

## NOTICE INVITING TENDER (NIT)

### 1.1 GENERAL

#### 1.1.1 Name of Work:

Delhi Metro Rail Corporation (DMRC) Ltd. Invites Open tenders from eligible applicants, who fulfil *qualification criteria* as stipulated in clause 1.1.3 of NIT, for the work, “**Contract CC-11 : Construction of Four Elevated Station buildings including architectural finishing, water supply, sanitary installation and external development work, etc. at Old Faridabad, Ajrona, Faridabad New Town & YMCA Chowk on Badarpur-Faridabad corridor of Delhi MRTS Phase-III**”. The brief scope of the work and site information is provided in NIT clause 2.0.

#### 1.1.2 Key details:

Approximate Cost of Work	₹90.00 Crores
Tender Security Amount	₹90 Lakhs
Completion period of the Work	18 (Eighteen) Months
Tender Documents on Sale	From 15/12/2011 to 26/12/2011 (between 09:00 Hrs to 17:30 Hrs) on working days
Cost of Tender Documents	21,000/- (inclusive of 5% VAT) (Demand Draft in favour of “Delhi Metro Rail Corporation Ltd”) payable at New Delhi.
Last Date of Seeking Clarification	02/01/2012 (up to 15:00 hrs)
Pre-bid Meeting	03/01/2012 at 11:00 Hrs.
<b><u>Date of issuing addendum</u></b>	<b><u>10/01/2012</u></b>
<b><u>Date &amp; Time of Submission of Tender</u></b>	<b><u>25/01/2012 (up to 15:00 hrs)</u></b>
<b><u>Date &amp; Time of opening of Tender</u></b>	<b><u>25/01/2012 at 15:05 hrs</u></b>
Authority and Place for purchase of Tender Documents, seeking Clarifications, Pre-bid meeting and Submission of completed tender documents & Opening of tender	Chief General Manager (Tender), Delhi Metro Rail Corporation, 5th floor, A-Wing, Metro Bhawan, Fire Brigade Lane, Barakhamba Road, New Delhi –110 001

#### 1.1.3 QUALIFICATION CRITERIA :

### 1.1.3.1 Eligible Applicants :

The tenders for this contract will be considered only from those tenderers (proprietorship firms, partnerships firms, companies, corporations, consortia or joint ventures) who meet requisite eligibility criteria prescribed as under :

- i. In the case of a JV or Consortium, all members of the Group shall be jointly and severally liable for the performance of whole contract.
- ii. A non-Indian firm is permitted to tender only in a consortium arrangement or Joint Venture with their wholly owned Indian subsidiary registered in India under Companies Act -1956 or any other Indian firm having minimum participation interest of 26%.
- iii. Tenderers shall not have a conflict of interest. All Tenderers found to have a conflict of interest in this tender process shall be disqualified. Tenderers shall be considered to have a conflict of interest, if:
  - (a) One firm applies for tender both as an individual firm and in a Group.
  - (b) If Tenderers in two different applications have controlling shareholders in common.
  - (c) Submit more than one application in this tender process.
  - (d) If the Tenderer has participated as a consultant in the preparation of the design or technical specifications of the works that are the subject of this tender.
- iv. A firm, who has purchased the tender document in their name, can submit the tender either as individual firm or in joint venture/Consortium. However in case of JV/consortium :
  - a) Lead partner must have a minimum of 26% participation in the JV/Consortium.
  - b) Partners having less than 26% participation will be termed as non-substantial partner and will not be considered for evaluation which means that their financial soundness and work experience shall not be considered for evaluation of JV/Consortium.
  - c) In case of JV/Consortium, change in constitution or percentage participation shall not be permitted at any stage after their submission of application otherwise the applicant shall be treated as non-responsive.
- v. Tenderer must not have been blacklisted or deregistered by any central / state government department or public sector undertaking. Also no work of the tenderer must have been rescinded by client after award of contract during last 5 years. The tenderer should submit undertaking to this effect in Performa of **Annexure-4**.
- vi. Tenderer (any member in case of JV/consortium) must not be involved in frequent litigations during last 5 years. If otherwise, then the reasons and the details for the same need to be submitted. The tenderer should submit undertaking to this effect in Performa of **Annexure-5**.

- vii. Tenderer (any member in case of JV/consortium) must not have paid liquidated damages of 10% or more of the contract value in a contract due to delay or must not have been penalised due to any other reason during last five years. If otherwise, then the reasons and the details for the same need to be submitted. The tenderer should submit undertaking to this effect in Performa of **Annexure-6**.
- viii. Tenderer (any member in case of JV/consortium) must not have suffered bankruptcy/insolvency during the last 5 years. If otherwise, then the reasons and the details for the same need to be submitted. The tenderer should submit undertaking to this effect in Performa of **Annexure-7**.

#### 1.1.3.2 Eligibility Criteria for the tenderers is given below :

**A) Work Experience :** The tenderers will be qualified only if they have completed work(s) during last **Seven(7)** years ending **31.12.2011** as given below :

- (i) One similar work of **civil construction of framed structured multistoried building/Metro Stations/any other concrete civil structure** of total value of **₹72.0 Crores or more, 'OR'**
- (ii) Two similar works of **civil construction of framed structured multistoried building/Metro Stations/any other concrete civil structure** of total value of **₹45.0 Crores or more, 'OR'**
- (iii) Three similar works of **civil construction of framed structured multistoried building/Metro Stations/any other concrete civil structure** of total value of **₹36.0 Crores or more.**

**At least one of the above works must be on pile foundation or else in addition to above works, the tenderer must have executed any other work involving pile foundation (details of the same to be submitted).**

Notes :

- (a) The tenderer shall submit details of work executed by them in the Performa of **Annexure - 1** for the works to be considered for qualification of work experience criteria. 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.*** In case the work is executed for private client, copy of work order, bill of quantities, bill-wise details of payment received certified by C.A., T.D.S certificates for all payments received and copy of final/last bill paid by client shall be submitted.
- (b) Value of successfully completed portion of any on-going work up to **31.12.2011** will also be considered for qualification of work experience criteria.
- (c) For completed works, value of work done shall be updated to **31.12.2011** price level assuming 5% inflation for Indian Rupees every year and 2% for foreign currency portions per year.
- (d) In case of joint venture / consortia, full value the work, if it was done by the same joint venture or the entire work was done fully by any of the substantial member, shall be considered. If the work was done in other JV formation, the value in proportion of the

participation in that JV by the member (only substantial member) shall be considered. No evaluation of work done by any non-substantial member shall be done.

**B) Financial Standing:** The tenderers will be qualified only if they have minimum financial capabilities as below:

- (i) **T<sub>1</sub>- Working Capital** (Liquidity and Bankers References): Working Capital (Net Cash Flow) of the tenders during last audited financial years should be  $\geq$  ₹8.5 Crores.
  - In case of JV/consortium, the requirement of working capital is to be distributed between members as per their percentage participation and every member should satisfy the minimum requirement.
  - For example, Let member-1 has percentage participation=M and member-2 has percentage participation=N. If minimum working capital required is 'W' then working capital required of member-1  $\geq$ (W.M)/100 and working capital required of member-2  $\geq$ (W.N)/100.
- (ii) **T<sub>2</sub>- Profitability** :Profit before Tax should be Positive in at least 2 (two) years, out of the last five financial years.
  - In case of JV/consortium, the profit before tax of the lead member of the JV/consortium will be considered. The Profitability of only lead member shall be evaluated.
- (iii) **T<sub>3</sub> - Net Worth:** Net Worth of tenderer during last audited financial year should be  $\geq$  ₹12.0 Crores.
  - In case of JV/consortium, the net worth will be based on the percentage participation of each member.
- (iv) **T<sub>4</sub> - Annual Turnover** : The average annual turnover from construction works of last five financial years should be  $\geq$  ₹48.0 crores.
  - In case of JV/consortium, the average annual turnover will be based on the percentage participation of each member.

**Notes :**

- a) Financial data for latest 5 years has to be submitted by bidders along with the audited Balance Sheets. In case audited Balance Sheet of the last Financial Year i.e. 2010-11 is not made available by the bidder, he has to submit an affidavit certifying that the Balance Sheet for the financial year 2010-11 has actually not been audited so far along with Statutory Auditor's certificate in this regard. In such a case the financial data of previous 4 years i.e. 2006-07, 2007-08, 2008-09 & 2009-10 will be taken into consideration for evaluation.
- b) Foreign Tenderers, in whose country calendar year is also the financial year, may submit all relevant data for the last 5 years i.e. 2006, 2007, 2008, 2009 and 2010.
- c) **If Audited Balance Sheet of any other year than the last financial year is not submitted, the application will be considered as Non-responsive.**

- d) For completed works, value of work done shall be updated to 31.12.2011 price level assuming 5% inflation for Indian Rupees every year (compounded annually) and 2% for foreign currency portions per year(compounded annually).

#### 1.1.3.3 Bid Capacity Criteria :

**Bid Capacity** : The tenderers will be qualified only if their available bid capacity is more than the approximate cost of work as per NIT. Available bid capacity will be calculated based on the following formula :

$$\text{Available Bid Capacity} = 2 * A * N - B$$

Where,

A = Maximum of the value of construction works executed in any one year during the last five financial years (updated to 31.03.2011 price level assuming 5% inflation for Indian Rupees every year and 2% for foreign currency portions per year).

N = No. of years prescribed for completion of the work

B = Value of existing commitments (**as on 31.12.2011**) for on-going construction works during period of **18 months w.e.f.01.01.2012**.

Notes :

- (e) Financial data of the construction work done for latest last five financial years has to be submitted by the tenderer in **Annexure - 3A** along with audited financial statements. The financial data in the prescribed format shall be certified by the Chartered Accountant with his stamp and signature.
- (f) Value of existing commitments for on-going construction works during period of **18 months w.e.f. 01.01.2012** has to be submitted by the tenderer in **Annexure - 3B**. These data shall be certified by the Chartered Accountant with his stamp and signature.
- (g) In the case of joint venture / consortia, bid capacity of each member will be computed applying above formula and combined bid capacity of the joint venture / consortia will be weighted average of the individual bid capacity of the members as per their percentage participation.

The tender submission of tenderers, who do not qualify the *eligibility criteria* & bid capacity criteria stipulated in the clauses 1.1.3.2 to 1.1.3.3 above, shall not be considered for further evaluation and therefore rejected. The mere fact that the tenderer is qualified as mentioned in sub clause 1.1.3.2 to 1.1.3.3 shall not imply that his bid shall automatically be accepted. The same should contain all technical data as required for consideration of tender prescribed in the ITT.

#### 1.1.4 The Tender documents consist of:

##### Volume 1

Notice Inviting Tender (NIT)

Form of Tender (FOT)

Instructions to Tenderers (ITT)

Special Conditions of Contract (SCC)

**Volume 2**

Technical Specifications

Employer's Requirement and Appendices

**Volume 3**

Bill of Quantities (BOQ)

**Volume 4**

General Conditions of Contract (Design & Build)

Condition of Contract on Safety, Health & Environment (SHE Ver. 1.2)

**Volume 5**

Tender Drawings

- 1.1.5** The contract shall be governed by the documents listed in para 1.1.4 above and CPWD, MORTH & IRC Specifications. CPWD, MORTH & IRC Specifications may be purchased from the market.
- 1.1.6** The tenderers may obtain further information/ clarification, if any, in respect of these tender documents from the office of Chief General Manager (Tender), Delhi Metro Rail Corporation, 5<sup>th</sup> floor, Metro Bhawan, Fire Brigade Lane, Barakhamba Road, New Delhi –110 001.
- 1.1.7** All tenderers are hereby cautioned that tenders containing any material deviation or reservations as described in Clause C2.2 (m) of "Instructions to Tenderers" and/or minor deviation without quoting the cost of withdrawal shall be considered as non-responsive and is liable to be rejected.
- 1.1.8** Late tenders (received after date and time of submission of bid) shall not be accepted under any circumstances.
- 1.1.9** Tenders shall be valid for a period of 180 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.
- 1.1.10** DMRC 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 DMRC for rejection of his proposal.

**Chief General Manager (Tender)  
Delhi Metro Rail Corporation Ltd**

## SCOPE OF WORK

### 2.0 GENERAL

The work content against the item wise rate (as per BOQ) of the work involves Construction of the complete 4 Elevated Stations at following locations including Station Building, property Development floors complete.

1. *Old Faridabad, (Non Typical)*
2. *Ajronda, (Typical)*
3. *Faridabad New Town (Typical)*
4. *YMCA Chowk (Typical)*

All the Design of permanent Works is being undertaken by a Designer under arrangement of DMRC, while design of temporary works and working drawings (bar bending schedules, etc...) and all non structural works will be in the scope of Contractor. Broad scope of work of Civil Contractor is given below:

### 2.1 Work Contents

- 2.1.1 Detailed survey of the alignment for station and as per GAD and Construction of following major components of stations and related works:
- (i) Foundation structures (open/raft or pile)
  - (ii) Station structure including track supporting structure, column, beams, slabs, staircase, parapets, gutters, and other structures as shown in the elevations, cross sections and floor plans and other tender drawings.
  - (iii) Elastomeric bearing on standard spans including bearing pedestals.
  - (iv) Lift shafts, escalators pits and other fixtures.
  - (v) Inserts for fixing roofs, fixtures for service requirement as per DMRC design and detailing. Tender drawings shall be considered as DMRC's drawing and detailing for the works and the Contractor shall prepare shop drawings accordingly.
  - (vi) Expansion joints.
  - (vii) Provision for ducts, cut-outs, concealed pipes, race ways, etc. required for services and will be provided by the civil Contractor as per drawing.
  - (viii) Waterproofing of terrace, water tanks and other required area.
  - (ix) Underground water tank, pump house and fixtures, and water proofing

- (x) Earth filling with compaction with Contractor's own earth at ground floor level of station area as shown in the tender drawings.
- (xi) Earthing arrangements, ground water recharge pits minimum two at each station, two bore wells, and sewage disposal arrangements.

2.1.2 There is possibility of some of the items not getting mentioned in the above list of works of station. Contractors are requested to go through the tender drawings also in details as the works mentioned above as well as indicated in the tender drawings would be considered inclusive in the scope of work.

2.1.3 In addition to the foregoing, the scope of works shall include but not limited to the following:

- a. Alignment plans (both vertical and horizontal) and typical pier locations would be provided by the DMRC to the Contractor. Utility identification at foundation location will be done by the Contractor and in case utility(s) is encountered or obligatory requirements are to be met, the Contractor would bring it into the notice of Engineer, who may change the span configuration at such location out of the standard spans configuration provided in the tender drawing to save the utility(ies) or to meet the obligatory requirements within the accepted price by Engineer. The shifting of the utility (ies) would be undertaken only in exceptional circumstances where in the opinion of the Engineer no other option is available. Cost of such utility shifting will be paid separately under relevant item of BOQ
- b. The contractor shall liaise with Local authorities like Forest Department, National Highway Authority of India, HUDA, CPWD, PWD, MCD, NDMC, forest department, Water, Electricity and Telephone service providers etc. regarding cutting/transplantation of trees, dismantling of roads, shifting of utilities/supporting of utilities as the case may be and Traffic Police regarding traffic management during launching and getting all necessary permissions and clearances.
- c. Site clearance and dismantling of obstructions etc., before commencement of work as specified or as directed;
- d. Preparing working drawings for various components of the works and obtaining approval in respect thereof from the Engineer, inclusive of incorporation of all modifications, alterations, changes, etc. that may be required to be carried as directed;
- e. True and proper setting out and layout of the Works, bench marks and provision of all necessary labour, instruments and appliances in connection therewith as specified or as directed;
- f. The OHE & signalling structures themselves are excluded from the scope of the tender, but civil works required for fixing the structures such as inserts are included, and shall be done in co-ordination with DMRC. The necessary arrangements shall form part of the total work;

- g. Conducting load test on piles as per IS-2911-Part IV and girders as per IRS-CBC-1997;
  - h. All aspects of quality assurance, including testing of materials and other components of the work, as specified or as directed;
  - i. The Contractor has to ensure cleanliness of the roads and footpaths by deploying man power for the same. The Contractor shall have to ensure proper brooming, cleaning and washing of roads and footpaths on all the times throughout the entire stretch till the currency of the contract including disposal of sweepage. Nothing extra shall be payable on this account;
  - j. Day to day cleaning of worksite throughout the execution period.
  - k. Clearing of site and handing over of all the Works, as specified or as directed;
  - l. Maintenance of the completed Work during the period as specified;
  - m. Submission of completion (i.e. 'As-Built') drawings and other related documents as specified;
- 2.1.4 Any other item of work as may be required to be carried out for completing the construction of elevated structure of specified length including all necessary interfaces works with DMRC in all respects in accordance with the provisions of the Contract and/or to ensure the structural stability and safety during and after construction.
- The value of the work shall be on item rate basis as accepted in letter of acceptance subject to such additions thereto or deductions there from as may be made under the provisions of the Contract.
- 2.1.5 As per BOQ, Contractor shall be responsible for tree cutting and (or) transplantation along the alignment. Permission for cutting/transplantation will be arranged by DMRC.
- 2.1.6 Demolition of RCC framed structures, brick masonry buildings including basement etc as existing at site without making damage to adjacent structures, utilities and taking away all the debris and released materials etc.
- 2.1.7 Traffic barricade with blinker, reflective tapes and other necessary traffic signage should be provided wherever required as per detailed plan. Temporary traffic diversion for smooth flow of traffic will be provided during construction including necessary traffic signs, repairs to diverted route/services lanes if required. Traffic marshals shall be deployed for the period of diversion to guide the road users and to avoid traffic congestion. Restoration of diverted route in original condition etc. shall be done by Contractor.
- 2.1.8 Boundary wall as per approved design and drawing around circulation area of stations.

2.1.9 Road works, landscaping, utility diversions, and other miscellaneous works to be paid under shall be confirmed.

## **Utilities**

2.1.10 Utility identification at foundation locations will be done by the contractor and in case utility(s) is encountered or obligatory requirement is to be met out, the contractor shall inform Engineer for change in configuration at such location out of the standard spans configuration provided in the tender drawing to save the utility(ies) or to meet obligatory requirements within the accepted price. Shifting of utility(ies) would be done only in exceptional cases where in the opinion of the Engineer no other option is available. Contractor shall be paid for diverting the utilities under Scheduled rate of BOQ. No payment shall however be made for supporting the utilities during course of work.

2.1.11 The utilities are to be diverted with proper liaison and approval of the utility owning agencies. The utilities which are not be diverted but require supporting, proper supporting be done so that they are not damaged along their branches. Precautions to be taken while handling the utilities are mentioned as under;

- (i) Utilities must not be damaged at any cost. If due to some or the other reason, mishap occurs, it should be rectified immediately by the Contractor at his own cost under intimation of DMRC.
- (ii) Till rectification of the damaged trunk sewers, the Contractor shall arrange substitute arrangement for sewer pumping and its disposal as per directions of concerned civic agency. The similar arrangement be done for other utility.
- (iii) The manholes of Trunk(T)/Sewers should not be covered under the extended portion beyond the structure (crushing barrier), etc. as these may create hindrances to the annual de-silting/cleaning of sewer lines.
- (iv) Sufficient distance of foundation from outer edge of T/ Sewers be kept in view of further maintenance/Safety of T/Sewers.
- (v) The covers of manholes are saved from heavy machinery movement to avoid any accident/Slippage of debris in manholes etc into the T/Sewers which may cause blockage of lines. In case of damage of manhole cover & frame the same shall be replaced immediately by the Contractor at his own cost.
- (vi) Manholes of the trunk sewer should be kept freely accessible for cleaning and removal of blockages and debris should not be dumped over these manholes.
- (vii) Branch sewer connections which are connected with the T sewers should also be taken care of. If the same are damaged, the same should be restored immediately on priority.

2.1.12 The construction of structures will have to be planned in such a manner that they do not obstruct or interfere with the existing roads/railways and other utilities. Where work is required to be carried out at locations adjacent to such roads/railways, utilities, structures, monuments etc. suitable safety and protection arrangements will have to be ensured for which nothing extra will be payable. It should be ensured that no damage is caused to any such element and Engineer/ Employer shall be indemnified against such damage at no extra cost.

## **2.2 Interface Works**

### **2.2.1 Co-ordination/co-operation with other Contractors & Agencies (External/Internal)**

- i. In addition, the Contractor shall be required to carry out various miscellaneous works as per interfacing requirements. The contractor shall carry out necessary co-ordinations with various system contractors pertaining to lift, escalator, traction power supply, signaling, telecommunication, AFC etc. for keeping provisions pertaining to cut outs, shafts, raceways, concealed conduits, other conduits, fixtures, inserts clearances etc. all complete for the scope of work.
- ii. Earthing and lighting protection wherever required
- iii. The track supporting structure will support ballast less track(long welded rail) which will be laid later by a separate contractor. Arrangements required for provision of such ballastless track will have to be incorporated in the deck, in consultation with the Engineer. Where the ballast less track concrete is to be laid the top of the deck slab, as directed by the Engineer, the contractor will make suitable arrangements for proper keying up further concrete layers and/or casting blocks which will form part of track work to be done by a separate contractor.
- iv. The contractor shall cooperate with the other contractors appointed by the employer so that the work proceeds smoothly to the satisfaction of engineer. The contractor shall plan & execute the works with proper interfacing with other contractors.
- v. NOC & Approval of schemes of Diversion of Utilities from the concerned regulatory / statutory / Local Authority is the responsibility of the Contractor.
- vi. The contractor shall attend regular coordination meetings convened by the employer/engineer for interface and adhere to the decisions taken in the meeting.

- vii. Access will be provided to the staff of the other Contractor appointed by the employer for carrying out their works and bringing materials and equipments at the site. However, the security of materials and Equipments brought at the site will be the responsibility of the respective Contractors.
- viii. The contractor shall, in carrying out his coordination responsibility, raise in good time and provide sufficient information for the employer to decide on any disagreement with other contractor. If the contractor despite having taken all reasonable efforts cannot resolve such disagreement then the decision of the Engineer shall be final and binding on the contractor.

### **2.2.2 Interface with E&M Works**

E & M construction works of station are to be executed by a separate E & M Contractor. The Civil Contractor shall ensure efficient Interface and Coordination with E & M Contractor concerning Electrical, Fire Fighting, and Hydraulics works etc. on site.

Such coordination responsibility of the contractor shall include the following:

- i. To obtain from the E & M Contractor information reasonably required to meet the construction target dates.
- ii. The Civil Contractor will be the coordinating entity and play major role in the interface with E & M Contractor.
- iii. E & M Contractor will make sure that he provides the updated valid documents, for the reference of the Civil Contractor in time, where E & M Contractor requires the Civil Contractor to execute work as his requirements. These documents will be the reference documents for the Interface Management being carried out by the Civil Contractor.
- iv. Where the execution of the Civil Contractor depends upon the Site management or information to be given by the E & M Contractor, the E & M Contractor shall provide correct and accurate information in time so as to enable them to meet their respective programs.
- v. It is to be ensured that all provisions for access and delivery of plant is coordinated with and reflected in the coordinated drawings for Delivery Routes. The E & M Contractor shall also ensure that all plants and equipments are delivered at mutually agreed time to allow openings to be left in the structure for such delivery in accordance with the Civil Contractor's Programmed.

- vi. E & M Contractor will ensure that the production of Working Drawings for Services to be provided in the base slab, other slabs, tunnels and structures such as earth mats, electrodes, provision of conduiting, cable support, brackets, cable trays / cable ladders, cable routing, fixture mounting, DB mounting, lighting protection, piping, fire fighting system and other works included in E & M tender is carried out in time and approval obtained from the Employers Representative. Civil Contractor shall obtain Copy of Drawings along with schedule for execution of such works including information required for any concreting/other works where electrical works is involved.
- vii. The Civil Contractor shall conduct regular meetings with the E & M Contractor as necessary to clarify particular aspects of the interfacing requirements of the works. He will also attend regular coordination meetings convened by the Employer / Engineer for Interface.
- viii. The Civil Contractor, shall in carrying out his coordination responsibilities, raise in good time and provide sufficient information for the Employer to decide on any disagreement with E & M Contractor. If the contractor despite having taken all reasonable efforts cannot resolve such disagreement, then the decision of the Engineer shall be final.
- ix. The E & M Contractor shall ensure that the presence of his qualified and experienced engineer (Chief – Co - coordinator) during Civil construction of the station to enable proper interface with Civil Contractor so as to ensure smooth completion of works.
- x. Access will be provided to the staff of the E & M Contractor for carrying out their works and bringing materials and equipments at the site. However, the security of a materials and Equipments brought at the site will be responsibility of the E & M Contractor.
- xi. Construction of Plant rooms, Ancillary building, Cable duct, sumps for seepage and sewage, provision of slope in slabs as per drainage requirements, shall be the responsibility of the Civil Contractor. Civil Contractor shall interface with E & M Contractor / other contractors regarding this.

- xii. Civil Contractor shall interface with E&M Contractor regarding cutouts to be made in structures for routing E&M services. The Civil Contractor shall provide these cutouts.

### **2.2.3 Interface with Elevator/escalator contractor**

- i. Provide Shaft structure
- ii. Provide lifting beams at the top of shafts and sumps in pits
- iii. Provide Head room structure
- iv. Providing lifting hooks at the top of lift shafts and escalator if required.
- v. Providing Intermediate support structures for escalators

### **2.2.4 Interface with Traction Power Supply Contractor**

- i. Civil Contractor shall construct appropriate passages/ trenches, ducts, cable shaft and also keep provision of crossing of various cables in the station along with walls, central column, under the platform in interface with Power Supply Contractor.
- ii. Civil Contractor shall coordinate with Power Supply Contractor in order to maintain specific Static and Dynamic clearances.
- iii. Provide earthing arrangements in viaduct segments, Pier and pier caps, railing etc.

## **2.3 Traffic Management**

The Contractor shall make the detailed traffic diversion plans in consultation with Delhi/Haryana Traffic Police. The work is to be executed with proper liaison with Traffic Police. Necessary assistance will be given by DMRC. The scheme should be such that preferably two lane of traffic on each direction of the road should be available for the smooth flow of traffic unless otherwise specific scheme is agreed by traffic police and approved by DMRC. 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 and cutting of trees/transplanting (as required), etc.

## **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 German 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 of NIT, the order of precedence will be as below:

- i) Provision in NIT
- ii) Technical Specifications,
- iii) CPWD specifications
- iv) Standard Codes of Practice.
- v) MORTH Specification for road & Bridges

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 will apply.

2.5.2 The levels, measurements and other information concerning the existing site as shown on the conceptual / layout drawings are believed to be correct, but the Contractor should verify them for himself and also examine the nature of the ground as no claim or allowance whatsoever will be entertained on account of any errors or omissions in the levels or strata turning out different from what is shown on the drawings.

## **2.6 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

## **2.7 CONSTRUCTION DEPOT & DUMPING AREA**

A plot of land of approx. 4000 Sq.m will be made available by DMRC on as is where basis within 10 Km from the work site free of cost is. This land shall be made good for such offsite activities as needed by the Contractor at no extra cost to the employer. The land shall be cleared from debris, all structures made by the contractor including, RCC footings and rafts etc. and reinstated to the line & levels and to the same conditions as existed before the work started before handing over back to the Employer within 90 days after completion of work. The final bill shall be released to the contractor after all structures from the construction depot are removed & clearance of site.

A mechanical tyre washing plant shall have to be installed by the contractor for the vehicles leaving the depot to avoid the spillage on the connecting roads.

## **2.8 TIME SCHEDULE & MONITORING OF PROGRESS**

- (i) 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 18 Months. The detailed programme in the form of a quantified bar chart or CPM network shall include all activities starting from design to completion.
- (ii) In compiling its Works Programme and in all subsequent updating and reporting, the Contractor shall make provision for the time required for co-ordinating and completing the design, testing, commissioning and integrated testing of the Works, including, inter alia, design co-ordination periods during which the Contractor shall co-ordinate its design with those of Designated Contractors, the review procedures, determining and complying with the requirements of all Government Departments and all others whose consent, permissions, authority or license is required prior to the execution of any work.
- (iii) The Contractor shall submit to the Engineer Four copies of a Monthly Progress Report (MPR), describing the progress and current status of the Works. The MPR shall address the matters set out in the Works Programme.

- (iv) The MPR shall be submitted by the end of each calendar month. It shall account for all works actually performed from twenty sixth day of the last month and up to twenty fifth day of the current month
- (v) A monthly / biweekly meeting to monitor the progress of the project shall be convened by the Engineer, Contractor's site agent and site agent of all interfacing contractors shall attend the meeting. The Employer may also be present in the meeting.

## **2.9 DELETED**

### **2.10 Contractor to Provide:**

The Contractor shall provide and maintain at site throughout the period of works the following at his own cost and without extra charge, Except for the items specified in the Bill of Quantities the cost being held to be included in the Contract Rates:

1. General works such as setting out, site clearance before setting out and on completion of works. All weather approach roads to the site office should also be constructed and maintained in good condition.
2. All labour, materials, plant, equipment and temporary works, Over head charges as well as general liabilities, obligations, insurance and risks arising out of GCC, required to complete and maintain the works to the satisfaction of the Engineer.
3. Adequate lighting for night work, and also whenever and wherever required by the Engineer.
4. Temporary fences, barricades, guards, lights and protective work necessary for protection of workmen, supervisors, engineers, General public and any other persons permitted access to the site. Contractor shall provide proper signages as directed.

All fences, barricade shall be painted with colour shades as specified by the Engineer. The barricading should be of adequate height to ensure visual obstruction of work from public view.

5. All equipment, instruments, labour and materials required by the Engineer for checking alignment, levels, slopes and evenness of surfaces measurements and quality etc.
6. Design mixes and testing them as per relevant clauses of specifications giving proportion of ingredients, sources of aggregates and binder along with accompanying trial mixes. Test results to be submitted to the Engineer for his approval before adoption on works.

7. Cost of Preparation and compliance with provision of a quality assurance control programme.
8. Cost of safe guarding the environment.
9. A testing laboratory as specified by the Engineer equipped with the following minimum apparatus, materials and competent trained staff required for carrying out tests, as specified in the relevant sections of the specifications: -
  - (i) 1 Set of standard sieves for testing grading of sand with mechanical sieve shaker.
  - (ii) Sieves with openings respectively of 4.75mm, 10mm, 20mm, 25mm, 30mm for testing and grading of aggregates.
  - (iii) Weighing Balance of capacity up to 10 Kg. reading up to 5 gm.
  - (iv) Electric Thermostat controlled oven and pans for drying of sand and aggregates.
  - (v) Glass measuring flasks of 1/2, 1 liter & 2 liter capacity.
  - (vi) Flask for determining moisture content of sand.
  - (vii) Slump cone with rod and V B Apparatus, flow table to measure slump or DIN Specifications.
  - (viii) Apparatus to measure permeability of concrete as per Appendix 1700/II of MOST Specifications.
  - (ix) Minimum 24 Nos. steel moulds for 150mm x 150mm x 150mm concrete test cubes. It may be necessary to provide more steel cube moulds depending upon concreting programme.
  - (x) 25mm dia vibrator for compaction of concrete in test cubes and also vibrating table.
  - (xi) Concrete cube testing machine of 200 tonnes capacity with 3 dial gauges electrically operated.
  - (xii) Work benches, shelves, desks, sinks and any other furniture and lighting as required by the Engineer.
  - (xiii) Abrasion Flakiness & Impact testing Equipment for testing coarse aggregate.
  - (xiv) Silt Testing Equipment.
  - (xv) Any other equipment specified by Engineer.

## **2.11 Key dates**

The key dates for major activities are mentioned in Table 1 including access to the site for DMRC and other designated contractors

**Table-1**  
**CONTRACT KEY DATES AND COMPLETION DATE**

<b>Key Dates</b>	<b>Date</b>	<b>Description of Stage</b>
Key Date 1	4 Weeks from Commencement	Submission of construction programme, establishing site office
Key Date 2	8 Weeks from Commencement	Installation of Batching Plant and commencement of drilling/boring of piles.
Key Date 3	15 Months from commencement	Completion of building structures and access to PEB, Track and E&M contractors.
Key Date 4	16 months from commencement	Part finishing of building including all operational rooms, ASS and access to S & T and IT contractors.
Taking Over Date	18 months from commencement	Completion of the Entire Works as per the contract <b>(Key Date 5)</b> and issue of Taking over Certificate by the Engineer.

**2.12 The tender price as mentioned in clause C2.5 of ITT shall include all the above listed items in the scope of the work. (Clause 2.1 to 2.11).**

### **3.0 SITE INFORMATION**

- 3.1 The project site is located in the Faridabad city of Haryana state. The location of the work and the general site particulars are shown in the General Arrangements Drawings enclosed in the tender documents.
- 3.2 The Tenderer should be prepared to deal with potential difficulties of excavating in mixed ground consisting of silt, weathered but hard quartzite as well as occasional hard rock.
- 3.3 The Contractor shall plan his works keeping in view restriction of approach and availability of space and time.
- 3.4 The area in which the work lies is urban terrain.
- 3.5 The recorded highest and lowest temperatures in the past 10 years are 45.8 degree Celsius and 2.4 degree Celsius respectively.
- 3.6 Summer season is from April to June and winter season is from November to March. Mean average annual rainfall in the area over a five-year period is of the order of 735 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 191 mm.
- 3.7 Faridabad falls in Seismic Zone IV. Earthquake of maximum magnitude 8 on Modified Mercalli scale has been experienced in the past, in the region.