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DELHI METRO RAIL CORPORATION LTD.

CONTRACT NO: OEW-2271

**“Supply & Installation of Stainless-Steel Wire Mesh Inside
B-200 Masts in Various Lines of DMRC Network”**

**EMPLOYER'S REQUIREMENT
&
TECHNICAL SPECIFICATIONS**

TENDER DOCUMENTS

**DELHI METRO RAIL CORPORATION LTD.
5th FLOOR, C-WING, METRO BHAWAN,
FIRE BRIGADE LANE, BARAKHAMBA ROAD,
NEW DELHI 110001**

Employer Requirement

1. OBJECTIVE

The objective of the **Contract No.: OEW-2271 - "Supply & Installation of Stainless-Steel Wire Mesh inside B-200 Masts in Various Lines of DMRC Network"** as mentioned in Employer Requirement. In full recognition of this objective, and with full acceptance of the obligations, liabilities and risks which may be involved, the Contractor shall undertake the execution of the Works.

2. GENERAL

2.1 Works for "**Supply & Installation of Stainless Steel Wire Mesh inside B-200 mast in Various Lines of DMRC Network**" shall be done in accordance with Employer's Requirements and the other requirements of the Contract.

2.2 Works for "**Supply & Installation of Stainless Steel Wire Mesh inside B-200 mast in Various Lines of DMRC Network**" shall be of highest standards available using proven up-to-date good Engineering practices. The Specification shall in any case not specify standards which, in the Engineer's opinion, are less than or inferior to those described in the Technical Specifications contained in the Tender Documents.

3. SITE OF WORK:

The work is required to be carried out at following Operational Lines of Delhi Metro Rail Corporation Limited:

- a) Line-1 Rithala to New Bus Adda & Shastri Park Depot
- b) Line-2 Samaypur Badli to Huda City Centre, Samaypur Badli Depot, Khyber Pass Depot & Sultanpur Depot
- c) Line-3 & 4 Dwarka Sec-21 to Noida Electronic City & Laxmi Nagar to Vaishali, Yamuna Bank Depot & Najafgarh Depot
- d) Line-5 Bahadurgarh to Inderlok/Kirti Nagar & Mundka Depot & Bhahadurgarh Depot
- e) Line-6 Kashmere Gate to Ballabgharh, Sarita Vihar Depot & Ajrona Depot
- f) Line-7 Shiv Vihar to Majlis Park, Vinod Nagar Depot & Mukundpur Depot
- g) Line-8 Janakpuri West to Botanical Garden & Kalindi Kunj Depot
- h) Line-9 Dwarka to Dhansa Bus Stand & Najafgarh Depot
- i) Airport Line & Dwarka Depot

The employer reserves the right to carry out the specified work on any other location in DMRC depending upon the site requirement. Tenderer is advised to visit the sites with proper permission from DMRC, before offering the rates in the tender, as the requirement of work may vary as per site conditions.

4. SCOPE OF WORK

The scope of work for "**Supply & Installation of Stainless-Steel Wire Mesh inside B-200 mast in Various Lines of DMRC Network**" is detailed as follows:

4.1 The work of "**Supply & Installation of Stainless-Steel Wire Mesh inside B-200 mast in Various Lines of DMRC Network**" mainly comprises of the following works:

Item No. 1 of the BOQ - Supply and Installation of Stainless Steel woven wire mesh (SS-304 grade) inside B-200 OHE mast on viaduct of various lines. SS Woven wire mesh shall be made of 2mm thick wire having square hole of size 0.5 inch X 0.5 inch. All cavities on both side of OHE mast from Top of mast up to a height of 2 mtrs from Bottom of mast to be considered for providing SS Woven wire mesh. Item cost shall include material cost as well as installation cost of SS Woven wire mesh including supply and installation of Stainless steel (SS-304 grade) ties (approx 30 ties to be installed in each mast) for fixing of SS wire mesh inside the OHE Mast. Dimension of SS ties shall be - 700 mm length, 5 mm width, 2 mm thick. Approx area to be covered by SS Woven wire mesh - 30 sqft.

4.2 Brief Details of Work & Requirement of Material for work is detailed as follows:

The Work of Supply and Installation of Stainless Steel woven wire mesh (SS-304 grade) inside B-200 OHE mast on viaduct of various lines includes following:

- Supply of SS woven wire mesh (SS-304 Grade) made of 2mm thick wire having square hole of size 0.5 inch X 0.5 inch as per drawing DMRC/O&M/Tr/SS Mesh/001 (Drawing enclosed at Annexure-A). Supply of Stainless steel (SS-304 grade) ties (approx. 30 ties to be installed in each mast) for fixing of SS Woven wire mesh inside OHE Mast. Dimension of SS ties shall be - 700 mm length, 5 mm width, 2 mm Thick.
- Installation of SS woven wire mesh to be done using SS Ties on both side of face of OHE Mast. Indicative arrangement of installation of SS Net shall be done as specified at Annexure-B of the Employer Requirement.
- One unit of Item No. 1 of BOQ includes provision of SS Woven Wire Mesh on both front as well as back side & top portion of the B-Series Mast complete in all respect.
- Approximate area to be covered by SS Woven Wire Mesh is given as 30 sqft. This area is only an approximation and may vary as per site requirement. Contractor shall carry out the provision of SS Woven Wire Mesh on additional area beyond 30 sqft(if any) without any additional cost.
- Approximate 30 Nos of SS ties are to be installed in each OHE Mast. This is only an approximation and may vary as per site requirement. Contractor shall provide additional SS ties beyond 30 Nos (if any) without any additional cost.
- Dismantling of old PVC Net already installed inside OHE Mast shall be in the Scope of item Sr. No. 1 of BOQ. Nothing shall be paid extra on this account.

4.3 Vendor approval & Testing Requirements

- a) Contractor shall obtain Vendor approval for all the major items (i.e. SS Woven Wire Mesh) to be supplied under the contract.
- b) Before manufacturing the material, Contractor shall be required to submit one prototype sample and test reports for the following:

SS Woven Wire Mesh (Grade SS-304) material testing report & design as per specification mentioned at Sr. No. 1 of BOQ. Only after obtaining approval from DMRC, on the basis of the above-mentioned reports, contractor shall start the manufacturing of the material.

- c) Contractor shall be required to obtain dispatch clearance from DMRC before the dispatch of the material from Contractor/Manufacturer's factory premises. For obtaining dispatch clearance, contractor shall be required to submit reports of acceptance tests conducted at Contractor/Manufacturer's factory premises.
- d) Following acceptance tests shall be carried out by the contractor in their factory/premises:
 - 1) Dimensional Test of the material as per approved drawing.
 - 2) Visual Inspection of the Material for surface defects/cracks etc.DMRC reserves the right to carry out the inspection of the material at Contractor's/Manufacturer's premises before the dispatch of the material. Sampling of items from the lot for the acceptance test shall be done as per relevant Indian Standards.

4.4 Indicative Procedure of Work:

Installation procedure of SS Woven Wire Mesh Inside B-200 Mast:

- a) Indicative drawing for provision of SS Woven Wire Mesh arrangement inside B Series OHE Mast is enclosed at Annexure-A.
- b) Provision of SS Woven Wire Mesh to be done inside all cavities between Top and upto 2Mtr from the bottom of mast.
- c) Proper size of SS Woven Wire Mesh as per cavities of B Series mast shall be arranged.
- d) Old PVC Net Installed inside B-Series Mast shall be dismantled and handed over to DMRC Officials.
- e) SS Woven Wire Mesh shall be provided inside cavities using Stainless Steel ties. 02 Nos Stainless Steel ties shall be provided on each batten plate of B Series Mast.
- f) All cavities from top of Mast to upto 2Mtrs from bottom of Mast on both sides shall be covered under the Scope of one item. Top of Mast also to be covered.
- g) SS Woven Wire Mesh shall be provided in such a manner that it is properly fixed at face of Mast & is not lying loose.
- h) Contractor shall arrange T&Ps, ladder etc as applicable for execution of the work.
- i) All the above activities shall be carried out using ladder. Contractor shall arrange suitable size ladder for carrying out the prescribed work.

5. General Terms and Conditions

- 5.1** The contractor during the execution of work shall follow the Indian Electricity act & all other statutory rules, regulations Acts as available on date during the period of Contract.

- 5.2** The contractor will have to submit the list of authorized/competent staff along with a set of photo identity cards for obtaining permission from DMRC before the start of work.
- 5.3** Any other work which may be necessary to complete the work specified in employer requirement is deemed to be included in the scope of work. Any additional cost for completing the installation, testing and commissioning shall be deemed to be included in the Pricing document.
- 5.4** While execution of work, minor modification/alteration as per site condition if any has to be done by the contractor as advised by engineer-in-charge. Nothing shall be paid extra.
- 5.5** The contractor shall be required to deliver the material at Shastri Park Depot. DMRC representative shall verify the material as per BOQ specifications. Only after technical suitability of material, contractor shall be allowed to use the material and start the work.
- 5.6** The contractor shall be responsible to shift the material from respective depot to work site. No transportation charges shall be paid to contractor on this account.
- 5.7** Before offering the rates in the tender, tenderer is advised to visit the site with proper permission from DMRC.
- 5.8** The contractor shall bring all healthy Tools & Plants such as Crimping Tool, slings, rope, toolbox, ladder and other associated tools required during the execution of work. The cost of these items shall be borne by the contractor.
- 5.9** Illumination/Lighting of working site shall be in the scope of contractor. Nothing shall be paid extra. Electricity through existing power sockets available on stations/viaduct shall be provided by DMRC. However, in case if power sockets are not available in nearby area, then it shall be responsibility of contractor to arrange electricity through nearest station area or other means. Contractor may also arrange UPS/DG if required. Nothing extra shall be paid on this account.
- 5.10** Quantity of work may vary to $\pm 25\%$.
- 5.11** Contractor's staff shall obey all the safety rules applicable for such works in DMRC. They shall also fill an indemnity bond before entering into the track. Contractor will have to ensure the safety of its own personnel and any other persons who can be affected by work, involved directly or indirectly.
- 5.12** The work shall be carried out in night during non-revenue hours in power block conditions (tentatively 3 hours). The time for actual work may be less than the power block/permit to work duration. This is due to the fact that work site may be away from the location from where permit to work is issued. No compensation/extra payment shall be made in this account.
- 5.13** Since the work is to be performed on line which is used for passengers services, it will be responsibility of contractor to ensure that the site is made fit and operational at least 30 minutes before scheduled time of cancellation of permit to work & power block. Any delay in train services due to contractor's negligence shall lead to penalty to contractor.

- 5.14** After completion of work, Site must be cleared before leaving and to be made fit for train operations.
- 5.15** There may be cases when the scheduled permit to work may be cancelled even after contractor manpower reaches the site of work & no work may be performed in that night. No compensation shall be paid for such cases.
- 5.16** Work may prolong due to bad weather condition or power Block constraint. Contractor has to negotiate with the prevailing condition. Nothing will be paid extra.
- 5.17** The contractor team shall be equipped with necessary communication facility at site of work. There should be at least one supervisor who will control his manpower & obtain necessary instruction from DMRC's representative/supervisor at each site of work.
- 5.18** DMRC's engineer in-charge / representative shall verify the installation during & after completion of work each day. Contractor's supervisor shall prepare the report in triplicate and get it signed by DMRC's representative at site. Two copies of report shall be kept by the contractor one of which will be produced along with the bill. One copy shall be kept by DMRC representative at site.
- 5.19** Any damage/breakage to the DMRC property during the execution of work will be at the risk & cost of the contractor.
- 5.20** Any other item of work as may be required to be carried out for completing the work under this contract in all respects in accordance with the provisions of the contract and/or to ensure the safety of installation during and after execution is included in the Contract Price.
- 5.21** Necessary personal protective equipment's (PPE) as per site requirement to used by the contractor personal working at the site shall be in the scope of the contractor. Nothing shall be paid extra on this account.
- 5.22** The Supply of all material and the execution of work shall be strictly as per as per specifications mentioned in the Employer Requirement/ Bill of Quantities and as per relevant RDSO/Railway/Metro standards.
- 5.23** Contractor shall keep close coordination and interface with Traction & Safety department of DMRC O&M department as well as CISF official for smooth working and proper execution & completion of work.
- 5.24** The manpower can also be deployed during OFF days/ holidays / night hours as per site requirements for which nothing shall be paid extra.
- 5.25** Contractor shall deploy multiple teams to work at different sites as per the requirements and nature of job.
- 5.26** DMRC is an ISO-14001 & OHSAS 18001 certified Organization for Environment, Health & safety. The work is to be carried out as per International Norms/Standards and in such a manner that all premises always look Neat & Clean. Similarly, the waste disposal is also carried out in totally sealed manner without affecting the Environment.
- 5.27** During transportation of material, there should be no damage till receipt of material by DMRC and granting suitability by competent officials of DMRC. For

any damage/breakage of items/spares at the time of transportation/dispatch of material, contractor will be responsible & cost shall be borne by the contractor.

5.28 No manpower/labour shall be provided by DMRC.

6. Safety

- 6.1** Contractor shall ensure all Provisions/Precautions as stipulated in SHE manual which is part of Contract.
- 6.2** Contractor shall adopt the necessary safety procedures to avoid any type of accidents to Employer's personnel, any other personnel & to avoid damages to DMRC assets.
- 6.3** The contractor during the execution of work shall follow the Indian Electricity act & all other statutory rules, regulations Acts as available & applicable on date during the period of contract.
- 6.4** Indemnity Bond shall be filled by contractor supervisor before entering the site.
- 6.5** All contractor staff should be fully equipped with Face Mask, safety helmet, safety belt, safety shoes, luminous jacket and other PPEs.
- 6.6** As work shall be done at height locations ranging from 5 mtr to 6 mtr, contractor shall take necessary safety precautions during Execution of work. Safety belt shall be used while working at height.
- 6.7** Portable first aid box should be readily available at site during execution of work.
- 6.8** Contractor shall keep close coordination and interface with Traction, Safety & Operation department of DMRC O&M as well as CISF official for smooth working and proper execution & completion of work.
- 6.9** Adequate lighting at work site will be ensured by the contractor.
- 6.10** The contractor shall display necessary sign boards/Barricades while carrying out the work.

7. Penalty

LD (Liquidated Damages) shall be as per Form of Tender Appendix-1.

Since the work is to be performed on line which is used for passengers services, it will be responsibility of contractor to ensure that the site is made fit and operational at least 30 minutes before scheduled time of cancellation of PTW & power block. Any delay in train services due to contractor's negligence shall lead to penalty to contractor @ Rs1,00,000/- (Rs One Lakh) per incident of delay in scheduled revenue service. Any incident causing damage to DMRC's assets during execution of work shall attract penalty to Contractor @ Rs 10,000/- (Rs Ten Thousand) per incident.

8. Time for Work Completion

Time for completion of the work shall be 12 (Twelve) Months from the stipulated date of commencement of work.

9. Defect liability Period (DLP)

In reference to SCC clause no. 09, Defect liability period (DLP) shall be 24 Months from the date of issue of taking over certificate for the whole of the work.

10. Schedule of Payment (In reference to SCC clause no. 12):

10.1 Payment shall be made as per the following terms and condition.

Payment Schedule	Payment Terms
For Supply & Installation	100% payment for supply & installation shall be made after supply of material & installation and after due verification by DMRC official. For this stage, Contractor can submit maximum 04 nos. Invoices in contract period after due verification by DMRC representative.

10.2 The payment shall be made subjected to submission of jointly signed report of DMRC Engineer in charge & contractor's representative.

10.3 DMRC's engineer in-charge / representative after verifying the installation during & after completion of work each day shall prepare joint report in triplicate duly signed by him and contractor's representative. Two copies of report shall be handed over to contractor. Bill along with one copy of joint report shall be submitted by contractor to DMRC Engineer for verification and processing the bill for payment.

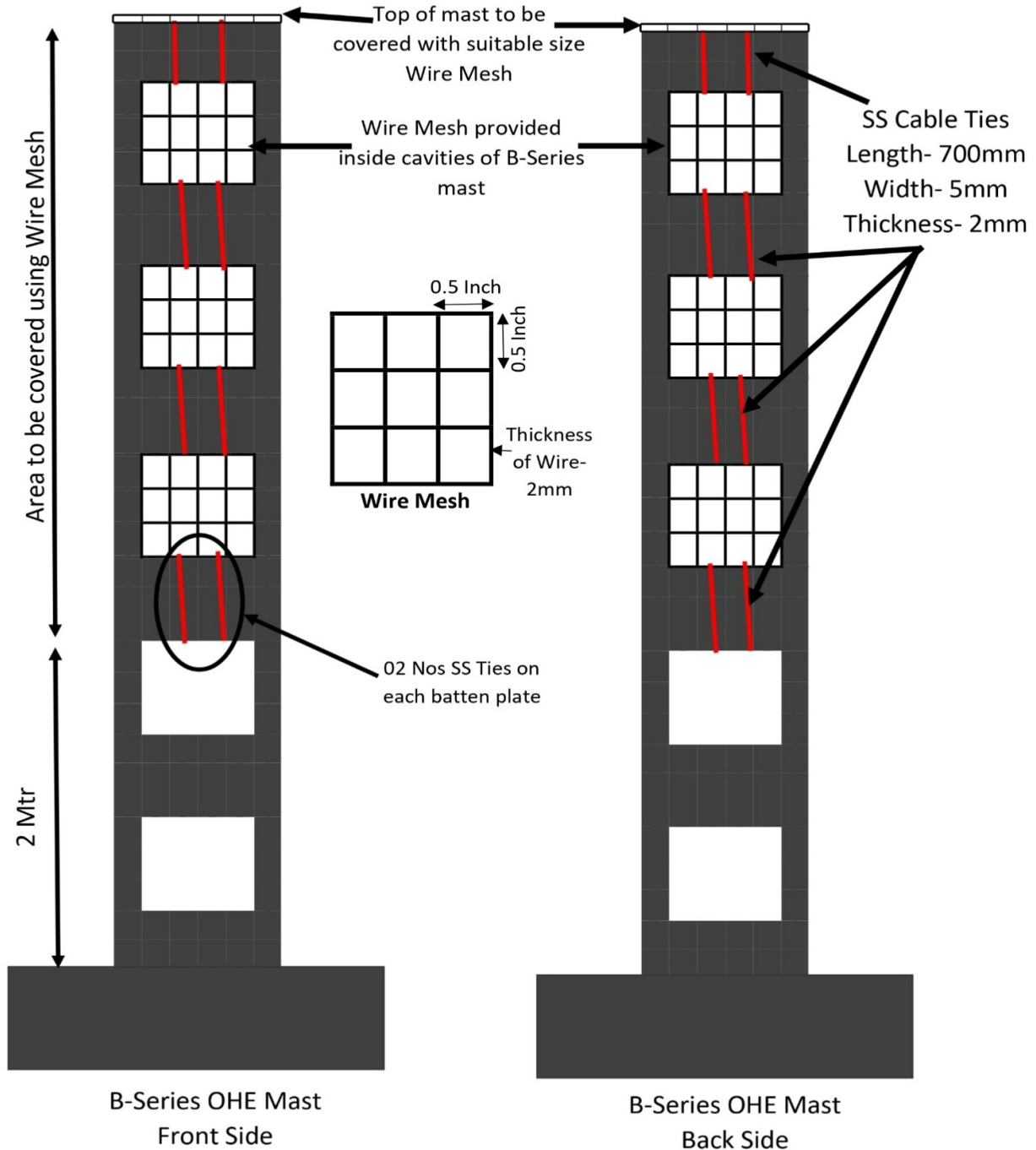
10.4 No mobilization advance is payable to contractor for the said work.

10.5 Payment shall be subjected to deduction of all TDS as per applicable law.

10.6 As the work will be performed at different locations in Delhi, UP, Haryana of DMRC. Contractor will submit their invoice as per provision of GST law.

Annexure-A

Indicative Drawing for Provision of Wire Mesh inside B-Series Mast



Note: 1. All cavities on both side of OHE mast (Front Side & Back Side) from Top of mast up to a height of 2 mtrs from Bottom of mast to be considered for providing Wire Mesh.
2. Top of mast to be covered with suitable size Wire Mesh.

Material of SS Woven Wire Mesh: SS-304

Annexure-B

Detail of B-Series Mast for providing SS Net

Sr. No.	Line	Depot	Qty of B-series Mast for providing SS Net	Remarks
1	1	SHPK	454	-
2	2	KPD	48	-
3		BLD		-
4	2/Ext.	SLTP	177	-
5	3 & 9	NJFD	130	-
6	4	YBD	215	-
7	5 & 5E	MUD	272	-
8		BGZ		-
9	6	STVR	2	-
10	6/Ext.	AJD	180	-
11	7	MPK	300	-
12	7/Ext.	VND	603	-
13	8	KKD	175	-
14	APL	DWD	97	-
15	Other Loc.	-	47	-
Total			2700	-