KOLKATA METRO RAIL CORPORATION LIMITED

East West Corridor of Kolkata Metro

CONTRACT-EWSR:

Design, Fabrication, Supply & Erection of Prefabricated Steel Roof structure including Roof Portals, Purlins, Sheeting etc. for 6 Elevated stations and Foot Over Bridges for 2 stations, Cable Runner for 1 station of East West Corridor of Kolkata Metro.

CONTRACT NO: EWSR

NOTICE INVITING TENDER

NIT No. KMRCL/NIT/EWSR date 01.11 2010

NOTICE INVITING TENDER

1.1 GENERAL

1.1.1 Name of Work:

Kolkata Metro Rail Corporation (KMRCL) Ltd. invites sealed tenders from interested tenderers for the CONTRACT-EWSR: Design, Fabrication, Supply & Erection of Prefabricated Steel Roof structure including Roof Portals, Purlins, Sheeting etc. for 6 Elevated stations and Foot Over Bridges for 2 stations, Cable Runner for 1 station of East West Corridor of Kolkata Metro. The detailed Scope of work is provided in clause 2.0 and the Site information in Clause 3.0 of NIT.

1.1.2 Key details:

Cost of Tender Documents	Rs 10,000/-
Tender Security amount	Rs. 25 lacs
Completion period of the Work	15 months
Tender documents on sale	From 10.11.2010 to 15.11.2010 (between 11.00 Hrs to 16.00 Hrs) on working days
Last date of Seeking Clarification	22.11.2010
Pre-bid Meeting	30.11.2010, at 14:30 Hrs, at KMRC Conference Hall (Vth Floor HRBC Bhavan)
Last date of issuing addendum	7.12.2010
Date & time of Submission of Tender	28.12.2010 (between 11.00 Hrs and 15.00 Hrs)
Date & time of opening of Tender	28.12.2010 at 15.30 Hrs
Authority and place for purchase of tender documents, seeking clarifications and submission of completed tender documents	Chief Engineer (II) Kolkata Metro Rail Corporation Ltd., 4th Floor, HRBC Bhavan, Munshi Premchand Sarani, Kolkata 700 021

1.1.3 Points to be noted

1.1.3.1 Works envisaged under this contract are required to be completed in all respects within the period of completion mentioned above.

1.1.3.2 Local Competitive Bidding shall be conducted in accordance with Single stage-Two envelope bidding procedure.

1.1.3.3 In accordance with this bid process, the Technical Proposals shall be opened first and evaluated using eligibility criteria. After evaluation, Financial Proposals of only the Technically Qualified Tenderers shall be opened and evaluated so as to determine the Bid, offering the lowest evaluated amount for the Employer

1.1.3.4 Tenders are required to furnish data for execution of works as specified in Appendix I of ITT. The Tender documents consist of:

1.1.4 Volume 1

- Notice Inviting Tender (NIT)
- Instructions to Tenderers (ITT)
- Special Conditions of Contract (SCC)

Volume 2

- General Specifications
- Special Specifications

Volume 3 (Drawings)

- Tender Drawings including Schedule of Dimensions

Volume 4

- Pricing Document: Bill of Quantities (BOQ) & Schedule of Payment

Following two documents too form part of tender document. The work is to be carried out in accordance with GCC & all provisions of conditions of contract on Safety, Health & Environment (SHE) shall be strictly followed. The tenderers while quoting their rates must carefully consider all the requirements of these documents:

- General conditions of contract – Part Design and Build only Contracts.
- Conditions of contract on Safety, Health & Environment (SHE).

All these documents will form integral part of Contract Agreement also.

1.1.5 All Tenderers are hereby cautioned that tenders containing any material deviation or reservations as described in Clause 19.0 : Determination of Responsiveness, of "Instructions to Tenderers" and/or minor deviation without quoting the cost of withdrawal shall be considered as non-responsive and shall be liable to be rejected.

1.1.6 **Late tenders (received after date and time of submission of bid) shall not be accepted under any circumstances**

1.1.7 Applicant must not have been blacklisted or deregistered by any govt. agencies or public sector undertaking during last 10 years. Also the applicant must not have rescind after award of contract. An undertaking to this effect be furnish alongwith tender submission.

1.1.8 Prices are inclusive of all taxes, duties, cess, insurance etc. **including Service Tax, W.B. V.A.T and Works Contract Tax.**

1.1.9 Tenders shall be valid for a period of 150 days from the date of submission of Tenders and shall be accompanied with a tender security of the requisite amount as per form B in the form of a Bank Guarantee from Scheduled Commercial Bank in India.

KMRCL reserves the right to accept or reject any or all proposals without assigning any reasons, No tenderer shall have any cause of action or claim against the KMRCL for rejection of his proposal**.**

Sd/-
Chief Engineer -II
KOLKATA Metro Rail Corporation Ltd.

SCOPE OF WORK

2.0 GENERAL

Name of Work

Contract EWSR: Design, Fabrication, Supply & Erection of Prefabricated Steel Roof structure including Roof Portals, Purlins, Sheeting etc. for 6 Elevated stations and Foot Over Bridges for 2 stations, Cable Runner for 1 station of East West Corridor of Kolkata Metro..

2.1 WORK CONTENT

2.1.1 Brief Scope

The scope of work, inter–alia, includes the following but not limited to:

A. Design of steel roof including portals, purlins, sheeting, gutters including end stops, down take pipes, base plates, foundation bolts, maintenance ladder, etc for the elevated stations. This includes roof for platforms as well as roofing for staircases from ground to concourse.

Names of the stations are as follows:

i. SALT LAKE STADIUM

ii. BENGAL CHEMICAL

iii. CITY CENTRE

iv. CENTRAL PARK

v. KARUNAMOYEE

vi. SALT LAKE SECTOR-V

In Sector V station, steel roofing shall be limited to adjacent spans and part of 2 transverse grids only, as indicated in the Drawings.

Apart from station roofing the following access/utility structures also form part of the work scope:

I. Foot Over Bridges for 2 stations complete with roof, viz two nos at Central Park station at Platform level to enable access to the platforms, 1 no. at Sector V station to enable access to passengers from ground level at WIPRO side to the concourse level.

II. Cable Runner for 1 station, viz at Central Park station to carry electrical cables from viaduct to ASS-TSS building situated near the station in Bikas Bhavan.

For supporting the roof, nos of roof portals are provided which support the purlins at its top. These roof portals are built–up beam from plates and of I -shape. The portals are oval-shaped and profiled with compound circular curves, except for City Centre Station which has a different profile. In some station zones, roof portals are having overhang on both sides. Each portal is divided into segments which will be fabricated in the workshop by the Contractor.

Assembling at site is to be done by using HS bolts. The springing point of portal has to be finally connected to the platform girder.

Design and construction shall also include maintenance ladder. Provision for fixing E&M and Signalling/ Telecommunications equipments in the station steel roof structure is also included in scope of work with due interface with respective System Contracts etc.

All the fabrication works involve welding of structural steel plates. Only **Automatic submerged arc welding** is permitted. It is also planned that all the site connections of fabricated members will be done by using HS bolts. Hence, the Contractor has to make the holes for the site bolted connection while fabricating the members. All the HS bolts and compatible nuts and washers will be also supplied by the contractor. All the plates used for fabrication have to be sand blasted and coated with primer and internal and external painting coats as specified in Volume 2 : Specifications. The fabricated members are required to be loaded and transported to individual station site for assembly and erection etc by the Contractor.

B. Tenderer will arrange design of steel roof with all its connections and related components. Design will be evaluated at the time of technical package evaluation. Design criteria and material specifications for structural steel members are as per Annexure 'A' and 'C' of Specifications (Structural Steel Works) – Volume II of Tender documents. Tenderers are required to submit with technical bid the following details:

- General arrangement drawing of all buildings showing all structural elements including bracings, sag rods etc.
- Sizes of all major members including purlins, portals, gutters, down take pipes etc.
- List of codes of standards in addition to those mentioned in specifications.
- Basic design calculations establishing sizes of structural members for roof provided is indicative. These are for references and the tenderer is allowed to change it provided the modified designs are approved by KMRCL and meet the requirements laid out in the Design Basis Report, Schedule of Dimensions and the reactions and architectural profile indicated in the drawings.
- Indicative Design for Foot Over bridges and Cable runner is provided.
- Validation report of software packages used, if any

C. Fabrication & supply of steel roof of elevated stations as per Special Specifications will include the following but not limited:

i. Preparation of complete detailed fabrication drawings based on the design drawings, required for all the permanent structures.

ii. Procurement of all raw steel materials for fabrication, taking into account wastage margin, including storage and upkeep of the materials.

iii. Providing of all materials, labour, tools and plant and all consumables required for fabrication and supply of all necessary bolts, nuts, washers with necessary wastage margins.

iv Fabrication of the steel works in accordance with the approved fabrication drawings, including all shop assembly, matching and marking. Design, manufacture / fabrication and provision of all jigs, fixings, manipulators etc. required for the fabrication.

v. Provision of shop painting to all fabricated steelwork, as per requirements of the related specification of the painting.

vi. Suitable marking, bundling and packing for transport of all fabricated materials.

vii. Preparing and furnishing detailed bill of materials, drawing Office dispatch lists, Bolts Lists and any other lists of bought out items required in connection with the fabrication of the structural steelwork.

viii. Loading and transporting all fabricated steel work and field connection materials to site of respective elevated stations for receiving, unloading, proper stacking and further handling etc. The contractor shall be completely responsible for proper and safekeeping of fabricated structure till the same is erected at respective station site.

ix. Any Grouting required for fixing the portals and painting form also part of these works.

D. Provision of roof sheeting, gutters with end stops complete with down take pipes etc. including purlins, runners etc. Provision for fixing E&M and Signalling/ Telecommunications equipments in the station steel roof structure is also included in scope of work with due interface with respective **System Contracts.**

E. The contractor shall be responsible for complete erection of roof at elevated stations in all respect. The contractor shall ensure the presence of the qualified and experienced Engineer during complete erection work at site to solve any problems related to fabrication and for smooth completion of work at site

F. All major modifications of the fabricated steel structures, as directed by the Engineer, including but not limited to the following:

i) Removal of bends, kinks, twists etc. for parts damaged during transport and handling.

ii) Cutting, chipping, filling, grinding etc. if required or preparation and finishing of site connections.

iii) Reaming of holes for use of higher size bolt if required.

iv) Re-fabrication of parts damaged beyond repair during transport and handling or re-fabrication of parts, which are incorrectly fabricated.

v) Fabrication of parts omitted during fabrication by error, or subsequently found necessary.

vi) Drilling of holes which are either not drilled at all or are drilled in incorrect location during fabrication.

vii) Carry out tests in accordance with the related Specification.

G. Any other item of work as may be required to be carried out for completing the fabrication or erection of steel roof for elevated station including all necessary interface works with KMRCL & its authorized station contractor and system-wide contractors in all respects in accordance with the provisions of the Contract.

2.1.2 The value of the work shall be on item rates accepted in letter of acceptance subject to such additions thereto or deductions there from as may be made under the provisions of the Contract.

The rates are inclusive of all cost but not limited to the cost such as for Plant, Equipment, tools, all types of labour, supervision, all materials from the source of supplies as approved by Engineer/Employer including all lead and lift, transport, all temporary works, erection, maintenance, contractors profits& establishment/overheads together with preparation of designs and drawings etc ,all general risks, taxes, royalties, duties, cess, octroi and other levies, insurance liabilities and all other obligations set out or implied in the contract for completion of work except otherwise specified in Bill of Quantities.

2.2 **INSPECTION**

KMRCL may appoint an independent agency to ensure the quality checking of design, supply, fabrication and erection of structural steel structures. The Contractor shall ensure the complete co-operation with the agency to perform their work satisfactorily. In addition KMRCL also reserves right to undertake quality check and inspection directly by itself.

2.3 DESIGN CRITERIA

Design criteria shall be as per Design Basis Report enclosed as Annexure-A and C in Volume 2-Specifications. The arrangements shall meet the requirements stipulated in relevant Schedule of Dimensions (included as part of Design Basis Report).
The profile of the roof as indicated in the Tender drawings shall be followed.

The shop drawing should cover all the items pertaining to all temporary works required for fabrication ,shop assembling. and transportation scheme for various structural elements The Contractor shall himself formulate a practical and viable scheme for fabrication of all structural members The tenderer should specify the scheme along with the tender that he proposes to adopt for carrying out all the works including fabrication transportation and erection at site.

2.4 REFERENCE TO THE STANDARD CODES OF PRACTICE

2.4.1 All Standards, Technical Specifications and Codes of practice referred to shall be latest editions including all applicable official amendments and revisions. The Contractor shall

make available at site all relevant Indian Standard Codes of practice and IRSC & IRC Codes as applicable.

2.4.2 Wherever Indian Standards do not cover some particular aspects of design/ construction, relevant British Standards will be referred to. The Contractor shall make available at site such standard codes of practice.

2.4.3 In case of discrepancy among Standard codes of practice, Technical Specifications and provisions in sub clauses in this NIT, the order of precedence will be as below :

i) Provision in NIT
ii) Technical Specifications,
iii) CPWD specifications
iv) Standard Codes of Practice.

In case of discrepancy among Standard Codes of Practice, the order of precedence will

be IRS, IRC, IS, BS, DIN

2.5 DIMENSIONS

2.5.1 As regards errors, omissions and discrepancies in Specifications and Drawings, relevant clause of Special Conditions of Contract and Schedule of Dimensions will apply.

2.5.2 Architectural drawings and structural GA drawings of the steel roof of the elevated stations are part of Tender. Detailed structural design and drawings are to be submitted by the contractor for approval by KMRCL. The contractor will be required to prepare and submit the shop drawings for approval before taking up the fabrication of the roof structure.

2.6 FABRICATION DEPOT

Contractor shall use his own premises / workshop for fabrication of structural steel work.

2.7 ASSOCIATED WORKS

Works to be performed shall also include all general works preparatory to the construction and works of any kind necessary for the due and satisfactory construction, completion and maintenance of the works to the intent and meaning of the drawings adopted and technical specifications, to best Engineering standards and orders that may be issued by the Engineer from time to time, compliance by the agency with all Conditions of Contract, supply of all materials, apparatus, plants, equipment, tools, fuel, water, strutting, timbering, transport, offices, stores, workshop, staff, labour and the provision of proper and sufficient protective works, diversion, temporary fencing, lighting and watching required for the safety of the public and protection of works on adjoining land; first –aid equipment, sanitary accommodation for the staff and workmen, effecting and maintenance of all insurances, the payment of all wages, salaries, fees, royalties, duties or the other charges arising out of the erection of works and the regular

clearance of rubbish, clearing up, leaving the site perfect and tidy on completion.

2.8 PRELIMINARY DRAWINGS

Architectural and Basic Structural drawings for the steel roof , Foot Over Bridges and Cable runners of the elevated stations are part of the tender. Detailed structural drawings including shop drawings will be submitted by the Contractor based on approval of structural drawings by KMRCL.

2.9 TIME SCHEDULE

The agency shall submit with the tender "Time Schedule" for completion of various portions of works. This schedule is to be within the overall completion period of 15 months. The detailed programme in the form of a quantified bar chart / CPM network or that in Ms-Project/Primavera output shall include all activities starting from design to completion.

2.10 TRAFFIC MANAGEMENT

The Contractor shall make the detailed traffic diversion plans in consultation with Kolkata Traffic Police. The work is to be executed with proper liaison with Kolkata Traffic Police. Necessary assistance will be given by KMRCL. The scheme should be such that minimum of two lane of traffic on each direction of the road should be available for the smooth flow of traffic. The Contractor should inspect the site. The Contractor shall also strengthen the road where the diversions are planned by widening, repairing to the road surface etc.

2.11 The tender price as mentioned in Clause 5 of ITT shall include all the above listed items in the scope of the work (Clause 2.1 to 2.10).

3.0 SITE INFORMATION

3.1 WORK SITE

3.1.1 The Project site is located in/near to Salt Lake City of Kolkata (W.B). The location of the work and the general site particulars are shown in the General Arrangement Drawings enclosed in the tender document.

3.1.2 The elevated stations form part of East west Corridor of Kolkata Metro Rail Project.

3.1.3 The Contractor shall plan his works keeping in view restriction of approach and availability of space and time.

3.2 GENERAL CLIMATIC CONDITIONS

3.2.2 The area in which the work lies is coastal and mostly plain terrain. This area lies in the tropic zone and hence the climate is also tropical

3.2.3 Annual mean temperature is 26.8 °C and monthly mean temperatures varies from 19 °C to 30 °C. The recorded highest and lowest temperatures in the past 10 years are 45.8 degree Celsius and 12.4 degree Celsius respectively.

3.2.4 Summer season is from March to June and winter season is from November to Feb.

3.2.5 Mean average annual rainfall in the area over a five-year period is of the order of 1235 mm, a good portion of which is concentrated during July to mid September, when about 75% of the annual rainfall occurs. The heaviest rainfall recorded during 24-hour period is 391 mm.

3.3 SEISMIC ZONE

Kolkata falls in Seismic Zone III.