



IT EXPRESSWAY LTD. (ITEL)

(A Special Purpose Vehicle)

**”Supply and Fixing of Safety Roller Barrier (SRB) at
Vilampur at km:101/800, 102/800 in East Coast Road,
Chennai, Tamil Nadu (CSR work)”**

BID DOCUMENT

Section I	:	Instructions to Bidders
Section II	:	Forms of Bids & Forms of Securities
Section III	:	Conditions of Contract
Section IV	:	Contract Data
Section V	:	Bill of Quantities
Section VI	:	Drawings
Section VII	:	Technical Specifications

February, 2018

ITEL

**M/s IT Expressway Limited,
No.171, TNMB Building, II Floor,
Tamil Nadu Maritime Board building,
South Kesavaperumal Puram,
Pasumpon Muthuramalingam Road (Greenways Road),
Raja Annamalai Puram, Chennai 600 028
Phone No.: 2495 2800 / 3800, Fax No.: 2493 3800**

IT EXPRESSWAY LIMITED (ITEL)

(A Special Purpose Vehicle)

”Supply and Fixing of Safety Roller Barrier (SRB) at Vilampur at km:101/800, 102/800 in East Coast Road, Chennai, Tamil Nadu (CSR work)”

Schedule of Bidding Process

Period of Issue of Tender Document	15th February, 2018 to 01st March, 2018
Bid Document Price	Rs.15,000/- DD in Favour of M/s. IT Expressway Limited (ITEL) payable at Chennai
Earnest Money Deposit (EMD) / Bid Security	Rs.82,000/- DD in Favour of M/s. IT Expressway Limited (ITEL) payable at Chennai
Last Date and Time for Receipt of Bids	02nd March, 2018 at 15.00 Hrs
Bid – Opening Date and Time	02nd March, 2018 at 15.30 Hrs

IT EXPRESSWAY LIMITED (ITEL)

(A Special Purpose Vehicle)

**”Supply and Fixing of Safety Roller Barrier (SRB) at
Vilampur at km:101/800, 102/800 in East Coast Road,
Chennai, Tamil Nadu (CSR work)”**

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Section VI	Drawings
Section VII	Technical Specifications



IT Expressway Ltd.

INVITATION FOR BIDS

Tender No.:ITEL/CD/002/2018

Dated 15.02.2018

Bids are invited by **M/s.IT Expressway Ltd. (ITEL)** for implementation of the following work in **East Coast Road, Chennai, Tamil Nadu. (CSR work)**

S. No.	Description of Work	Indicative value of work (Rs)	EMD / Bid Security Value (Rs)	Period of Completion
1	Supply and Fixing of Safety Roller Barrier (SRB) at Vilampur at km:101/800, 102/800 in East Coast Road, Chennai, Tamil Nadu (CSR work)	82,00,000/-	82,000/-	01 Month

Bid document can be obtained between **10.00 hrs and 17.00 hrs** on all working days from **15th February, 2018** to **01st March, 2018** at the address for communication mentioned below on payment of Non-refundable fee of **Rs.15,000/- (Rupees Fifteen Thousand Only)** by way of a Demand Draft drawn in favour of **M/s IT Expressway Ltd. (ITEL)** payable on any scheduled bank in **Chennai**. Alternatively, the Bid document can also be downloaded from the website www.tnrdc.com and in such cases, the bidders will be required to pay the non-refundable fee as mentioned above, at the time of submission of Bids. The bids shall be submitted through **Single Cover System (Technical and Financial Bids in the same envelope)**.

Sealed bids should reach at the following address not later than **15.00 hrs on 02nd March, 2018** which will be opened on the same day at 15.30 hrs.

Address for communication

Chief General Manager

M/s. IT Expressway Ltd. (ITEL)

No.171, II Floor, Tamil Nadu Maritime Board Building,

South Kesavaperumal Puram,

Pasumpon Muthuramalingam Road,

(Near Greenways Road MRTS Station),

Raja Annamalai Puram, Chennai 600 028

Phone: 91-44-2495 2800 / 3800,

Fax : 91-44-2493 3800

E-Mail: tenders@tnrdc.com

Web : www.tnrdc.com

Section I

Instructions to Bidders

SECTION 1: INSTRUCTIONS TO BIDDERS

A: GENERAL

1. Scope of Bid

1.1 Background

- (a) **M/s Tamil Nadu Road Development Company Ltd. (TNRDC)** is promoted by Tamil Nadu Industrial Development Corporation Ltd. (TIDCO) and TIDEL Park Ltd. The existing ECR between Km 22/300 (Kudimiyandithopu) and Km 135/500 (up to Tamil Nadu State Border) is maintained as a Toll road by TNRDC.
- (b) Bids are invited by **M/s. IT Expressway Ltd. (ITEL)** for **“Supply and Fixing of Safety Roller Barrier (SRB) at Vilampur at km:101/800, 102/800 in East Coast Road, Chennai, Tamil Nadu (CSR work)”**

The total estimated cost is **Rs.82,00,000/-**.

- 1.1.2 The successful bidder will be expected to complete the work within **01 month** period from the date of entering into Contract Agreement.
- 1.1.3 The execution of the above works is proposed to be on **“Item Rate Contract basis”**. The approximate quantities for all items of works to be executed are furnished in the Bill of Quantities – Section - V of the bidding document.

1.2 Scope of works

- 1.2.1 The broad scope of Improvement Works to be carried out by the selected bidder includes the following components, but is not limited to:

“ Supply and Fixing of Safety Roller Barrier (SRB) at Vilampur at km:101/800, 102/800 in East Coast Road, Chennai, Tamil Nadu (CSR work)”

The details of the work are as follows:

Description of Work	Indicative value of work (Rs)	EMD / Bid Security Value (Rs)	Period of Completion
Supply and Fixing of Safety Roller Barrier (SRB) at Vilampur at km:101/800, 102/800 in East Coast Road, Chennai, Tamil Nadu (CSR work)	82,00,000/-	82,000/-	01 Month

- Other works and services as may be indicated in the contract.

The Non Refundable Bid Document Cost for the work is **Rs.15,000/- (Rupees Fifteen Thousand Only)** as indicated in Clause 4.1. EMD should be attached for the work as given in Clause 15.

Any bid not accompanied by the Bid Document duly signed in all pages and acceptable Bid document Cost & EMD, shall be summarily rejected by the Employer as **Non- Responsive**.

Throughout this Bidding document, the term ‘bid’ and ‘tender’ and their derivatives (bidder/ tenderer, bid/ tender, bidding/ tendering, etc.) are synonymous.

2. Eligible Bidders

To be qualified for award of the contract, the Bidder shall provide the following evidence to the Employer of their capability and adequacy of resources to carry out the contract effectively.

- (i) Deleted.
- (ii) Should have adequate labour resources / link with manpower agencies to supply the required labourers and equipment for the work.

- (iii) The Bidder should have **GST No., PAN No. & ESI/Workmen Compensation Policy and EPF code**. However, the Successful bidder has to furnish **GST No, PAN No. & ESI/Workmen Compensation Policy and EPF code subsequent to which payment for the work done will be released**.
- (iv) The bidder should remit workmen compensation cess at the rate of 1% on the estimate amount as per notification under sub-section (1) of section 8-A of the Tamil Nadu Manual workers (Regulation of Employment and Conditions of Work) Act, 1982 (Tamil Nadu Act 33 of 1982) the Governor of Tamil Nadu, in suppression of the Labour and Employment Labour and Employment Department Notification No. II (2)/LE/1420(b-1)/97, published at page 1 of part-II – Section 2 of the Tamil Nadu Government Gazette Extraordinary dated the 2nd July 1997 as contribution to the fund constituted for the benefit of the manual workers under employment in construction or maintenance of dams, bridges, roads or in any building operations under section 3 of the said Act before execution of the Agreement as per the format prescribed in appendix 3
- 2.1 Bidders shall not be under a declaration of ineligibility or blacklisted for corrupt and fraudulent practices or poor quality/ delayed implementation of any work by the Government of India (GoI), Government of Tamil Nadu (GoTN), other State Governments or any other agencies and/ or Statutory Authorities.

3 Deleted

4 Cost of Bid document and Bidding

- 4.1 The Bid document cost for the work is **Rs.15,000/- (Rupees Fifteen Thousand Only)** as indicated in the Invitation for bids. Any bid not accompanied by the bid document duly signed in all pages and the acceptable Bid document cost shall be rejected by the Employer as a **Non-Responsive Bid**.
- 4.2 The bidder shall bear all costs associated with the preparation and submission of his Bid and the Employer will in no case be responsible and liable for such costs, regardless of the conduct or outcome of the tendering process.

5 Site Visit

The Bidder shall prior to submitting the Bid for the work, at his own responsibility and risk is encouraged to visit and examine the Site of Works and its surroundings and obtain all information that may be necessary for preparing the Bid and entering into a contract for the work. The costs of visiting the Site shall be at the Bidder's own expense.

B. BIDDING DOCUMENT

6 Content of Bidding Document

- 6.1 The Bidding Document comprises the documents listed below and should be read in conjunction with any addenda/amendment issued in accordance with Clause 9.
- | | | |
|-----|-------------|------------------------------------|
| (a) | Section I | Instructions to Bidders |
| (b) | Section II | Forms of Bid & Forms of Securities |
| (c) | Section III | Conditions of Contract |
| (d) | Section IV | Contract Data |
| (e) | Section V | Bill of Quantities (BoQ) |
| (f) | Section VI | Drawings |
| (g) | Section VII | Technical Specifications |
- 6.2 The Bidder is expected to examine carefully all instructions, qualification information, Conditions of Contract, Contract Data, Technical specifications, forms, BoQ, drawings in the Bid Document. Failure to comply with the requirements of Bid Document shall be at Bidder's own risk. Pursuant to Clause 25.2, bids which are not substantially responsive to the requirements of the Bid Document shall be rejected.

7. Deleted
8. Deleted

9 Amendment/Addendum of Bidding Document

- 9.1 Before the deadline for submission of bids, the Employer may modify the bidding documents by issuing addenda.
- 9.2 Any addendum thus issued shall form part of the bidding documents and shall be communicated in writing or by post or fax or e-mail to all the purchasers of the bidding documents and it will also be uploaded in the website. It is the bidder's responsibility (those who download from the website) to keep track of the website specified in the NIT (Notice Inviting Tender) for any addendum. The addendum of the bidding document will not be notified in the newspaper. Prospective bidders shall acknowledge receipt of each addendum by post or fax to the Employer.
- 9.3 To give the prospective bidders reasonable time to take an addendum into account in preparing their bids, the Employer may, at his discretion, extend the deadline for submission of bids, in accordance with Sub-Clause 19.2.

C. Preparation of Bids

10. Language of the Bid

- 10.1 The Bid and all correspondence and document related to the bid exchanged between the Bidder and the Employer shall be written in **English** language.

11. Documents Comprising the Bid

- 11.1 The bid shall be prepared and complete in accordance with the provisions of Bid Document and shall be submitted properly filled in, signed and initialled as appropriate.
 - (i) Earnest Money Deposit (EMD) as per Clause 15.1.
 - (ii) Bid Document and its cost as per clause 4.
 - (iii) Letter of Application and Letter of Financial Bid according to Section-II of Bid Document and
 - (iv) Bill of Quantities as given in Section-V of Bid Document

- 11.2 The bid must be in a bound form with pages numbered serially and by giving an index of submissions. The forms and schedules given in Section-II, and Section-V shall be filled in without exception and without any variation, both in respect of form and contents. **No bid shall be submitted un bound and in loose papers.**

- 11.3 All the addenda issued should be properly incorporated.

12. Bid Prices

- 12.1 Unless stated otherwise in the bidding documents, the contract shall be for the whole work or parts thereof as described in Sub-Clause 1, based on the quoted rates in Bill of Quantities submitted by the Bidder.

- 12.2 The bidder shall fill in rates and prices on unit basis (both in figures and words) including taxes as applicable for all items of the works described in the Bill of Quantities along with total bid price (both in figures and words). Items for which no rate or price is entered by the bidder will not be paid for by the Employer when executed and shall be deemed covered by the other rates and prices in the Bill of Quantities. Corrections, if any, shall be made by crossing out, initialling, dating and rewriting.

- 12.3 All duties, taxes as applicable (including GST), fees, tolls, royalties, cess and octroi, insurance, contribution to labour welfare fund, & ESI / Workmen Compensation Policy and EPF code and other levies payable by the contractor under the contract, or for any other cause shall be included in the rates, prices and total Bid Price submitted by the Bidder.
- 12.4 The rates and prices quoted by the Bidder shall be fixed for the duration of the Contract and shall not be subject to adjustment on any account.

13. Currencies of Bid and Payment

The unit rates and the prices shall be quoted by the bidder entirely in Indian Rupees only.

All payments shall be paid in Indian Rupees only.

14. Bid Validity

- 14.1 Bids shall remain valid for a period of **90 days (Ninety days)** after the deadline date for Bid submission as specified in Clause 19. A bid valid for a shorter period shall be rejected by the Employer as **Non-Responsive**.
- 14.2 In exceptional circumstances, prior to expiry of the original time limit, the Employer may request the bidders to extend the period of validity for a specified additional period. The request and the bidder's responses shall be made in writing or by cable. A bidder may refuse the request without forfeiting his bid security. A bidder agreeing to the request will not be required or permitted to modify his bid, but will be required to extend the validity of his bid security for the period of the extension, and in compliance with clause 19.2 in all respects.

15 Earnest Money Deposit (EMD) / Bid Security

- 15.1 The proposals duly filled in the required format must reach the Office of **M/s. IT Expressway Ltd. (ITEL), Raja Annamalai Puram, Chennai – 600 028** on or before **15.00 hrs on 02nd March, 2018** along with **EMD/ Bid security** for an amount specified in the table given below in the form of **Demand Draft / Bank Guarantee** drawn in favour of **M/s. IT Expressway Ltd. (ITEL)** payable on any scheduled bank in Chennai as specified below:

Description of Work	Indicative value of work	EMD / Bid Security Value (Rs)	Period of Completion
Supply and Fixing of Safety Roller Barrier (SRB) at Vilampur at km:101/800, 102/800 in East Coast Road, Chennai, Tamil Nadu (CSR work)	82,00,000/-	82,000/-	01 Month

- 15.2 **Any bid not accompanied by the acceptable EMD, Bid Document duly signed in all pages and its cost shall be rejected by the Employer as Non- Responsive.**

16 Deleted

17 Format and Signing of Bid

- 17.1 Only relevant supporting documents shall be submitted along with the Bid. Documents furnishing additional information other than that is required as per Bid Document, if any, shall be submitted separately under separate heading, which may not be considered for evaluation.
- 17.2 The entire Bid including covering letter, Bid Document and supporting documents shall be duly page numbered and shall contain a detailed table of contents with page references.
- 17.3 The person or persons signing the Bids shall initial all pages of the Bids.

- 17.4 The Bidder shall prepare and submit the bid comprising the Bid Document and other relevant document bound as described in Clause 11.
- 17.5 The Bid shall be typed or written in indelible ink and shall be signed by a person or persons duly authorized to sign on behalf of the Bidder. All pages of the bid where entries or amendments have been made shall be initialled by the person or persons signing the bid.
- 17.6 The Bid shall contain no alterations or additions, except those to comply with instructions issued by the Employer, or as necessary to correct errors made by the bidder, in which case such corrections shall be initialled by the person or persons signing the bid.
- The Bidder shall furnish information as described in the Form of Bid and Qualification on commissions or gratuities, if any, paid or to be paid to agents relating to this Bid, and to contract execution if the Bidder is awarded the contract.
- 17.7 All witnesses and sureties shall be persons of status and probity and their full names, occupation and addresses shall be printed below their dated signatures.

D. SUBMISSION OF BIDS

18. Sealing and Marking of Bids

- 18.1 (a) The Bid and other supporting documents shall be addressed to the Employer at the following address:

**Chief General Manager
IT Expressway Limited,**

No.171, TNMB Building, II Floor,
South Kesavaperumal Puram,
Pasumpon Muthuramalingam Road (Greenways Road),
Raja Annamalai Puram, Chennai 600 028
Phone No.: 2495 2800 / 3800, **Fax No.:** 2493 3800

and

- (b) bear the following identification:

”Supply and Fixing of Safety Roller Barrier (SRB) at Vilampur at km:101/800, 102/800 in East Coast Road, Chennai, Tamil Nadu (CSR work)”

- 18.2 If the envelopes are not sealed and marked as above, the Employer will assume no responsibility for misplacement or premature opening of the bid and the bid will be treated as a **Substantially Non Responsive** bid and will be subsequently rejected.
- 18.3 No Bid shall be submitted through post / courier. All the Bids must be received by the Employer at the address specified above on the deadline for submission as specified in clause 19 below, only in person and should be in the manner specified in Clause 17 and 18 above.

19. Deadline for Submission of the Bids

- 19.1 Bids must be received by the Employer at the address specified above at **15.00 Hours on 02nd March, 2018.** In the event of the specified date for the submission of bids declared a holiday for the Employer, the Bids will be received up to the appointed time on the next working day.
- 19.2 The Employer may extend the deadline for submission of bids by issuing an amendment in accordance with Clause 9, in which case all rights and obligations of the Employer and the bidders previously subject to the original deadline will then be subject to the new deadline.

20. Late Submission of Bids

Any Bid received by the Employer after the deadline prescribed in Clause 19 will be returned unopened to the bidder.

21. Deleted

E. BID OPENING AND EVALUATION**22. Bid Opening**

22.1 The Employer will open all the Bids received (except those received late), including modifications made pursuant to Clause 19, in the presence of the Bidders or their authorised representatives who choose to be present at **15:30 Hrs on 02nd March, 2018** at the office of the ITEL, Raja Annamalaipuram, Chennai.

22.2 In the event of the specified date of Bid opening being declared a holiday, the Bids will be opened at the appointed time and location on the next working day by the employer.

22.3, 22.4, 22.5 Deleted

23. Process to be Confidential

Information relating to the examination, clarification, evaluation and comparison of Bids and recommendations for the award of a contract shall not be disclosed to Bidders or any other persons not officially concerned with such process until the award to the successful Bidder has been announced. Any effort by a Bidder to influence the Employer's processing of Bids or award decisions may result in the rejection of his Bid.

24. Clarification of Bids

24.1 To assist in the examination, evaluation, and comparison of Bids, the Employer may, at his discretion, ask any Bidder for clarification of his Bid, including breakdowns of the unit rates. The request for clarification and the response shall be in writing or by cable, but no change in the price or substance of the Bid shall be sought, offered, or permitted except as required to confirm the correction of arithmetic errors discovered by the Employer in the evaluation of the bids in accordance with Clause 27. Provided however, the employer shall seek the rectification of price with the bidder who quoted lowest in total;

24.2 Subject to sub-clause 24.1, no Bidder shall contact the Employer/ its representatives on any matter relating to its bid from the time of the bid opening to the time the contract is awarded.

24.3 Any effort by the Bidder to influence the Employer in the Employer's bid evaluation, bid comparison or contract award decisions may result in the rejection of the Bidder's bid.

25. Preliminary Examination of Bids and Determination of Responsiveness

25.1 Prior to the detailed evaluation of Bids, the Employer will determine whether each Bid (a) has been properly signed; (b) is accompanied by the required securities and; (c) is substantially responsive to the requirements of the Bidding documents; and (d) provides any clarification and/ or substantiation that the Employer may require pursuant to Clause 24.

25.2 A substantially responsive Bid is one which conforms to all the terms, conditions, and specifications of the Bidding documents, without material deviation or reservation. A material deviation or reservation is one (a) which affects in any substantial way the scope, quality, or performance of the Works; (b) which limits in any substantial way, inconsistent with the Bidding documents, the Employer's rights or the Bidder's obligations under the Contract; (c) not confirming to the requirement at Clause 18 or (d) whose rectification would affect unfairly the competitive position of other Bidders presenting substantially responsive Bids.

25.3 If a Bid is not substantially responsive, it will be rejected by the Employer, and may not subsequently be made responsive by correction or withdrawal of the non-conforming deviation or reservation.

26. Correction of Errors

- 26.1 Bids determined to be substantially responsive will be checked by the Employer for any arithmetic errors. Errors will be corrected by the Employer, where there is a discrepancy between the unit rates in figures and in words, the lesser of the two will prevail.
- 26.2 The amount stated in the Bid will be adjusted by the Employer in accordance with the above procedure for the correction of errors and, with the concurrence of the Bidder, shall be considered as binding upon the Bidder in accordance with Sub-Clause 17.6. If the Bidder does not accept the corrected amount the Bid will be rejected, and the Bid security may be forfeited.

27. Evaluation and Comparison of Bids

- 27.1 The Employer will evaluate and compare only the Bids determined to be substantially responsive in accordance with Clause 25.
- 27.2 In evaluating the Bids, the Employer will determine for each Bid, the evaluated Bid Price by adjusting the Bid Price as follows:
- (a) Making any correction for errors pursuant to Clause 26;
 - (b) Excluding Provisional Sums and the provision, if any, for contingencies in the Summary Bill of Quantities;
- 27.3 Towards evaluation, the employer will take into account the adjusted Bid Price for the works arrive at the lowest evaluated rate of bid.
- 27.4 The Employer reserves the right to accept or reject any variation, deviation, or alternative offer and other factors which are in excess of the requirements of the Bidding document or otherwise result in the accrual of unsolicited benefits to the Employer shall not be taken into account in Bid evaluation.
- 27.5 If the Bid of the successful Bidder is seriously unbalanced in relation to or substantially below the Employer's estimate of the cost of work to be performed under the contract, the Employer may require the Bidder to produce detailed price analysis for any or all items of the Bill of Quantities, to demonstrate the internal consistency of those prices with the construction methods and schedule proposed. After evaluation of the price analysis, the Employer may require that the amount of the performance security set forth in Clause 31 be increased at the expense of the successful Bidder to a level sufficient to protect the Employer against financial loss in the event of default of the successful Bidder under the Contract.

F. AWARD OF CONTRACT**28. Award Criteria**

28.1, 28.2 Deleted

- 28.3 Subject to Clause 27, the Employer will award the Contract to the Bidder whose Bid has been determined to be substantially responsive to the Bidding documents and whose bids are evaluated to be the lowest. The lowest (L1) bidder will be called for negotiation on the quoted rates. If the lowest bidder is not responding for further negotiations, the Employer reserves the right to negotiate with any of the eligible bidders who is willing to take up the work at the L1 price and to offer a further negotiated, reasonable rate.

Awarding the work to bidders or summarily reject all the proposals shall be the sole discretion of ITEL, based on the capability of the Bidders.

Employer reserves the right to appoint other contractor/contractors for **“Supply and Fixing of Safety Roller Barrier (SRB) at Vilampur at km:101/800, 102/800 in East Coast Road, Chennai, Tamil Nadu (CSR work)”** or part of this work / contract and any other works that the Employer may decide.

29. Employer's Right to Accept any Bid and to Reject any or all Bids

- 29.1 Notwithstanding Clause 28, 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 the award of Contract, without thereby incurring any liability to the affected Bidder or Bidders or any obligation to inform the affected Bidder or Bidders of the grounds for the Employer's action.

30. Notification of Award

- 30.1 The Bidder whose Bid has been accepted will be notified of the award by the Employer prior to expiration of the Bid validity period by cable, telex or facsimile confirmed by registered letter. This letter (hereinafter and in the *Conditions of Contract* called the "Letter of Award/ Work Order") will state the sum that the Employer will pay the Contractor in consideration of the execution, completion, and maintenance of the Works by the Contractor as prescribed by the Contract (hereinafter and in the Contract called the "Contract Price").

31. Performance Security

- 31.1 Within 7 days of receipt of the Letter of Award, the successful Bidder shall deliver to the Employer,

a. Performance Security in the form of a Demand Draft in favour of **M/s. IT Expressway Ltd.**, payable at Chennai (or) in the form of a Bank Guarantee from Nationalised Bank/ Scheduled Bank acceptable to the Employer in the form as given in Section 2 for an amount equivalent to **2%** of the contract price in accordance with Clause 48 of Conditions of Contract. The Performance Security for works shall be valid for a period of **14 Months** from the date of Bank Guarantee or **01 Month** beyond the defect liability period whichever is later with a claim period of **03 months**.

- 31.2 Failure of the successful bidder to comply with the requirements of Clause 31.1 shall constitute a breach of contract, cause for annulment of the award, forfeiture of the bid security, and any such other remedy the Employer may take under the contract.

31.3 Retention Money

In each, Interim Payment Certificate (IPC) @ **5%** of value of work executed during each bill will be withheld and the withheld amount will be refunded to the Contractor along with the Final Bill /Taking over certificate. The maximum amount of Retention money to be with held is restricted up to **5%** of the contract value.

32. Signing of Agreement

- 32.1 At the same time, the employer notifies to the successful Bidder that his Bid has been accepted, and the Employer will direct him to attend the Employer's office on a date determined by the Employer for signing the Contract Agreement as per the format provided in the Bidding Document incorporating all the agreements between the parties. The signing of the Contract Agreement shall take place only after the furnishing of the requisite performance security by the selected Bidder as per Clause 31.1.
- 32.2 The Agreement will incorporate all agreements / correspondences between the Employer and the successful Bidder. It will be kept ready for signature of the successful bidder in the office of employer within 15 days following the acceptance of the Letter of Award by the successful bidder; the successful Bidder will sign the Agreement upon furnishing of the requisite performance security and deliver it to the Employer.
- 32.3 Upon furnishing of the Performance Security by the successful Bidder, the Employer will promptly notify the other Bidders that their Bids have been unsuccessful and refund the Bid Security of all the bidders.

33. Corrupt or Fraudulent Practices

- 33.1 The Employer requires that all the Bidders should observe the highest standard of ethics during the procurement and execution of this Contract. In pursuance of this policy, the Employer:

- (a) Defines, for the purposes of this provision, the terms set forth as follows :
 - i. "Corrupt practice" means the offering, giving, receiving or soliciting of anything of value to influence the action of Employer/ its representatives in the procurement process or in contract execution; and
 - ii. "Fraudulent practice" means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of the Employer, and includes collusive practice among Bidders (prior to or after Bid submission) designed to establish Bid prices at artificial non-competitive levels and deprive the Employer of the benefits of free and open completion;
- (b) will reject a proposal for award if he determines that the Bidder recommended for award has engaged in corrupt or fraudulent practices in competing for the Contract in question;
- (c) will declare a firm ineligible, either indefinitely or for a stated period of time, to be awarded any contract in **ITEL**, if it at any time determines that the firm has engaged in corrupt or fraudulent practices in competing for, or in executing this Contract.

34. Termination:-

In case the Contractor fails to carryout the works, as per the construction programme and as per the conditions stipulated in the Bid Document , then the Employer, at its sole discretion is entitled to terminate this contract at the '**Risk and Cost**' of the Contractor and to employ such other Contractor/s to carryout the balance works. The additional cost incurred by the employer in completing the works, which remain unfinished at the time of termination of the contract will be recovered from the Contractor. Any unrecovered 'Risk and Cost' amount will be a debt payable to the Employer and the Employer will take suitable actions for such unrecovered 'Risk and Cost' amount at the cost of the Contractor. Any bill/s for the works executed remains unsettled and/or the value of materials, machineries etc., taken over or possessed by the Employer at the time of termination or on termination will be adjusted towards the 'Risk and Cost' recoverable from the contractor.

Section II Forms of Bid & Forms of Securities

SECTION II
FORMS OF BID & FORMS OF SECURITIES

1. LETTER OF APPLICATION

(Letterhead paper of the Bidder)

[Including full postal address, telephone, fax, cable and telex addresses]

[Date]

To:

Chief General Manager
IT Expressway Ltd, (ITEL)
No.171, TNMB Building, II Floor,
South Kesavaperumal Puram,
Pasumpon Muthuramalingam Road
(Near Greenways Road MRTS Station),
Raja Annamalai Puram, Chennai 600 028
Phone No.: 2495 2800 / 3800, Fax No.: 2493 3800

Sir,

1. Being duly authorised to represent and act on behalf of ----- (hereinafter "The Bidder"), and having reviewed and fully understood all the bid information provided, the undersigned hereby apply to be qualified by your agency as a bidder for the contract "**Supply and Fixing of Safety Roller Barrier (SRB) at Vilampur at km:101/800, 102/800 in East Coast Road, Chennai, Tamil Nadu (CSR work)**"
2. ITEL and its associates/ representatives are hereby authorized to conduct any inquiries or investigations to verify the statements, documents and information submitted in connection with this application, and to seek clarification from our bankers and clients regarding any financial and technical aspects. This Letter of Application will also serve as authorization to any individual or authorised representative of any institution, to provide such information deemed necessary to verify statements and information provided in this application or with regard to the resources, experience and competence of the Bidder.
3. This application is made in the full understanding that:
 - (a) ITEL reserves the right, to reject or accept any application, cancel the bidding process and reject all applications; and
 - (b) ITEL shall not be liable for any such actions and shall be under no obligation to inform the Bidder of the grounds for them.
4. The undersigned declared that the statements made and the information provided in the duly completed application are complete, true and correct in every detail.

Authorised Signature

Name and Title of Signatory

2. LETTER OF FINANCIAL BID

(Letterhead of the Bidder)

[Date]

Chief General Manager

IT Expressway Ltd, (ITEL)
No.171, TNMB Building, II Floor,
South Kesavaperumal Puram,
Pasumpon Muthuramalingam Road,
(Near Greenways Road MRTS Station)
Raja Annamalai Puram, Chennai 600 028
Phone No.: 2495 2800 / 3800, Fax No.: 2493 3800

Dear Sir,

Sub: "Supply and Fixing of Safety Roller Barrier (SRB) at Vilampur at km:101/800, 102/800 in East Coast Road, Chennai, Tamil Nadu (CSR work)" – Letter of Financial Bid - Reg.

Having examined the Bid Document including Notice Inviting Bids, Instructions to Bidders, forms, General Conditions of Contract, Special Conditions of Contract, Technical Specifications, Bill of Quantities, drawings, Schedules, Annexure and Addenda for the execution of the above named works, we, the undersigned, offer to execute and complete such works and remedy any defects therein in conformity with the said Bid Document at the prices indicated in the enclosed BoQ.

The Payment for:

The subject work for the sum of **INR _____ (Indian Rupees in words)**
_____)
inclusive of GST and other applicable taxes in accordance with the said Bid Document.

We undertake, if our Bid is accepted, to commence the works within seven (7) days of receipt of the Engineer's order to commence, and to complete and deliver the sections and whole of the works comprised in the Contract within the period stated in the Appendix to Bid/ Contract data hereto.

We agree to abide by this Bid for the period of 90 days (Ninety days) from the date of Bid opening, as prescribed in Clause 14.1 of the Instructions to Bidders (Section-I), and it shall remain binding upon us and may be accepted at any time before the expiry of that period.

We confirm our agreement to treat the Bid Document and other records connected with the works as secret and confidential document and shall not communicate information contained therein to any other person other than the person authorized by Employer or use such information in any manner prejudicial to the safety and integrity of the works.

We undertake that, in completing for and, if the award is made to us, in executing the above Contract, we will observe the laws against fraud and corruption in force in India namely "Prevention of Corruption Act 1988".

We confirm that our firm has valid GST/PAN registrations along with ESI / Workmen Compensation Policy and EPF codes as stipulated under Appendix 2 and 3 of GCC.

We hereby confirm that this Bid complies with the Eligibility, Bid validity and Bid security required as stated in the Bidding documents.

Yours faithfully,

Authorised Signature

3. Confirmation Letter

(Letterhead paper of the Contractor)

To
[Name and address of the Employer)

Dear Sir,

Sub: “Supply and Fixing of Safety Roller Barrier (SRB) at Vilampur at km:101/800, 102/800 in East Coast Road, Chennai, Tamil Nadu (CSR work)” – Reg.

We acknowledge the receipt of your Letter of Award, Ref No. _____ dated _____ and unconditionally accept the offer to take up above captioned works at the price indicated in the Letter of Award.

We also confirm our acceptance to all the corrections and modifications made by the Employer in respect of our bid.

We undertake to provide you unconditional Bank Guarantee towards Performance Security and additional security for unbalanced bid as per the agreed format within the prescribed date as per the Instructions to Bidder and Conditions of Contract of the Bid Document.

Yours faithfully,

Authorized Signature:
Name and Title of Signatory:
Name of Agency:

4. FORM OF BANK GUARANTEE FOR EMD / BID SECURITY**Chief General Manager**

IT Expressway Ltd.,

No.171, II Floor, Tamil Nadu Maritime Board Building,

South Kesavaperumal Puram, Pasumpon Muthuramalingam Road,

(Near Greenways Road MRTS Station),

Raja Annamalai Puram, Chennai 600 028

Phone: 91-44-2495 2800 / 3800,**Fax:** 91-44-2493 3800**Email :** tenders@tnrdc.com

1. In consideration of M/s IT Expressway Ltd (hereinafter called "ITEL" which expression shall include any entity which ITEL may designate for the purpose) having agreed, inter alia, to consider the bid of M/s _____ (hereinafter referred to the "Bidder" which expression shall include their respective successors and assigns) which will be furnished in accordance with the terms of the Bid Document for **"Supply and Fixing of Safety Roller Barrier (SRB) at Vilampur at km:101/800, 102/800 in East Coast Road, Chennai, Tamil Nadu (CSR work)"** (hereinafter called the "Bid") in lieu of the Bidder being required to make a cash deposit, we [*****] [name of the Bank and address of the issuing branch], hereinafter called the "Bank" which expression shall include our successors and assigns, as to bind ourselves our successors and assigns do at the instance of the Bidder hereby unconditionally and irrevocably undertake to pay as primary obligor and not as surety only to ITEL without any demur protest or demand and without any proof or condition the sum of **Rs. _____/- (Rupees _____ Only)**
2. We, the Bank, do hereby unconditionally and irrevocably undertake to pay forthwith the amounts due and payable under this Guarantee without demur and on first demand and without any delay merely on a written demand from ITEL or under the hand of any of the employee of ITEL or any other person or entity duly authorised by ITEL in this regard, stating that the amount claimed is due by reason of the occurrence of any of the events referred to in the document. Any such demand on the bank made by ITEL under the hand of the employee of ITEL or any other person or entity duly authorized by ITEL in this regard shall be conclusive as regards the amount due and payable by the Bank under this Guarantee. However, the Bank's liability under 'this Guarantee shall be restricted to an amount not exceeding **Rs. _____/- (Rupees _____ Only)**. This Guarantee will remain in force for the period specified in paragraph 4 below.
3. We, the Bank unconditionally undertake to pay to ITEL any money so demanded under this Guarantee notwithstanding any dispute or disputes raised by the Bidder or any other party including in any suit or proceeding pending before any court or tribunal relating thereto or any instructions or purported instructions by the Bidder or any other party to the Bank not to pay or for any cause to withhold or defer payment to ITEL under this Guarantee. The Bank's liability under this Guarantee is irrevocable, unconditional, absolute and unequivocal. The payment so made by the Bank under this Guarantee shall be a valid discharge of the bank's liability for payment hereunder and the Bidder shall have no claim against the Bank for making such payment.
4. We, the Bank further agree that the Guarantee herein contained shall remain in full force and effect upto and until 17:00 hours on the date which falls Sixty (60) days beyond the Bid Validity period (90 days after the last date of submission) i.e.(hereinafter called "the Expiry Date"). Unless a demand or claim under this Guarantee is made on the Bank by ITEL or under the hand of any of the employee of ITEL or any other person or entity duly authorised by ITEL in this regard, in writing on or before the said End Date, the Bank shall be discharged from all liability under this Guarantee thereafter.

5. We, the Bank further agree with ITEL, that ITEL shall have the fullest liberty without the Bank's consent and without affecting in any manner the Bank's obligation hereunder to vary any of the terms and conditions of the bid or to extend or postpone the time of performance by the Bidder or any other party from time to time or postpone for any time or from time any of the powers exercisable by ITEL against the Bidder or any of them and to enforce or to forbear from enforcing any of the terms and conditions relating to the bid and the Bank shall not be relieved from its liability by reason or any forbearance act or omission on the part of ITEL, or any indulgence given by ITEL to the Bidder or any other party or by any such matter or thing whatsoever which under the law relating to securities would, but for this provision, have the effect of so relieving the Bank.
6. To give full effect to the obligations herein contained, ITEL shall be entitled to act against the Bank as primary obligor in respect of all claims subject of this Guarantee and it shall not be necessary for ITEL to proceed against the Bidder or any other party before proceeding against the Bank under this Guarantee and the Guarantee herein contained shall be enforceable against the bank as principal obligor.
7. This Guarantee will not be discharged or affected in any way by the liquidation or winding up or dissolution or change of constitution or insolvency of any individual member of the Bidder or any other party or any change in the legal constitution or insolvency of the Bidder or any other party or any change in the legal constitution of the Bank or ITEL.
8. We, the bank lastly undertake not to revoke this Guarantee during its currency.
9. Notwithstanding anything contained herein.
 - a) Our liability under the Bank Guarantee shall not exceed Rs/-
(RupeesOnly)
 - b) The Bank Guarantee shall be valid upto [date], 20____.(Expiry Date)
 - c) Unless a demand in writing is made upon us on or before _____,
[date] or any other extended date, all our liability under this guarantee shall cease. (Expiry Date)

IN WITNESS WHEREOF THE BANK HAS SET ITS HANDS HERETO ON THE DAY, MONTH AND YEAR MENTIONED HEREUNDER.

Signed and Delivered

On behalf of(Bank name) (Signature) (Date)
 by the hand of Mr..... (name of authorized signatory)

Designation

Note:

- a) Address of the controlling office of the issuing branch with phone number and fax number to be provided.
- b) Authenticated copy of Letter of Authority authorizing the signatory of this guarantee to execute the same to be enclosed herewith).

5. BANK GUARANTEE FOR PERFORMANCE SECURITY

BG No dated20_____

To
IT Expressway Ltd.,
No.171, TNMB Building, II Floor,
South Kesavaperumal Puram,
Pasumpon Muthuramalingam Road
(Near Greenways Road MRTS Station),
Raja Annamalai Puram, Chennai 600 028
Phone No.: 2495 2800 / 3800, Fax No.: 2493 3800

Bank Guarantee No.datedfor **Rs./- (Rupees
.....only)**

WHEREAS vide the Letter of Award / Work Order No..... dated for "**Supply and Fixing of Safety Roller Barrier (SRB) at Vilampur at km:101/800, 102/800 in East Coast Road, Chennai, Tamil Nadu (CSR work)**" (hereinafter referred to as "**the Contract**") **M/s.....**, a Company incorporated under the Companies Act, 1956, having its Registered Office at.....(address) (hereinafter referred to as "**the Contractor**" which expression shall unless repugnant to or inconsistent with the context mean and include its successors and assigns) has been awarded by **M/s IT Expressway Ltd.**, a company incorporated under the Companies Act, 1956, having its registered office at No.171, TNMB Building, II Floor, South Kesavaperumal Puram, Pasumpon Muthuramalingam Road (Greenways Road), Raja Annamalai Puram, Chennai 600 028 (hereinafter referred to as "**the Employer**" which expression shall unless repugnant to or inconsistent with the context mean include its successors and assigns), the contract for "**Supply and Fixing of Safety Roller Barrier (SRB) at Vilampur at km:101/800, 102/800 in East Coast Road, Chennai, Tamil Nadu (CSR work)**"

AND WHEREAS it has been stipulated by you in the said contract that the Contractor shall furnish you a Performance Guarantee, within 7 days on receipt of the Letter of Award/ work order by a specified Scheduled / Nationalised Bank, for the sum specified therein as security for compliance with the contractor's obligations in accordance with the Contract and against any breach or non-performance of the terms and conditions contained in the contract.

AND WHEREAS we**BANK**, having its Head Office atand amongst others, a branch office situated at....., have agreed to furnish a Performance Guarantee for a sum of **Rs. -----/- (Rupees -----
-----Only)** (hereinafter referred as the Guaranteed amount) as security for compliance of the contractor's obligations under the contract.

NOW THEREFORE we hereby affirm that we as the Guarantor are responsible to you on behalf of the Contractor, for the guaranteed amount and we irrevocably undertake to pay you upon your first written demand and without demur or argument, any sum or sums

within the limits of the guaranteed amount as aforesaid without your needing to prove or to show grounds or reasons for your demand for the sum specified herein. The guaranteed amount shall be payable merely on demand by the Employer. Any letter stating that the amount claimed in the demand notice/letter is due and payable, signed by a duly

authorized official of the Employer to this effect, shall be final, binding or conclusive upon us.

We, hereby agree to pay on demand the guaranteed amount without demur by crediting to the Bank Account of the Employer, the details of which are to be informed to us by you during the validity of the guarantee.

Our liability under this Guarantee shall not be affected by any change in the constitution of the Contractor or of the Guarantor.

We hereby undertake that this Guarantee is absolute, irrevocable and unconditional and shall be enforceable against us notwithstanding any security or securities comprised in any instrument executed or to be executed by the contractor in favour of the Employer.

We hereby also agree that this guarantee shall not be wholly or partially satisfied or exhausted by any payments made to or settled with the Employer by the Contractor and shall be valid and binding on us and operative until the expiry of this Guarantee.

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 this guarantee, and we hereby waive notice of any such change, addition or modification.

The jurisdiction in relation to this Guarantee shall be Courts at Chennai and Laws of India shall be applicable. This guarantee shall be valid up to -----20__ (hereinafter referred to us as the "Expiry Date") which is a period of **14 Months** from the date of Bank Guarantee or **01 Month** beyond the defect liability period whichever is later with a claim period of **03 months**.

Notwithstanding anything contained herein.

- i) Our liability under this Guarantee shall not exceed the guaranteed amount **Rs _____/- (Rupees _____ Only)**

This Bank Guarantee shall be valid up to -----20__ (Expiry date) and

- ii) We shall be liable to pay the guaranteed amount under this guarantee only and if we receive a written claim or demand duly signed by a duly Authorised official of the Employer before the -----20__ (Expiry date) as mentioned above.

IN WITNESS WHEREOF we have executed this guarantee on this20__.

Signature of Authorised Representative of the Bank

Name and Designation

Seal of the Bank

Signature of Witness

Name of Witness

Section III

Conditions of Contract

Section III: CONDITIONS OF CONTRACT

A. GENERAL

1. Definitions

1.1 Terms which are defined in the Contract Data are not also defined in the Conditions of Contract but kept their defined meanings. Capital initials are used to identify defined terms.

Activity Schedules means the priced and completed Activity Schedules forming part of the Bid.

Bill of Quantities (BOQ) means the completed Bill of Quantities attached in Appendix and forming part of this Contract.

Compensation Events are those defined in Clause 41 hereunder.

Confirmation Letter is the letter of the Contractor dated accepting the letter of Award/ Work Order issued by the Employer.

The **Contract Completion Date** is the date of completion of Contractor's Obligations under this Contract as certified by the Engineer in accordance with Clause 50.2.

The **Contract** is the contract between the Employer and the Contractor to execute, complete and maintain the Works. It consists of the documents listed in Clause 2.3 below.

The **Contract Data** defines the documents and other information which comprise the Contract.

The **Contractor** is a person or firm or corporate body that's Bid to carry out the Works has been accepted by the Employer.

The **Contractor's Bid** is the completed Bidding document submitted by the Contractor to the Employer.

The **Contract Price** is the price stated in the Letter of Award / Work Order and thereafter as adjusted in accordance with the provisions of the Contract.

Days are calendar days: **Months** are calendar months.

A **Defect** is any part of the works not completed in accordance with the Contract.

The **Defects Liability Period** is 12 Months period named in the Contract Data and calculated from the date of issue of completion certificate for the works completion date.

The **Employer** is the party who will employ the Contractor to carry out the Works and in this case the employer is ITEL, Raja Annamalai Puram, Chennai – 600 028.

The **Engineer** is the person named in the Contract Data (or any other competent Person appointed and notified to the Contractor by the Employer to act in replacement of the Engineer) who is responsible for supervising the execution of the works and administering the Contract and in this case it is IT Expressway Ltd. (ITEL), Raja Annamalai Puram, Chennai – 600 028.

"Engineer Representative" means a person appointed from time to time by the Engineer under Sub-clause 5.1.

Equipment is the Contractor's plant / machineries and vehicles brought temporarily to the site to construct the works.

Construction / Improvement Works means **"Supply and Fixing of Safety Roller Barrier (SRB) at Vilampur at km:101/800, 102/800 in East Coast Road, Chennai, Tamil Nadu (CSR work)"**

The **Initial Contract price** is the Works Contract price in the Employer's Letter of Award/Work Order.

The **Intended Completion Date** is the date on which it is intended that the Contractor shall complete the Construction Works or Improvement Works or both, as the case may be. The Intended Completion Date is specified in the Contract Data. The Intended Completion Date may be revised only by the Engineer by issuing an extension of time, in writing.

Letter of Award / Work Order is the letter issued by the Employer to the Contractor containing the Initial Contract Price and other details.

Materials are all supplies, including consumables, used by the contractor for incorporation in the Works.

Milestone is a specified date or duration by which specified works are to be completed.

Plant is any Integral part of the Works which is to have a mechanical, Electrical, electronic or chemical or biological function.

Project Facility means the stretch of the Road as mentioned in Contract Data, all appurtenances thereto, including road furniture, Sign boards and other road components and all access roads upto 50 m from the edge of the road.

The **Site** is the area defined as such in the Contract Data.

Site Investigation Reports are those which are included in the Bidding documents and are factual interpretative reports about surface and Sub- surface conditions at the site.

Specification means the Specification of the Works included in the Contract and any Modification or addition made approved by the Engineer in writing.

Temporary Works are works designed, constructed, installed and removed by the Contractor which are needed for construction or installation of the Works.

A **Variation** is an instruction given by the Engineer/ Employer in writing which varies the Works.

The **Works** are what the Contract requires the Contractor to carry out as part of this Contract and shall refer to Improvement Works or Maintenance Works or any combination thereof.

The **Works Completion Date** is the actual date of completion of the Works as certified by the Engineer in accordance with Clause 50.1

2. Interpretation

- 2.1 In interpreting these Conditions of Contract, singular also means plural, male also means female or neuter and the other way around. Heading have no significance. Words have their normal meaning under the language of the Contract unless specifically defined. The Engineer will provide instructions clarifying queries about the Conditions of Contract.
- 2.2 If sectional completion is specified in the Contract data, reference in the Conditions of Contract to the Works, the Completion Date, and the Intended Completion Date apply to any Section of the works (other than references to the Completion Date and Intended Completion date for the whole of the Works).
- 2.3 The documents forming the Contract shall be interpreted in the following order of priority:
 - a. Conditions of Contract
 - b. Instruction to Bidders
 - c. Contract Data
 - d. Letter of Financial Bid, Negotiation letter

- e. Negotiated Bill of Quantities
- f. Letter Of Award/Work Order
- g. Confirmation Letter
- h. Drawings
- i. Specifications
- j. Any other document listed in the Contract Data/ Bid Document as forming part of the contract

3. Language and Law

- 3.1 The language of the Contract and the law governing the Contract are stated in the Contract Data.

4. Engineer's Decisions

- 4.1 Except where otherwise specifically stated, the Engineer will decide contractual matters between the Employer and the Contractor in his role representing the Employer.

5. Delegation

- 5.1 The Engineer may delegate any of his duties and responsibilities to other person/organization after notifying the Contractor.

6. Communications

- 6.1 Communication between parties which are referred to in the conditions is effective only when in writing. A notice shall be effective when it is delivered (in terms of Indian Contract Act).

7. Sub- Contracting

- 7.1 The contractor shall not, with out the prior consent of the Employer assign the contract or any part thereof or any benefit or interest therein or there under.

The contractor shall not sub contract the works. Except where otherwise provided by the contract, the contractor shall not sub contract any part of the works, with out the prior consent of the Employer. Any such consent shall not relieve the contractor from any liability or obligation under the contract and he shall be responsible for the acts, defaults and neglects of any Sub Contractor, his agents, servants or workmen as fully as if they were the acts, defaults or neglects of the contractor, his agents, servants or workmen.

Provided that the contractor shall not be required to obtain such consent from the employer for:

- a. The provision of labour and
- b. The purchase of materials which are in accordance with the Specifications and quality standards specified in the Contract.

8. Other Contractors

- 8.1 The Contractor shall cooperate and share with the other contractors, public authorities, utilities, and the Employer and his representative between the dates given in the Schedule of the other contractors. The Contractor shall also provide facilities and services to them as may be necessary for smooth coordination. The Employer may modify the schedule of other contractors and shall notify the Contractor of any such modification.

- 8.2 Pursuant to the above, the Contractor hereby agrees and acknowledges that the Employer is well within their right to appoint other contractor for **“Supply and Fixing of Safety Roller Barrier (SRB) at Vilampur at km:101/800, 102/800 in East Coast Road, Chennai, Tamil**

Nadu (CSR work)” a part of this work / contract and any other works that the Employer may decide. The Contractor acknowledges that the Employer has no liability whatsoever towards the Contractor in this regard and that the Contractor will, unconditionally and without any financial charge, extend all necessary assistance and cooperation to the Employer and other Contractor(s), so as to ensure that the Works are completed in terms of the Milestones stipulated in the Contract Data.

- 8.3 Any default in the above regard shall be treated as a fundamental breach of the contract in terms of Clause 54.2

9. Personnel

- 9.1 The Contractor shall employ required personnel to carry out the functions stated in the approved program in terms of Clause 25. The contractor shall ensure that atleast 20% of the Skilled/unskilled labour employed are trained/certified labourers.

- 9.2 If the Engineer asks the Contractor to remove a person who is a member of the Contractor's staff or his work force stating reasons, the Contractor shall ensure that the person leaves the site within seven days and has no further connection with the work in the Contract.

9.3 Labour Statutory Requirement

The Contractor shall confirm to and comply with the regulations and By-Laws of the State or Central Government and other statutory Body the provisions contained in the various Acts specified in Appendix 2 of this section

10. Employer's and Contractor's Risks

- 10.1 The Employer carries the risks which this Contract states are Employer's risks, and the Contractor carries the risks which this Contract states are Contractor's risks.

11. Employer's Risks

- 11.1 The Employer is responsible for the expected risks which are in so far as they directly affect the execution of the Works in the Employer's country, the risks of war, hostilities, invasion, and act of foreign enemies, rebellion, and revolution. Insurrection or military or usurped power, civil war, (unless restricted to the Contractor's employees), and contamination from any nuclear fuel or nuclear waste or radioactive toxic explosive.

12. Contractor's Risks

- 12.1 All risks of loss or damage to physical property or personal injury and death which arise during and in consequence of the performance of the Contract other than the expected Employer's risks are the responsibility of the Contractor.

13. Insurance

- 13.1 The Contractor shall provide, in the joint names of the Employer and the Contractor, insurance cover from the start Date to the end of the Defects liability period, in the Amounts and deductibles stated in the Contract Data for the following events:

- a. loss of or damage to Works, Plant and Materials;
- b. loss of or damage to Equipment;
- c. loss of or damage of property (except the Works, Plant, Materials and Equipment) in connection with the Contract;
- d. personal injury or death of employer/employee personal and third party persons;

However, it is for the contractor to decide whether the minimum amount specified in the Contract data is sufficient, and if he considers it necessary, to insure for a greater amount. The policy should cover an unlimited number of claims.

- 13.2 Policies and certificates for insurance shall be delivered by the Contractor to the Engineer for the Engineer's approval before the start Date. All such insurance shall provide for

compensation to be payable in the type and proportions of currencies required to rectify the loss or damage incurred. The contractor shall be responsible for effecting change to the policies and certificates as may be directed by the Engineer, within time period indicated by the Engineer.

- 13.3 If the Contractor does not provide the policies and certificates as required, the Employer may effect the insurance which the Contractor should have provided and recover the premiums the Employer has paid, from payments otherwise due to the Contractor or, if no payment is due, the payment of the premiums shall be a debt due and if warranted, recovered by invoking Performance Security.
- 13.4 Alterations to the terms of insurance shall not be made without the approval of the Engineer.
- 13.5 Both parties shall comply with any conditions of the insurance policies.
- 13.6 The Contractor shall be entitled to place all insurance relating to the Contract with insurers from India, which have been determined to be acceptable to the Employer.
- 13.7 The contractor should take risk insurance at their cost against lose due to unprecedented flood and other Acts of God (G.O. Ms. No.620/ Transport Department, Dt. 22.07.78).

14. Queries about the Contract Data

- 14.1 The Engineer will clarify queries on the Contract Data.

15. Contractor to undertake the Works

- 15.1 The Contractor shall undertake the Works in accordance with the Specifications, Conditions of Contract, etc and as per the instructions of the Engineer.

16 The Construction/Improvement Works to be Completed by the Intended Completion Date

- 16.1 The contractor shall commence execution of the works on the start date and shall carry out the works in accordance with the program submitted by the contractor, with the approval of the Engineer and complete them in all respects by the intended completion date.
- 16.2 Deleted

17. Approval by the Engineer

- 17.1 Deleted
- 17.2 The Contractor shall be responsible for design of Temporary Works.
- 17.3 The Engineer's approval shall not alter the Contractor's responsibility for the quality, and design of the Temporary Works, who shall bear all consequences of failures thereof.
- 17.4 The Contractor shall obtain approval of other parties/ agencies to the design of the Temporary work where required.
- 17.5 Deleted

18. Safety

- 18.1 The contractor shall be responsible for the safety of all activities on the Site. The proposed work site falls in High speed road Corridor. In addition to the safety of workmen in the project, the Contractor is responsible for the safety of the road users. The Contractor shall at his own cost formulate and implement an efficient traffic movement / regulation plan so as to achieve safe and efficient movement of vehicular traffic and pedestrians.
- 18.2 The contractor shall make necessary safety arrangements and equipments specified in Appendix 1 of this section.
- 18.3 Any damage caused to the existing structure, the road surface and other appurtenances shall be remedied/restored/replaced to the original condition at the cost of the Contractor and to the satisfaction of the Employer.

In case of default by the contractor, the Employer has the option to carry out the required remedial/restoration/replacement works and deduct the expenditure incurred from the payments due to the Contractor.

- 18.4 The Contractor shall take all reasonable steps to protect the environment on and off the Site and to avoid damage or nuisance to persons or to property of the public or others resulting from pollution, noise or other causes arising as a consequence of his methods of operation.
- 18.5 During continuance of the contract, the Contractor shall abide at all times by all existing enactments on environments on environmental protection and rules, labour laws made there under, regulations, notifications and bye-laws of the State or Central Government, or local bodies/authorities and any other law, bye-law, regulations that may be passes or notification that may be issued in this respect in future by the State or Central Government or the local authority.

Salient features of some of the major laws that are applicable are given below:

The Water (Prevention and Control of Pollution) Act, 1974, provides for the prevention and control of water pollution and the maintaining and restoring of wholesomeness of water.

'Pollution' means such contamination of water or such alteration of the physical, chemical or biological properties of water or such discharge of any sewage or trade effluent or of any other liquid, gaseous or solid substance into water (whether directly or indirectly) as may, or is likely to, create a nuisance or render such water harmful or injurious to public health or safety, or to domestic, commercial, industrial, agricultural or other legitimate uses, or to the life and health of animals or plants or of aquatic organisms.

The Air (Prevention and Control of Pollution) Act, 1981, provides for prevention, control and abatement of air pollution. 'Air Pollution' means the presence in the atmosphere of any 'air pollutant', which means any solid, liquid or gaseous substance (including noise) present in the atmosphere in such concentration as may be or tend to be injurious to human beings or other living creatures or plants or property or environment.

The Environment (Protection) Act, 1986, provides for the protection and improvement of environment and for matters connected therewith, and the prevention of hazards to human beings, other living creatures, plants and property. 'Environment' includes water, air and land and the inter-relationship which exists among and between water, air and land, and human beings, other living creatures, plants, micro-organism and property.

The Public Liability Insurance Act, 1991, provides for public liability insurance for the purpose of providing immediate relief to the persons affected by accident occurring while handling hazardous substances and for matters connected herewith or incidental thereto. Hazardous substance means any substance or preparation which is defined as hazardous substance under the Environment (Protection) Act 1986, and exceeding such quantity as may be specified by notification by the Central Government.

19. Discoveries

- 19.1 Anything of historical or other interest or of significant value unexpectedly discovered on the Site is the property of the Employer. The Contractor is to notify the Engineer/ Employer of such discoveries and carry out the Engineer's instructions for dealing with them.

20. Possession of the Site

- 20.1 The Employer shall give possession of the site to the Contractor in accordance with the Contract Data. If possession of a part is not given by the agreed date stated in the Contract Data, then the Intended Completion Date shall be postponed by the Employer as may be required for that particular part/ stretch. However, this will not be applicable if sufficient work site is made available to the Contractor as and when required for him to proceed ahead with the progress of work and if available work fronts remain unattended.
- 20.2 The Contractor will co-ordinate with service provider / concerned authorities for shifting of utilities and removal of encroachments etc. and making the site unencumbered from the project construction area required for completion of work. This includes getting estimates,

initial and frequent follow-up with concern authorities. However, the cost of shifting shall be borne by the employer. The contractor will not be entitled for any additional compensation for delay in shifting of utilities and removal of encroachments by the service provider/ local bodies/concern authorities.

21. Access to the Site

21.1 The Contractor shall allow the Engineer and any person authorized by the Engineer access to the Site, to any place where work in connection with the Contract is being carried out or is intended to be carried out and to any place where materials or plant are being manufactured / fabricated / tested/ stored for the works.

22. Instructions

22.1 The Contractor shall carry out all instructions of the Engineer which comply with the applicable laws where the Site is located.

23. Disputes

23.1 If either party believes that a decision taken by the Employer was either outside the authority given to the Employer by the contract or that the decision was wrongly taken, the objecting party may file written notice of dispute to the other party with a copy to the Engineer stating that it is giving the notice pursuant to this Clause while stating clearly the basis for the dispute.

23.2 The party receiving the dispute notice will consider it and reply in writing within 30 days of the receipt of the notice. If no reply is received or the reply is not acceptable to the other party, the affected party may refer only to the High Court of Madras (Chennai) for adjudication.

23.3 Further, in case of any dispute or difference between the parties to the contract either during the progress of the works or after the completion of the works or after the determination / abandonment of the contract or any other matter/s arising thereof shall be referred to or filed with the High Court of Madras (Chennai) within a period of 18 Months). No other courts, persons, or bodies will have any jurisdiction over the dispute/s beyond such date.

24. Deleted

B. Time Control

25. Deleted

26. Extension of the Intended Completion Date for Construction/ Improvement Works

26.1 The Engineer shall extend in consultation with Employer the Intended Completion Date if a Compensation Event occurs or a Variation is issued which makes it impossible for Completion to be achieved by the Intended Completion Date without the Contractor taking steps to accelerate the remaining work and which would cause the Contractor to incur additional cost.

26.2 The Engineer shall decide whether and by how much to extend the Intended Completion Date within 21 days of the Contractor asking the Engineer for a decision upon the effect of a Compensation Event or Variation and submitting full supporting information. If the Contractor has failed to give early warning of a delay or has failed to cooperate in dealing with a delay, the delay by this failure shall not be considered in assessing the new Intended Completion Date.

27. Delays Ordered by the Engineer

27.1 The Engineer in consultation with the Employer may instruct the Contractor to delay the start or progress of any activity within the Works.

28. Deleted**29. Early Warning**

- 29.1 The Contractor is to warn the Engineer at the earliest opportunity of specific likely future events or circumstances that may adversely affect the quality of the work, increase the Contract Price or delay the execution of works. The Engineer may require the Contractor to provide an estimate of the expected effect of the future event or circumstance on the Contract Price and Completion Date. The estimate is to be provided by the Contractor as soon as reasonably possible.
- 29.2 The Contractor shall cooperate with the Engineer in making and considering proposals for how the effect of such an event or circumstance can be avoided or reduced by any one involved in the work and in carrying out any resulting instructions of the Engineer.

C. Quality Control**30. Identifying Defects**

- 30.1 The Engineer shall check the Contractor's work and notify the Contractor of any Defects that are found. Such checking shall not affect the Contractor's responsibilities. The Engineer may instruct the Contractor to search for a Defect and to uncover and test any work that the Engineer considers may have a Defect.
- 30.2 The contractor shall permit the Employer's Technical auditor to check the contractor's work and notify the Engineer and Contractor of any defects that are found. Such a check shall not affect the Contractor's or the Engineer's responsibility as defined in the Work Order / Agreement.
31. Deleted

32. Correction of Defects

- 32.1 The Engineer shall give notice to the Contractor of any Defects before the end of the Defects Liability Period. The Defects Liability Period shall be extended for as long as Defects remain to be corrected.
- 32.2 Every time notice of a Defect is given, the Contractor shall correct the notified Defects within the length of time specified by the Engineer's notice.

33. Uncorrected Defects

- 33.1 If the Contractor has not corrected a Defect within the time specified in the Engineer's notice, the Engineer will assess the cost of having the Defect corrected and rectify the defects if needed by employing other persons and the Contractor will have to pay this amount or will be recovered from the bills of the contractor as 'Risk & Cost'.

D. Cost Control**34. Bill of Quantities (BOQ)**

- 34.1 The Bill of Quantities for works contains items for the Works being implemented by the Contractor as in Section – V.
- 34.2 The Bill of Quantities (BoQ) is used to calculate the payment for works. The Contractor will be paid for the quantity of the work done at the rate in the Bill of Quantities for each item of work.
- 34.3 Bill of Quantities for the work should also be submitted along with the bid in the cover.

35 Changes in the Quantities

- 35.1 Any additional quantity required for completing the work will have to be carried out by the Contractor at the same quoted rate. There will be no percentage ceiling either addition or reduction in the quantities for completion of the project.
- 35.2 Provided further that no change in the rate or price for any item contained in the Contract shall be considered unless such item accounts for an amount more than **2%** of the Contract Price, and the actual quantity of work executed under the item exceeds or falls short of the quantity set out in the Bill of Quantities by more than **25%**

36. Variations during Implementation of Construction/ Improvement Works

- 36.1 Approval and methodology for all variations either Rate or Quantity should be followed as per the directions of the Engineer / Engineer's representative.

37. Payments for Variations in Construction/ Improvement Works

- 37.1 The Contractor shall provide the Engineer with an estimate and quotation (with break up of unit rates) along with detailed justification and vouchers for carrying out the Variation items, **if not available in the BOQ** and when requested to do so by the Engineer. The Engineer shall assess the quotation, within a period of 7 (seven) days of the request (or) within a reasonable time by the Engineer, and before the variation is ordered.
- 37.2 If the work in the Variation corresponds with an item description in the Bill of Quantities and if, in the opinion of the Engineer, the quantity of work above the limit stated in Clause 35 or the timing of its execution do not cause the cost per unit of quantity to change, the rate in the Bill of Quantities shall be used to calculate the value of the Variation. If the cost per unit of quantity changes, or if the nature or timing of the work in the Variation does not correspond with items in the Bill of Quantities, the quotation by the Contractor shall be in the form of new rates for the relevant items of work as per the MORTH Data book and standard procedures."
- (a) The Contractor shall submit a detailed rate analysis with all supporting documents. Such analysis shall be prepared based on similar items available in Bill of Quantities, subject to Mutual Agreement between the Engineer and the Contractor and according to the Standard MORTH Data Book adopting the Schedule of Rates for the current year applicable to the Chennai region of Tamil Nadu.
- (b) In case, the data for the item is not available in the Standard MORTH Data Book, observed data with current Schedule of Rates applicable to Chennai region of Tamil Nadu shall be adopted.

With the concurrence of the Employer, the Engineer shall determine the quantities and rates for the variation works. Prior approval should be obtained for all the variation items from the employer.

- 37.3 If the Contractor's quotation is unreasonable (or if the contractor fails to provide the Engineer with a quotation within a reasonable time specified by the Engineer in accordance with Clause 37.1), the Engineer shall fix the variation rate and make a change to the Contract Price which shall be based on Engineer's own forecast of the effects of the Variation on the Contractor's costs.
- 37.4 If the Engineer decides that the urgency of varying the work would prevent a quotation being given and considered without delaying the work, the Engineer shall instruct in writing, to commence the additional works before the approval of the rate.
- 37.5 The Contractor shall not be entitled to additional payment for costs that could have been avoided by giving early warning.
38. Deleted

39. Payment

39.1 The Contractor shall submit a statement in 3 (three) copies to the Engineer by the 7th (seventh) day of the month, signed by the authorized representative of the Contractor, for the work executed up to the end of the previous month in a tabulated form approved by the Engineer, showing the amounts to which the Contractor considers himself to be entitled. The statement shall include the following items, as applicable, which shall be taken into account in the sequence listed:

- (a) the estimated value of work executed (Works executed & payable) up to the end of the month in question determined in accordance with conditions of contract, at base unit rates and prices;
- (b) The actual value certified for payment for the Temporary and Permanent Works executed up to the end of the previous month, at base unit rates and prices;
- (c) the estimated value at base unit rates and prices of the Temporary and Permanent Works for the month in question, obtained by deducting (b) from (a);
- (d) The value of any variations executed up to the end of the month in question, less the amount certified in the previous Interim Payment Certificate.
- (e) Amount to be deducted for all taxes in accordance with contract conditions.
- (f) Net amount of application, which will be expressed in Indian Rupees.
- (g) The details of RFI, joint measurement sheets, level sheets, test results to be enclosed along with the bill.

Notwithstanding the terms of this Sub-Clause or any other Clause of the Contract, no amount will be certified by the Engineer for payment until the Performance Security has been provided by the Contractor and approved by the Employer.

39.2 Monthly Payments

Within 7 (seven) days of receipt of the monthly statement from the Contractor in pursuant to above, the Engineer to account for liquidated damages and other deductions, while arriving at amount payable to contractor; if not satisfied with works, Engineer to inform Employer and instruct Contractor to complete the works within a stipulated time and carry forward this balance amount;

The Engineer if satisfied, shall recommend to the Employer for release to the Contractor against the monthly statement.

In cases where there is a difference of opinion as to the value of any item, the Engineer's view shall prevail.

Engineer shall determine the amount due to the Contractor and shall deliver to the Employer and the Contractor, an Interim Payment Certificate, certifying the amounts due to the Contractor after adjusting the payment already released to the Contractor against the said statement.

Employer will make payment within 15 (Fifteen) days of receipt of payment recommendation from Engineer; and

Notwithstanding anything contained herein above, the final payment due shall be made only upon completion of Improvement works, and suitable certification by the Engineer.

39.3 Retention Money

In each Interim Payment Certificate (IPC) @ 5% of value of work executed during each bill will be withheld and the withheld amount will be refunded to the contractor along with the Final bill / Taking over certificate. The maximum amount of Retention money to be with held is restricted up to 5% of the contract value.

40 Delayed and Disputed Payments

- 40.1 The Employer shall pay the Contractor, the amounts certified by the Engineer within the periods stipulated in this Contract. If the Employer makes a late payment, the contractor shall be paid interest on the late payment along with the next payment. Interest shall be calculated from the date by which the payment should have been made upto the date when the payment is made at the rate of 8% p.a.
- 40.2 If an amount certified is increased either in a later certificate or as a result of any judgement, the contractor shall be paid interest upon the delayed payment as set out in this clause. Interest as referred above, shall be calculated from the date upon which the increased amount would have been accepted by the Employer in the absence of dispute.

41 Compensation Events

- 41.1 The following are compensation events unless they are caused by the Contractor;
- (a) The Engineer orders a delay in execution of works for a period of more than 60 days;
 - (b) The effect on the Contractor of any of the Employer's Risks; and
 - (c) Other Compensation Events listed in the contract data, if any.
- 41.2 If a Compensation Event would prevent the Works from being carried out in terms of the Contract, then the Employer shall extend the Intended Completion Date as may be warranted. The Engineer shall decide by how much the Intended Completion Date shall be extended.
- 41.3 As soon as information demonstrating the effect of each Compensation Event has been provided by the Contractor, it is to be assessed by the Engineer and the Intended Completion period shall be adjusted accordingly. If the Contractor's forecast is deemed unreasonable, the Engineer shall adjust the Intended Completion Period on Engineer's own forecast. The Engineer will assume that the Contractor will react competently and promptly to the event.
- 41.4 The Contract shall be entitled to compensation to the extent that the Employer's interests are adversely affected by the Contractor not having given early warning or not having cooperated with the Engineer / Employer.

42. Tax

- 42.1 The rates quoted by the Contractor shall be deemed to be inclusive of GST, sales tax, contract tax, royalty, Toll tax, cess and other taxes/duties/levies as may be levied by Central / State Governments and local bodies that the Contractor will have to pay for the performance of this Contract. The Employer will perform such duties in regard to the deduction of such taxes at source as per applicable law.
- 42.2 The contractor shall have valid Registration for GST and PAN as prescribed in Appendix 3

43. Currency

- 43.1 All payments shall be made in **Indian Rupees only**.

44. Price Adjustment for Works

No Price adjustment shall apply to this work/contract.

45. Penalty and Liquidated Damages

45.1 For Construction/ Improvement Works

- (a) In case of non-completion of the works within the Intended Completion Date as indicated in the Contract Data the Contractor shall pay liquidated damages to the Employer at the rate stated in the Contract Data for each day that the actual Completion Date is later than the Intended Completion Date. The liquidated damages amount shall be deducted from payments due to the Contractor and shall not be refundable. The total amount of liquidated damages shall not exceed the amount defined in the Contract Data.

- (b) Time is the essence of the Contract and payment or deduction of penalty or liquidated damages shall not relieve the Contractor from his obligation to complete the works as per Program and/or Milestones or from any of the other Contractor's obligations and liabilities under the Contract or the Employer's right to invoke the Performance Security.

45.2 For Maintenance Works

- (a) In case the Contractor has not rectified or addressed deficiencies as directed by the Engineer at the time of site inspections during defects liability period, the Employer retains the right to get works done through a third party and debit the cost and expenses incurred to the Contractor. Alternatively, the Engineer may recommend invoking of Performance Security in part or full, as the case may be. In case, the Contractor still fails to rectify or address deficiencies even after invoking Performance Security, as described earlier, then the Employer shall treat the event as fundamental breach of Contract in terms of Clause 54 of Conditions of Contract.

46. Deleted

47. Advance Payment for Construction/ Improvement Works

- 47.1 No Mobilisation advance/Machinery and equipment advance payment will be made to the Contractor for the works.
- 47.2 No material advance will be made or paid to the Contractor.

48. Securities

- 48.1 The Performance Security (including additional security for unbalanced bids) shall be provided to the Employer not later than the date specified in the Letter of Award and shall be issued in an amount and form indicated in Contract Data from:
- a. State Bank of India or subsidiaries;
 - b. Any Indian Nationalised Bank; or
 - c. Any Scheduled Bank

as acceptable to the Employer, and denominated in Indian Rupees. The Performance Security shall be valid for period of **14 Months** from the date of bank guarantee or **01 Month** beyond the defect liability period whichever is later with a claim period of **03 months**. In case the Intended Completion Date is extended, then the Contractor shall submit a fresh Performance Security or extension of the date of the Bank Guarantee/s if any, furnished as security, the same value valid up to a date of one month beyond the issue of Defect Liability Certificate.

49. Cost of Repairs

- 49.1 Loss or damage to or defective works or Materials during the Contract Period shall be remedied by the Contractor at the Contractor's cost to the satisfaction of the Engineer/Employer. In case of default by the Contractor, the Employer shall carry out suitable remedial measures and deduct the amount incurred thereto from payments due to the Contractor.

E. Finishing the Contract

50. Completion

- 50.1 The Contractor shall request the Engineer to issue a Certificate of Completion of Works and the Engineer will do so upon deciding that the Works are completed in all respects.
- 50.2 Upon satisfactory compliance and observance of the performance standards by the Contractor, the Engineer shall suitably inform the Employer who may then issue the Certificate of Contract Completion to the Contractor, subject to Contractor satisfying all Provisions under this Contract.

51. Taking Over

- 51.1 The Employer will take over the Site and the Works within 1 month of the Engineer issuing a certificate of Contract Completion in terms of Clause 50.2.

52. Final Account

- 52.1 In case of Construction / Improvement Works, the Contractor shall supply to the Engineer, a Detailed account of the total amount that the contractor considers payable under the Contract on or before 30 days beyond the Engineer shall assess the quality and completion status of Construction /improvement Works in terms of this Contract and upon satisfaction, shall certify and final payment that is due to the contractor within 30 days of receiving the Contractor's account. If the Engineer is not satisfied, then the Engineer shall issue within 7 days thereto a schedule that states the scope of the corrections or additions that are necessary. If the Contractor fails to comply with the Engineer's instructions, the Engineer shall levy Liquidated Damages and shall recommend the Employer suitably. The Employer retains the right to employ a third party and carry out the remaining works and deduct the payment from pending bills of the Contractor.

53. Deleted

54. Termination

- 54.1 The Employer or the Contractor may terminate the contract if the other party causes a fundamental breach of the Contract.

- 54.2 Fundamental breach of Contract includes, but shall not be limited to the following:

- (a) Contractor stops work for 28 days when no stoppage of work is shown on the program and the stoppage has not been authorized by the Employer.
- (b) Employer or the Contractor is made bankrupt or goes into liquidation, other than for a reconstruction or amalgamation.
- (c) Payment certified by the Engineer is not paid by the Employer to the Contractor within 60 days of the Engineer's Certificate.
- (d) The Engineer gives Notice that failure to correct a particular Defect is a fundamental breach of Contract and the Contractor fails to correct it within a reasonable period of time determined by the Engineer.
- (e) The Contractor does not maintain a security (performance security, Security against Advance Payment etc) which is required;
- (f) In case of the Contractor has awarded more than 20% of value of works on sub-contract
- (g) The Contractor has defaulted in fulfilling his obligations under this Contract;
- (h) The Contractor has contravened clause 7,8 and 9 of the conditions of contract
- (i) Deleted;
- (j) The Contractor fails to carry out the instructions of Engineer within a reasonable time determined by the Engineer in accordance with Clause 15.1 and 22.1 of the conditions of Contract.
- (k) The contractor has delayed the completion of works by the number of days for which the maximum amount of liquidated damages can be paid as defined in the Contract Data; and

- (l) If the Contractor, in the judgment of the Employer has engaged in corrupt or fraudulent practices in competing for or in executing the Contract.

For the purpose of this paragraph "corrupt practice" means the offering, giving, receiving or soliciting of anything of value to influence the action of a public official or the Employer or Engineer in the procurement process or in contract execution. "Fraudulent practice" means a misrepresentation of facts in order to influence a procurement process or the execution of a contract, and includes collusive practice among Contractors (prior to or after bid submission) designed to establish bid prices at artificial non competitive levels and to deprive the Employer of the benefits of the free and open competition."

- 54.3 When either party to the Contract gives notice of a breach of Contract to the Engineer for a cause than those listed under Clause 54.2 above, the Engineer shall decide whether the breach is fundamental or not.
- 54.4 Notwithstanding the above, the Employer may terminate the Contract for his convenience.
- 54.5 If the Contract so terminated, the Contractor shall stop work immediately make the site safe and secure and leave the site as soon as reasonably possible.
- 54.6 In case the Contractor fails to carryout the works, as per the work programme schedule and as per the conditions stipulated in the Bid Document, then the Employer, at its sole discretion is entitled to terminate this contract at the '**Risk and Cost**' of the Contractor and to employ such other Contractor/s to carryout the balance works. The additional cost incurred by the employer in completing the works, which remain unfinished at the time of termination of the contract will be recovered from the Contractor. Any unrecovered 'Risk and Cost' amount will be a debt payable to the Employer and the Employer will take suitable actions for such unrecovered 'Risk and Cost' amount at the cost of the Contractor. Any bill/s for the works executed remains unsettled and/or the value of materials, machineries etc., taken over or possessed by the Employer at the time of termination or on termination will be adjusted towards the 'Risk and Cost' recoverable from the contractor.

55. Payment upon Termination

If the Contract is terminated because of fundamental breach of Contract by the Contractor, the Engineer shall issue a certificate for the value of the work done less advance payment received up to the date of the issue of the work certificate, less other recoveries due in the terms of the Contract, less taxes due to be deducted at source as per applicable law and the estimated/actual '**Risk and Cost**' to be recovered from the contractor due to termination. If the total amount due to the Employer exceeds any payment due to the Contractor the difference shall be a debt payable to the Employer.

If the Contract is terminated at the Employer's convenience or because of a fundamental breach of Contract by the Employer, the Engineer shall issue a certificate for the value of the Works done, the reasonable cost removal of Equipment, repatriation of the Contractor's personnel employed solely on the Works, and the Contractor's cost of protecting and securing the Works and less advance payments received up to the date of the certificate, less other recoveries due in terms of the contract and less taxes due to be deducted at source as per applicable law.

56. Property

- 56.1 All materials on the site, plant, Equipment, Temporary Works and Works are deemed to be property of the Employer, if the Contract is terminated because of a Contractor's default.

57. Release from Performance

- 57.1 If the Contractor is frustrated by the outbreak of war or by any other event entirely outside the control of the Employer or the Contractor, the Engineer shall certify that the Contractor has been frustrated. The Contractor shall make the site safe and stop works as quickly as possible after receiving this certificate and shall be paid for all works carried out before receiving it and any work carried out afterwards to which commitment was made.

APPENDIX 1

Safety Measures

I Contractor's Liability

The contractor shall be absolutely and solely responsible for any and all kinds of injuries or damages to person and property of any description whatever may be caused by or result from the execution of the works, whether these may have been carried out skillfully and carefully and strictly in conformity with the provisions of the specifications or not.

II Responsibility for Accidents, Damages etc.

The care of the whole of the permanent works shall remain with the contractor who shall be responsible for all accidents or damages from whatever cause arising and chargeable for anything that may be stolen, removed destroyed or damaged to whomsoever belonging and also for making good all defects and damages to the said works or to any property adjoining or any cause whatever whether such damage or defects were occasioned by the negligence of the contractor or not or may be or might have been discovered during the progress of the works or in consequences thereof, or shall appear to be known after the completion whereof or whether payment may wholly or partially have been made or the works approved as supposed to have been properly done and no certificate of approval of any works by any officers or ITEL shall affect or prejudice the right of ITEL against the contractor or be considered or held as at all conclusive as to the sufficiency of any works or materials.

III Contractor to be responsible for all Trespasses and Damages

In the event of accidents to any person including employees of ITEL on duty, damages to property, trespass on land, injury to cattle, horses, or other animals or damage injury of any description to any person or thing arising out of the execution of the works, the contractor shall be held responsible for and make good the same and shall indemnify ITEL from all claims or expenses on account thereof and if ITEL has to pay any money in respect thereof the sum so paid and the costs incurred by ITEL shall be charged to the contractor as so much money paid to him on account of his contract and the contractor shall not be at liberty to dispute or question the right of ITEL to make such payment for him or on his account notwithstanding the same may have been made without his consent of authority and decision or determination in law or otherwise to the contrary notwithstanding. ITEL shall not be liable to, or for in respect of any damages or compensation or claim there for, under any Act for the time being in force or common law because or by reason or in consequences of any accident or injuries to workmen or others in the employment of the contractor or any subcontractor or of any person acting under him or on his behalf or the staff / persons employed by ITEL for supervision of the work under his contract and the contractor shall save ITEL harmless and indemnify in respect thereof and of any all costs and expenses incidental there to or consequent thereon.

IV Safety Measures

1. All the works to be carried out in and around the work site, it must be under the contractors supervision with their supervisor, at their own risk and cost.

2. The contractor should possess rubber gloves, gum safety boots, helmet, face mask, torch light, emergency light etc. as safety equipments in good condition.
3. Each and every employee of the contractor should have insurance cover under Workmen Compensation Act.
4. The Contractor has to carry out any activity of the construction work only after informing and getting concurrence of ITEL / Engineer In Charge.

V Safety Equipments & Loose Tools:

The Contractor will be responsible to make available the safety equipment and loose tools as listed below. If the Contractor fails to keep the safety equipment and loose tools and consumable items as listed the above will be procured by ITEL and the cost will be deducted immediately from the bill payable to the contractor with a penalty of Rs. 5,000/-

VI Safety Measures to be adhered

1. Only experienced, skilled people have to be employed by the contractor.
2. All personnel should be covered by insurance under Workmen Compensation Act.
3. All labour act provisions has to be met with.
4. Rubber gloves, gum safety boots, helmet, face mask, torch light, emergency light etc are need to be provided by the contractor.
5. Exhibit labels of "Safety First"

VII List of Safety equipments to be provided by the Contractor

SI No	Name of Equipment
1	Face Mask
2	Shock proof hand gloves
3	Disposable hand gloves
4	Gum boot / Safety shoes
5	First Aid Box
6	Emergency light
7	Helmet / hard hat
8	Safety cones
9	Traffic barriers
10	Warning lights
11	Red flags
12	Caution boards

Note: The above is only an illustrative minimum list. The contractor must note that it is their responsibility to ensure the lives and safety of the workers employed by them. Towards this end, all the equipments of appropriate specifications should be procured and made available to the workers in usable conditions throughout the period of contract. Responsibility for any health problem or death will solely rest with contractor.

APPENDIX 2**Labour Statutory Requirements****I General**

The Contractor shall confirm to and comply with the regulations and by-laws of the State or Central Government or ITEL and of all other local authorities such as Corporation of Chennai, The Tamil Nadu Electricity System, The Chief Electrical Inspector to Government of Tamil Nadu, The Government Customs and Police Departments Fire Service, the provisions contained in the various Labour Acts enacted by the State Legislature and Central Parliament in force and rules made there under including those under Minimum Wages Act, Factories Act, The Indian Electricity Act and rules framed under it, Workmen Compensation Act, The Employees State Insurance Act 1948, Provident Fund Regulations Act, The EPF and Miscellaneous Provisions Act 1952, Employees Provident Fund 1961 and scheme made under the said Act, Health and Sanitary Arrangements for workers etc. and the Contract Labour (Regulation and Abolition) Central Act 1970 and the Contracts (Regulation and Abolition) Central Rules 1971 etc. for Welfare and protection of works, workers or for the safety of the public and other Insurance provisions.

II Further, the Contractor has to give a declaration for the following provisions:-

- i. That in the capacity of Contractor, the Contractor has to comply with the provisions of Contract Labour (Regulation & Abolition) Act, 1970 by obtaining a valid license under the Act and the Rules thereto and similarly under Factories Act wherever applicable.
- ii. The Contractor has to pay the wages in accordance with the Minimum Wages Act to all his / their employees.
- iii. That the Contractor has to abide to recover the Employees Provident Fund and the Employee's Insurance contributions (both Employees and employers contribution) from the payment of bills every month.
- iv. The Contractor's Code Nos. for E.S.I / Workmen Compensation Policy and E.P.F codes are---
----- & ----- and both the Employees, Employers contributions will be remitted by the contractor in his / their code numbers and copy of the remittance challans will be produced. In case, if the contractor is failing to remit, he / they will inform wage rates of employees to the Principal employer so that they can remit Employee's State Insurance Contribution & Employees Provident Fund contribution (both for the Employer and the Employee) and authorize them to make deductions from the payment of bills.
- v. That the Contractor has to contribute towards Tamil Nadu Manual Worker (Regulations of Employment and Conditions of work) Act, 1982 fund at the percentage prescribed by the Government from time to time.
- vi. That the contractor has to further declare and undertake that in case of any liability pertaining to his / their employees is to be discharged by the Principal Employer for his / their lapse, the contractor undertake to reimburse the same or the Principal Employer is authorized to deduct the same from the contractor's dues as payable.
- vii. That the contractor will maintain the Registers and records about the Contract Labour employed under Section 29 of Labour (Regulation & Abolition) Act wherever applicable.
- viii. That the contractor will take insurance policy under Workmen Compensation Act to meet out any untoward incident until the contract labourers are issued with ESI card.

III Compliance with Labour Regulations

During continuance of the contract, the contractor and his sub contractors shall abide at all times by all existing labour enactment's and rules made there under, regulation, notifications and bye laws of the State or Central Governments or local authority and any other labour law (including rules), regulations, bye laws that may be passed or notification that may be issued under any labour law in future either by the State or the Central Government or the local authority. The Contractor shall keep ITEL indemnified in case any action is taken against ITEL by the competent authority on account of contravention of any of the provisions of any Act or rules made there under, regulation's or notifications including amendments. If ITEL is caused to pay or reimburse, such amounts as may be necessary to cause or observe, or for non-observance of the provisions stipulated in the notifications / Bye Laws / Acts / Rules / Regulations including amendments, if any, on the part of the contractor, the Engineer / ITEL shall have the right to deduct any money due to the contractor including his amount of performance security. ITEL/Engineer shall also have right to recover from the Contractor any sum required or estimated to be required for making good the loss or damage suffered by ITEL.

The employees of the Contractor and the Sub-Contractor in no case shall be treated as the employees of ITEL at any point of time.

IV Contribution to Fund

Notwithstanding anything contained in any Law for the time being enforced or in any Agreement every person / Contractor who undertakes any Civil work shall be liable to pay a sum at such percent, not exceeding one percent of the total estimated cost of the work as may be fixed by the Government, by notification, as contribution to the fund constituted for the benefit of manual workers in the employment in Civil Works under a scheme, framed under Section 3 of Tamil Nadu Manual Workers (Regulation of Employment and conditions of Work) Act, 1982. The percentage of total estimated cost of work, as may be fixed by the Government notification from time to time shall be paid by the Contractor.

V Contract Labour Welfare

- i. The rights and benefits conferred on the workmen employed by the contractor under the provisions of various Labour Laws are the responsibility of the contractor. The contractor has to indemnify ITEL in case of loss or any damages. It is the responsibility of the contractor to take insurance policy under Workmen's Compensation Act, 1923 for each labour engaged by the contractor. The contractor will be responsible for any deficiency on safety measures to be adhered as stipulated in Safety measures to be adhered in Appendix 1. A photocopy of the insurance under Workmen's Compensation Policy should be furnished to ITEL. The policies should be kept alive till the completion of the contract period.
- ii. The Contractor shall produce fitness certificate from any Authorized Medical Attendant (AMA) of Government Hospital for all the Technical Staff and Labour Staff to be employed.

VI Following Laws shall be adhered to by the Contractor wherever applicable

- a. Workmen Compensation Act, 1923
- b. Payment of Wages Act, 1936
- c. Industrial Disputes Act, 1947
- d. Minimum Wages Act, 1948
- e. Factories Act, 1948
- f. Employees PF and Miscellaneous Act, 1952
- g. Payment of Bonus Act, 1965
- h. Payment of Gratuity Act, 1972

- i. Equal Remuneration Act, 1979
- j. Maternity Benefit Act, 1951
- k. Contract Labour (Regulation & Abolition) Act 1970
- l. Industrial Employment (Standing Orders) Act 1946
- m. Trade Unions Act 1951
- n. Child Labour (Prohibition & Regulation) Act 1986
- o. Inter-State Migrant Workmen's (Regulation of Employment & Conditions of Service) Act 1979
- p. The Building and other Construction workers (Regulation of Employment and Conditions of Service) Act 1996 and the Cess Act of 1996
- q. Employee State Insurance Act, 1948
- r. The Tamil Nadu Manual Workers (Regulation of Employment and Conditions of Work) Act, 1982
- s. The Bonded Labour System (Abolition) Act, 1976
- t. The Employer's Liability Act, 1938

VII Elimination of Child Labour

1. Attention of all contractor are invited to the Child Labour (Prohibition and Regulations) Act 1986, which prohibits employment of children below 14 years of age in certain occupations and process and provides for regulations of employment of children in all other occupations and progress. Employment of child labor is prohibited in building and construction industry.
2. Hence all the contractors are requested to adhere to the provisions in the above Act and see that engagement of child labour in the operational activities of ITEL are completely prohibited. Any violation of the provision will lead to penal action and removing of the contractor from the list of registered contractors.

APPENDIX 3

Tax Registration Number

We confirm that our firm/company has valid GST/PAN details as under:

- i) GST No. _____

- ii) PAN No. _____

We confirm that our firm/company has valid ESI / Workmen Compensation Policy and EPF codes as under:

- i) ESI No. _____
or
Workmen Compensation Policy No. _____

- ii) EPF No. _____

**1% Cess to be paid for the Estimated Contract Value within 30 days after negotiation/
Letter of Award (LOA)**

(Format to be filled by the successful bidder)

- 1. Name of the Person
In charge of the Work :

- 2. Place of Work :

- 3. Total Estimated Cost of the Work :

- 4. 1% of the Total Estimated Cost of
the Work :

- 5. DD No., Date, Amount and Bank
On which Demand Draft is drawn :

Section IV Contract Data

SECTION IV CONTRACT DATA

Item	Clause Reference from GCC
The following documents are also part of the contract and enclosed as Appendix	2.3
<p>The Employer is : IT Expressway Ltd. (ITEL) No.171, TNMB Building, II Floor, South Kesavaperumal Puram, Pasumpon Muthuramalingam Road (Greenways Road), Raja Annamalai Puram, Chennai 600 028 Phone No.: 2495 2800 / 3800, Fax No.: 2493 3800</p> <p>Name of Authorised Representative : Chairman and Managing Director</p> <p>-----</p> <p>Engineer is : IT Expressway Ltd. (ITEL) No.171, TNMB Building, II Floor, South Kesavaperumal Puram, Pasumpon Muthuramalingam Road (Greenways Road), Raja Annamalai Puram, Chennai 600 028 Phone No.: 2495 2800 / 3800, Fax No.: 2493 3800</p> <p>Name of Authorised Representative: Chief General Manager</p>	1.1
The name of the Contract is “Supply and Fixing of Safety Roller Barrier (SRB) at Vilampur at km:101/800, 102/800 in East Coast Road, Chennai, Tamil Nadu (CSR work)”	1.1
The Start Date shall be the date of entering into Contract Agreement for the Work.	1.1
Intended Completion Date: 01 Month from the Date of Contract Agreement	1.1,16,26
The Site Possession Date shall be the date of commencement of work /Start Date	20
The Site is “Supply and Fixing of Safety Roller Barrier (SRB) at Vilampur at km:101/800, 102/800 in East Coast Road, Chennai, Tamil Nadu (CSR work)”	1
The Defects Liability Period is 12 Months after the work Completion Date	1.1
The language of the Contract Document is English	3
The law which applies to the Contract is the law of Union of India	3
The currency of the contract is Indian Rupees Only	43
<p>Retention Money :- In IPC's @ 5% of value of each bill will be withheld and the withheld amount will be refunded to the Contractor along with the Final Bill / Taking over certificate.</p>	39.3

<p>The liquidated damages for non-completion of works within the Intended Completion date shall be 0.5% of the value of balance works for each week's delay or part there of beyond the completion date. The maximum amount of liquidated damages for the whole of the works is 5% of final contract price for works.</p>	45.1
<p>Performance Security shall be of 2% of Contract Price for Improvement Works as stated in the work order, valid for 14 Months from the Date of bank guarantee or 01 Month beyond the defect liability period of work whichever is later with a claim period of 03 Months.</p> <p>The standard form of Performance Security acceptable to the Employer shall be in the form of DD / an unconditional and irrevocable Bank Guarantee of the type as presented in section – II of Bidding Documents.</p>	48

Section V

Bill of Quantities

Bill of Quantities (BoQ)

A. Preamble

1. The Bill of Quantities shall be read in conjunction with the Instruction to Bidders, General and Special Conditions of Contract, Technical Specifications and conforming to the Indian standard specification.
2. The Bidder should closely peruse all the specification clauses for items of works for which he is tendering his rates.
3. The quantities given in the Bill of Quantities are approximate and provisional, which are given to provide a common basis for making payment for works. Actual quantities of work are likely to increase or decrease as per the requirement at site. Hence, there is no claim for any additional or less quantities than the specified in the BOQ.
4. The rates in the Bill of Quantities shall except in so far as it is otherwise provided under the Contract, include all plant, labour, supervision, materials, erection, transportation, maintenance, insurance, Toll, administrative overheads, profit, taxes and duties, together with all general risks, liabilities and obligations set out or implied in the Contract.
5. General directions and description of work and materials are not necessarily repeated nor summarized in the Bill of Quantities. The whole cost of complying with the provisions of the Contract shall be included in the items provided in the Bill of Quantities.
6. The method of measurement of completed work for payment shall be in accordance with relevant best practices MoRTH, IRC/ IS/ BIS/ AASHTO or as per codal provisions/specifications as may be decided by the Employer.
7. References to the relevant sections of the Contract document shall be made before entering prices against each item in the Bill of Quantities

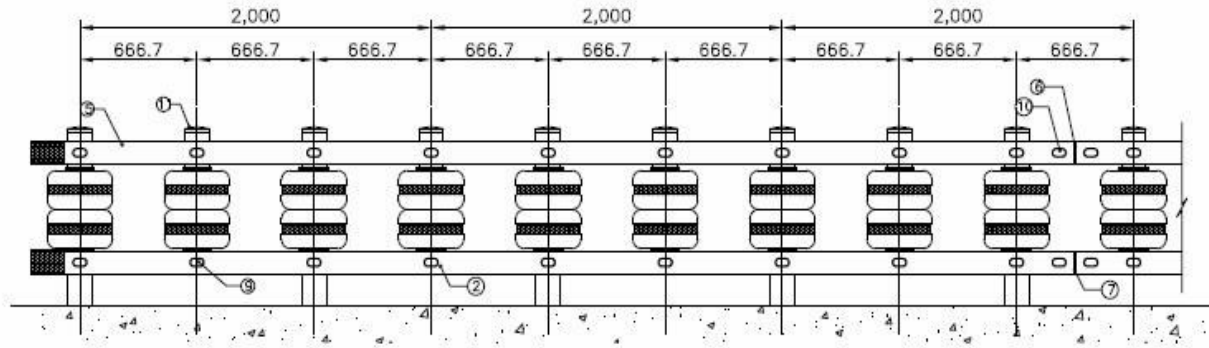
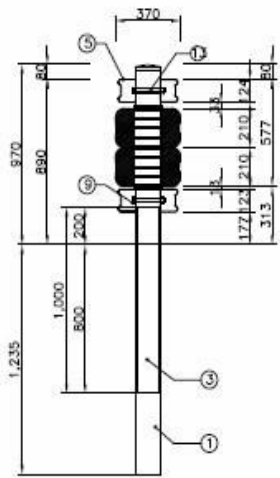
Supply and Fixing of Safety Roller Barrier (SRB) at Vilampur at km:101/800, 102/800 in East Coast Road, Chennai, Tamil Nadu (CSR work)

Bill of Quantities (BoQ)

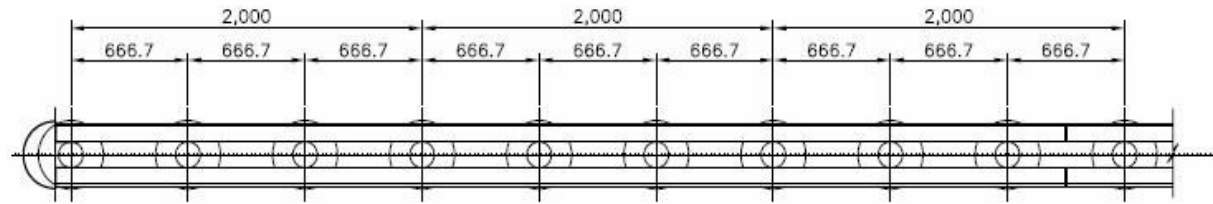
S.No	Description	Unit	Quantity	Rate (Rs.)		Amount (Rs)
				In Figures	In Words	
1	Supply and installation of Safety Roller Barrier (SRB) made up of EVA material as per the drawings conforming to the stipulations as per the enclosed specifications and as directed by the Engineer-Incharge	Meters	193			
Total Amount (Rs.)						

(Rupees _____ Only)

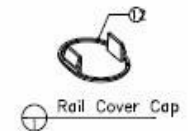
Section VI
Drawings
(For Tender Purpose Only)



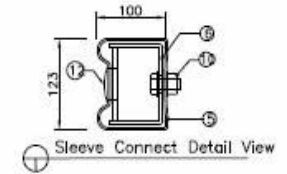
ELEVATION



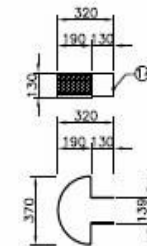
TOP VIEW



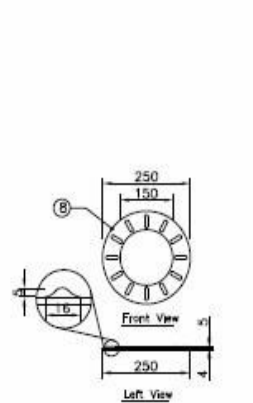
Rail Cover Cap



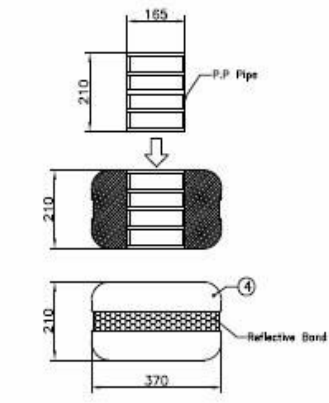
Sleeve Connect Detail View



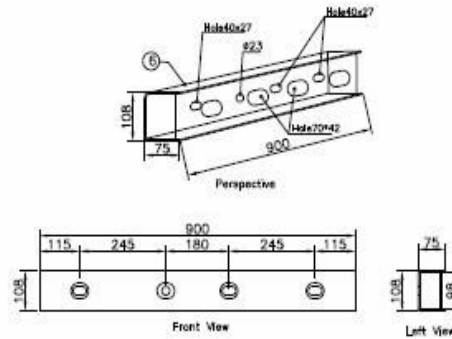
Round Rail Detail View



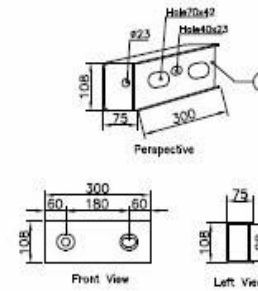
Stopper Board(9T)



Shock Absorbing Roller Detail View



Sleeve Detail View



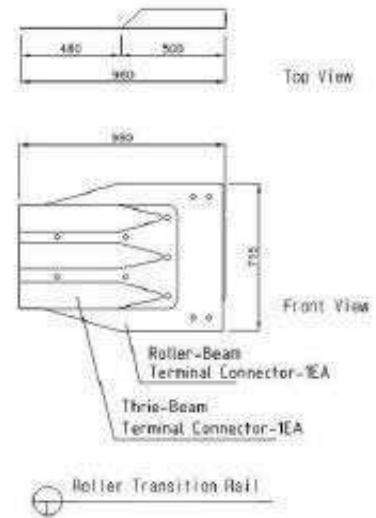
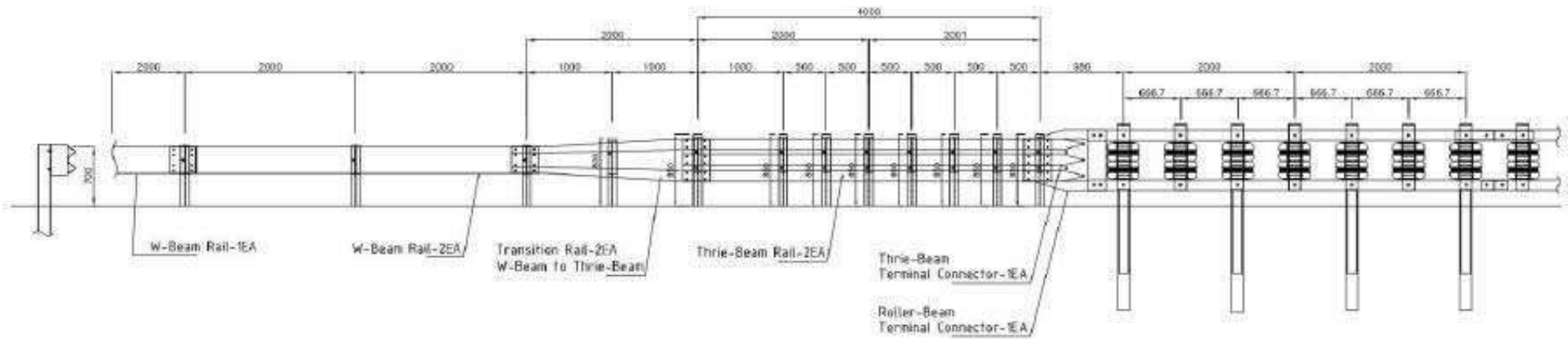
Sleeve Detail View

Material List (1 SPAN : 6M)

NO	PRODUCT	STANDARD	UNIT	QTY.	MEMO
①	Post (SS400)	#139.8x2200Lx4.5T	EA	5	Ht Dep Sdk
②	Post (SS400)	#139.8x780Lx4.5T	EA	4	Ht Dep Sdk
③	Inner Post (SS400)	#125x1000Lx4.5T	EA	5	Ht Dep Sdk
④	Shock Absorbing Roller P.P. Pipe	#370x210 #165x210x8T 50x125xL	EA	18	E.V.A P.P
⑤	Safety Rail (SS400)	123x100x5.999x3.0T	M	24	Ht Dep Sdk
⑥	Sleeve Rail (SS400)	108x75x900x3.0T	EA	2	Ht Dep Sdk
⑦	Sleeve Rail (SS400)	108x75x300x3.0T	EA	2	Ht Dep Sdk
⑧	Stopper Board	#250x9T	EA	36	P.E
⑨	N-Bolt/Nut/N-Washer	#19x200L	EA	18	Ht Dep Sdk
⑩	N-Bolt/Nut/N-Washer	#18x40L	EA	8	Ht Dep Sdk
⑪	Post Cap	#139.8TPE	EA	9	Ht Dep Sdk
⑫	Rail Cover Cap	80x45	EA	48	P.E
⑬	Pipe (SS400)	#34x125Lx4.0T	EA	9	Ht Dep Sdk
⑭	Round Rail	370x320x130x3.2T	EA	1	Ht Dep Sdk

* Allow ±10% of tolerance in spec, such as size, thickness, length and width of material listed above.

Safety Roller Barrier System



Transition from Roller Barrier to Thrie Beam

Section VI

Technical Specifications

Technical Specifications**PREAMBLE**

1. The Technical Specifications contained herein shall be read in conjunction with the other Bidding Documents.

1.1 Site Information
General

1.1.1 The information given hereunder and provided elsewhere in these documents is given in good faith by the Employer but the Contractor shall satisfy himself regarding all aspects of site conditions and no claim will be entertained on the plea that the information supplied by the Employer is erroneous or insufficient.

1.1.2 The area in which the works are located is in plain terrain, the approximate longitude and latitude of the region (Tamil Nadu) being 76° 15'/80° 20' East and 8° 05'/13° 35' North.

1.1.3 Climatic Conditions

1.1.3.1 The temperature in this region is as under:

i) During summer months, the average maximum temperature is 42°C.

ii) During winter months, the average minimum temperature is 18°C.

1.1.3.2 The average annual rainfall in the area is of the order of 800mm.

1.1.4 Seismic Zone

The works are located in Seismic Zone-II as defined in IS :1893 (Part I) - 2002

2 GENERAL REQUIREMENTS

The Technical Specifications in accordance with which the entire work described hereinafter shall be constructed and completed by the Contractor shall comprise of the following. All the specification given in the relevant codes, MoRTH shall be adhered to during execution of the work

2.1 Part-I: General Technical Specifications

The General Technical Specifications shall be the "SPECIFICATIONS FOR ROAD AND BRIDGE WORKS" (Fifth Revision, April 2013), issued by the Ministry of Road Transport and Highways, Government of India and published by the Indian Roads Congress, henceforth called MORT&H Specifications and deemed to be bound into this document.

2.2 Part-II: Supplementary Technical Specifications

2.2.1 The Supplementary Technical Specifications shall comprise of various Amendments/Modifications/ Additions to the "SPECIFICATIONS FOR ROAD AND BRIDGE WORKS" referred to in Part-I above and Additional Specifications for particular item of work not already covered in Part-I.

- 2.2.2 A particular clause or a part thereof in "SPECIFICATIONS FOR ROAD AND BRIDGE WORKS (Fifth Revision April 2013)" referred in Part-I above, where Amended/Modified/Added upon, and incorporated in Part-II, referred to above, such Amendment/Modification/ Addition supersedes the relevant Clause or part of the Clause.
- 2.2.3 The Additional Specifications shall comprise of specifications for particular item of works not already covered in Part-I.
- 2.2.4 When an Amended/Modified/Added Clause supersedes a Clause or part thereof in the said Specifications, then any reference to the superseded Clause shall be deemed to refer to the Amended/Modified/Added Clause or part thereof.
- 2.2.5 In so far as Amended/Modified /Added Clause may come in conflict or be inconsistent with any of the provisions of the said MORT&H Specifications under reference, the Amended/Modified/Added Clause shall always prevail.

2.2.6 Additional Specifications

In the absence of any definite provisions on any particular issue in the aforesaid Specifications, reference may be made to the latest codes and specifications of IRC, BIS, BS, ASTM, AASHTO and CAN/CSA in that order. Where even these are silent, the construction and completion of the works shall conform to sound engineering practice as approved by the Engineer and in case of any dispute arising out of the interpretation of the above, the decision of the Engineer shall be final and binding on the contractor. .

The latest edition till 28 days before the final date of submission of the bid of all specifications / standard shall be applicable.

DESCRIPTION OF AN ITEM

1. Supply and installation of Safety Roller Barrier made up of EVA material as per the annexed drawing conforming to the stipulations of:

(a) All barrier systems deflect under impact by errant vehicles except for rigid concrete barriers. The behaviour of barriers under impact varies depending on the type of system. The posts in semi-rigid systems act to reduce deflection but may induce more vehicle roll whereas the weaker posts in flexible systems do not restrain the cables under impact and vehicle roll is likely to be less.

The post strength and spacing will affect dynamic deflection on semi ridged barriers. The Post spacing is to be set at <1350mm.

The posts must include an inner sleeve for structural strength and that will significantly reduce dynamic deflection. The inner post must be a minimum of 1000mm with 80% of the sleeve placed below the natural ground level to maximise structural strength and limit dynamic deflection.

The outer post diameter must be within 140 mm with a wall thickness of 4.5mm and not protrude above the top of the railing by more than 80mm with a protective cap supplied.

Once the barrier has been located longitudinally (points of need) and laterally to accommodate dynamic deflection, suitable leading and trailing terminal treatments must be selected for use. Terminal treatments and crash cushions or impact attenuators should be used to terminate a road safety barrier. These devices are specifically designed to ensure that the ends of road safety barriers provide safe conditions for occupants of vehicles that may impact this area of a road safety barrier.

Appropriate end treatments must be used to suit each type of barrier and restricted road environment (i.e. width available and behaviour of end treatment on vehicle impact).

Crashworthy terminals are to be used on safety barriers that terminate within a clear zone that are in an area where they are likely to be hit head-on by an errant vehicle.

Only MASH TL4 tested transition plates to be used when transitioning from the roller barrier down to an attenuator which has been approved by international bodies.

There should be *In-factory* protective coatings to the steel line posts which will provide a 20-year corrosion free protective guarantee.

- (b) the Safety barrier must be a Box shaped beam to provide added strength and rigidity.

There shall be two top rails and two bottom rails running horizontal along the length of the barrier system to provide vertical support for the rollers, lateral stability for the posts, and allow the barrier to generate ribbon tension when impacted in the design.

A minimum 123 mm x 100 mm x 3.0 mm thick custom manufactured rail section to be bolted to either side of the steel line posts and intermediate posts. The rail section to be manufactured from SS400 steel for general structures or better and then Hot Dipped Galvanised. Each rail section to be a minimum 5995 mm in length.

Intermediate posts placed centrally between the line posts, shall be supported by the top and bottom rail members only. The finished nominal rail height of the barrier system must be within 890 mm, with all steel line posts finishing 80 mm above the top rail.

A series of slots and grooves to be placed in each rail section to allow placement of the bolts securing the rail to the Posts. Each bolt to be placed inside of the rail section, securing the inside face of the rail to the posts only, ensuring that all bolt heads and nuts to be located on the inside of the rail

- (c) the steel line post dimensions should be 140mm diameter x 4.5 mm thickness CHS sections, 2200 mm long. The posts to be fabricated from SS400 steel for general structures or better. All line posts must be hot dip galvanised or in factory coated. Steel Line posts should be manufactured with bolt attachment holes necessary to allow the placement of the upper and lower rail sections.

- (d) there should be an inner post section plug welded to the inside of each Steel Line Post. The inner post sections should be fabricated from 127 mm diameter x 4.3 mm thick CHS sections, 1000 mm long. Each inner post should be welded to be 435 mm from the ground embedment end of the Steel Line Posts. When installed the inner post will provide additional stiffness and strength to the Steel Line posts surrounding the ground level.

- (e) the intermediate line posts shall be manufactured from 140mm diameter x 4.5 mm thickness CHS sections, 780 mm long. The posts should be fabricated from SS400 steel for general structures better. All line posts should be hot dip galvanised or in factory coated. Each post to be fabricated with bolt

attachment holes located near either end to allow attachment to the top and bottom rails.

all intermediate posts shall be suspended between the top and bottom rails and not extend down to the ground level.

- (f) the Top Rail Sleeve should be manufactured from 108 mm x 75 mm x 5.0 mm thick fabricated box section. The sleeve should be 900 mm in length and Hot Dip Galvanised. Each sleeve to be fabricated with a series of slotted and round holes which facilitated placement of the bolts that joined the rail section to the Line Posts and Intermediate Posts.

The top Rail sleeve is used to join two sequential rail members using the bolted fasteners that also secure the rail members to the posts.

- (g) the Bottom Rail Sleeve to be manufactured from 108 mm x 75 mm x 5.0 mm thick fabricated box section. The sleeve to be 300 mm in length and Hot Dipped Galvanised. Each sleeve to be fabricated with two slotted holes which facilitated placement of the bolts that joined the rail section to the Line Posts and Intermediate Posts.

The top Rail sleeve is used to join two sequential rail members using the bolted fasteners that also secure the rail members to the posts.

- (h) the post sleeve should be of 34 mm diameter x 4 mm wall thickness pipe section, 125 mm long, to be placed inside each of the steel line posts and intermediate posts to be used as a sleeve for the top bolt fastening of the top rails to the posts. The Post Sleeve should prevent the bolts from being over-tightened and deforming the post elements.

- (i) a series of two stopper boards are placed on the top and bottom of each series of rollers. The stopper boards are 250 mm diameter x 9 mm thick, with a 145-mm hole located in the centre to allow placement over the steel posts. Each stopper board to be fabricated from UV protected Polyethylene, with a series of ribs on one side.

The primary purpose of the stopper boards is to reduce the free-spinning potential of the roller sections by introducing a degree of rolling friction.

- (j) a series of minimum Grade 8.8 fasteners should be used to assemble the Safety Roller Barrier System. The top and bottom rail sections must be secured using a M20 x 200 mm long Galvanised bolt. M20 x 40 mm long Galvanised bolts shall be used to secure the Bottom Rail Sleeve and the 2 bolts (those not coinciding with a post) in the Top Rail Sleeve.

- (k) a series of injection moulded plastic caps to be inserted into all slotted holes on the outside surfaces of the top and bottom rail members. The plastic caps to be manufactured from UV protected Polyethylene, and approximately 0.8 mm thick. The caps to be held in place with a barbed detail that locks onto the inside edge of the slots in the steel rail sections.

Each Steel Line Post and Intermediate Post must have a galvanised steel cap. The steel caps to be friction fitted onto the outside of the steel posts.

- (l) the rollers must be fabricated from Ethylene Vinyl Acetate (EVA).

the shock absorbing rollers must be made of a durable EVA material which does not burn, melt or crack when subject to naked flame or weather extreme conditions. The roller colour should not fade, crack or shrink when subject to diverse weather conditions and contain a minimum reflective class 1 band. The rollers should be able to withstand high compression and impact then be capable of returning to its original form read for service again.

The rollers should be compression tested to 50,000psi and be able to return to its original shape and;

- (m) the posts must be fixed to the ground by M15 grade concrete to atleast 1.00 m depth, etc. Including cost, conveyance of all the materials to the site, installation to the required lines and grade as per the annexed drawings.