause 18.17		
		Using Bamboo ladders (Clause 18.20)		
		Painting of ladders		
		Improper usage (less than 1m extension above landing point, not maintaining 1:4 ratio) (Clause 18.20)		
		Aluminium ladders without base rubber bush (Clause 18.20)		
		Usage of broken / weak ladders (Clause 18.20)		
		Usage of re-bar welded ladders (Clause 18.20)		
		Improper guardrail, toe board, barriers and other means of collective protection (Clause 18.16)		
		Improper working platform (Clause 18.17)		
		Working at unprotected fragile surface (Clause 18.9)		
		Working at unprotected edges (Clause 20.0)		
14	Lifting appliances and gear	Non availability of fitness certificate as per Clause 21.3	L2→L3	L2-Rs 50,000 per single violation Compounded to a maximum of Rs 2,00,000 at any single instance. L3-Rs 1,00,000 per single violation Compounded to a maximum of Rs 5,00,000 at any single instance.
		Documents not displayed on the machine or not available with the operator as per Clause 21.4		
		Maximum Safe Working Load not written on the machine as per Clause 21.5		
		Non-compliance of Clause 21.6		
		Non-compliance of Clause 21.7		
		Automatic safe load indicator not provided or not in working condition as per Clause 21.8		
		Age of the operator less than 21 years or without any licence and non-compliance of other item as per Clause 21.9		
		Non-compliance of Clause 21.10		
		Non-compliance of any of the items mentioned regarding rigging requirements as per Clause 21.11		
		Failure to submit method statement in case of all critical lifting (Clause 21.3)		
		Person riding on crane. (Clause 23.4)		
		Creating more noise and smoke (Clause 43.1.1)		
		Absence of portable fire extinguisher in driver cabin (Clause 31.5)		
		Fail to guard hoist platform (Clause 24.0)		
		No fencing of hoist rope movement area (Clause 24.0)		

		Hoist platform not in the horizontal position (Clause 21.2)		
		Usage of first Generation of Hydra Clause 21.11.11 and 21.11.12		
15	Launching operation	Non-adherence of any of the provisions mentioned in Clause 22.2	L2→L3	L2-Rs 50,000 for first violation and Rs 1,00,000 for subsequent violations. L3-Rs 1,50,000 for first violation and Rs 3,00,000 for subsequent violations.
16	Site Electrical safety	Non-compliance of Clause 26.1.1	L2→L3	L2-Rs 10,000 per single violation Compounded to a maximum of Rs 1,00,000 at any single instance. L3-Rs 20,000 per single violation Compounded to a maximum of Rs 2,00,000 at any single instance
		Non-compliance of Clause 26.2.3, 26.2.4 & 26.2.5		
		Non-compliance of Clause 26.3.1		
		Non-compliance of Clause 26.7, 26.8 and 26.9.1		
		Non-compliance of Clause 26.10 and 26.13		
		Non-compliance of Clause 28.3.2		
		Exposed electric lines (fermentative damage) and circuits in the workplace. (Clause 26.5.1)		
		Inserting of wires directly into the socket		
		Improper grounding for the electrical appliances Clause 26.7.1)		
		Electrical cables running on the ground (clause 26.8.5 & 26.8.6)		
		Non-compliance Clause 27.0		
17	Hand tools and Power tools	Non-compliance of Clause 28.0	L2→L3	L2-Rs 10,000 per single violation Compounded to a maximum of Rs 50,000 at any single instance. L3-Rs 20,000 per single violation Compounded to a maximum of Rs 1,00,000 at any single instance.
18	Gas Cutting	Wrong colour coding of cylinder.	L2→L3	L2-Rs 10,000 per single violation Compounded to a maximum of Rs 50,000 at any single instance. L3-Rs 20,000 per single violation Compounded to a maximum of Rs 1,00,000 at any single instance.
		Cylinders not stored in upright position. (Clause 29.1) Flash back arrester, non-return valve and regulator not present or not in working condition. (Clause 29.3 & 29.4)		
		Fail to put cylinders in a cylinder trolley. (Clause 29.1)		
		Damaged hose and fail to use hose clamps (Clause 29.2)		

		Using domestic LPG cylinders (Clause 29.5)		
		Fail to store cylinder 6.6m away from fire prone materials (Clause 29.8)		
		Fire extinguisher not placed in the vicinity during operation (Clause 29.6)		
19	Welding	Voltmeter and Ammeter not working (Clause 29.9)	L2→L3	L2-Rs 10,000 per first violation and Rs 50,000 for subsequent violations.
		Non-availability of separate switch in the transformer (Clause 29.9)		
		Improper grounding and return path. (Clause 29.10)		
		Damaged and bare openings in the welding cable. (Clause 29.10)		
		Damaged holder (Clause 29.10)		
		Fire extinguisher not placed in the vicinity during operation (Clause 29.6)		L3-Rs 75,000 per first violation and Rs 1,50,000 for subsequent violations.
20	Fire precaution	Smoking and open flames in fire prone area (Clause 31.6)	L2→L3	L2-Rs 5,000 per single violation Compounded to a maximum of Rs 25,000 at any single instance.
		Using more than 24V portable electrical appliances in the fire prone area (Clause 34.2.3)		
		Not proper ventilation in cylinder storage area. (Clause 29.8)		
		Absence of fire extinguishers (Clause 31.1)		L3-Rs 10,000 per single violation Compounded to a maximum of Rs 1,00,000 at any single instance.
		Fire extinguishers not refilled once in a year. (Clause 31.2)		
		Fire extinguisher placed in a not easily accessible location		
21	Excavation, Tunnelling and confined space	Non-compliance of Clause 34.1.1	L2→L3	L2-Rs 10,000 per single violation Compounded to a maximum of Rs 50,000 at any single instance.
		Non-compliance of Clause 34.2.3		
		Non-compliance of Clause 34.4		L3-Rs 20,000 per single violation Compounded to a maximum of Rs 1,00,000 at any single instance.
				L2-Rs 10,000 per first violation and Rs 50,000 for subsequent violations.
				L3-Rs 75,000 per first violation and Rs 1,50,000 for subsequent violations.
22	Work permit system	Non-compliance of Clause 35.2	L2→L3	L2- Rs 50,000 per first violation and Rs 1,00,000 for subsequent violations.
		Non-compliance of Clause 21.11.9		L3- Rs 1,00,000 per first violation and Rs 2,00,000 for subsequent violations.
23	Traffic Management	Non-compliance of Clause 36.4.1	L2→L3	L2-Rs 50,000 per first violation and Rs 1,00,000 for subsequent violations.
		Non-compliance of Clause 36.8.3		

		Non-compliance of Clause 36.9.2		L3-Rs 1,50,000 per first violation and Rs 3,00,000 for subsequent violations.
		Non-compliance of Clause 36.9.3		
		Non-compliance of Clause 36.9.7		
		Non-compliance of Clause 36.9.8		
		Barricades (Clause 36.9.4)	L2	Rs 15,000 per single violation Compounded to a maximum of Rs 25,000 at any single instance
		Not Cleaned		
		Not in alignment		
		Not numbered		
		Not painted		
		Red lights /reflectors not working		
		Damages not repaired		
		Not secured properly		
		Barricade inspector not employed		
		Protruding parts / portions repaired		
		Barricades maintaining register not properly maintained up to date		
		Contractor Vehicles (Clause 36.9.5 & 36.9.6)	L2	Rs 15,000 per single violation Compounded to a maximum of Rs 1,00,000 at any single instance
		i) Over loading of vehicles ii) Unfit drivers or operators iii) Unlicensed vehicles iv) Absence of traffic marshals v) Absence of reversing alarm vi) Absence of fog light (at winter) vii) Power / hand brakes not in working condition.		
		Splashing of Bentonite on roads / non-cleaning of tyres of dumpers and transit mixers (Clause 17.11 & 17.14)		
		i) Mishandling of bentonite like splashing of bentonite outside specified width of barricading. ii) Non-cleaning of tyres of dumpers and transit mixers before leaving the site and thereby creating a traffic safety hazard to road users.	L2	a) Rs 50,000 on first observation. b) Rs 1,00,000 on second observation c) Rs 2,00,000 on third and subsequent observations
24	Batching plant / Casting yard	Non-adherence of any of the provisions mentioned in Clause 38.0.	L2	Rs 10000 for single violation compounded to a maximum of Rs 1,00,000 at any single instant.
25	PPE (Personal Protective Equipment)	Not having (Clause 39.1)	L2→L3	L2-Rs 200 per single violation.
		Not wearing (or) using and kept it elsewhere (Clause 39.1)	L2→L3	L3-Rs 400 per single violation.
		Using damaged one (Clause 39.2)	L2→L3	
		Using wrong type (Clause 39.5)	L2→L3	

		Using wrong colour helmet or helmet without logo (Clause 39.4.1)	L1→L2	
		Using for other operation (e.g. Using safety helmet for storing materials or carrying water from one place to other) (Clause 39.5)	L2→L3	
		Not conforming to BIS standard (Clause 39.2)	L2→L3	L2-Rs 10,000 for first violation and Rs 40,000 for subsequent violations. L3-Rs 75,000 for first violation and Rs 1,50,000 for subsequent violations.
		Non-compliance of Clause 39.6, 39.7 and 39.8	L2→L3	L2-Rs 10,000 for first violation and Rs 40,000 for subsequent violations. L3-Rs 75,000 for first violation and Rs 1,50,000 for subsequent violations.
26	Occupational Health	Fail to conduct Medical examination to workers (Clause 42.1)	L1→L2	L1-Rs 5,000 per single violation Compounded to a maximum of Rs 50,000 at any single instance. L2-Rs 10,000 per single violation Compounded to a maximum of Rs 1,00,000 at any single instance. L3-Rs 15,000 per single violation Compounded to a maximum of Rs 1,50,000 at any single instance.
		Absence of ambulance van & room (Clause 42.3)	L2→L3	
		Workers not having ID card (Clause 8.2)		
		Absence of first-aid person in work site (Clause 42.4)		
		Absence or inadequacy of first-aid box (Clause 42.4)	L1→L2	
		Misuse of first-aid box (Clause 42.4)		
		First-aid box not satisfy the minimum Indian standard. (Clause 42.4)		
		Smoking inside the construction site (Clause 42.7.2)		
		Drink and drive or work (Clause 42.7.1)		
		Fumigation / insecticides not sprayed to prevent Mosquito breeding (Clause 42.6.3)		
		Non-compliance of Clause 44.1 and 44.2		
27	Labour Welfare measures	Inadequate number of toilets (Clause 46.1.1)	L1→L2	L1-Rs 10,000 per single violation Compounded to a maximum of Rs 50,000 at any single instance. L2-Rs 20,000 per single violation Compounded to a maximum of Rs 1,00,000 at any single instance.
		Toilets not cleaned properly (Clause 46.1.3)		
		Toilet placed more than 500m from the work site (Clause 46.1.3)		
		Absence of water facilities for toilets and washing places (Clause 46.1.3)		
		Accommodation not provided as per BOCWA (Clause 46.5.1))		
		Absence of drinking water (Clause 46.4)		
		Excessive noise and vibration (Clause 43.0)		
		Canteen not provided (Clause 46.2)		
		Food stuff not served on no loss no profit basis (Clause 46.3)		

		Creche not provided (Clause 46.6)		
		Non adherence of Labour welfare provisions of BOCWA (Clause 3.3.1.2)		
		Fail to register establishment and display the registration certificate at workplace (Clause 3.3.1.2)		
		Absence of workers register and records (Clause 3.3.1.2)		
		Absence of muster roll and wages register (Clause 3.3.1.2)		
		Fail to display an abstract of BOCWA and BOCWR (Clause 3.3.1.2)		

63.5 Without limiting to the unsafe acts and or conditions mentioned above in Clause 63.4 the Employer shall have the right to deduct charges for any other unsafe act and or condition depending upon the gravity of the situation on a case-to-case basis. The charges shall be in comparison with that of the similar offence indicated in Clause 63.4.

63.6 Non-conformities detected during inspections carried out by the Engineer are subject to a process adapted to the severity of the situation. Non-conformities are divided into 4 categories as follows:

63.6.1 Notification of observation of minor non-conformities. The non-conformity results in a notification to the on-site Contractor's representative, followed-up by a signed notification of observation prepared by the Engineer. The multiplication of notifications of observation at the Worksite, or absence of corrective actions by the Contractor, can result in the severity of the non-conformity being raised to that of level 1.

63.6.2 **Level 1 non conformity:** non-conformities, that do not represent a serious immediate risk for health and environment. The non-conformity is the subject of a report addressed to the Contractor and which shall be resolved within five (5) days. The Contractor addresses to the Engineer a report explaining how the non-conformity has been corrected. Further to an inspection and a favourable evaluation of effectiveness of the corrective action, the Engineer signs a close-out report for the non-conformity. In all cases where a non-conformity of level 1 is not resolved within one (1) month, the severity of the non-conformity is raised to level 2.

63.6.3 **Level 2 non-conformities:** Applies to all non-conformities that have resulted in damage to health or the environment or which represent a high risk to health and the environment. The same procedure as for level 1 non-conformities is applied. Corrective action shall be taken by the Contractor within three (3) days. The Contractor addresses a report explaining the corrective actions implemented. All level 2 non-conformities which are not resolved within one (1) month, are raised to level 3.

63.6.4 **Level 3 non-conformities:** applies to all non-conformities that represent a risk with major consequences to health and the environment. The highest levels of the Contractor's and Engineer's hierarchies present in the Employer's country are informed immediately and the Contractor has twenty-four (24) hours to bring the situation under control. Clause 14.7 of the Particular Conditions of Contract (PC), a level 3 non-conformity results in the suspension of interim payments until the non-conformity has been resolved. If the situation requires, and in pursuance to Clause 8.8 of the PC, the Engineer can order the suspension of work until the resolution of the non-conformity.

63.7 **Environmental Penalties:** Following penalties shall be recovered from contractors while dealing the Environmental Protection aspects/Management measures.

SL. No.	Topic	Violation	Deductible Amount
1.	Contractor's	Not engaging Environmental personnel for the entire duration of contract and	Rs. 2,00,000/- for first month

	Environment Organization	its extension	and Rs. 4, 00,000/- for subsequent months
2.	ISO Certification	Not obtaining ISO 14001:2015 & ISO 45001:2018 certification within the stipulated time frame with the Maha-Metro approved agency	Rs. 1,00,000/- per single violation and Rs. 2,00,000 for subsequent violations.
3.	External Environmental Audit	Not carrying out External Environmental Audit with the Maha-Metro approved agency	Rs. 1,00,000/-for first violation and Rs. 2,00,000/- subsequent violation
4.	Environmental Training	Not carrying out Environmental Training with the Maha-Metro approved agency	Rs. 50,000/- for first violation and Rs. 1,00,000/- subsequent violation
5.	Legal Requirements	Noncompliance of statutory requirements (CTE,CTO,Factory Act,CGWA Permission etc.)	Rs. 2,00,000/-for first violation and Rs. 4,00,000/- subsequent violation or as per regulatory Authority.
6.	Environmental Sanitation	<ol style="list-style-type: none"> 1. Environment Sanitation maintenance register not properly maintained up to date 2. Surrounding areas of drinking water tanks/ taps not hygienically cleaned / maintained 3. Office, stores, toilet/ urinals not properly cleaned and maintained 4. Required dustbins at appropriate places not provided / not cleaned 5. Water stagnation leading to mosquito breeding 6. Not practicing any other Environmental Sanitation measures mentioned in this document 	Rs. 50,000/- for violation of any single item compounded to a maximum of Rs. 1,00,000/- at any single instance
7.	Felling of Trees & Tree Preservation	Felling of trees without obtaining requisite permission from Maha Metro /Statutory Authority	Rs. 1,00,000/- on single violation for item a)
8.	Top Soil Preservation	Top soil preservation not practiced	Rs. 25,000/- on each violation/ per instance
9.	Containment of Air Pollution	<ol style="list-style-type: none"> 1. Wheel washing facility not provided at exit gates of casting yard, batching plant and underground station sites 2. Soil, sand, aggregate, debris of any kind and all dust prone materials stored without proper tarpaulin coverage 3. Sprinkling or mist-based dust suppression methods not practiced at site 4. Casting yard and batching plant not provided with hard surface and access roads and internal circulation roads not maintained properly 5. Not maintaining required DG Stack height as prescribed in the standard 6. Conveyor belt used for carrying aggregate not covered 7. Carrying out construction work without erecting proper barricades 8. Storage facility for dust generating materials/debris not provided 	Rs. 50,000/- on single violation compounded to a maximum of Rs. 2,00,000/- at any single instance

		9. Storing material/debris/soil outside barricaded area 10. Storing aggregates and sand in open area 11. Over speeding of construction vehicles 12. Operating vehicles, machineries and other equipments without valid PUC 13. Truck carrying Material/ muck/ soil/ C&D waste (debris) not covered / tyre not cleaned/washed while leaving site 14. Deposition of material/muck/soil on public streets 15. Dumping sites not barricaded 16. Toe dust along the barricade not cleaned regularly 17. Not practicing any other Air Pollution & dust control measures mentioned in this document	
10.	Containment of Water Pollution and Conservation of Water	1. Transit Mixer (TM) washing facility not provided at casting yard/batching plant 2. Drainage system not maintained at casting yard or and batching plant 3. Not providing treatment facility before discharge of muck slurry into drainage system 4. Washout of construction or excavated materials directly diverted to drainage system 5. Spillage or dumping of Bentonite slurry/Poly-mud slurry or other grouts onto public road or any other ecologically sensitive location 6. Discharge water from the site without the approval of the Employer 7. Discharge of de-watered water from underground construction work to drains without prior approval of the Employer 8. Not practicing any other Water Pollution control measures mentioned in this document.	Rs. 50,000/- for violation of any single item compounded to a maximum of Rs. 2,00,000/- at any single instance
11.	Containment of Noise	1. Not providing noise barrier of required height near noise sensitive receptors such as residences, schools, hospitals and similar areas 2. Not providing acoustic enclosure or acoustic treatment for DG sets for meeting the ambient noise standards 3. Breaching allowable noise limits given in this document 4. Not adhering to noise limits for DG sets 5. Not providing PPE to workers against occupational noise	Rs. 50,000/- for violation of any single item from a) to b) compounded to a maximum of Rs. 2,00,000/- at any single instance
12.	Containment of	1. Waste Management Plan not submitted along with Environment	Rs. 50,000/- for violation of

	Waste	<p>Plan</p> <ol style="list-style-type: none"> Leakage of waste during handling, storage and transportation of waste causing pollution Material Safety Data Sheet for material/ chemicals/ substances used not provided Not following waste disposal mechanism in accordance with this document Discharging of Bentonite slurry/Poly- mud slurry or other grouts drainage directly in to drainage system Delay in disposal of waste items Burning of refuse at construction site Required number of colour coded dust bins not provided Not disposing C&D waste by authorized means Disposal of C&D waste along the river bed, natural drainage and wet land Separate hazardous waste storage area not provided Drip pans of suitable size not provided Not maintaining separate scrap yard with hard surface Not practicing any other waste management measures mentioned in this document. 	any single item from a) to n) compounded to a maximum of Rs. 2,00,000/- at any single instance
13.	Environmental Monitoring	<ol style="list-style-type: none"> Air monitoring not implemented as per requirement given in this document DG set stack monitoring is not implemented as per requirement given in this document Noise monitoring not implemented as per requirement given in this document Soil testing not implemented as per requirement given in this document Groundwater testing not implemented as per requirement given in this document Carrying out monitoring through un- approved laboratories Not keeping records of monitoring Not maintaining check on the quality of monitoring agency while carrying out monitoring work at site Not verifying the correctness of monitoring data submitted by monitoring lab Not ensuring calibration of air monitoring instruments used by monitoring agency Not ensuring calibration of noise monitoring instrument used by 	Rs. 50,000/- for violation of any single item compounded to a maximum of Rs. 2,00,000/- at any single instance

		monitoring agency	
14.	Green Building Requirements	1. Green Building measures not implemented as per requirement given in Green Mass Rapid Transit System (MRTS) Rating (latest revision). 2. Non-Submission of required documents under Green Mass Rapid Transit System (MRTS) Rating. 3. Not practicing any other Green Building requirements mentioned in this document	Rs. 1,00,000/- for violation of any single item compounded to a maximum of Rs. 2,00,000/- at any single instance.

63.8 Without limiting to the environmental management measures mentioned above in Clause 63.7 the Employer shall have the right to deduct charges for any other Environmental management noncompliance depending upon the gravity of the situation on a case-to-case basis. The charges shall be in comparison with that of the similar offence indicated in Clause 63.4.

64.0 STOPPAGE OF WORK

64.1 The Employer shall have the right to stop the work at his sole discretion, if in his opinion the work is being carried out in such a way that it may cause accidents and endanger the safety of the persons and / or property, and / or equipments. In such cases, the Contractor shall be informed in writing about the nature of hazards and possible injury / accident.

64.2 The Contractor shall not proceed with the work until he has complied with each direction to the satisfaction of Employer.

64.3 The Contractor shall not be entitled for any damages / compensation for stoppage of work, due to safety reasons and the period of such stoppage of work shall not be taken as an extension of time for Completion of the Facilities and will not be the ground for waiver of levy of liquidated damages.

65.0 OCCUPATIONAL HEALTH AND SAFETY AWARDS

65.1 The following categories will be considered for awards as per the scheme in practice of Employer:

- (i) For every safe million-man hour working without any reportable incidents
- (ii) Zero fatality contracts
- (iii) 100% adherence to voluntary reporting of all accidents throughout the currency of contract
- (iv) Safest project team of the year.
- (v) Best SHE team of the year.
- (vi) Safest Contractor of the year.

66.0 ENVIRONMENTAL AWARDS

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66.1 The following categories will be considered for awards as per the scheme in practice of Employer

- (i) Best Environmentally managed Underground contract
- (ii) Best Environmentally managed Elevated contract
- (iii) Best Environmentally managed Batching plant
- (iv) Best Environmentally managed Casting yard

(v) Best Condition of Contract compliant contractor

66.2 The above categories may increase or decrease at the sole discretion of the employer.

PART - VI: APPENDIX, FORMS AND GENERAL INSTRUCTION**MAHARASHTRA METRO RAIL CORPORATION LIMITED****Appendix No.1: MoU between Maha-Metro and the Contractor for safe execution of contract work**

This Memorandum of Understanding is made and executed by and between **Maharashtra Metro Rail Corporation Limited (Maha-Metro)**, a Company registered under the Companies Act 1956 and having its registered office at XXXX or their authorized representative(s), hereinafter referred to as **“EMPLOYER”** (which expression shall wherever the context so requires or admits be deemed to mean and include its successors in business and assigns) of the one party

AND

M/s _____ having its registered office _____ hereinafter referred to as the **“CONTRACTOR”** (which expression shall wherever the context so requires or admits be deemed to mean and include its successors in business and assigns) of the other party

WITNESSETH THAT

WHEREAS the EMPLOYER gives highest importance to the occupational safety, health and environment during execution of work, seeks cooperation from the CONTRACTOR in this endeavour.

Thus, this Memorandum of Understanding is for promoting the safety, health and environment aspects required to be followed at workplace/site and will be applicable to any site job to be done by the CONTRACTOR

AND

WHEREAS the CONTRACTOR has read all the terms and conditions of the EMPLOYER and whereas the CONTRACTOR has studied the following documents:

- (i) Tender Documents, including Notice Inviting Tender, General Conditions, Special Conditions;
- (ii) Conditions of Contract on Safety, Health and Environment and Project Safety, Health, and Environment Manual;
- (iii) Building and Other Construction Workers (Regulations of Employment and Conditions of Service) Act 1996, Central Rules 1998 and subsequent Maharashtra BOCW Rules 2003, Building and Other Construction Workers Welfare Cess Act 1996 and Rules 1998 and notification [Central & State] Collection of cesses.
- (iv) Indian Electricity Act 2003 and Rules 1956;
- (v) Corresponding International / Bureau of Indian Standard Codes.

Including the amendments to any of the above rules and any other rules & regulations or procedures, circulars, notices & advices laid down by the EMPLOYER from time to time.

Now it is hereby AGREED AND DECLARED by and between the EMPLOYER and the CONTRACTOR as follows:

Clause - I The CONTRACTOR shall abide by the terms and conditions stipulated in Condition of Contract on Safety, Health & Environment and Project Safety, Health & Environment Manual.

Clause - II The CONTRACTOR shall undertake full responsibility for safe execution of job

at work place/site and safety of his personnel and adjoining road users during work.

Clause - III Without giving any prior notice, the EMPLOYER shall from time to time be entitled to add/or amend any or all terms and conditions with a view to improving safety and occupational health of personnel and safety of work, with immediate effect and the same shall be binding on the CONTRACTOR. The Contractor agrees to implement all such amendments, which shall be laid down by the EMPLOYER.

Clause - IV Besides following the guidelines, safety rules and regulations, safety codes given in various safety procedures/documents mentioned above, the CONTRACTOR shall also prepare detailed method statement which includes job safety analysis wherever there are complicated and hazardous/high risk working involved and get it approved from Employer before execution of work.

Clause - V Any negligence or violation in implementing any of the provision of the conditions of contract on Safety, Health & Environment and Maha-Metro project Safety, Health & Environment Manual shall be viewed seriously and the Contractor is liable to compensate the Employer for the loss of reputation. The cost of damage shall be fixed on case-to-case basis.

In witness thereof the Parties hereto by representatives duly authorised have executed this Memorandum of Understanding on _____ day of _____ 20____.

Signed on

Signed on

For and on behalf of Maha-Metro

For and on behalf of (Contractor)

Signature:


Signature:

Name:

Name:

Title:

Title:

	MAHARASHTRA METRO RAIL CORPORATION LIMITED
Appendix no.: 2: OHS and Welfare requirements as per BOCW Act 1996 and Rules 1998	

(This list has been prepared in chronological order with primary importance to Section of Act and secondary importance to Rules)


- S - Refers relevant Sections in BOCWA
R - Refers relevant Rules in BOCWR
C - Refers relevant Chapter No. in BOCWR
P - Refers to relevant rules in BOCWWCR 1998
G - Refers to relevant rules in Maharashtra BOCWR 2003

SN	Items	Relevant Sections / Rules in BOCWA and BOCWR and MBOCWR 2003
1.	Registration of establishment	S – 7, R – 23 to 27
2.	Display of registration certification at workplace	R – 26 (5)
3.	Hours of work	S – 28 R – 234 to 237
4.	Register of overtime	S – 28; S – 29 R – 241(1) Form XXII
5.	Weekly rest and payment at rest	R – 235
6.	Night shift	R – 236
7.	Maintenance of workers registers and records	S – 30 R – 238
8.	Notice of commencement and completion	S – 46 R – 239
9.	Register of persons employed as building workers	R – 240
10.	Muster roll and wages register	R – 241(1) (a); Form XVI and XVII
11.	Payment of wages	R – 248
12.	Display of notice of wages regarding	R – 249
13.	Register of damage or loss	R – 241(1)(a); Form XIX, XX, XXI
14.	Issue of wages book	R – 241(2)(a); Form XXIII
15.	Service certificate for each workers	R – 241(2)(b); Form XXIV
16.	Display an abstract of BOCWA and BOCWR	R – 241(5)
17.	Deduction of welfare cess by the government agencies	P – 4(3)
18.	Annual return	R – 242; Form XXV
19.	Drinking water	S – 32
20.	Latrines and Urinals	S – 33

SN	Items	Relevant Sections / Rules in BOCWA and BOCWR and MBOCWR 2003
		R – 243
21.	Accommodation	S – 34
22.	Creches	S – 35
23.	First-aid boxes	S – 36 R – 231 and Schedule III
24.	Canteens	S – 37 R – 244
25.	Food stuff and other items served in the canteens	R – 245
26.	Supply of tea and snacks in work place	R – 246
27.	Food charges on no loss no profit basis	R – 247
28.	BOCWR 2003 welfare Board Rules	
29.	Safety committee	S – 38 R – 208
30.	Safety officer	S – 38 R – 209 and Schedule VII
31.	Reporting of accidents and dangerous occurrences	S – 39 R – 210
32.	Procedure for inquiry in to the causes of accidents	R – 211
33.	Responsibility of employer	S - 44 R – 5
34.	Responsibility of Architects, Project engineer and Designers	R – 6
35.	Responsibility of workmen	R – 8
36.	Responsibility for payment of wages and compensation	S – 45
37.	Penalties and Procedures	S – 47; S – 55
38.	Excessive noise, vibration etc	R – 34
39.	Fire Protection	R – 35
40.	Emergency action plan	R – 36
41.	Fencing of motors	R – 37
42.	Lifting of carrying of excessive weight	R – 38
43.	Health, Safety and Environmental Policy	R – 39
44.	Dangerous and Harmful Environment	R – 40
45.	Overhead protection	R – 41
46.	Slipping, Tripping, Cutting, Drowning and Falling Hazards	R – 42
47.	Dust, Gases, Fumes, etc	R – 43
48.	Corrosive substance	R – 49

SN	Items	Relevant Sections / Rules in BOCWA and BOCWR and MBOCWR 2003
49.	Eye Protection	R – 45
50.	Head Protection and other protection apparel	R – 46; R – 54
51.	Electrical Hazards	R – 47
52.	Vehicular traffic	R – 48
53.	Stability of structure	R – 49
54.	Illumination	R – 50; R – 124
55.	Stacking of materials	R – 51
56.	Disposal of debris	R – 52
57.	Numbering and marking of floors	R – 53
58.	Lifting appliances and gears	C – VII; R – 55 to 81
59.	Runways and Ramps	C – VIII; R – 82 to 85
60.	Working on or adjacent to water	C – IX; R – 86 & 87
61.	Transport and earthmoving equipments	C – X; R – 88 to 95
62.	Concrete work	C – XI; R – 96 to 107
63.	Demolition	C – XII; R – 108 to 118
64.	Excavation and Tunnelling works	C – XIII; R – 119 to 168
65.	Ventilation	R – 153
66.	Construction, repair and maintenance of step roof	C – XIV; R – 169 to 171
67.	Ladders and Step ladders	C – XV; R – 172 to 174
68.	Catch platform and hoardings, chutes, safety belts and nets	C – XVI; R – 175 to 180
69.	Structural frame and formworks	C – XVII; R – 181 to 185
70.	Stacking and unstacking	C – XVIII; R – 186 & 187
71.	Scaffold	C – XIX; R – 188 to 205
72.	Cofferdams and Caissons	C – XX; R – 206 to 211
73.	Explosives	C – XXI; R – 212 & 213
74.	Piling	C – XXII; R – 214 to 222
75.	Medical Examination for building and other construction worker, Crane operator and Transport vehicle drivers	R – 81; R – 223(a)(iii) and Schedule XII


SN	Items	Relevant Sections / Rules in BOCWA and BOCWR and MBOCWR 2003
76.	Medical examination for occupational health hazards	R – 223(a)(iv)
77.	Charging of workers for Medical Examination	R – 223(b)
78.	Occupational health centres and medical officers	R – 225 and Schedule X & XI
79.	Ambulance van & room	R – 226 & 227 and Schedule IV & V
80.	Stretchers	R – 228
81.	Occupational health service for building workers	R – 229
82.	Medical examination for occupational health hazards	R – 223(a)(iv)
83.	Emergency care services and emergency treatment	R – 232
84.	Panel of experts and agencies	Central Rule 250
85.	Power of inspectors	Central rule 251 Maharashtra State Rules

	MAHARASHTRA METRO RAIL CORPORATION LIMITED
Appendix no. : 3 Site Safety,Health and Environmental Plan	

Contract No	
Contractor Name	
Project Name	

1.	Project Highlights i) Title of the content ii) Contractor Number iii) Brief scope of work iv) Location map/ key plan v) Period of the project
2.	SHE Policy
3.	Site Organisation Chart Chart indicating reporting of SHE personnel
4.	Roles & Responsibility Individual responsibility of the: i) Project Manager ii) Construction Manager iii) Construction Supervisors iv) SHE Committee Members v) SHE In charge vi) Environmental Manager vii) Site Engineers viii) First Line Supervisors ix) Sub-contractors
5.	SHE Committee i) Details - Chairman, Members, Secretary and Employer's representative ii) Procedures for effective conduct of meeting
6.	SHE Training
7.	Subcontractor Evaluation, Selection and Control
8.	SHE Inspection
9.	SHE Audit
10.	Accident Investigation and Reporting Procedures
11.	Occupational Health Measures
12.	Labour Welfare Measures
13.	Risk assessment and mitigation procedures

14.	Safe Work Procedures <ul style="list-style-type: none">i) Work at Heightii) Structural Steel Erectioniii) Launching of segmentsiv) Floor, Wall Openings and Stairwaysv) Welding, Cutting and Bracingvi) Lifting appliancesvii) Work Permit Systemsviii) Electrical Equipmentsix) Mechanical Equipmentsx) Excavationxi) Fire Preventionxii) Hazardous Chemicals and Solventsxiii) Ionising Radiationxiv) Lightingxv) Abrasive Blasting
15.	Work Permit System
16.	List of standard job specific PPEs to be used in the site
17.	Maintenance of Regime for construction Equipment and Machinery
18.	Traffic management
19.	Housekeeping
20.	Environmental Management
21.	Emergency Management
22.	Visitors and Security arrangement


	MAHARASHTRA METRO RAIL CORPORATION LIMITED
Appendix No.4: Workplace Policy on HIV Prevention & Control for Workmen	

“Being mobile in and of itself is not a risk factor for HIV infection. It is the situations encountered and the behaviours possibly engaged in during mobility or migration that increase vulnerability and risk regarding HIV / AIDS.”

UNAIDS, Technical update on ‘Population, Mobility and AIDS’, February 2001, p.5

Maha-Metro recognizes HIV / AIDS as a developmental challenge and realizes the need to respond to it by implementing regular HIV / AIDS prevention programmes and creating a non-discriminatory work environment for HIV infected workmen engaged by contractors. For the purpose of making conscientious, sensitive and compassionate decision in addressing the realities of HIV / AIDS, Maha-Metro has established these guidelines based on ILO code of practice on HIV / AIDS.

- Creating awareness through professional agency using IEC (Information, Education and Communication) package specially designed for migrant workers.
- Institutional capacity building by training the project implementation team, Safety, Health & Environment (SHE) Managers, establishing linkages for efficient diagnosis and treatment of the affected workers, effective monitoring of implementation and documentation for further learning.
- Establishing peer educators by selecting them in consultation with Contractors and training them through professional agencies so that they become focal point for any information, education and awareness campaigns among the workmen throughout the contract period.
- Promotion of social marketing of condoms through State Aids Control Society

	MAHARASHTRA METRO RAIL CORPORATION LIMITED
General Instruction: Maha-Metro/SHE/GI/001: Minimum Manpower Requirements of SHE Org.	

	1	2	3	4	5	6	7	8	9	10	11	12
Awarded Contract value (in Rs Cr.)	Chief SHE Manager	Senior SHE Manager	Junior SHE Manager	Safety Steward	Senior SHE (Electrical Engineer)	Junior SHE (Electrical Engineer)	Senior SHE (Fire) Manager	Occupational Health officer with Necessary Male Nursing Assistants	Senior Environmental Manager	Senior SHE (Traffic) Engineer	House Keeping Cum Barricade Maintenance Manager	Labour Welfare Officer
Up to 2	-	-	1	-	-	1	-	-	-	-	-	-
Up to 10	-	1	-	1	-	1	-	1 (PT)	1	1	Refer Note 4	1
Up to 25	1	-	1	-	1	-	1	1 (PT)	1	1		1
Up to 100	1	1	-	1	1	1	1	1 (FT)	1	1		1
Up to 200	1	2	2	2	1	2	1	2 (FT)	1	1		1 with support staff
More than 200	1	2	5	5	1	2	1	2 (FT)	1 with Env. Steward	1		

Note 1: The above deployment of SHE professionals can be varied as per the progress of work with approval of Engineer In-charge. Nothing extra shall be paid on this account.

Note 2: (PT) means Part-Time and (FT) means Full-time.

Note 3: Senior SHE (Traffic) Engineer Post and Barricade Manager (including the staff) Posts are applicable to contracts where the work has to be executed either below or over the right-of-way like Viaduct, Tunnel Contracts wherein erection and maintenance of barricades are paramount important.

Note 4: One Housekeeping cum Barricade Manager supported by **Minimum 02 (Two) Supervisors** and **10 (Ten) workmen**

Note 5: Minimum requirement of the SHE organisation given as above (SHE Condition of Tender Documents) with deployment schedule **shall prevail**, in case of any variation/conflict in provisions given in MAHA Metro SHE Manual or elsewhere.

Deployment Schedule of SHE Professionals

SHE Professionals	DEPLOYMENT **
Chief SHE Manager	Within 30 Days from the date of issuance of LOA
Senior SHE Manager	50% Within 30 Days from the date of issuance of LOA and balance 50 % Within 90 Days from the date of issuance of LOA
Junior SHE Manager	50% Within 30 Days from the date of issuance of LOA and balance 50 % Within 90 Days from the date of issuance of LOA
Safety Steward	50% Within 30 Days from the date of issuance of LOA and balance 50 % Within 90 Days from the date of issuance of LOA
Sr SHE (Ele Engineer)	Within 30 Days from the date of issuance of LOA
Jr SHE (Ele Engineer)	50% Within 30 Days from the date of issuance of LOA and balance 50 % Within 90 Days from the date of issuance of LOA
Sr SHE (Fire) Manager	Within 90 Days from the date of issuance of LOA
Occupational Health Officer	Within 60 Days from the date of issuance of LOA
Environmental Manager	Within 60 Days from the date of issuance of LOA
Sr SHE (Traffic) Engineer	Within 30 Days from the date of issuance of LOA.
House Keeping Cum Barricade Maintenance Manager with Team	Within 30 Days from the date of issuance of LOA.
Labour Welfare Officer	Within 60 Days from the date of issuance of LOA.
Note: ** Deployment to continue till completion of the project work.	

Note 1: Minimum requirement of the SHE organisation given as above (SHE Condition of Tender Documents) with deployment schedule **shall prevail**, in case of any variation/conflict in provisions given in MAHA Metro SHE Manual or elsewhere.



MAHARASHTRA METRO RAIL CORPORATION LIMITED

General Instruction: Maha-Metro/SHE/GI/002: Minimum Qualification and exp. for SHE Professionals

SN	Designation	Qualification	Experience (in years)
1.	Chief SHE Manager	<p>The Chief SHE Manager shall have qualified in any of the following degree/diploma:</p> <ul style="list-style-type: none"> i) Post Graduate Diploma in Industrial Safety & Environmental Management (PGDISEM) from National Institute of Industrial Engineering, Mumbai ii) M.E. in Industrial Safety from NIT, Trichy, Tamil Nadu iii) M.E. in Industrial Safety from MepcoSchlenk Engineering College, Sivakasi, Tamil Nadu iv) B.E. in Fire and Safety Engg. From Cochin University of Science and Engg. Cochin, Kerala v) B.E. with advanced Safety Management Diploma from CLI / RLI Mumbai / Chennai / Kolkata and Kanpur. vi) B.E / B.Arch., with one-year Full Time advanced Safety diploma from NICMAR, Hyderabad. vii) B.E / B.Tech with any other equivalent State and Central Govt. recognized full time Degree / Diploma in Safety. viii) International qualifications like CSP (Certified Safety Professional), NEBOSH, MIOSH, MSISO etc. 	<p>12 years for Diploma holders and 10 years for Degree holders</p> <p>2 {for all category except (iv) and 5yrs for category (iv)}</p>
2.	Senior SHE Manager	<p>As stated in SN1 and in addition the following categories:</p> <ul style="list-style-type: none"> i) B.Sc. (Physics/Chemistry/Maths) with one-year Full Time advanced Safety diploma from NICMAR, Hyderabad ii) B.Sc. / Diploma in Engg with advanced Safety Management Diploma from CLI / RLI / Mumbai / Chennai / Kolkata and Kanpur. iii) B.Sc. (Physics/Chemistry/Maths) with One-year Full Time diploma in Safety Engineering offered by West Bengal State Technical Education Departments and similar courses by other states. iv) Any Graduate or diploma holder with 7 years of work experience in full fledged SHE department of any Public Sector / Leading Private Sector / MNC / with prior approval of employer on a case-to-case basis 	<p>05 years for Diploma holders and 03 years for Degree holders</p> <p>2 {for category (i), (ii) and (iii) only}</p>
3.	Senior Environment Manager	Govt. recognized B. Tech/ M.Sc./M.Tech. in Environmental Science/Engineering with experience in Metro Rail Project/Construction sector	5 Years
4.	Junior SHE Manager	<ul style="list-style-type: none"> i) Degree in Science / Diploma in Engineering with Govt. recognized safety diplomas from Correspondence course of NICMAR, Annamalai University, National and State Productivity Councils, Other State Technical Education Boards etc. ii) Any Graduate or diploma holder with 5 years of work experience in full fledged SHE department of any Public Sector / Leading Private Sector / MNC / with prior approval of employer on a case-to-case basis 	2 (for category (i) only)


SN	Designation	Qualification	Experience (in years)
5.	Safety Steward	Any basic qualification with any SHE related certificate courses.	2
6.	Environment Steward	Any basic qualification with Environment Management certificate courses.	2
7.	Senior SHE (Electrical) Manager	Degree in Electrical Engineering + Govt. recognized Electrical Licence holder	2
9.	Junior SHE (Electrical) Manager	Diploma in Electrical Engineering + Govt. recognized Electrical Licence holder	1
10.	Senior SHE (Fire) Manager	i) B.E. (Fire) from National Fire Service College, Pune ii) B.E (Fire & Safety) from Cochin University iii) Graduate with any Govt. recognized diploma in Fire Safety with 5 years of experience	2 (for category (i) and (ii) only)
11.	Junior SHE (Fire) Manager	Any Diploma holder with any Govt. recognized diploma in Industrial Fire Safety.	1
12.	Occupational Health Officer	MBBS with Govt. recognized degree/diploma in Industrial/occupational health	1
13.	Senior SHE (Traffic) Engineer	Govt. recognized PG Degree / Degree / Diploma in Traffic/Transportation Engineering or Planning	1
14.	House Keeping Cum Barricade Manager	Any Diploma in Engineering	1
15.	Labour Welfare Officer	Any Degree with Govt. Recognized Degree / Diploma / P G Diploma in Labour Welfare related fields like Law, Personnel / Industrial Relations etc.	2

Note 1: In some extraordinary cases where the candidate had earlier worked in any metro projects in India, they can be considered for the following posts:

- Senior SHE Manager
- Junior SHE Manager
- Safety Steward

depending upon the qualification and number of years of experience on a case-to-case basis even if they do not possess the prescribed qualification as listed above.

Note 2: In all other cases other than listed under Note 1 irrespective their earlier experience with metro projects in India the candidates shall qualify as specified above.

	MAHARASHTRA METRO RAIL CORPORATION LIMITED
General Instruction: Maha-Metro/SHE/GI/003: Min. Requirements of SHE Monitoring and A.V. Equip.	


1. For the purpose of minimum requirements of Audio-visual and Other equipment the contracts are categorized into the following groups:

Contract Value (Initial awarded value of contract)	Group
Upto 25 Cr	A
Upto 100 Cr	B
Upto 250 Cr	C
More than 250 Cr	D

2. Every contractor falling into the above groups shall provide the following minimum required audio-visual aids for conducting weekly review, monthly safety committee and other post review meeting of all fatal and major incidences effectively. These audio-visual equipments are a must for conducting periodical in-house safety presentations in the training programmes.
3. In addition to the above portable hand-held digital sound level meter (SLM) and portable hand-held digital lux meter are also to be provided.

SN	SHE monitoring and Audio-Visual Equipment details	SHE monitoring and Audio-Visual equipment required for			
		Group A Contract	Group B Contract	Group C Contract	Group D Contract
1.	Portable hand-held Digital Sound Level Meter (SLM) Noise Monitoring deleted	1	1	1	1
2.	Portable hand-held Digital Lux Meter	1	1	1	1
3.	Laptop Computer with standard configuration including multimedia facilities	1	1	1	1
4.	Colour Printer	1	1	1	1
5.	Computer projector with screen	-	1	1	1
6.	Overhead projector	1			
7.	35mm Camera (For taking accident investigation photos in which case the images cannot be easily altered)	1	1	1	1
8.	Digital camera with flash of minimum 4 mega pixel and video facility	1	1	1	2
9.	Digital still camera with flash of minimum 4 mega pixel	1	2	4	6
10.	Portable loudspeaker (for tool-box talk and emergency purpose)	1	1	2	6
11.	Communication facility like mobile phone, walky-talky etc	For all supervisors and managers/engineers working in Safety, Health & Environment			
12.	Accident investigation Kit containing the following:	1	1	1	2
a)	Chalk piece for marking				

SN	SHE monitoring and Audio-Visual Equipment details	SHE monitoring and Audio-Visual equipment required for			
		Group A Contract	Group B Contract	Group C Contract	Group D Contract
b)	Measuring tape for measuring Flexible tape – 2m length Metal Foot long scale and Metal tape – 30m				
c)	Equipment tags				
d)	Multipurpose Flash light				
e)	Barrier tape of 20m length				
f)	Accident investigation Forms and checklists				
g)	Enough Paper for witness recording and other noting				
h)	Emergency Phone Numbers list				

	MAHARASHTRA METRO RAIL CORPORATION LIMITED
General Instruction: Maha-Metro/SHE/GI/004:SHE Induction Training	

A) Safety and Health induction training Topic

1. Hazard Identification Procedure

Hazards on site:

- Falls
- Earthing work
- Electricity
- Machinery
- Handling materials
- Transport
- Site housekeeping
- Fire

2. Personal Protective Equipment

- What is available?
- How to obtain it?
- Correct use and care

3. Health

- Site welfare facilities
- Potential health hazards
- First Aid/Cardio-Pulmonary Resuscitation (CPR)

4. Duties of the Contractor

- Brief outline of the responsibilities of the Contractor by law
- Details of Contractor's accident prevention policy
- Maha-Metro's SHE manual
- Building and other Constructions Welfare Law

5. Employee's Duties

- Brief outline of responsibilities of employee under law
- Explanation of how new employees fit into the Contractor's plan for accident prevention. (Induction and orientation).

B) Environment induction training Topic

- Contractor's Environment Policy
- Avoidance of Nuisance
- Environmental Sanitation
- Dust Control Measures
- Water Pollution and Control
- Occupational noise mitigation
- Waste Management and Disposal
- Key legal requirements

Note: This is a sample list; other topic can also be included in first day induction training

	MAHARASHTRA METRO RAIL CORPORATION LIMITED
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General Instruction: Maha-Metro/SHE/GI/005: ID Card Format


(85 mm x 55mm)

Front side of ID card:

Pune Metro Rail Project	
Company Logo	Name & Address of Main / Sub / Labour contractor
ID Card No: Name: Designation: Blood Group: Valid up to:	Photo
Authorised Signatory	

Backside of ID card:

Employee Address: _____ _____ _____
<div>1 This card is the property of "XX"(Main / Sub / Labour Contractor) and must be returned on demand and on transfer / cancellation of employment.</div> <div>2 A charge will be levied for replacement of the card due to loss or theft</div> <div>3 If found please return it to:</div>
Main contractors' Address

	MAHARASHTRA METRO RAIL CORPORATION LIMITED
General Instruction: Maha-Metro/SHE/GI/006: SHE Training details for Managers and Supervisors	

1. The Law and Safety Statutory requirement Appropriate regulations Duties of employer and employee	2. Policy and Administration Effect of incentive on accident prevention Human relations Consultation Safety Officer: duties, aims, objectives
3. Safety and the Supervisor Safety and efficient production go together Accidents affect morale and public relations	4. Principles of Accident Prevention Attitudes of management, supervision, and operations Methods of achieving safe operations Accident and injury causes
5. Site Inspection The role of management Hazard Identification Procedure Records results Follow-up procedures Feedback	6. Human Behaviour Motivating agencies Individual behaviour Environmental effects Techniques of persuasion
7. Site housekeeping Site organization Relationship of site housekeeping to accident occurrence Site access Equipment storage Material stacking Materials handling	8. Health Medical examination Hazard to health on site Sanitation and welfare Protective clothing First Aid/CPR
9. Personal Protective Equipment Eye, face, hands, feet and legs Respiratory protective equipment Protection against ionizing radiation	10. Electricity Appreciation of electrical hazards Power tools Arc welding Low voltage system Lighting and power system on sites ELCB, RRCB, Grounding/Ground fault circuit interrupters (GFCIs)
11. Oxygen and Acetylene Equipment Cylinder storage and maintenance Condition and maintenance of valves, regulators, and gauges Condition and maintenance of hoses and fittings Pressures	12. Equipment Accidents related to moving parts of machinery Appreciation of principles of guarding Importance of regular maintenance
13. Transportation Transport to and from site Hazard connected with site transport Competent drivers Dumpers Tipping trucks Movement near excavations	14. Excavations Method of shoring Precautions while shoring Precautions at edge of excavations Removal of shoring Sheet steel piling
15. Working platforms, Ladders, and Scaffolding Hazards connected with the use of ladders Maintenance and inspection Type of scaffold Overloading Work on roofs Fragile material	16. Cranes and other Lifting Machines Licensing, certification, and training required for operation of cranes Slings methods Signalling Access to crane(s) Maintenance and examination

Openings in walls and floors Use of safety belts and nets	Ground conditions Hazards and accident prevention methods connected with the use of different types of cranes/heavy equipment Crane Lift Plan for all lifts
17. Lifting Tackle	18. Fire Prevention and Control
Slings - single and multi-legged Safe working loads (SWLs) Safety hooks and eyebolts Cause of failure Maintenance and examination	Principle causes determining fire Understanding fire chemistry Fire fighting equipment Fire fighting training
19. Communications	20. Manual Handling
Effective methods of communication (particular interest to non-English speaking workers) Method and preparation of reports Safety committees Safety meeting	Body posture and procedure for lifting, pushing, pulling, dragging, sitting and walking Ergonomics Stretching exercises

CONTENTS OF ENVIRONMENTAL TRAINING PROGRAMME


1. Environment Policy
2. Regulatory requirements i.e. Central, State and Environmental requirement of funding agency
3. Overview of Environmental issues at construction sites and funding agency's requirements.
4. Avoidance of nuisance
5. Environmental sanitation
6. Dust control measures
7. Contractual requirements to reduce construction related impacts
8. Monitoring of environmental parameters and their significance
9. Waste Management
10. Occupational Noise and its mitigation
11. Health impacts of construction industry
12. Green Buildings certifications (IGBC)
13. Resource minimization
14. ISO requirement (as applicable)



MAHARASHTRA METRO RAIL CORPORATION LIMITED

General Instruction: Maha-Metro/SHE/GI/007: SHE Training Matrix

Types of training	Management																Supervisor								Specific																		
	Safety & Health Orientation	safety & Health Leadership	Safety & Health Plan	safety & Health Improvement Plan	Management of Change	Safety & Health Audit & Inspection	Safety & Health Emergency Response & Incident/Accident Investigation & Prevention	Safety & Health Communication	Safety & Health Promotion & Incentives	Traffic Management	Hazard Identification & Risk Analysis	Permit to work system	Confined space entry	scaffolding	Labour welfare measures	Behavioral Based Safety Management (BBSM)	Job/Task Safety Analysis (JSA)	Safety Training Observation Programme (STOP)	Industrial First Aid & CPR	Incident / Accident Investigation & Fire fighting	Confined Space Testing & Certification	Scaffold Erection & Inspection	Rigging	Wire Rope Inspection	Crane Inspection	Electrical/Mechanical Isolation	Permit to Work System	Confined Space Working	Explosive Handling & Control	Heavy Lifting Operation	Radiography (X-Ray)	HAZMAT Handling & Control	Welding, Cutting & Bracing	Power Actuated Hand Tool	Electrical/Mechanical Isolation	Roofing Work	Steel erection work	Scaffold Erection/Dismantling	False-work Erection / Dismantling	Painting in Confined Area			
Project Manager	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•					•								•											
Sr. Construction Managers	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•																								
Quality Manager	•	•	•	•	•	•	•	•		•	•	•	•	•	•	•	•	•	•																								
Planning engineer	•	•	•	•	•	•	•	•		•	•	•	•	•	•	•	•	•	•																								
Construction Managers	•	•	•	•	•	•	•	•		•	•	•	•	•	•	•	•	•	•					•																			
Construction Supervisors	•		•	•	•	•	•	•		•	•	•		•	•	•	•	•	•																								
Construction Foreman	•		•				•	•			•	•			•	•		•																									
Machinery Operators	•																																										
Material Handlers	•						•				•		•											•																			
Station Building Workers	•						•					•																															
Steel workers	•						•	•																																			
Mechanical workers	•						•																																				
Other Civil workers	•						•	•																																			
Electrical workers	•						•																																				
Radiographers	•						•																																				
Transportation Drivers	•						•	•																																			
Security Officers	•						•		•			•																															
Clerical Staff	•						•	•																																			
Medical Doctor	•	•	•				•	•																																			
Sr. Safety & Health Managers		•					•																																				
Jr. Safety & Health Managers	•		•	•	•	•	•	•																																			
Safety & Health Supervisors	•		•	•	•	•	•	•																																			

	MAHARASHTRA METRO RAIL CORPORATION LIMITED
General Instruction: Maha-Metro/SHE/GI/008: Days to Be Observed for Creating SHE Awareness	

1 st Monday to Sunday of January	Road Safety Week (Subjected to confirmation from Ministry of Road Transport, Govt. of India every year.)
16 th February	Kyoto Protocol Day
March	Red Cross Month
4 th March	National Safety Day
7 th April	World Health Day
14 th April	Fire Safety Day
April 18 to 22	Earth Week
20 th April	Earth Day
20 th April	Noise Awareness Day
28 th April	ILO World Day for Safety and Health at Work
May 1 to 7	Emergency Preparedness Week
5 th June	World Environmental Day
12 th June	World Day against Child Labours
9 th July	Occupational Health Day
17 th October	World Trauma Day
1 st December	World AIDS Day


MAHARASHTRA METRO RAIL CORPORATION LIMITED
General Instruction: Maha-Metro/SHE/GI/009: Minimum Requirements of SHE Communications

1. For the purpose of Minimum requirements of SHE Communication Posters / Signages / Video the contracts are categorized into the following groups:

Contract Value (Initial awarded value of contract)	Group
Upto 25 Cr	A
Upto 100 Cr	B
Upto 250 Cr	C
More than 250 Cr	D

2. Every contractor falling into the above groups shall prepare a SHE Communication Plan as a part of site specific SHE Plan and shall include the following minimum requirement of Posters / Signages / Video as applicable. In case readymade posters are available in any of the category from National Safety Council, Loss Prevention Association of India or any other safety related organisations they may procure the same and display it. In case the same is not available then the contractors shall make necessary arrangements to get the posters designed and printed on their own.

All the above are to be detailed in the Site SHE Plan and get an approval from the Employer before displaying the posters.

Table 1: Minimum number of Posters

SN	SHE Poster Title	Min No. of concepts each title	No. of Posters / Signage / Video			
			Group A Contract	Group B Contract	Group C Contract	Group D Contract
1.	Safety Culture	5	Each 10	Each 50	Each 75	Each 100
2.	Daily Safety Oath	1 English, 1 Hindi	Each 100	Each 200	Each 500	Each 1000
3.	Mandatory PPE Usage					
a)	Signages to display the messages like PPE ZONE, NO PPE ZONE, HARD HAT AREA etc.	2 types of sizes made up of metal sheet to be mounted at different locations	Each 25	Each 50	Each 75	Each 200
b)	Helmet	5	Each 25	Each 50	Each 75	Each 200
c)	Shoe	5	Each 25	Each 50	Each 75	Each 200
d)	Goggles & Ear Protection	5	Each 25	Each 50	Each 75	Each 200
e)	Full Body Harness	5	Each 25	Each 50	Each 75	Each 200
f)	Hi-Vi Jacket	5	Each 25	Each 50	Each 75	Each 200
4.	Emergency Management Plan	5	Each 25	Each 50	Each 75	Each 200
5.	Working at Heights	10	Each 25	Each 50	Each 75	Each 200
a)	Ladder, Stairway, Scaffold - Signages to display the messages like SAFE, UNSAFE, FIT FOR USE, AVOID USE etc.	5 types of sizes made up of metal sheet to be mounted at different locations	Each 25	Each 50	Each 75	Each 200
6.	Site Electricity	5	Each 25	Each 50	Each 75	Each 200
7.	Fire and Explosion	5	Each 25	Each 50	Each 75	Each 200
8.	Crane Safety	5	Each 25	Each 50	Each 75	Each 200
9.	Slings	5	Each 25	Each 50	Each 75	Each 200
10.	Rigging Procedures	5	Each 25	Each 50	Each 75	Each 200
11.	Excavation	5	Each 25	Each 50	Each 75	Each 200

SN	SHE Poster Title	Min No. of concepts each title	No. of Posters / Signage / Video			
			Group A Contract	Group B Contract	Group C Contract	Group D Contract
12.	Occupational Health (Mosquito Control, HIV/AIDS awareness, Dust Control, Noise Control, No Smoking/Spitting, etc.)	10	Each 25	Each 50	Each 75	Each 200
13.	First – Aid	3	Each 25	Each 50	Each 75	Each 200
14.	Labour Welfare Measures (Payment of Minimum Wages, Avoidance of Child labour, signing in the Muster Roll, In case of accidents-what to do? etc	5	Each 25	Each 50	Each 75	Each 200
15.	Importance of “Safety Handbook”	1	25	50	75	200
16.	Traffic Safety (Speed limit, safe crossing and working within barricaded area etc.)	5	Each 25	Each 50	Each 75	Each 200
17.	Environmental Sanitation, Dust Control, Waste Management, Water Conservation, Tree Protection, General Environmental Awareness Measures against noise pollution etc	5	Each 25	Each 50	Each 75	Each 200
18.	Video in Hindi on PPE usage – 15 minutes duration	1	-	-	-	1


Note 1: Items mentioned under 17 is video. Items under 3 (a) and 5 (a) are metal signage boards and all other items are posters.

Table 2: Size of Posters / Signages

SN	Item	Size
1.	Posters – Standard	17”x22” –135 GSM 4 Colour Printing
2.	Posters – Special (Wherever required)	17”x22” card laminated FA Poster
3.	Posters - Mega size (Wherever required)	32”x40” Flex FA Poster
4.	First-Aid Booklet	6”x4”
5.	SHE Handbook	6”x4”
6.	Signages	Small: 12”x6” Big : 24”x12”
7.	Road Traffic Sign Boards	Strictly as per Indian Road Congress (IRC) specifications

Table 3: Safety Signage Colour (as per IS 9457)

SN	Type of signage	Colour
1	Mandatory	Blue
2	Danger	Yellow
3	Prohibit	Red
4	Safe conditions	Green

	MAHARASHTRA METRO RAIL CORPORATION LIMITED
General Instruction: Maha-Metro/SHE/GI/010: Experts / Agencies for SHE Services	

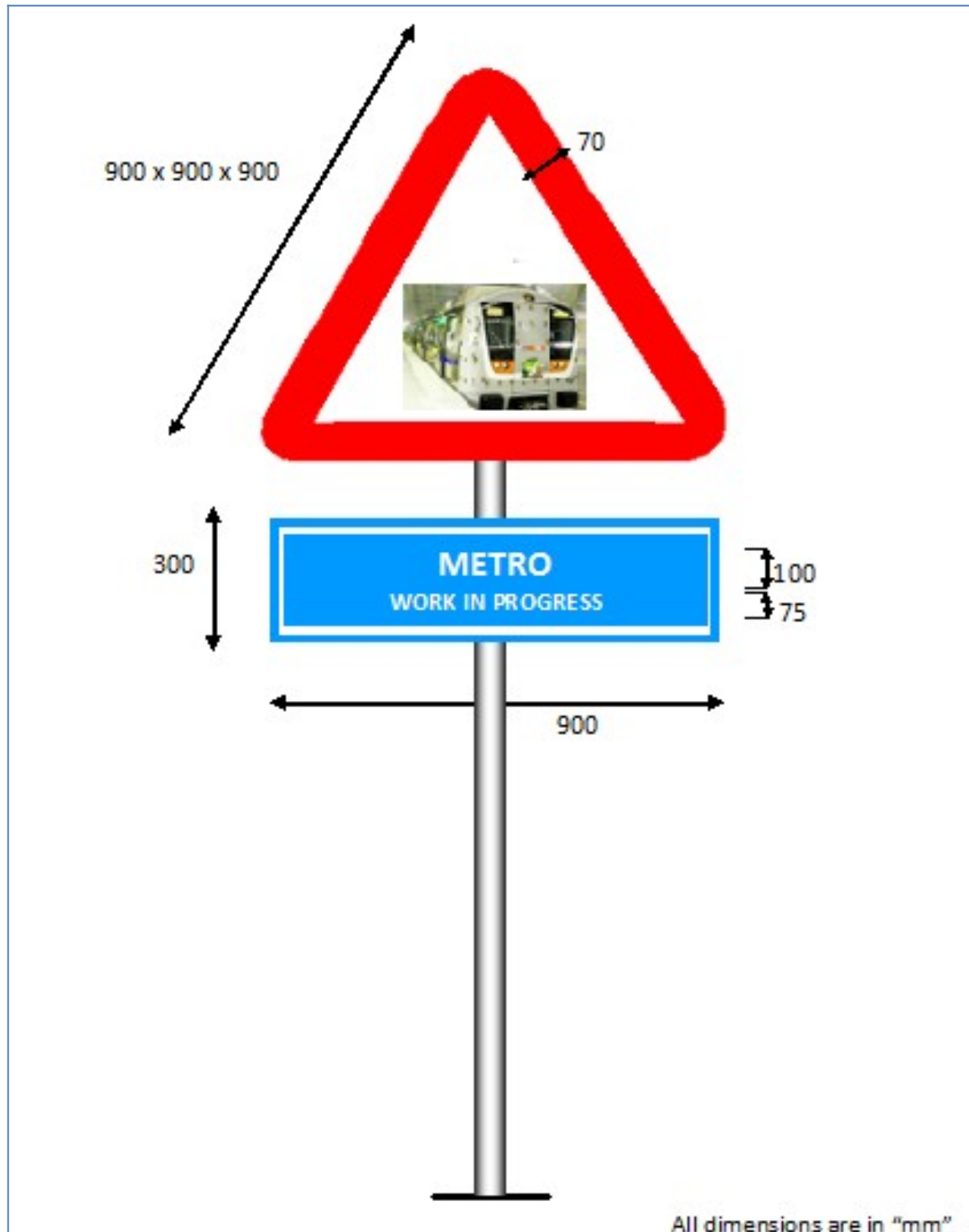
SN	Organisation	Services
1.	Bureau Veritas Industrial Services (India) Pvt. Ltd., B-21 & 22, First Floor, Sector-16, NOIDA-201 301 (U.P.) Phone: 0120 - 2515055 Fax: 0120 - 2515248 E-mail: enp.delhi@in.bureauveritas.com	<ul style="list-style-type: none"> External SHE Audit SHE Management / Technical Training
2.	Central Labour Institute Post box no: 17851, NSMonkikarMarg Sion, Mumbai- 400 022 Tel.: 022- 4092203 Fax: 022 – 4071986 E-mail: cli@dgfasli.nic.in	SHE Management / Technical Training
3.	Construction Industry Development Council 801, 8th Floor, Hemkunt Chambers, 89, Nehru Place, New Delhi – 110 019 E-mail: cidc@vsnl.com	SHE Management / Technical Training
4.	Delhi Productivity Council 1E/10, Swami Ramtirath Nagar New Delhi – 110 055 Tel.: 23522835	SHE Management / Technical Training
5.	Det Norske Veritas AS, 203, SavitriSadan 1, 11 PreetVihar Community Centre, New Delhi-110 092 Phone: 011-22531502/2253/1503, 22427688/22531278 Fax: 011-2253 0247 Website: www.dnv.com	<ul style="list-style-type: none"> External SHE Audit SHE Management / Technical Training
6.	Dr AV Baliga Memorial trust Link House, Bagadur Shah ZafarMarg Press Area New Delhi – 110 002 Phone: 011 – 23311119	HIV / AIDS awareness
7.	Dr. Cris Research Centre for Occupational Health & Safety 306, Guru ArjunaDevBhawan, Ranjit Nagar Complex, New Delhi – 110 008 Phone: 9810040406 Fax: 011 – 25702929 E-mail: team@drcri.com Website: www.drcri.com	<ul style="list-style-type: none"> Ambulance Room & Van Communication Materials First-aid box First-aid Training HIV / AIDS awareness ID Card Medical Facilities SHE Orientation Training
8.	DuPont Safety Resources, E.I. DuPont India Private Limited, ArihantNitco Park 6th Floor, 90, Dr. Radhakrishnan Salai, Mylapore, Chennai-600 004 Phone: 044-2847 2800, 2847 3752 Fax: 044-2847 3800 Mobile: 9381201040 Website: in.dupont.com	SHE Management Training

SN	Organisation	Services
9.	Automech Engineering India Pvt. Ltd, L-1, Shivalay, Deenanath Mangeshkar Road, Pune-411004, Phone: 09423732672 E-Mail: info@automechengineering.in	ISO certification services SHE Trainings External SHE audits T&P testing and certifications
10.	Green Cross Consultants 59, 7th Cross, 1st Floor, Jai Bharath Nagar, Bangalore-560 033 Phone: 080-2549 6782 E-mail: etgrangan@yahoo.com	SHE Management / Technical Training
11.	HSRTC, PENTASAFE, 201, 2nd Floor, Town Centre, AndheriKurla Road, Marol, Andheri (East), Mumbai-400 059 Phone: 022-2850 2210/20/50 Fax: 022-2850 2260 E-mail: training@penta-safe.com	SHE Practical Field Training for Height Safety
12.	Institute of Driving Training & Research, Wazirabad Road, Adjoining Loni Road flyover. New Delhi – 110 094 Phone: 011 – 22813474, 22815833 Fax: 011 - 22811131	SHE Technical Training for Vehicle Drivers.
13.	Institute for Research, Development & Training of Construction Trades & Management, An Educational Institute, Society and Trust, 1st Floor, UVCE Alumni Association Building, K.R. Circle, Bangalore-560 001 Phone: 080-22294291/22243257 Fax: 080-22243257 E-mail: ubrco@vsnl.com Website: www.instructindia.org	SHE Technical /Field Training
14.	International Engineering Company K – 10, South Extension, Part – 2, New Delhi – 110 049 Phone: 011 – 26254761, 26258130 Mobile: 9312260130 E-mail: ashok@intenco.net	<ul style="list-style-type: none"> Crane and Lifting appliances and Gears Certification SHE Practical Field Training for Crane Safety
15.	L & T Eutectic 32, SivajiMarg, New Delhi – 110 015 Phone: 011 - 51419538, 51419539 Fax: 011 - 51419600 Website: www.Inteutecticwelding.com	SHE Practical Field Training for Welding Safety
16.	Loss Prevention Association of India Ltd. Warden House, Sir P.M. Road, Mumbai – 400 001 Website: www.lpaindia.org	SHE Management / Technical Training
17.	MFA Crucial Moments Healthcare Pvt. Ltd., 42, Okhla Industrial Estate, Phase – II New Delhi – 110 020 Phone: 011 – 55624000 Fax: 011 – 55624010 E-mail: contact@crucialmoments.net	First-aid Training
18.	Modicare Foundation 4 Community Centre, New Friends Colony, New Delhi – 110 065 Phone: 011 – 5167235059 Fax: 011 – 26915469 E-mail: nivedita@modi.com nivedita@gmavil.com Website: www.modicarefoundation.org	HIV / AIDS awareness

SN	Organisation	Services
19.	National Safety Council HQ and Institute Building 98A, Sector 15, industrial Area C.B.D Belapur, Navi Mumbai – 400614 Phone: 27579924	SHE Management / Technical Training
20.	NICMAR (National Institute of Construction Management and Research) 910,9th Floor, Hemkunt Chambers, 89, Nehru Place, New Delhi – 110 019 Phone: 011 – 51618415, 51618417, 51618418 Fax: 011 – 51618416	SHE Management / Technical Training
21.	Quality Growth Services Pvt. Ltd. H-13, Kirti Nagar, New Delhi – 110 015 Fax: 011 – 25431737 / 25438598 / 25918332 E-mail: qgs@qgspl.com Website: www.qgspl.com	ISO Certification
22.	Safety Engineers Association / Safety Educational Trust – India 2/257, First Floor, Dr.Ambedkar Nagar, Manapakkam, Chennai – 600 116 Phone: 044 – 22523461 E-mail: safetrustindia@rediffmail.com	SHE Management / Technical Training
23.	SHE Management Consultancy & Support Services, 145 A, Pocket-VI, (DDA Flats), KondliGharoli, MayurVihar-II, Delhi-110 096 Fax: 011-2262 5015 Mobile: 9811153873 E-mail: r_k_p@vsnl.net	SHE Management / Technical Training
24.	St. Johns' Ambulance Red Cross Road New Delhi – 110 001	First-aid Training
25.	Vexil Business Process Services Pvt. Ltd. 208, A/4, Savitri Nagar, New Delhi – 110 017 Mobile: 9350232714, 98102832201, 9350232716 E-mail: info@vexilbps.com Website: www.vexilbps.com	<ul style="list-style-type: none"> Emergency Preparedness Mock drill SHE Management / Technical Training
26.	Welding Research Institute Bharat Heavy Electricals Ltd. (BHEL) Trichirappalli, Tamil Nadu – 620 014 Phone: 0431 – 2577029, 2577283 Fax: 0431 – 2520770 E-mail: wri@bheltry.co.in	SHE Practical Field Training for Welding Safety

General Instruction: Maha-Metro/SHE/GI/011: Minimum Lighting Requirements

SN	Facility or Function	Luminance – lx (lm/ft ²)
1.	Administrative areas (offices, drafting and meeting rooms, etc.)	540 (50)
2.	Construction areas <ul style="list-style-type: none"> general indoor general outdoor tunnel and general underground work areas (minimum 110 lux required at tunnel and shaft heading during drilling, mucking and scaling) 	55 (5) 33 (3) 55 (5)
3.	Access ways <ul style="list-style-type: none"> exit ways, walkways, ladders, stairs 	110 (10)
4.	Maintenance / Operating areas / shops <ul style="list-style-type: none"> vehicle maintenance shop carpentry shop outdoors field maintenance area refueling area, outdoors shops, fine details work shops, medium detail work welding shop 	325 (30) 110 (10) 55 (5) 55 (5) 540 (50) 325 (30) 325 (30)
5.	Mechanical/electrical equipment rooms	110 (10)
6.	Hoists, Elevators, freight and passenger	215 (20)
7.	Warehouses and storage rooms/area <ul style="list-style-type: none"> indoor stockroom, active/bulk storage indoor rack storage outdoor storage 	110 (10) 270 (25) 33 (3)
8.	Health Centers and First aid stations and infirmaries	325 (30)
9.	Toilets, wash and dressing rooms	110 (10)
10.	Work areas – general (not listed above)	325 (30)
11.	Parking areas	33 (3)
12.	Visitor areas	215 (20)
13.	Laboratories	540 (50)

**MAHARASHTRA METRO RAIL CORPORATION LIMITED****General Instruction: Maha-Metro/SHE/GI/012: Warning Traffic Sign**



MAHARASHTRA METRO RAIL CORPORATION LIMITED

General Instruction: Maha-Metro/SHE/GI/013 :IGBC Document submission

Credit-wise list of documents applicable to respective contractor of Elevated and Underground Station

SSP MR1	Site environment Management	1. Emergency excavation plans / Site Management Plan (DWG) with photograph of site barricading and stacking of fresh material yard with signange
		2. Photograph of Wheel Wash Facility/ Grating/Manual cleaning
		3. Photograph of Water sprinkling
		4. Photograph of Covering excavated soil with tarpaulin or green net and tree protection at site
		5. Photograph of Diesel Storage area with drip tray
		6. Air & Noise test Reports at various locations in the station area along with photograph of monitoring measures during construction
		7. Environmental Management Plan
		8. Photograph of Waste Segregation with dust bins at the site
		9. Photograph of Electrical equipment covered at the site during civil construction and finishing
		10. Photograph of Covering of HVAC ducts
		11. Photograph of Scrap Material yard with signage
		12. Photograph of Good Housekeeping activities
		13. Photograph of Keep the Construction pathway free from interruption
		14. Photograph of DG Sets with proper exhaust (10m height from the breathing level)
		15. Photograph of Protect temporary area, and staircase using net or caution tape
		16. Traffic management permission and plan/policy along with photographs
		17. TopSoil test report showing porosity and percolation rate (Applicable only at grade station), also mentions the quantity and the process of preservation and uses and Photographs of Topsoil during excavation and preservation
SSP MR2	Basic Facilities for Construction Workforce	1. Welfare facilities and emergency excavation Plan for construction workforce for all stations (DWG)
		2. Photographs for basic facilities for the construction workforce - PPE Kits - First Aid & Medical Facilities - Sanitation facilities - Drinking-Water facilities
		3. Policy or contract documents and site layout for basic facilities for the construction workforce (Typical) - PPE Kits, First Aid & Medical Facilities, Sanitation facilities, Drinking-Water facilities, Assembly Point, Wheel cleaning area, Dustbin / waste storage area, DG, Fire-point, worker restroom etc.
SSP CR5	Preserve/Restor Tree	1. Tree Survey Report
		2. Details Trees inventory
		3. Permission for tree cutting from the authority
		4. PO of new saplings and name of the saplings
		5. Trees Maintenance Clause
		6. Site plan indicating the location of existing trees, before construction (Kindly Provide the Survey drawing showing the location of trees)
		7. Landscape plan (post-construction) highlighting the location of

		preserved/restored trees and newly planted saplings. In the landscape plan, please also provide a legend indicating the type of new plant species used (Kindly provide the landscape plan and also mention plant species)
		8. Photographs of Transplanted Trees with location
		9. Landscape plan and calculations demonstrating the percentage of the median area below the viaduct, covered with native/naturalized vegetation
		10. List of native / naturalized species planted in median area below the viaduct
		11. Photographs of landscape areas at various station locations
		12. Photographs of the median area below the viaduct tree plantation area
		13. Photographs during the tree plantation
		1. SRI Certificate for pavers from the manufacturer, also mention the distance from the manufacturer unit to the project location
		2. PO of the pavers block
		3. Photographs of Non Roof Areas, pavers blocks
SSP CR6.2	Heat Island Mitigation, Roof	1. PO and manufacturer specifications for SRI Paint (showing SRI Values) for exposed roof area
		2. Photographs of Exposed Roof Area
SSP CR8	Green Education	1. Any kind of Green Education Strategies, like Green Signage Program Environmental Awareness Program Tree Plantation Various Green Workshop, seminars or training programs for staff
		2. Photographs of the taken Green Education Strategies
WE MR1	Efficient Water Fixtures	1. A list of all plumbing fixtures installed(make and model no.) in the project indicating their flow and flush rates.
		2. Manufacturer letters (addressed to the project) or test certificates indicating the flow rates (at design water pressure of 3 bar) and flush rates of plumbing fixtures installed.
		3. Photographs of Installed Water Fixtures
		4. PO of installed Water Fixtures
WE MR2	Rainwater Harvesting, Station	1. Site storm water layout and storm water drain typical section
		2. Rainwater harvesting system sizing calculations (if applicable)
		3. Rainwater harvesting system plan, section (pits, storage tanks, etc..) (if applicable) **If the ground Water table is less than 4m, such projects need not comply to the requirement. For these, need to submit the soil test report or Geo-technical Investigation report indicating the water table level
		4.Photos of Rainwater Harvesting System (if applicable) during construction and after construction at all the station Locations
WE CR1	Ultra Efficient Water Fixtures	Efficient Water Fixtures Details, PO, vendor certificate for Flow & Flush rate and photos
WE CR2	Rainwater Harvesting, Station and Viaduct	1. Total Length of Viaduct
		2. No of rainwater pits or tanks are provided throughout the viaduct
		3. Cross-sectional diagram for pits provided at viaduct area
WE CR3	Water Monitoring	1. Single line diagram (SLD) showing the installed water metering system (station wise, at least 2 locations in each station) (DWG)
		2. Photos of provided water meter
		3. PO of water meter

		<p>1. Wall & Roof Construction Details (i.e., cross-section drawings in DWG) for all Air-Conditioned Spaces and fenestration details like a certificate from manufacturer mentioning the VLT, U-Value, SF, Make, and Model</p> <p>2. Lighting drawing layout (DWG) for all the proposed areas with fixture wattage and LPD level (station-wise)</p> <p>3. HVAC Layout (DWG) for all the stations</p> <p>4. List of HVAC Equipments space-wise for every station, Manufacturer Technical Specifications, PO and BOQ</p> <p>5. PO & BOQ of Lighting Fixtures</p> <p>6. Tender Document or Manufacturer test certificate for Escalator & Elevator, PO and VVVF technology Details</p> <p>7. Technical Specification of occupancy sensors in the toilet (if applicable)</p> <p>8. Technical Details and agreement/tender of BMS system if installed</p> <p>9. All office equipment such as printers, computers fax etc should be energy star-labeled. Please provide any contact agreement or policy regarding this.</p> <p>10. Pumps & Motors TDS, PO with VSD (Variable Speed Drive) systems.</p> <p>11. Photographs of All types of LED Lighting Fixtures</p> <p>12. Photographs of LED Signages inside stations</p> <p>13. Photographs of Occupancy Sensor (if applicable)</p> <p>14. Photographs of Escalator & Elevator VVVF control System</p> <p>15. Photographs of HVAC System</p> <p>16. Photographs of Pumps & Motors with VSDs system (Only of Under-Ground)</p>
EE CR2	Eco-Friendly Refrigerants and Halon-free System	<p>1. Technical specifications of installed fire suppression system</p> <p>2. A list of all Fire suppression systems used in the project</p> <p>3. A list of HVAC System and Technical details of refrigerants used in HVAC equipment & systems</p> <p>4. Photographs of installed Fire Suppression Systems</p>
EE CR3	On-Site Renewable Energy	<p>*If any renewable energy system is installed:</p> <p>1. Commissioning Report</p> <p>2. Capacity of the Installed Renewable Energy</p> <p>3. Technical Details of Installed Renewable Energy</p> <p>**If the installing Renewable Energy is in progress</p> <p>1. Tender Documents or LoA with the Agency</p> <p>2. Tentative Calculation for each station</p>
EE CR5	Energy Monitoring	<p>1. Schematic drawing showing the location of energy meters in the project</p> <p>2. Energy (kwh) meter manufacturer specifications and PO</p> <p>3. Photographs of Electrical Panel</p>
MC CR1	Handling of Waste Materials, During Construction	<p>1. Site logistic plan highlighting the construction waste segregation, storage, areas of topsoil storage, barricading, wheel washing area, labour facility (construction site management plan)</p> <p>2. A list of construction waste generated and diverted for reuse, recycle & land-fill within the project or outside the project</p> <p>3. Photographs taken at various stages of the project showing construction waste management yard and reuse of construction waste within site</p> <p>4. Letters from scrap dealers (addressed to the project) / contractors</p>

		stating the type and quantity of construction waste received/ reused from the project site, for recycling/ reuse
MC CR2	Materials with Recycled Content	<div>1. Master material sheet (in excel format) listing all the civil and interior materials with quantities used in the project (BOQ will be acceptable to calculate the quantity of all building civil and construction materials)Note: For quantities, specify the units (Sqm, no., tons, cum, liters etc.,) in line with bills/PO</div> <div>2. PO for all civil and interior material listed in master material sheet indicating the cost</div> <div>3. Manufacturers letters (addressed to the project) indicating the percentage of post consumer post-industrial recycled content of the major materials used in project</div>
MC CR3	Local Matrials	<div>1. Major civil and interior materials used in the project along with their cost. Clearly highlight the local materials and their corresponding cost along with approximate distance from the project site to the place of manufacturing unit.</div> <div>2. Manufacturer letters (addressed to the project) for local materials which are manufactured within a distance of 400km from project site.</div>
IEC CR1	Indoor Air Quality (IAQ) Monitoring	<div>1. For all station types and tunnel submit Indoor Air Quality (IAQ) management plan would be provided by Contractor's representative describing the strategies implemented during construction and pre-occupancy phases for addressing measures such as scheduling, electrical and mechanical equipment & systems protection, housekeeping, isolating clean areas and source control (as applicable).</div> <div>2. Contractor's representative have to ensure and provide evidence indicating IAQ measures implemented at various development stages of the project such as construction, installation, commissioning and before occupancy phases of the project.</div>
IEC CR4	Low-Emitting Materials	<div>1. Paints & Coatings:</div> <div>a. A list of low or no VOC content paints & coatings (make & model) used in the project interiors, along with the VOC content (in g/L, less water).</div> <div>b. Test certificate or manufacturer letters (addressed to the project) indicating the VOC content (in g/L, less water) of the paints & coatings sourced.</div> <div>2. Adhesives:</div> <div>a. A list of low or no VOC content adhesives (make & model) used in the project interiors, along with the VOC content (in g/L, less water).</div> <div>b. Test certificate or manufacturer letters (addressed to the project) indicating the VOC content (in g/L, less water) of the adhesives sourced.</div> <div>3. Sealants & Sealant Primers:</div> <div>a. A list of low or no VOC content sealants & sealant primers (make & model) used in the project interiors, along with the VOC content (in g/L, less water).</div> <div>b. Test certificate or manufacturer letters (addressed to the project) indicating the VOC content (in g/L, less water) of the sealants & sealant primers sourced.</div> <div>** Photographs of all the above mentioned materials</div>
IEC CR6	Daylighting	<div>1. Manufacturer cut-sheet / brochure / letter of the proposed glass showing the visual light transmittance (VLT)</div>



MAHARASHTRA METRO RAIL CORPORATION LIMITED

General Instruction: Maha-Metro/SHE/GI/014: Environmental Inspection Checklist

Report No.:		Inspection Date:		Inspected by :			
Inspection Area:							
Participants:							
Sl. No	Item	Compliance		Photograph	Observation & Recommendation	Action	
		Yes	No			By whom	Target date
1.0	ENVIRONMENTAL SANITATION						
1.1	Regular housekeeping done at site						
1.2	Materials are properly stored						
1.3	Construction equipment's and tools are kept properly						
1.4	Designated storage area for all materials as per requirement						
2.0	CONTAINMENT OF AIR POLLUTION						
2.1	Site is properly barricaded						
2.2	Dust generating materials are stored properly as per requirement given in the contract document						


2.3	construction equipment/ instruments/ construction material/debris/soil are not kept outside barricaded area						
2.4	Nearby roadways are clean from dust/Muck/debris						
2.5	Wheel washing facility is provided near the exit gate						
2.6	Wheel washing facility is in working condition						
2.7	Soil & debris stored in the site fully covered						
2.8	Regular water sprinkling						
2.9	Batching plant and / or casting yard area kept clean and neat						
2.10	Sufficient number of openings with exhaust fans are provided at cement storage area						
2.11	Proper PPEs are provided to workmen involved in manual cement handling						
2.12	Conveyor belt used for carrying aggregate are fully covered						
2.13	Access roads and internal circulation roads are well laid and maintained						
2.14	Stack height of DG set is as per norms						
2.15	Regular cleaning of toe dust						
2.16	Vehicle carrying construction materials, debris, muck etc are properly cleaned and covered						
3.0	CONTAINMENT OF WATER POLLUTION						

3.1	Water meters are provided as per requirements and are functional						
3.2	Waste water from site is not discharged into sewer without approval						
3.3	Waste water from RO reject, curing etc is put to effective use						
3.4	Transit Mixer washing facility /Beton washing provided at casting yard/batching plant						
3.5	Transit Mixer washing facility provided at casting yard/batching plant is functional						
3.7	Drainage system is functional						
3.8	Refuse/ excavate muck are not stored near the drains						
3.9	Site and adjacent areas are free from water logging						
3.10	Water consumption is recorded regularly						
4.0	CONTAINMENT OF NOISE						
4.1	Construction plant & equipments are serviced regularly						
4.2	Acoustic enclosures are provided for DG sets and maximum permissible sound pressure level is within 75dB(A) at one meter distance from the enclosure						
5	WASTE MANAGEMENT						
5.1	Adequate number of colour coded dust bins are available						
5.2	All waste items are deposited in refuse containers						

5.3	Bins are Emptied regularly						
5.4	No refuse is burnt at site						
5.5	Waste materials are properly stored at designated areas only						
5.6	C&D waste is not disposed along river bed, drainage & wet land						
5.7	Regular disposal of all types of waste as per law						
5.8	Availability of drip pans to prevent leakage and spill.						
5.9	No oil stains on ground						
5.10	Spill absorption material available						

Senior Environment Manager

Chief SHE Officer

	MAHARASHTRA METRO RAIL CORPORATION LIMITED
Form No. SF/001: Formation of Site SHE Committee	

Contract No.	
Contractor Name	
Contract Title	

<u>CIRCULAR</u>					
<u>Committee</u> <p>The following SHE Committee is constituted with immediate effect:</p> <p>Chairman:</p> <p>Members:</p> <ol style="list-style-type: none"> 1. 2. 3. 4. 5. <p>Secretary</p>					
<u>Periodicity</u> <p>The committee will meet at least once in a month on the day (specify date)</p>					
<u>Agenda</u> <p>Secretary will circulate agenda of the meeting at least two days in advance of the schedule date of the meeting.</p>					
<u>Circulation</u> <p>Gist of the meeting will be minuted in the standard format and circulated to the following under the signature of the secretary</p> <table style="width: 100%;"> <tr> <td>1. Chairman</td> <td>3. Maha-Metro Representatives</td> </tr> <tr> <td>2. Members</td> <td>4. Others concerned</td> </tr> </table>		1. Chairman	3. Maha-Metro Representatives	2. Members	4. Others concerned
1. Chairman	3. Maha-Metro Representatives				
2. Members	4. Others concerned				
<p>Date: _____ Signed By: _____</p> <p style="text-align: right;">CHAIRMAN</p>					

	MAHARASHTRA METRO RAIL CORPORATION LIMITED
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Form No. SF/002: Minutes of SHE Committee Meeting

Contract No.			
Contractor Name			
Contract Title			
Meeting No.		Date of Meeting	
Location of Meeting			

MEMBERS PRESENT	INVITEES	MEMBERS ABSENT

REPORT SENT TO					
No. of Copies	Name / Dept.	No. of Copies	Name / Dept.	No. of Copies	Name / Dept.
Prepared by:		Location:		Date:	

MINUTES OF SHE MEETING

Item No.	Description of Discussion	Action By	Target	Remarks
1	Complaints received from Clients and corrective and preventive action			
2	Review of MOM of previous meeting			
3	NCR's / Observation from third party			
4	First - Aid cases / Reportable accident cases			
5	Future jobs and specific requirement			
6	Status of implementation of Safety plan			
7	Sub-contractor performance			
8	Analysis of first-aid cases			
9	Need for any specific system / training / PPE's / resources			
10	Observation of SHE committee during last walk down			

Next, SHE Meeting is scheduled on:

Date:	Chief SHE Manager (Signature & Name)
Date:	Project Manager (Signature & Name)

MAHARASHTRA METRO RAIL CORPORATION LIMITED

BID DOCUMENTS FOR

Name of work: Geotechnical Investigation of Underground Section of NS Corridor
Phase-I Extension Swargate-Katraj of Pune Metro Rail Project.

TENDER NO. P1Misc-34/2024

PART 3:
SECTION-X CONTRACT FORMS



Maharashtra Metro Rail Corporation Limited

Civil Court Metro Station, Nyayamurti Ranade Path, Pune-

411005, Maharashtra, INDIA

E-mail: tenders.pmrp@mahametro.org

Website: www.punemetrorail.org

Section X. Contract Forms**Table of Forms**

1. Notification of Award.....	.....
2. Contract Agreement.....	.....
3. Performance Security.....	.....
4. Advance Payment Security.....	.....
5. Retention Money Security.....	.....
6. Form of Designer's Warranty.....	.....
7. Parent Company Undertaking.....	.....
8. Parent Company Guarantee.....	.....
9. Contractor's Warranty.....	.....
10. Sub-Contractor's / Vendor's Warranty.....	.....
11. Indemnity Bond.....	.....
12. Guarantee for Safe Custody.....	.....
13. Undertaking pertaining to engagement of Sub-Contractor.....	.....

Contract Form-1

Notification of Award

LETTER OF ACCEPTANCE

[letter head paper of the Employer]

[date]

To: *[name and address of the Contractor]*

This is to notify you that your Bid dated *[date]* for execution of the *[name of the Contract and identification number, as given in the Contract Data]* for the Accepted Contract Amount *[amount in numbers and words] [name of currency]*, as corrected and modified in accordance with the Instructions to Bidders, is hereby accepted by our institution.

You are requested to furnish the Performance Security within 28 days in accordance with the Conditions of Contract, using for that purpose one of the Performance Security Forms included in Section X – Contract Forms, of the Bidding Documents

Authorized Signature: _____

Name and Title of Signatory: _____

Name of institution: _____

Attachment: Contract Agreement

Contract Form-2**Contract Agreement**

THIS AGREEMENT made the _____ day of _____, _____, between Maharashtra Metro Rail Corporation Limited, Pune (hereinafter “the Employer” or Maha-Metro), of the one part, and _____ of _____ (hereinafter “the Contractor”), of the other part:

WHEREAS the Employer desires that the Works known as _____ should be executed by the Contractor, and has accepted a Bid by the Contractor for the execution and completion of these Works and the remedying of any defects therein, in the sum of *[insert Contract Price or Ceiling in words and figures, expressed in the Contract currency(ies)]* (hereinafter called “the Contract Price”).

The Employer and the Contractor agree as follows:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Contract documents referred to.
2. The following documents shall be deemed to form and be read and construed as part of this Agreement. This Agreement shall prevail over all other Contract documents.
 - (a) the Letter of Acceptance (LOA)
 - (b) Accepted Financial Bid & Bill of Quantities
 - (c) Corrigendum / Addendum/ Clarifications
 - (d) the Particular Condition of Contract (PCC)
 - (e) the General Conditions (GC)
 - (f) the Work Specification & Employer’s Requirement,
 - (g) the Drawings,
 - (h) Contractor’s Submissions
 - (i) and any other reference documents forming part of the Contract.

If an ambiguity or discrepancy is found in the documents, the Employer shall issue any necessary clarification or instruction by approval of competent authority.

3. In consideration of the payments to be made by the Employer to the Contractor as specified in this Agreement, the Contractor hereby covenants with the Employer to

execute the Works and to remedy defects therein in conformity in all respects with the provisions of the Contract.

4. The Employer hereby covenants to pay the Contractor in consideration of the execution and completion of the Works and the remedying of defects therein, the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

IN WITNESS whereof the parties hereto have caused this Agreement to be executed in accordance with the laws of _____ on the day, month and year specified above.

Signed by _____ (for the Employer)

Signed by _____ (for the Contractor)

Note:-

The costs of stamp duties and similar charges (if any) imposed by law and as per Stamp Duty Act (amended from time to time) of state in which the work is executed, in connection to entering into the Contract Agreement, shall be borne by the Contractor.

Contract Form-3**PERFORMANCE SECURITY**

(Demand Guarantee)

Beneficiary: _____ Date: _____

PERFORMANCE GUARANTEE No.: _____

Guarantor: _____

We have been informed that _____ (hereinafter called "the Applicant") has entered into Contract No. _____ dated _____ with the Beneficiary, for the execution of _____ (hereinafter called "the Contract").

Furthermore, we understand that, according to the conditions of the Contract, a performance guarantee is required.

At the request of the Applicant, we as Guarantor, waiving all objections and defences under the aforementioned contract, hereby irrevocably and independently undertake to pay the Beneficiary any sum or sums not exceeding in total an amount of _____ (____),¹ such sum being payable in the types and proportions of currencies in which the Contract Price is payable, upon receipt by us of the Beneficiary's first demand supported by the Beneficiary's statement, whether in the demand itself or in a separate signed document accompanying or identifying the demand, stating that the Applicant has failed to duly perform the aforementioned contract, without the Beneficiary needing to prove or to show grounds for your demand or the sum specified therein.

This guarantee shall expire, no later than the Day of, 2...², and any demand for payment under it must be received by us at this office indicated above on or before that date.

This guarantee is subject to the Uniform Rules for Demand Guarantees (URDG) 2010 Revision, ICC Publication No. 758, except that the supporting statement under Article 15(a) is hereby excluded.

[signature(s)]

¹ The Guarantor shall insert an amount representing the percentage of the Accepted Contract Amount specified in the Letter of Acceptance, less provisional sums, if any, and denominated either in the currency(cies) of the Contract or a freely convertible currency acceptable to the Beneficiary.

² Insert the date twenty-eight days after the expected completion date. The Employer should note that in the event of an extension of this date for completion of the Contract, the Employer would need to request an extension of this guarantee from the Guarantor. Such request must be in writing and must be made prior to the expiration date established in the guarantee. In preparing this guarantee, the Employer might consider adding the following text to the form, at the end of the penultimate paragraph: "The Guarantor agrees to a one-time extension of this guarantee for a period not to exceed [six months][one year], in response to the Beneficiary's written request for such extension, such request to be presented to the Guarantor before the expiry of the guarantee."

Note: All italicized text (including footnotes) is for use in preparing this form and shall be deleted from the final product.

Contract Form-4**Advance Payment Security****BANK GUARANTEE FOR MOBILISATION ADVANCE****Deleted**

To
 Maharashtra Metro Rail Corporation Ltd.,
 Regd Office: Civil Court Metro Station, Nyayamurti Ranade Path, Pune-
 411005, Maharashtra, INDIA

Bank Guarantee No. _____, dt. _____ for Rs. _____
 (Rupees _____ only).

w.e.f. : _____
 valid upto : _____
 claim upto : _____

1. In Consideration of M/s.Maharashtra Metro Rail Corporation Ltd., (hereinafter called "the Employer", which expression shall, unless repugnant to the context or subject thereof include his successor and assigns) having awarded M/s. _____ having its Registered Office at _____ (hereinafter referred to as "the Contractor", which expression shall unless repugnant to the context of meaning thereof include its successors, administrators, executors and assigns), a contract by issue of Employers Letter of Acceptance No. _____ dated _____ and the same having been mutually accepted by the Contractor, resulting in a Contract bearing No. _____ for Rs. _____ (Rupees _____ only) for Contract _____ :
 (Name of work) _____
 (hereinafter called "the Contract") and the Employer has agreed to make an advance payment to the Contractor for performance of the said Contract amounting to Rs. _____ (Rupees _____ only) of Mobilisation Advance.
2. We, _____ constituted under the _____ Act, 1955 having its Corporate Centre and Central Office at _____ and one of its Local Head Office at _____ and Branch Office at _____ (hereinafter referred to as "the Bank", which expression shall unless repugnant to the context of meaning thereof, include its successors, administrators, executors and assigns) do hereby guarantee and undertake to pay the Employer, immediately on demand any or all monies payable by the Contractor to the extent of Rs. _____ (Rupees _____ only) as aforesaid at any time upto _____

_____ without any demur, reservation, context, recourse or protest and or without any reference to the Contractor.

3. Any such demand made by the Employer on the Bank shall be conclusive and binding notwithstanding any difference between the Employer and the Contractor or any dispute pending before any Court, Tribunal, Arbitrator and shall continue to be enforceable till the Employer discharges this guarantee. However, not later than expiry date of guarantee.
4. The Employer shall have the fullest liberty without affecting in any way the liability of the Bank under this Guarantee, from time to time to vary the advance or to extend the time for performance of the Contract by the Contractor. The Employer shall have the fullest liberty without affecting his guarantee, to postpone from time to time the exercise of any powers vested in them or of any right which they might have against the Contractor and to exercise the same at any time in any manner and either to enforce or to forebear to enforce any covenants, contained or implied, in the Contract between the Employer and Contractor or any other course or demand or security available to the Employer. The Bank shall not be redeemed to its obligation under these presents by any exercise by the Employer of its liberty with reference to the matters aforesaid of any of them or by reason of any other act or forbearance or other acts of omission or commission on the part of the Employer or any other indulgence shown by the Employer or by any other matter or thing whatsoever which under law would but for this provision have the effect of relieving the bank.
5. The Bank also agrees that the Employer at his option shall be entitled to enforce this Guarantee against this bank as a principal debtor, in the first instance without proceeding against the Contractor and notwithstanding any security or other guarantee that the Employer may have in relation to the Contractor's liabilities.

Notwithstanding anything contrary contained in any law for the time being in force or banking practice this guarantee shall not be assignable or transferable by the beneficiary. Notice or invocation by any person such as assignee, transferee or agent of beneficiary shall not be entertained by the bank any invocation of guarantee can be made only by the beneficiary directly.

Notwithstanding anything contained herein:

- a) Bank liability under this Bank Guarantee shall not exceed Rs. _____
(Rupees _____ only)
- b) This Bank Guarantee shall be valid upto _____.
- c) We are liable to pay the guarantee amount or part thereof under this Bank Guarantee only & only if you serve upon us a written claim or demand on or before _____.
- d) Thereafter all your rights under this guarantee shall be forfeited and we shall be released from all our liabilities hereunder irrespective of whether the guarantee in original is returned to us or not.

Dated _____.

Contract Form-5**Retention Money Security****Demand Guarantee
Deleted**

_____ [Guarantor letterhead or SWIFT identifier code]

Beneficiary: _____ [Insert name and Address of Employer]

Date: _____ [Insert date of issue]

RETENTION MONEY GUARANTEE No.: [Insert guarantee reference number]

Guarantor: [Insert name and address of place of issue, unless indicated in the letterhead]

We have been informed that _____ [insert name of Contractor, which in the case of a joint venture shall be the name of the joint venture] (hereinafter called "the Applicant") has entered into Contract No. _____ [insert reference number of the contract] dated _____ with the Beneficiary, for the execution of _____ [insert name of contract and brief description of Works] (hereinafter called "the Contract").

Furthermore, we understand that, according to the conditions of the Contract, the Beneficiary retains moneys up to the limit set forth in the Contract ("the Retention Money"), and that when the Taking-Over Certificate has been issued under the Contract and the first half of the Retention Money has been certified for payment, payment of [insert thesecond half of the Retention Moneyorifthe amount guaranteed under the Performance Guarantee when the Taking-Over Certificate is issued is less than half of the Retention Money,thedifference between half of the Retention Money and the amount guaranteed under the Performance Security] is to be made against a Retention Money guarantee.

At the request of the Applicant, we,as Guarantor, hereby irrevocably without any demure, reservation, context, recourse or protest and or without any reference to the contractor, undertake to pay the Beneficiary any sum or sums not exceeding in total an amount of _____ [insert amount in figures]()[amount in words]' upon receipt by us of the Beneficiary's first demand supported by the Beneficiary's statement, whether in the demand itself or in a separate signed document accompanying or identifying the demand, stating that the Applicant is in breach of its obligation(s) under the Contract,without your needing to prove or show grounds for your demand or the sum specified therein.

¹ The Guarantor shall insert an amount representing the amount of the second half of the Retention Money or or if the amount guaranteed under the Performance Guarantee when the Taking-Over Certificate is issued is less than half of the Retention Money, the difference between half of the Retention Money and the amount guaranteed under the Performance Security and denominated either in the currency(ies) of the second half of the Retention Money as specified in the Contract, or in a freely convertible currency acceptable to the Beneficiary.

A demand under this guarantee may be presented as from the presentation to the Guarantor of a certificate from the Beneficiary's bank stating that the second half of the Retention Money as referred to above has been credited to the Applicant on its account number _____ at _____ *[insert name and address of Applicant's bank]*.

This guarantee shall expire no later than the day of, 2...², and any demand for payment under it must be received by us at the office indicated above on or before that date.

This guarantee is subject to the Uniform Rules for Demand Guarantees (URDG) 2010 Revision, ICC Publication No. 758, except that the supporting statement under Article 15(a) is hereby excluded.

² *²Insert the same expiry date as set forth in the performance security, representing the date twenty-eight days after the completion date described in GC Clause 11.9. The Employer should note that in the event of an extension of this date for completion of the Contract, the Employer would need to request an extension of this guarantee from the Guarantor. Such request must be in writing and must be made prior to the expiration date established in the guarantee. In preparing this guarantee, the Employer might consider adding the following text to the form, at the end of the penultimate paragraph: "The Guarantor agrees to a one-time extension of this guarantee for a period not to exceed [six months][one year], in response to the Beneficiary's written request for such extension, such request to be presented to the Guarantor before the expiry of the guarantee."*

Contract Form-6**Form of Designer's Warranty
Deleted**

THIS AGREEMENT is made the day of

BETWEEN:

- (1) [] [whose registered office is at]/[of] [] ("the Designer"); and
- (2) The Maharashtra Metro Rail Corporation Limited (together with its successors and assigns, "the Employer") of _____ [address].

WHEREAS:

- (a) By a contract _____ dated [] ("the Contract") made between (1) Maharashtra Metro Rail Corporation Limited ("the Employer") and (2) [] ("the Contractor"), the Contractor has agreed to design, execute, complete, test and commission (including Integrated Testing and Commissioning) and remedy any defect in the Works upon the terms and conditions contained in the Contract.
- (b) The Designer has had an opportunity of reading and noting the provisions of the Contract (other than details of the Contractor's prices and rates).
- (c) Pursuant to the Contract, the Contractor wishes to enter into an agreement with the Designer and Designer agrees to the wishes of the Contractor (the Consultancy agreement) to carry out the Contractor's obligations under the Contract in relation to the design and functions ascribed to the Designer in the Contract.
- (d) The Contract stipulates that the Contractor shall ensure that the Designer executes a warranty agreement in favour of the Employer.

NOW IT IS HEREBY AGREED as follows:

- 1. In consideration of the Employer not objecting to the Contractor and the Designer entering into the Consultancy Agreement, the Designer warrants and undertakes to the Employer that he has exercised and will continue to exercise all the skill and care to be expected of a professionally qualified and competent designer experienced in work of similar nature and scope as the Works in carrying out the design of the Works and in performing the other duties and functions ascribed to him in the Contract.
- 2. The Designer agrees that, in the event of the termination of the Contract by the Employer, the Designer will, if so required by notice in writing given by the Employer, except subject to Clause 4 the instructions of the Employer or his appointee to the exclusion of the Contractor in respect of the carrying out and completion of the Works upon the terms and conditions of the Consultancy Agreement.
- 3. The Designer further agrees that he will not, without first giving the Employer not less than 21 days' previous notice in writing, exercise any rights it may have to terminate the Consultancy Agreement or to treat the same as having been as repudiated by the Contractor or to discontinue the performance of any duties to be performed by the Designer pursuant thereto. The Designer's right to terminate the Consultancy Agreement or to treat the same as having been repudiated or to discontinue the performance thereof shall cease if, within such period of notice and subject to Clause 4, the Employer shall give notice in writing to the Designer requiring the Designer to accept the instructions of the Employer or his appointee to the exclusion of the Contractor in respect of the carrying out and completion of the Contract Works upon the terms and conditions of the Consultancy Agreement.

4. Any notice given by the Employer under Clause 2 or 3 shall state that the Employer or his appointee accepts liability for payment of the fees payable to the Designer under the Consultancy Agreement and for performance of the Contractor's obligations under the Consultancy Agreement, including payment of any fees outstanding at the date of such notice.
5. The Employer shall be entitled to assign the benefit of this Warranty at any time without the consent of the Designer being required.
6. All documents arising out of or in connection with this Warranty shall be served:
 - (1) upon the Employer at [] marked for the attention of [];
 - (2) upon the Designer at [].
7. The Employer and the Designer may change their respective nominated addresses for service of documents to another address in India but only by prior written notice to each other. All demands and notices must be in writing.
8. This Warranty shall be governed by and construed according to the laws for the time being in force in India.
9. Except to the extent (if any) expressly permitted by the Consultancy Agreement, the Designer shall not sub-contract any of the Designer's obligations under the Consultancy Agreement without the prior written consent of the Employer's Representative.
10. Without prejudice to its obligations under this Warranty, the Designer shall maintain with well established underwriters of repute and on terms and conditions reasonably acceptable to the Employer, professional indemnity insurance (as per sub-clause 18.1 of the General Conditions) in respect of the Designer and its sub-consultants for Indian Rupees (*in words..... Rupees*) in relation to his design of the Works for any one occurrence or series of occurrences arising out of any one event from the date of notification of acceptance until 5 years after the issue of Performance Certificate for the whole of works. The Designer shall immediately inform the Employer if for any reason professional indemnity insurance is not maintained in accordance with this Warranty or becomes void or unenforceable.
11. Insofar as the patent, copyright or other intellectual property rights in any Design Data (as defined in the Contract), plans, calculations, drawings, documents, materials, computer software, know-how and information relating to the Works shall be vested in the Designer, the Designer grants to the Employer his successors and assigns a royalty-free, non-exclusive and irrevocable licence (carrying the right to grant sub-licences) to use and reproduce any of the works designs or inventions incorporated and referred to in such documents or materials and any such know-how and information for all purposes relating to the Works (including without limitation the design, construction, reconstruction, completion, reinstatement, extension, repair and operation of the Works). To the extent beneficial ownership of any such patent, copyright or other intellectual property right is vested in anyone other than the Designer or the Contractor, the Designer shall use his best endeavors to procure that the beneficial owner thereof shall grant a like licence to the Employer. Any such licence granted shall not be determined if the Designer shall for any reason cease to be employed in connection with the Works.
12.
 - (1) Any dispute or difference of any kind whatsoever between the Employer and the Designer arising out of or in connection with this Warranty shall be referred to arbitration in accordance with Clause 20 of GC "Claims, Disputes and Arbitration" as defined in the Contract shall be deemed to include any such dispute or difference between the Employer and the Designer.
 - (2) In the event that the Employer is of the opinion that the issues in such a dispute or difference will or may touch upon or concern a dispute or difference arising under out of or in connection with the Contract ("the Contract Dispute") then provided that an arbitrator has not already been appointed, the Employer may by notice in writing to the Designer require and the Designer shall be deemed to have consented to the referral of such dispute or difference to the arbitrator to whom the Contract Dispute has been or will be referred.

- (3) Save as expressly otherwise provided, the arbitrator shall have full power to open up, review and revise any decision, opinion, instruction, notice, order, direction, withholding of approval or consent, statement of objection, determination, certificate, assessment or valuation by the Employer's Representative or the Contractor, relating to the dispute or difference.

IN WITNESS whereof this Warranty has been executed as a deed on the date first before written.

THE COMMON SEAL of)
[Designer])
was affixed hereto in)
the presence of:-)

Contract Form-7**Parent Company Undertaking
Deleted**

THIS UNDERTAKING is issued on the _____ day of _____

BY _____ [whose registered office is at] / [of] _____ ("the Parent Company").

infavour of

Maharashtra Metro Rail Corporation Limited together with its successors and assigns, (the Employer"):

.....
.....
.....

WHEREAS

(A) By a Contract for _____ in respect of Pune Metro Rail Project

Contract No: MAHA-METRO/ _____ ("the Contract") made between

(1) Maharashtra Metro Rail Corporation Limited (the "Employer")

and

(2) _____ (the "Contractor") the Contractor has agreed to design, execute, complete and remedy any defects in the works ("the Works") upon the terms and conditions contained in the Contract.

(B) Pursuant to the terms of the Contract, the Contractor has agreed to procure the provision of an undertaking in the terms hereof.

(C) The Parent Company is the beneficial owner of _____ % [see Note 1] of the issued share capital of [the Contractor] [see Note 2].

(D) At the request of the Contractor, the Parent Company has agreed to provide this undertaking.

NOW IT IS HEREBY UNDERTAKEN AND AGREED as follows:

1. In consideration of the Employer entering into the Contract with the Contractor, the Parent Company hereby undertakes to the Employer that, without the written consent of the Employer, it will not [and will ensure that none of the companies referred to in Recital (C) will] [see Note 5]:

- a. Sell, transfer, assign or otherwise dispose of or deal with ownership of the whole or any part of EITHER [the share holding or other interest in the [Contractor] [see Note 3] OR [the share holdings or other interests] [see Note 4] referred to in Recital (C) in any way which will affect the beneficial ownership and control in [the Contractor] [see Note 3] of the Parent Company [and the other companies referred to in Recital (C)] [see Note 5]; and

- b. take any action which may result in the Contractor being unable to comply with its obligations or perform in any way its duties under the Contract [or take any action which may result in [the Member forming part of the Contractor] [see Note 3] being unable to comply with its obligations or perform in any way its duties under the [Consortium or other relevant] agreement] [see Note 6]

until such time as the Works shall have been completed, all the Contractor's obligations under the Contract shall have been performed and the Defects Liability Period (as defined in the Contract) for the whole and every part of the Works shall have elapsed and further that it will ensure [that the Member forming part of the Contractor will take all steps necessary to ensure [see Note 6] compliance by the Contractor with the provisions of the Contract.

2. The obligations of the Parent Company under this Undertaking shall remain in full force and effect and shall not be affected or discharged in any way and the Parent Company hereby waives notice of:
 - a. any suspension of the Works, variation or amendment to the Contract (including without limitation extension of time for performance) or any concession or waiver by the Employer in respect of the Contractor's obligations [and/or the obligations of [_____] [see Note 7]
 - b. any provision of the Contract being or becoming illegal, invalid, void, voidable or unenforceable;
 - c. the termination of the Contract or of the employment of the Contractor and/or [_____] [see Note 7] under the Contract for any reason;
 - d. any forbearance or waiver of any right of action or remedy the Employer may have against the Contractor [and/or [_____] [see Note 7] or negligence by the Employer in enforcing any such right of action or remedy;
 - e. any bond, undertaking, security or other guarantee held or obtained by the Employer for any of the obligations of the Contractor [and/or [_____] [see Note 7] under the Contract or any release or waiver thereof.
3. This Undertaking shall extend to any variation of or amendment to the Contract and to any agreement supplemental thereto agreed between the Employer and the Contractor [and/or [_____] [see Note 7] and for the avoidance of doubt the Parent Company hereby authorises the Employer and the Contractor [and/or [_____] [see Note 7] to make any such amendment, variation or supplemental agreement.
4. All documents arising out of or in connection with this Undertaking shall be served:
 - a. upon the Employer, at _____ marked for the attention of _____;
 - b. upon the Parent Company, at _____
5. The Employer and the Parent Company may change their respective nominated addresses for service of documents to another address but only by prior written notice to each other. All demands and notices must be in writing.
6. This Undertaking shall be governed by and construed according to the laws for the time being

in force in India and the Parent Company agrees to submit to the exclusive jurisdiction of the courts at Pune, Maharashtra, India.

IN WITNESS where of this Undertaking has been executed as a deed on the date first before written.

Name:

Designation:

Date of Board resolution authorizing executant to execute this undertaking

Place:

Notes:

(For preparation of but not for inclusion in the engrossment of this Undertaking)

1. If the Parent Company is not the immediate parent company, the chain of ownership must be recited, identifying each company in the chain and the shareholdings or other interests in each subsidiary.
2. If the Contractor is a Consortium, that fact and the Consortium or other relevant agreement must be recited. In such case, insert the name of the Members of the Consortium in respect of which the parent company undertaking is being given. In such a case, the parent company of each of the Members is required to give the undertaking.
3. If Note 2 applies, refer to the Member relating to that Parent Company (which is giving this undertaking) and not the Contractor.
4. If Note 1 applies, use this alternative.
5. If Note 1 applies, add this provision.
6. If Note 2 applies, add this provision.
7. If Note 2 applies, add this provision and insert the name of the Member.
8. The notarized copy of the board resolution of the Parent Company must also accompany this Undertaking. In case the Parent Company is a foreign entity, then such board resolution should be notarized by a notary in its home country followed by the consularisation by the Indian Embassy there, or apostilised as per Hague Convention, as the case may be.

Contract Form-8**Parent Company Guarantee
Deleted**

THIS GUARANTEE is made the _____ day of _____

BY _____ whose registered office is at _____ [and _____ whose registered office is at _____] ("the Guarantor").

To Maharashtra Metro Rail Corporation Limited together with its successors and assigns, "the Employer") of:

.....
.....
.....

WHEREAS

(A) By a Contract for _____ of Pune Metro Rail Project

Contract No: _____ ("the Contract") made between

(1) Maharashtra Metro Rail Corporation Limited (the "Employer")

and

(2) _____ (the "Contractor") the Contractor has agreed to design, execute, complete and remedy any defects in the works ("the Works") upon the terms and conditions contained in the Contract.

(B) Pursuant to the terms of the Contract, the Contractor has agreed to procure the provision of a guarantee in the terms hereof. [see Note 1]

(C) At the request of the Contractor, the Guarantor has agreed to guarantee performance of the Contract by the [Contractor] [see Note 2] as set out herein.

IT IS HEREBY AGREED AS FOLLOWS:

1. In consideration of the Employer entering into the Contract with the Contractor, the Guarantor irrevocably and unconditionally guarantees to the Employer as a primary obligation and not as a surety due performance by the [Contractor] [see Note 2] of all of its obligations and liabilities under and in accordance with the Contract save that nothing herein shall be construed as imposing greater obligations or liabilities on the Guarantor than are imposed on the [Contractor] [see Note 2] in the Contract.
2. The obligations of the Guarantor under this Guarantee shall remain in full force and effect and shall not be affected or discharged in any way by and the Guarantor hereby waives notice of:
 - a. any suspension of the Works, variation to or amendment of the Contract (including without limitation extension of time for performance) or any concession or waiver by the Employer in respect of the Contractor's obligations [and/or the obligations of _____] [see Note 3] under the Contract;

- b. any provision of the Contract being or becoming illegal, invalid, void, voidable or unenforceable;
 - c. the termination of the Contract or of the engagement of the Contractor [and / or _____] [see Note 3] under the Contract for any reason;
 - d. any forbearance or waiver of any right of action or remedy the Employer may have against the Contractor [and / or _____] [see Note 3] or negligence by the Employer in enforcing any such right of action or remedy;
 - e. any bond, undertaking, security or other guarantee held or obtained by the Employer for any of the obligations of the Contractor [and / or _____] [see Note 3] under the Contract or any release or waiver thereof.
3. This Guarantee shall extend to any variation of or amendment to the Contract and to any agreement supplemental thereto agreed between the Employer and the Contractor [and/or _____] [see Note 3] and for the avoidance of doubt the Guarantor hereby authorises the Employer and the Contractor [and/or _____] [see Note 3] to make any such amendment, variation or supplemental agreement.
4. This Guarantee is a continuing guarantee and accordingly shall cover all of the obligations and liabilities of the [Contractor] [see Note 2] under the Contract and remain in full force and effect until all the said obligations and liabilities of the Contractor shall have been carried out, completed and discharged in accordance with the Contract. This Guarantee is in addition to any other security which the Employer may at any time hold and may be enforced without first having recourse to any such security or taking any steps or proceedings against the Contractor.
5. Until expiry of the Defects Liability Period (as defined in the Contract) for the whole and every part of the Works, the Guarantor shall not on any ground whatsoever make any claim or threaten to make any claim whether by proceedings or otherwise against the Contractor [and/or _____] [see Note 3] for the recovery of any sum paid by the Guarantor pursuant to this Guarantee. Any such claim shall be subordinate to any claims (contingent or otherwise) which the Employer may have against the Contractor [and/or _____] [see Note 3] arising out of or in connection with the Contract until such time as such claims shall be satisfied by the Contractor [and/or _____] [see Note 3] or the Guarantor as the case may be. To that intent the Guarantor shall not claim or have the benefit of any security which the Employer holds or may hold for any monies or liabilities due or incurred by the Contractor [and/or _____] [see Note 3] to the Employer and, in case the Guarantor receives any sum from the Contractor [and/or _____] [see Note 3] in respect of any payment by the Guarantor hereunder, the Guarantor shall hold such sum in trust for the Employer for so long as any sum is payable (contingently or otherwise) under this Guarantee.
6. The Employer shall be entitled to assign the benefit of this Guarantee at any time without the consent of the Guarantor or the [Contractor] [see Note 2] being required.
7. All documents arising out of or in connection with this Guarantee shall be served:
 - a. upon the Employer, at _____ marked for the attention of _____;
 - b. upon the Guarantor, at _____ India [see Note 5]
8. The Employer and the Guarantor may change their respective nominated addresses for service of documents to another address but only by prior written notice to each other. All demands and notices must be in writing.

9. This Guarantee shall be governed by and construed according to the laws for the time being in force in India and the Guarantor agrees to submit to the exclusive jurisdiction of the courts at Pune, Maharashtra, India.

IN WITNESS whereof this Guarantee has been executed as a deed on the date first before written

.....

Name:

Designation:

Date of Board resolution authorizing executant to execute this undertaking

Place:

Notes:

(For preparation of but not inclusion in the engrossment of this Guarantee)

1. If the Contractor is a Consortium, that fact and the Consortium or other relevant agreement and the relationship of the Guarantor to the concerned Members forming part of the Contractor must be recited.
2. If Note 1 applies, replace the word "Contractor" with name of the concerned Member of the Consortium being guaranteed.
3. If Note 1 applies, add additional wording and insert the name the concerned Member of the Consortium being guaranteed.
4. The notarized copy of the board resolution of the Guarantor must also accompany this Guarantee. In case the Guarantor is a foreign entity, then such board resolution should be notarized by a notary in its home country followed by the consularisation by the Indian Embassy there, or apostilised as per Hague Convention, as the case may be.
5. The address for service shall be in India.

Contract Form-9**Contractor's Warranty**

THIS WARRANTY is made the _____ day of Deleted

BY _____ of _____ [and [see Note 1]] ([jointly] "the Contractor")

To Maharashtra Metro Rail Corporation Limited together with its successors and assigns, "the Employer") of:

.....
.....
.....

WHEREAS

(A) By a Contract for _____ of Pune Metro Rail Project

Contract No: ("the Contract") made between

(1) Maharashtra Metro Rail Corporation Limited (the "Employer")

and

(2) _____ (the "Contractor"), the Contractor has agreed to design, execute, complete, test and commission (including Integrated Testing and Commissioning) and remedy any defects in the works ("the Works") upon the terms and conditions contained in the Contract.

(B) [See Note 3].

(C) At the request of the Employer and pursuant to the terms of the Contract the Contractor has agreed to provide this Warranty.

NOW IT IS AGREED AS FOLLOWS:

1. The Contractor hereby warrants and undertakes that:

- a. the Contractor will design, execute, complete, test and commission (including Integrated Testing and Commissioning) and remedy any defect in the Works in accordance with the terms of the Contract; and
- b. the Contractor owes a duty of care to the Employer in relation to the performance of its duties under the Contract; and
- c. the Contractor will rectify or replace free of cost to the Employer any defect or failure of equipment provided in the Works for a period of 24 months from the date of taking over of section of the Works; and
- d. the Contractor agrees that should any modification be required to any part of the construction work as a consequence of failure analysis, the aforesaid period of 24 months shall re-commence from the date when the modified part is commissioned into service if the date of modification is later than the date of taking over of last trainset, and such modification shall be carried out free of cost to the Employer in all sections;

and

- e. the Contractor shall maintain the manufacture & supply of spares (including those of its Sub-Contractors / vendors) for the equipment supplied in the Contract-work for at least 5 years from the date of Completion of the Contract; and
 - f. the Contractor has exercised and will continue to exercise in the design of the Works all the skill and care to be expected of a professionally qualified and competent designer experienced in work of similar nature and scope as the Works; and
 - g. the Works will, when completed, comply in all respects with the Employer's Requirements, the Contractor's Technical Proposals, the final Design Document and the intended use of the Works; and
 - h. the Works has been or will be designed and manufactured to the highest standards available using internationally proven up-to-date good practice; and
 - i. the Works will, when completed, comply with enactments and regulations relevant to the Works; and
 - j. no Materials generally known to be deleterious or not in accordance with good engineering practice have been or will be specified or selected or incorporated in the Works by the Contractor.
2. The liability of [the companies comprising [see Note 3]] the Contractor under this Warranty [shall be joint and several and [see Note 3]] shall not be released, diminished or in any way affected by any independent inquiry or investigation into the Works or any matter related to the Contract whether carried out by or on behalf of the Employer or any liability or right of action which may arise out of such inquiry or investigation.
 3. Insofar as the copyright or other intellectual property rights in any plans, calculations, drawings, documents, materials, plant, know-how and other information relating to the Works shall be vested in [the Contractor] [see Note 5], the [Contractor] [see Note 5] grants to the Employer its successors and assigns a royalty free, non-exclusive and irrevocable licence (carrying the right to grant sub-licences) to use and reproduce any of the works designs, inventions or other information incorporated and referred to in such documents or materials and any such know-how and information for all purposes relating to the Works of the Pune Metro Rail Project including without limitation the design, manufacture, installation, completion, testing and commissioning (including Integrated Testing and Commissioning) reinstatement, extension and the remedy of any defect in the Works. To the extent that beneficial ownership of any such copyright or other intellectual property rights is vested in anyone other than the [Contractor] [see Note 5], the [Contractor] [see Note 5], shall use best endeavours to procure that the beneficial owner thereof shall grant a like licence to the Employer. For the avoidance of doubt, any such licence granted shall not be determined if the [Contractor] [see Note 5], shall for any reason cease to be employed in connection with the Works.
 4. The provisions of this Warranty shall be without prejudice to and shall not be deemed or construed so as to limit or exclude any rights or remedies which the Employer may have against the Contractor, whether in tort or otherwise.
 5. Nothing contained in this Warranty shall vary or affect the Contractor's rights and obligations under the Contract.
 6. The address for service of all documents arising out of or in connection with this Warranty

shall be:

a. Upon the Employer at:

.....
.....
.....

b. Upon the Contractor at _____ India. [Note 4]

7. The Employer and the Contractor may change their respective nominated addresses to another address in India but only by prior written notice to each other. All notices must be in writing.
8. This Warranty shall be governed by and construed according to the laws for the time being in force in India.
9.
 - (1) Any dispute or difference of any kind whatsoever between the Employer and the Contractor arising under out of or in connection with this Warranty shall be referred to arbitration in accordance with the provisions relating to 'Conciliation and Arbitration' as set out in the General Conditions of Contract. "Dispute" as defined in the Contract shall be deemed to include any such dispute or difference between the Employer and Contractor.
 - (2) In the event that the Employer is of the opinion that the issues in such a dispute or difference will or may touch upon or concern a dispute or difference arising under out of or in connection with the Contract ("the Contract Dispute") then provided that an arbitrator has not already been appointed pursuant to Clause 9(1), the Employer may by notice in writing to the Contractor require and the Contractor shall be deemed to have consented to the referral of such dispute or difference to the arbitrator to whom the Contract Dispute has been or will be referred.
 - (3) Save as expressly otherwise provided, the arbitrator shall have full power to open up, review and revise any decision, opinion, instruction, notice, order, direction, withholding of approval or consent, determination, certificate, statement of objections relating to the dispute.
 - (4) Subject to the foregoing provisions of this clause 9, the Employer and the Contractor agree to submit to the exclusive jurisdiction of the Courts of India at Pune.

IN WITNESS whereof this Warranty has been executed as a deed on the date written at the head hereof.

.....
Name:

Designation:

Date of Board resolution authorizing executant to execute this undertaking

Place:

Notes:

(for preparation of and not inclusion in the engrossment of this Warranty)

1. If the Contractor is a Consortium,, each Member of such Consortium shall be a party and

liability under this warranty will be joint and several, with consequential grammatical changes.

2. If Note 1 applies, that fact and the Consortium or other relevant agreement must be recited.
3. Delete if Note 1 does not apply.
4. The address for service shall be in India.
5. If Note 1 applies, then insert the name of each Member.

Contract Form-10**Sub-Contractor's / Vendor's Warranty**

(As applicable)

THIS WARRANTY is made the _____ day of _____

BY _____ [whose registered office is at] / [of] _____ ("the Sub-contractor") and

TO Maharashtra Metro Rail Corporation Limited together with its successors and assigns, "the Employer") of:

.....
.....
.....**WHEREAS**

(A) By a Contract for _____ of Pune Metro Rail Project

Contract No: ("the Contract") made between

(1) Maharashtra Metro Rail Corporation Limited (the "Employer")

and

(2) _____ (the "Contractor"), the Contractor has agreed to _____ and remedy any defects in the works ("the Works") upon the terms and conditions contained in the Contract.

(B) The Sub-contractor / vendor has had an opportunity of reading and noting the provisions of the Contract (other than details of the Contractor's prices and rates).

(C) Pursuant to the Contract, the Contractor wishes to enter into an agreement ("the Sub-contract") with the Sub-contractor / Vendor to carry out and complete a part of the Works as more particularly described in the Sub-contract ("the Sub-contract Works").

(D) The Contract stipulates that the Contractor shall obtain the consent of the Engineer before entering into the Sub-contract, and that the Contractor shall procure that the Sub-contractor executes a warranty in favour of the Employer.

NOW IT IS HEREBY AGREED as follows:

1. In consideration of the Engineer consenting to the Contractor and the Sub-contractor / Vendor entering into the Sub-contract, the Sub-contractor warrants and undertakes to the Employer that:

- a. he will execute and complete the sub-contracted Works / supply, and will carry out each and all of the obligations, duties and undertakings of the Sub-contractor / Vendor under the Sub-contract when and if such obligations, duties and undertakings shall become due and performable, in accordance with the terms of the Sub-contract (as the same may from time to time be varied or amended with the consent of the

Employer); and

- b. he will supply to the Contractor and in specific cases wherever required to the Engineer with all information as may be required from time to time in relation to progress of the Sub-contract Works.
2. The Sub-contractor / Vendor undertakes to indemnify the Employer against each and every liability which the Employer may have to any person whatsoever and against any claims, demands, proceedings, loss, damages, costs and expenses sustained, incurred or payable by the Employer provided that the Sub-contractor / Vendor shall have no greater liability to the Employer by virtue of this Warranty than the liability of the Contractor to the Employer under the Contract insofar as and to the extent that the same has arisen by reason of the execution of the Sub-Contract or any breach by the Sub-contractor / Vendor of his obligations under the Sub-contract.
3. No allowance/extension of time by the Employer hereunder or by the Contractor under the Sub-contract nor any forbearance or forgiveness in or in respect of any matter or thing concerning this Warranty or the Sub-contract on the part of the Employer or the Contractor, nor anything that the Employer or the Contractor may do or omit or neglect to do, shall in any way release the Sub-contractor / Vendor from any liability under this Warranty.
4. The Sub-contractor / Vendor agrees that he will not without first giving the Employer not less than 21 day's prior notice in writing exercise any right he may have to terminate the Sub-contract or treat the same as having been repudiated by the Contractor or withhold performance of its obligations under the Sub-contract.
5.
 - (1) In the event that the Contract or the employment of the Contractor under the Contract is terminated for any reason whatsoever and if so requested by the Employer in writing within 21 days of such termination, the Sub-contractor / Vendor shall carry out and complete his obligations under this Warranty and shall enter into a novation agreement with the Employer and the Contractor in which the Sub-contractor will undertake inter alia to perform the Sub-contract and be bound by its terms and conditions as if the Employer had originally been named as a contracting party in place of the Contractor. The said novation agreement will be in such form as the Employer may reasonably require.
 - (2) In the event that the Employer does not require the Sub-contractor / Vendor to enter into a novation agreement as required by Sub-clause 5 (1), the Sub-contractor shall have no claim whatsoever against the Employer for any damage, loss or expense howsoever arising out of or in connection with this Warranty.
6. Insofar as the copyright or other intellectual property rights, in any plans, calculations, drawings, documents, materials, know-how and information relating to the Sub-contract Works shall be vested in the Sub-contractor / Vendor, the Sub-contractor / Vendor grants to the Employer, his successors and assignees a royalty free, non-exclusive and irrevocable licence (carrying the right to grant sub-licences) to use and reproduce any of the works designs, inventions or other information incorporated and referred to in such documents or materials and any such know-how and information for all purposes relating to the Works of the Pune Metro Rail Project, without limitation the design of enabling facilities, construction, installation, reconstruction, completion, reinstatement, extension, remedy of any defect of the Works. To the extent beneficial ownership of any such copyright or other intellectual property right is vested in anyone other than the Sub-contractor / Vendor, the Sub-contractor shall use best endeavours to procure that the beneficial owner thereof shall grant a like licence to the Employer. For the avoidance of doubt, any such licence granted shall not be determined if the Sub-contractor / Vendor shall for any reason cease to be employed in connection with the

Sub-contract Works.

7. In the event of any ambiguity or conflict between the terms of the Sub-contract and this Warranty, the terms of this Warranty shall prevail.
8. The provisions of this Warranty shall be without prejudice to and shall not be deemed or construed so as to limit or exclude any rights or remedies which the Employer may have against the Sub-contractor / Vendor whether in tort or otherwise.
9. Nothing contained in this Warranty shall vary or affect the Sub-contractor's / Vendor's rights and obligations under the Sub-contract.
10. The Employer shall be entitled to assign the benefit of this Warranty at any time without the consent of the Sub-contractor / Vendor being required.
11. All documents arising out of or in connection with this Warranty shall be served:
 - a. Upon the Employer at:
.....
.....
 - b. Upon the Sub-Contractor / Vendor at _____ India.
12. The Employer and the Sub-contractor / Vendor may change their respective nominated addresses for service of documents to another address in India but only by prior written notice to each other. All demands and notices must be in writing.
13. This Warranty shall be governed by and construed according to the laws for the time being in force in India.
14.
 - (1) Any dispute or difference of any kind whatsoever between the Employer and the Sub-contractor / Vendor arising under out of or in connection with this Warranty shall be referred to arbitration in accordance with the arbitration provisions as described in the Contract.
 - (2) In the event that the Employer is of the opinion that the issues in such a dispute or difference will or may touch upon or concern a dispute or difference arising under out of or in connection with the Contract ("the Contract Dispute") then provided that an arbitrator has not already been appointed pursuant to Clause 14 (1), the Employer may by notice in writing to the Sub-contractor / Vendor require and the Sub-contractor / Vendor shall be deemed to have consented to the referral of such dispute or difference to the arbitrator to whom the Contract Dispute has been or will be referred.
 - (3) Save as expressly otherwise provided, the arbitrator shall have full power to open up, review and revise any decision, opinion, instruction, notice, order, direction, withholding of approval or consent, determination, certificate, statement of objection, assessment or valuation by the Engineer or the Contractor relating to the dispute or difference.
 - (4) Subject to the foregoing provisions of this clause 14, the Sub-Contractor agrees to submit to the exclusive jurisdiction of the Courts at Pune, Maharashtra.

IN WITNESS whereof this Warranty has been executed as a deed on the date first before written

.....

Name:

Designation:

Date of Board resolution authorizing executant to execute this undertaking

Place:

Note: The notarized copy of the board resolution of the Sub-Contractor/vendor must also accompany this Warranty. In case the Sub-Contractor/vendor is a foreign entity, then such board resolution should be notarized by a notary in its home country followed by the consularisation by the Indian Embassy there, or apostilised as per Hague Convention, as the case may be.

Contract Form-11**Indemnity Bond**

THIS INDENTURE made onbetween(hereinafter called the Contractor) which expression shall where the context do admits or implies be deemed to include its executors, administrators and assigns of the one part and the Maharashtra Metro Rail Corporation Ltd. (hereinafter called Maha-Metro) of the other part.

WHEREAS by the agreement (LOA No dated.....) (hereinafter called the said agreement) the contractor has agreed to “-----” and whereas the contractor has applied to the MAHA-METRO that they may be allowed advance on the security of materials absolutely belonging to them and brought by them to the site of the works covered under the project of the said agreement for use in the construction of such of the work as they have under taken to execute at rates fixed for the finished work (inclusive of the cost of materials and labour and other charges).

AND WHEREAS the MAHA-METRO has agreed to make stage payment to the contractor the total sum of Rs.----- (Rupees -----only) for stage payment Bill. The quantities and other particulars of which are detailed in this bill for the said works signed by the Contractor on “-----” and MAHA-METRO has reserved to itself option of making any further advances till date on the security of other materials brought by the contractor to site of the said work.

NOW THIS INDENTURE WITNESS that in pursuance of the said agreement and its consideration of the sum of Rs. ----- (Rupees -----only) on or before the execution of these present amount paid to the contractor by the MAHA-METRO (the receipt where of the contractor) both hereby acknowledge and of such further Stage payment, if any, as may be made to him so aforesaid to the contractor do the covenant and agreed with the MAHA-METRO and declare as follows:

1. That the said sum of Rs. ----- (Rupees ----- only) so Stage Payment by the MAHA-METRO to the contractors as aforesaid and all or any further sum or sum's advanced as aforesaid shall be employed by the contractor in or towards the execution of the said works and for no other purpose whatsoever.
2. That the Stage Payment detailed in the said running account bill which have been offered to and accepted by the MAHA-METRO as security are absolutely the contractor's own property and free from encumbrances of any kind and the contractor's shall not make any application for or receive any further payments on the security of work executed which are not absolutely his own property and free from encumbrances of any kind the Contractor indemnifies the MAHA-METRO against all claims on any materials in respect of which any Stage Payment has been made to him as aforesaid.
3. That the Stage Payment detailed in the said running account bill and all other stage payments on the security of which further payments or Stage Payment any hereafter be made as aforesaid (hereinafter called the said materials) shall be used by the contractor solely in the execution of the said works in accordance with the directions of the Engineer / MAHA-METRO and in the terms of the said agreement.
4. That the contractor shall be fully liable for the materials/components and shall make at his own cost all necessary and adequate arrangement for the proper watch, safe custody and protection against all risks including, acts of the God of the said materials/components

and provide on approved insurance in favour of MAHA-METRO that until used in construction as aforesaid the said materials shall remain at the site of said works in the contractor's custody and on his own responsibility and shall at the time be open to inspection by the Engineer/MAHA-METRO. This insurance will be valid for a period until this material is approved and fixed in the building or advance has been fully recovered from contractor.

5. That the said materials/components shall not on any account be removed/shifted from the site of the works except with the written permission of the Engineer/MAHA-METRO.
6. That issue of any Stage Payment excess of what is finally required to be used at site would be the contractor's property without any liability on MAHA-METRO., who would recover the cost of this from the contractor.
7. That the contractor hereby charges all the said materials components with the repayment to the MAHA-METRO of the said sum of Rs. ----- (Rupees ---- -----only) and any further sum or sums advanced as aforesaid and all cost charges. Damages and expenses payable under these presents provided always and it is hereby agreed and declared that not with power contained therein, if any, whenever the convenient for payment, and repayment herein before contained shall become enforceable and the money owned shall not be paid in accordance therewith, the MAHA-METRO., may at any time thereafter adopt all or any of the following courses as he may deem best.
 - a. That if the contractor shall at any time not be able to complete any part of the Component / equipment as per provision in contract Agreement it shall be considered as the work being left incomplete by the contractor and action as per the conditions of the contract shall be taken.
 - b. Deduct all or any of the money owing out of the performance security or any sum due to the contractor under the said agreement.

That in the event of any conflict between the provisions of these presents and the said agreement the provisions of these presents shall prevail.

This widening shall be co-extensive to the agreement dated between Maharashtra Metro Rail Corporation Limited, _____. (Client) and(Contractor).

IN WITNESS where of the said contractor and by the order under the direction of MAHA-METRO has here set their respective hands the day and years first above written.

Signed, Sealed & Delivered by the said Contractor:

IN THE PRESENCE OF: WITNESS:

1. NAME: Signature:
SIGNED BY (ADDRESS)

BY THE ORDER AND DIRECTION OF THE MAHA-METRO IN THE PRESENCE OF:
SIGNATURE: WITNESS
(NAME AND ADDRESS)

Contract Form-12**Guarantee for Safe Custody**

(To be stamped in accordance with Stamp Act, of the country of issuing bank)

To:

MAHARASHTRA METRO RAIL CORPORATION LIMITED,

WHEREAS – the Consortium/ Joint venture consisting of:

(Name of Lead Member of the Group and address)

(Name of Member of the Group and address)

(Name of Member of the Group and address)

(hereinafter called “the Contractor”), with M/s----- as the lead member has undertaken, in pursuance of Contract No. [] datedfor [Note 4] (hereinafter called “the Contract”), AND WHEREAS according to the said Contract the Employer is obliged to pay to the Contractor the sum of [] ([]) (“the Payment on delivery”) as set out in the priced Bill of Quantities.

(A) Pursuant to the said activities, [Note 4] are to be manufactured offshore or in India for subsequent delivery to the Contractor’s premises in Pune, India and held in safe custody by the Contractor.

(B) Pursuant to the terms of the Contract, the Contractor, as a condition precedent to his entitlement to receive any payment for items including an element of [Note 4] Contract [] to the Contractor’s premises in Pune, is obliged to provide a Guarantee in the terms hereof for 95 percent of the Payment.

AND WHEREAS we (Insert name and address of scheduled commercial bank based in India) have agreed to give the Contractor such a Bank Guarantee:

NOW THEREFORE we hereby affirm that we are the Guarantor and responsible to you, on behalf of the Contractor up to a total of ----- (amount of Guarantee)----- (in words), such sum being payable in the types and proportion of currencies in which the Contract Price is payable and we hereby unconditionally, irrevocably and without demur undertake to immediately pay you, upon your first written demand and without cavil or argument any sum or sums within the limits of ----- (amount of guarantee) as aforesaid without your needing to prove or to show grounds or reasons for your demand for the sum specified therein.

1. We hereby waive the necessity of your demanding the said debt from the Contractor before presenting us with the demand.
2. We further agree that no change or addition to or other modification of the terms of the contract or of the Works to be performed there under or of any of the contract documents which may be made between you and the Contractor shall in any way release us from any liability under the guarantee and we hereby waive notice of any such change, addition or modification.
3. The Bank shall pay to the Employer the amount thus demanded without requiring further evidence or proof of:
 - a. the default of the Contractor; or

- b. the Employer's entitlement to terminate the Contract or the employment of the Contractor under the Contract; or
 - c. any termination of the Contract or the employment of the Contractor under the contract; or
 - d. of the amount due and payable under this bank Guarantee.
4. The liability of the Bank under this Guarantee shall remain in full force and effect and shall not be affected or discharged in any way by and the Bank hereby waives notice of:
 - a. any suspension of the Works, variation to or amendment of the Contract (including without limitation extension of time for performance or adjustment to the Tender Total or other payment under the Contract) or any concession or waiver by the Employer in respect of the Contractor's obligations under the Contract;
 - b. the termination of the Contract or of the employment of the Contractor under the Contract solely as a result of default by the Contractor under the Contract;
 - c. any forbearance or waiver of any right of action or remedy the Employer may have against the Contractor or negligence by the Employer in enforcing any such right of action or remedy;
 - d. any other security or guarantee held or obtained by the Employer for any of the obligations of the Contractor under the Contract or any release or waiver thereof;
 - e. any act or omission of the Contractor pursuant to any other arrangement with the Surety.
5. The liability of the Bank under this Guarantee shall cease on whichever of the following events first occurs:
 - a. payment by the Bank of the Guaranteed Sum in full to the Employer; or
 - b. receipt of written notification from the Employer that the [Note 4] have been installed and tested to the satisfaction of the Employer.
6. Until the MAHA-METRO has issued an instruction to the Bank to the effect that this Guarantee can be released, the Bank undertakes to extend the validity under the same conditions for successive periods of six (6) calendar months at a time and to forward the appropriate extension sheets to the MAHA-METRO.

SIGNATURE AND SEAL OF THE GUARANTOR

NAME OF THE BANK-----
ADDRESS-----
DATE-----

Notes:

1. The stamp papers of appropriate value shall be purchased in the name of the Bank, who issues the 'Bank Guarantee'.
2. The Bank Guarantee shall be from a scheduled commercial bank based in India, acceptable to the Employer.
3. The amount payable under this Guarantee shall be 95 percent of the aggregate of the installments of the Payment made to the Contractor prior to the date of the written demand referred to above less the aggregate of any sums in respect of items installed,

tested and certified by the Employer's Representative (as defined in the Contract) in accordance with the terms of the Contract.

4. Enter name of the Contract.

Form- 13

Undertaking
(Pertaining to engagement of Sub Contract)

Contract no./Tender No.

Name of work

In connection with above work, M/s , Contractor has/is engaging M/s ,
as sub-contractor (material / equipment supplier or service provider). For this, the terms and
conditions of agreement between Contractor & Sub-contractor, include necessary provisions for
resolution of dispute if any arising between Contractor and subcontractor.

It is confirmed by the subcontractor that any payment/claim/dispute arising out of the above work
shall be resolved in terms of agreement and shall not be raised before Employer and also shall
not make any claim against Employer before any forum/court.

SIGNATURE AND SEAL OF THE CONTRACTOR

MAHARASHTRA METRO RAIL CORPORATION LIMITED**(PUNE METRO RAIL PROJECT)****BID DOCUMENTS****FOR**

Name of work: Geotechnical Investigation of Underground Section of NS Corridor Phase-I Extension Swargate-Katraj of Pune Metro Rail Project.

TENDER NO. P1Misc-34/2024**Part4****Financial Bid & Bill of Quantities**

MAHARASHTRA METRO RAIL CORPORATION LTD
(A joint venture of Govt. of India & Govt. of Maharashtra)
Civil Court Metro Station, Nyaymurti Ranade Path,
Shivajinagar, Pune-411005,

E-mail: tenders.pmrp@mahametro.org

Website: www.punemetrorail.org

Telephone: 020-26051072

Preamble and BOQ:

- 1) The Bill of Quantities shall be read in conjunction with the instructions to Tenderers, Conditions of Contract, Notice Inviting Tender.
- 2) The currency of prices shall be expressed in Indian Rupees.
- 3) The price quoted by bidders shall be deemed to be inclusive of all kinds of duties, taxes, Cess and other levies payable as per GST, Custom tariff act etc. and as prevailing on 28 days (Base Date) prior to final date of submission of bid (Closing time & date of submission of online bid).
- 4) The quoted rates are for completed and finished items of work and complete in all respects. It will be deemed to have included all constructional plant, tools, machinery, labour, supervision, materials, fuel, oil, consumables, electric power, water, transportation, all leads and lifts, dewatering, all temporary works and false works, construction of temporary stores and buildings, fencing, watering, lighting, erection maintenance, night working, inspection facilities, safety measures at work sites for workmen and road users, establishment and overhead charges, labour camps, insurance costs for labour and works, contractor's profit, all taxes, royalties, duties, cess and other levies payable as per GST, Custom tariff act etc. and other charges together with all general risks, liabilities and obligations set out or implied in the contract and including remedy of any defects during the Defect Liability Period, unless otherwise provided in BOQ.
- 5) The whole cost of complying with the provisions of the Contract shall be deemed to have been included in the quoted rates.
- 6) The method of measurement of completed work for payment shall be in accordance with the requirements as stated in the individual sections of the Particular Schedule of SOR and Special Conditions of Contract (SCC).
- 7) Errors will be corrected by the Employer for any arithmetical errors in computation or summation as indicated in Contract Document.
- 8) Bidder may please note that to perform this contract, nothing extra shall be payable on account of field constraints, availability of front, preparation of detailed scheme for taking necessary clearance and approval from the concerned authority and other local bodies etc.
- 9) The Bidder shall complete and submit all bill sheets endorsed by the signature of authorized representative.
- 10) The bidder should quote for respective items.

Format for Financial Bid**Bid Document No.:****Dated:**

To,
The ED/Procurement & Contracts
Maharashtra Metro Rail Corporation Limited,
Civil Court Metro Station, Nyaymurti Ranade Path,
Shivajinagar, Pune-411005.

Sub: Tender No P1Misc-34/2024.

Name of Work: "Geotechnical Investigation of Underground Section of N-S Corridor Phase-I Extension Swargate-Katraj of Pune Metro Rail Project."

I / We hereby offer the Amount in Rupees for the subject Tender as per terms and conditions of the tender as per Annexure-A.

a) I/We confirm that I/We have read and understood the rules and regulations regarding the bidding process and we have inspected the various conditions as present in the site and have also inspected the physical infrastructure available on the site, plans and specifications of site and offer my/our acceptance to execute work as per the terms and conditions contained herein in the Bidding documents.

b) This offer is being made after taking into consideration of all the terms and conditions stated in the Bid document, and after careful assessment of all risks and contingencies and all other conditions that may affect the financial Bid.

(c) I/We agree to keep my/ our offer valid for 180 days from the due date of submission of this Bid.

Signature (Authorized signatory): _____

Name of Signatory: _____

Designation: _____

Name & Seal of the Bidder: _____

Address: _____

Tel (M): _____

Tel (O): _____

Email: _____

Annexure -A

Sr.No	Description of Work	Unit	Quantity	Rate	Amount
1	Mobilization & Demobilization of boring rigs (Hydraulic Rig at work site including setting up at site and removing away from the site on completion of work including loading unloading etc complete	Nos	18		
	a) Vertical boring 150mm dia . through all kinds of soil and weathered/ soft & Hard rock with adequate/suitable equipment for a depth measured below existing ground upto a depth of 20mts or drilling in hard rock strata having RQD less than 50% FIR 5.00 mts in depth whichever is earlier. b) Collecting undisturbed soil samples i 100 mm dia, 450 mm long thin walled tube sampler at every 3.00 m interval or at change of strata whichever occurs earlier & sealing the container. Conducting standard penetration test as per ISI : 213-1982 at 3 m interval or at change of strata and collecting disturbed sample. packaging & labelling the same. c) Conducting Laboratory test on collected samples from Maha-Metro in house lab Durocrete Engineering Services Private Limited.	Rmt	1500		
3	Vertical boring 150mm dia, with double swindle tube core barrel diamond drilling trim with to take out core samples through Hard rock having RQD Grater than 50% with adequate suitable equipment for a depth measured below existing ground upto a depth of 40 mts .b) Collecting undisturbed soil samples in 100 mm dia, 450 mm long thin walled tube sampler at every 3.00 m interval or at change of strata whichever occurs earlier & sealing the container Conducting standard penetration test as per B1: 213 1982 at 3 m interval or at change of strata and collecting disturbed sample , packaging & labelling the same) Conducting Laboratory test on collected samples from Maha-Metro in house lab Durocrete Engineering Services Private Limited.	Rmt	1500		
4	Breaking of concrete pavement necessary) for drilling of holes in concrete surface.	Sq.m	90		

Annexure -A

Sr.No	Description of Work	Unit	Quantity	Rate	Amount
5	Restoration of road surface to its original position on completion of drilling work including cleaning of site etc complete.	Nos	110		
6	Conducting Sigle packer permeability test including Mobilization & Demobilisation of all required equipment and entire accessories etc to the site of work dismantling and removing away from site including loading unloading etc complete in all respect (Packer test machinery)	Per No	20		
7	Conducting pressure meter test and submission of Report including Mobilization & Demobilisation of all required equipment and entire accessories etc to the site of work dismantling and removing away from site including loading unloading etc complete in all respect (Pressure meter test)	Per No	20		
8	Carrying out modulus of Elasticity test on Rock sample	Per No	20		
9	Carrying out on land cross hole sonic test by using 2 receiver and 1 source hole upto 30m depth as per ASTM D4428 of 1.5 to 2 m interval including mobilization of cross test equipment and personnel	Nos	6		
Total Amount (INR) including GST @ 18%					

IMPORTANT NOTES TO BIDDERS: -

1. The bidder should quote in the "Financial Bid" of the Bid Document of MAHA-METRO.
2. For comparison of the quoted bid price by the bidders, the grand total of the quoted amount from schedule shall be taken into consideration.
3. Maha Metro reserves the right to omit / partially execute any items in any of the Schedules during construction without any liability to either party.