



Tamil Nadu Road Development Company Ltd.

Tamil Nadu Road Development Company Ltd. (TNRDC)

Fabrication and supply of 110 KV Single Circuit and Double Circuit Galvanized Tower parts and supply of Hot dip galvanized steel bolts and nuts as per IS standard and approved drawings with washers and Tower accessories, inspection by TANTRANSCO before despatch, packing and deliver at work site for the work of “ Construction of two bypasses at Kelambakkam and Thiruporur along OMR”

BID DOCUMENT

Section I	:	Instruction 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	:	Technical Specifications

TNRDC

Tamil Nadu Road Development Company Limited,

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,

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E-Mail: tenders@tnrdc.com

Web : www.tnrdc.com

**Tamil Nadu Road Development Company Ltd.
(TNRDC)**

Fabrication and supply of 110 KV Single Circuit and Double Circuit Galvanized Tower parts and supply of Hot dip galvanized steel bolts and nuts as per IS standard and approved drawings with washers and Tower accessories, inspection by TANTRANSCO before despatch, packing and deliver at work site for the work of “ Construction of two bypasses at Kelambakkam and Thiruporur along OMR”

Schedule of Bidding Process

Period of Issue of Tender Document	12th December 2020 to 26th December 2020
Bid Document Price (inclusive of GST)	Rs.16,800/- DD in Favour of M/s Tamil Nadu Road Development Company Limited (TNRDC) payable at Chennai
Earnest Money Deposit (EMD) / Bid Security	Rs. 84,100/- DD in Favour of M/s Tamil Nadu Road Development Company Limited (TNRDC) payable at Chennai
Last Date and Time for Receipt of Bids	28th December 2020 at 15.00 Hrs
Bid – Opening Date and Time	28th December 2020 at 15.30 Hrs

***Tamil Nadu Road Development Company Ltd.
(TNRDC)***

Fabrication and supply of 110 KV Single Circuit and Double Circuit Galvanized Tower parts and supply of Hot dip galvanized steel bolts and nuts as per IS standard and approved drawings with washers and Tower accessories, inspection by TANTRANSCO before despatch, packing and deliver at work site for the work of “ Construction of two bypasses at Kelambakkam and Thiruporur along OMR”

CONTENTS OF BID DOCUMENTS

Invitation for Bids	
Section I	Instruction to Bidders
Section II	Forms of Bid & Forms of Securities
Section III	Conditions of Contract
Section IV	Contract Data
Section V	Bill of Quantities (BoQ)
Section VI	Technical Specifications



Tamil Nadu Road Development Company Ltd.

INVITATION FOR BIDS

Tender Notice No.:TNRDC/CD/023/2020

Date: 08.12.2020

Bids are invited by **M/s.Tamil Nadu Road Development Company Ltd. (TNRDC)** for implementation of the following work in **Old Mahabalipuram Road, Tamil Nadu on 28th December, 2020 upto 3.00 PM.**

S. No.	Description of Work	Indicative value of work (Rs) inclusive of GST	EMD / Bid Security Value (Rs)	Period of Completion
1	Fabrication and supply of 110 KV Single Circuit and Double Circuit Galvanized Tower parts and supply of Hot dip galvanized steel bolts and nuts as per IS standard and approved drawings with washers and Tower accessories, inspection by TANTRANSCO before despatch, packing and deliver at work site for the work of “ Construction of two bypasses at Kelambakkam and Thiruporur along OMR”	84.08 lakhs	84,100/-	04 months

Bid document can be obtained between **10.00 hrs and 17.00 hrs** on all working days from **11th December, 2020 to 26th December, 2020** at the address for communication mentioned below on payment of Non-refundable fee of **Rs.16,800/- (Rupees Sixteen Thousand Eight Hundred Only) inclusive of GST** in the form of a Demand Draft drawn in favour of **M/s.Tamil Nadu Road Development Company Ltd. (TNRDC)** 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 28th December, 2020** which will be opened on the same day at **15.30 Hrs.**

Address for communication

Chief General Manager

M/s.Tamil Nadu Road Development Company 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

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. Bids are invited by **M/s Tamil Nadu Road Development Company Ltd. (TNRDC)** for **Fabrication and supply of 110 KV Single Circuit and Double Circuit Galvanized Tower parts and supply of Hot dip galvanized steel bolts and nuts as per IS standard and approved drawings with washers and Tower accessories, inspection by TANTRANSCO before despatch, packing and deliver at work site for the work of “ Construction of two bypasses at Kelambakkam and Thiruporur along OMR”**
- (b) The Total estimated cost of the work is **Rs. 84.08 lakhs** (inclusive of GST @ 18%)
- (c) **All the Terms and conditions stipulated in this Bid Document and its annexure thereof are applicable to the work.**
- 1.1.2 The successful bidder will be expected to carry out the works for a period of **04 Months** from the date of **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 works to be carried out by the selected bidder includes the following components, but are not limited to the following:
- Fabrication and supply of 110 KV Single Circuit and Double Circuit Galvanized Tower parts and supply of Hot dip galvanized steel bolts and nuts as per IS standard and approved drawings with washers and Tower accessories, inspection by TANTRANSCO before despatch, packing and deliver at work site for the work of “ Construction of two bypasses at Kelambakkam and Thiruporur along OMR”**

Other works and services as may be indicated in the Special Conditions of Contract (SCC)

- 1.2.2 The Details of the above subject work are as follows:

Description of Works	Indicative value of work inclusive of GST(Rs)	EMD / Bid Security Value (Rs)	Period of Completion
Fabrication and supply of 110 KV Single Circuit and Double Circuit Galvanized Tower parts and supply of Hot dip galvanized steel bolts and nuts as per IS standard and approved drawings with washers and Tower accessories, inspection by TANTRANSCO before despatch, packing and deliver at work site for the work of “ Construction of two bypasses at Kelambakkam and Thiruporur along OMR”	84.08 lakhs	84,100/-	04 months

- 1.2.3 The Bidder is required to furnish the requisite acceptable EMD only at the time of bid submission
- 1.2.4 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) Should have adequate labour resources / link with manpower agencies to supply the required labourers and equipment for the work.
 - (ii) The Bidder should have **GST No., PAN No. , ESI or Workmen Compensation Policy** and **EPF code**. However, the Successful bidder has to furnish **GST No., PAN No., ESI / Workmen Compensation Policy before execution of contract agreement**.
 - (iii) 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 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 Qualification Criteria and Information

The bidder shall furnish the following details in addition to the information furnished as specified in clause 2 above to satisfy the qualification criteria.

3.1 Litigation History

- a) The bidder as on date should not have been debarred from taking up any civil works and shall not be under a declaration of ineligibility for corrupt and fraudulent practices by the Government of India, Government of Tamil Nadu or any other agency. The bidder should provide accurate information about any litigation or arbitration resulting from contracts completed or ongoing under its execution over the last five years. A consistent history of awards against the bidder will result in rejection of the bid. Suppression of any information or material in this regard would be construed as a fundamental breach and TNRDC reserves its right to take appropriate action including cancellation of the bid, forfeiture of EMD / performance security etc, as may be deemed fit and proper by TNRDC at any time before or after the award of work without requiring to give any notice to the applicant in this regard.
- b) Suppression of any information or material by the bidder regarding the Debarment, details of Litigation history, blacklisting of the bidder, misrepresentation or omission of any other material fact in order to influence a selection process would be construed as a fundamental breach and will lead to the disqualification of the Bidder or the termination of its Contract without any further notice.

- 3.2 Bidder should have carried out 75 % cumulative value of TLC and stringing Works (Rs.63.06 Lakhs) in any one financial year for Tamil Nadu Electricity Board/ Government / Government undertaking / SEBs / Power utility.

Bidder should have supplied Cumulative Quantity of minimum 78.5 MT of tower materials in any one financial year.

The Bidder should have TNEB Registration with appropriate class and above.

- a) The experience as sub-contractor will not be considered for qualifying experience criteria and offer of such tenders will be summarily rejected.
- b) The tenderer should furnish along with the tender the relevant documentary evidences/ end users certificates to execution of works and satisfactory operation. The end user certificates issued by the officers not below the rank of Executive Engineer alone will be accepted.

Financial requirements: Annual turnover of the tendered during any one of the last three financial years (2017-18,2018-19 & 2019-20) should be more than Rs.21.02 Lakhs /- (25 % the value of the contract). In case of bidders who happen to be companies registered under companies act -1956 ,attested copy of audited financial statements like profit and loss account and balance sheet for the above 3 financial years should be furnished and in case of others, attested copies of the annual turnover certified by the practicing chartered accountant for the above three financial years or attested copy of income tax statements for all the three financial years (2017-18,2018-19 & 2019-20) should be uploaded.

Registration: The bidder should be Class I registration with TANTRANSCO/TANGEDCO/TNEB (Both the registration and latest renewal copy should be furnished).

3.3 Experience

The bidder shall provide documentary evidence of above requirements having been actively engaged as agents of similar nature of work during the last three years.

4 Cost of Bid document and Bidding

- 4.1 The Bid document cost for the work is **Rs.16,800/- (Rupees Sixteen Thousand Eight Hundred Only)** inclusive of GST 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 submission of 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	Technical Specifications

- 6.2 The Bidder is expected to examine carefully all instructions, qualification information, Conditions of Contract, Contract Data, Technical specifications, forms and BoQ 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 to all the purchasers of the bidding documents. 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) Bidder's qualification, other information and supporting documents of Clause 3 as per formats given in Section-II of Bid Document.
 - (ii) Earnest Money Deposit (EMD) as per Clause 15
 - (iii) Bid Document duly signed in all pages and its cost as per clause 4
 - (iv) Letter of Application and Letter of Financial Bid according to Section-II of Bid Document and
 - (v) 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 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) which includes GST @18% and all other items covered in clause 12.3 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 (including GST@18%), 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

The proposals duly filled in the required format must reach the Office of **M/s Tamil Nadu Road Development Company Ltd. (TNRDC), R A Puram, Chennai – 600 028** on or before **15.00 hrs, on 28th December 2020** along with **EMD/ Bid security** for an amount specified in the table below in the form of Demand Draft drawn in favour of **M/s Tamil Nadu Road Development Company Ltd. (TNRDC)**, payable on any scheduled bank in Chennai as specified below:

Description of Works	Indicative value of work inclusive of GST(Rs)	EMD / Bid Security Value (Rs)
Fabrication and supply of 110 KV Single Circuit and Double Circuit Galvanized Tower parts and supply of Hot dip galvanized steel bolts and nuts as per IS standard and approved drawings with washers and Tower accessories, inspection by TANTRANSCO before despatch, packing and deliver at work site for the work of “ Construction of two bypasses at Kelambakkam and Thiruporur along OMR”	84.08 lakhs	84,100/-

- 15.1 Any bid not accompanied by the acceptable EMD and Bid Document and its cost shall be rejected by the Employer as Non- Responsive.

16 Alternative Proposals by Bidders

Bidders shall only submit offers that comply with the requirements of the bidding documents, including the basic technical design as indicated in the specifications.

Alternate proposals will not be considered.

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 duly signed in all pages 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.
- 17.7 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.
- 17.8 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
Tamil Nadu Road Development Company Ltd. (TNRDC)
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
and
- (b) bear the following identification:
Bid for “Fabrication and supply of 110 KV Single Circuit and Double Circuit Galvanized Tower parts and supply of Hot dip galvanized steel bolts and nuts as per IS standard and approved drawings with washers and Tower accessories, inspection by TANTRANSCO before despatch, packing and deliver at work site for the work of “ Construction of two bypasses at Kelambakkam and Thiruporur along OMR” ”
- 18.3 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.

19. Deadline for Submission of the Bids

- 19.1 Bids must be received by the Employer at the address specified above not later than 15.00 Hours on 28th December 2020. 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), in the presence of the Bidders or their authorised representatives who choose to be present **at 15:30 Hrs on 28th December 2020** at the office of the TNRDC, R A Puram, 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 Envelopes shall be opened and the submissions therein will be read out in appropriate detail at on the same day of bid opening
- 22.4 The Bidder's names, the Bid Prices, the total amount of each bid, any discounts, and such other details as the Employer may consider appropriate, will be announced and recorded by the Employer at the time of opening.
- 22.5 No bid shall be rejected at Bid opening except for late bids pursuant to Clause 20 and conditional bids. Bids that are not opened and read out at Bid opening will not be considered for further evaluation regardless of the circumstances.

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.

25.4 REJECTION OF TENDERS

- I. **Tender will be summarily rejected if**
- a. **the EMD requirements are not complied with,**
 - b. **Bid Qualification Requirements are not satisfied**
 - c. **Not signed forms in the annexures – 1 & 2 and shall be properly filled and signed.**
- II. **Tender is liable to be rejected, if it is**
- a. **with validity period less than that stipulated in this specification.**
 - b. **not in conformity with TNRDC/TANTRANSCO's commercial terms and Technical specifications.**
 - c. **received from any Black listed Firm / Contractor**
 - d. **received by Telex/Telegram/E-mail or other than electronically**
 - e. **received from a tenderer whose past performance/vendor rating is not satisfactory.**
 - f. **not containing all required particulars as per Schedules prescribed in this specification.**
 - g. **received from consortium units of SSI, NCSI, TANSIDCO etc.,**
 - h. **Containing false and bogus certificates.**
 - i. **Received from the tenderer who is directly or indirectly connected with Government service or TNRDC/TANTRANSCO service or services of Local Authority.**

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 methods 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 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 TNRDC, based on the capability of the Bidders.

Employer reserves the right to appoint other contractor/contractors for **“Fabrication and supply of 110 KV Single Circuit and Double Circuit Galvanized Tower parts and supply of Hot dip galvanized steel bolts and nuts as per IS standard and approved drawings with washers and Tower accessories, inspection by TANTRANSCO before despatch, packing and deliver at work site for the work of “ Construction of two bypasses at Kelambakkam and Thiruporur along OMR””** 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 anything contained in 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

- a. Performance Security in the form of a **Demand Draft** in favour of **M/s. Tamil Nadu Road Development Company 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 **5% of the Contract Price** in accordance with Clause 48 of Conditions of Contract. If the Performance Security is in the form of Bank Guarantee, the same shall be valid for a period of **44 Months** from the date of Bank Guarantee or **03 Months** beyond the Defect Liability Period whichever is later.
- b. 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.

31.2 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. Work Order/ Letter Of Award

- 32.1 At the same time that the employer notifies to the successful Bidder that his quote has been accepted. The Employer will issue the Letter of Award / work order for the work. The conditions of the contract and other related documents shall form part of this work order and shall be binding upon either parties till the contract completion period.
- 32.2 Upon the placing of order for work to the successful Bidder and after furnishing of the Performance Guarantee and execution of Contract Agreement by the successful bidder, the Employer will promptly notify the other Bidders that their Bids have been unsuccessful and upon request from the respective bidders to refund the EMD already submitted by the bidders, the employer will refund the EMD/Bid Security.

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 **TNRDC**, 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 work 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

Tamil Nadu Road Development Company Ltd. (TNRDC)

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

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 "**Fabrication and supply of 110 KV Single Circuit and Double Circuit Galvanized Tower parts and supply of Hot dip galvanized steel bolts and nuts as per IS standard and approved drawings with washers and Tower accessories, inspection by TANTRANSCO before despatch, packing and deliver at work site for the work of " Construction of two bypasses at Kelambakkam and Thiruporur along OMR"**".
2. TNRDC 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) TNRDC reserves the right, to reject or accept any application, cancel the bidding process and reject all applications; and
 - (b) TNRDC 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 Signatory

Name and Title of Signatory

2. LETTER OF FINANCIAL BID

(Letterhead of the Bidder)

[Date]

Chief General Manager

Tamil Nadu Road Development Company Ltd. (TNRDC)

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

Dear Sir:

Sub: "Fabrication and supply of 110 KV Single Circuit and Double Circuit Galvanized Tower parts and supply of Hot dip galvanized steel bolts and nuts as per IS standard and approved drawings with washers and Tower accessories, inspection by TANTRANSCO before despatch, packing and deliver at work site for the work of " Construction of two bypasses at Kelambakkam and Thiruppurur along OMR" - Reg

Having examined the Bid Document including Notice Inviting Bids, Instructions to Bidders, forms, General Conditions of Contract, Special Conditions of Contract, Bill of Quantities, 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 is **INR _____ (Indian Rupees in words) _____) inclusive of GST@18% and all 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, Drawings 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 Signatory:

Name and Title of Signatory:

Name of Bidder with official seal:

3. Confirmation Letter

(Letterhead paper of the Contractor)

To:

[Name and address of the Employer)

Dear Sir,

Sub: Fabrication and supply of 110 KV Single Circuit and Double Circuit Galvanized Tower parts and supply of Hot dip galvanized steel bolts and nuts as per IS standard and approved drawings with washers and Tower accessories, inspection by TANTRANSCO before despatch, packing and deliver at work site for the work of “ Construction of two bypasses at Kelambakkam and Thiruporur along OMR”.

We acknowledge 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/Demand Draft towards performance security and additional security for unbalanced bid as per the agreed format within the prescribed data as per the Instructions to Bidder and Conditions of Contract.

Yours faithfully,

Authorized Signatory:

Name and Title of Signatory:

Name of Agency:

4. BANK GUARANTEE FOR PERFORMANCE SECURITY

BG No dated20__

To

Tamil Nadu Road Development Company Ltd., (TNRDC)

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

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

WHEREAS vide the Work order no..... dated for **Fabrication and supply of 110 KV Single Circuit and Double Circuit Galvanized Tower parts and supply of Hot dip galvanized steel bolts and nuts as per IS standard and approved drawings with washers and Tower accessories, inspection by TANTRANSCO before despatch, packing and deliver at work site for the work of “ Construction of two bypasses at Kelambakkam and Thiruporur along OMR”** 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 Tamil Nadu Road Development Company Ltd.**, a company incorporated under the Companies Act, 1956, having its registered office at **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** (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 **Fabrication and supply of 110 KV Single Circuit and Double Circuit Galvanized Tower parts and supply of Hot dip galvanized steel bolts and nuts as per IS standard and approved drawings with washers and Tower accessories, inspection by TANTRANSCO before despatch, packing and deliver at work site for the work of “ Construction of two bypasses at Kelambakkam and Thiruporur along OMR”**

AND WHEREAS it has been stipulated by you in the said contract that the Contractor shall furnish you a Performance Guarantee, within 7 days of 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 **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 **44 Months** from the date of Bank Guarantee or **03 Months** beyond the Defect Liability Period whichever is later.

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

ANNEXURE I

DECLARATION FORM

To be signed with company seal on letter head and uploaded in the technical Bid

TENDER ACCEPTANCE LETTER

(To be given on Company Letter Head)

Date:

To,

The Chief General Manager, TNRDC/Chennai -28.

Sub: Acceptance of Terms & Conditions of Tender.

Tender Reference No:-TNRDC/CD/023/2020 dated 08.12.2020- **Fabrication and supply of 110 KV Single Circuit and Double Circuit Galvanized Tower parts and supply of Hot dip galvanized steel bolts and nuts as per IS standard and approved drawings with washers and Tower accessories, inspection by TANTRANSCO before despatch, packing and deliver at work site for the work of “ Construction of two bypasses at Kelambakkam and Thiruporur along OMR”**

1. I/We hereby certify that I/We have read the entire terms and conditions in all pages of the tender documents which form part of the contract agreement and I/We shall abide hereby the terms / conditions / clauses contained therein.

2. The corrigendum(s) issued from time to time by your department/ organization too has also been taken into consideration, while submitting this acceptance letter.

3. I/We hereby unconditionally accept the tender conditions of above mentioned tender document(s) corrigendum(s) in its totality / entirety.

4. In case any provisions of this tender are found violated, then your department/organization shall without prejudice to any other right or remedy be at liberty to reject this tender/bid including the forfeiture of the full said earnest money deposit absolutely.

Yours Faithfully,

(Signature of the bidder, with official Seal)

ANNEXURE II

Declaration to be submitted by the bidders in NJS paper of value not less than Rs.100/-

To
The Chief General Manager ,
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.

Dear Sir,

We hereby declare and confirm that we are registered vendor under GST Act having GSTIN _____ in State of _____. Our applicable GST% for the above reference job is _____ under code _____.

We hereby declare and confirm that we are registered vendor under composite scheme having GSTIN _____.

We are aware that as per sec 171 of CGST Act, any reduction in rate of tax on any Supply of goods or services or the benefit of input tax credit should be passed on to TNRDC by way of commensurate reduction in prices and as such we hereby declare that we are extending Rs. _____ /- of _____ % as rebate in my awarded price against input tax credit benefit.

We hereby declare that we do not have any input tax credit benefit on account of GST applicable against this job. If it is established that we have availed input tax credit benefit against this job, the differential tax benefit will be returned to TNRDC failing which TNRDC may take appropriate action.

Signature of bidder with Company Seal.

Section III

Conditions of Contract

Section III: CONDITIONS OF CONTRACT

A. GENERAL

1. Definitions

1.1 In this contract, the following terms shall have respective meanings as indicated. 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 36 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 TNRDC, R A Puram, Chennai – 600028.

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 Tamil Nadu Road Development Company Ltd.,(TNRDC), R A Puram, Chennai – 600028.

"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.

Work means “Fabrication and supply of 110 KV Single Circuit and Double Circuit Galvanized Tower parts and supply of Hot dip galvanized steel bolts and nuts as per IS standard and approved drawings with washers and Tower accessories, inspection by TANTRANSCO before despatch, packing and deliver at work site for the work of “Construction of two bypasses at Kelambakkam and Thiruporur along OMR””.

The **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 Works 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 is the letter issued by the Employer to the Contractor containing the Initial Contract Price and other details as enclosed in Appendix of this Contract.

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

The Goods” means all the equipment, machinery and/or other materials, which the Contractor is required to Supply to the TNRDC/TANTRANSCO under the contract.

“Plant, Work or Works” shall mean and include plant materials to be provided and work and / or services to be done by the Contractor under the Contract. This also includes all temporary works of every kind required in or about the execution of the works.

“Services” means services auxiliary to the supply of materials for 110 KV transmission line including cost of all materials

“The Site” shall mean the place where equipments are to be supplied and serviced for commercial operation and also include all the area in which operation in respect of the works are carried out. This term shall also include material stocking yard and the area where temporary structures are put up for installing any part of the work etc.

“Tests and Completion” shall mean such tests as prescribed by the Engineer before the line is taken over by the TANTRANSCO.

“Commercial Use” shall mean that use of the work, which the Contract contemplates or usage when it is to be commercially available.

“Guaranteed Period” shall mean 36 months for all equipments / materials and accessories from the date of commissioning of the whole.

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, installed, and removed by the Contractor which are needed for 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

Any other terms not defined herein but defined elsewhere in the contract and the Bid Document shall have the meaning ascribed to such terms therein and shall be deemed to have been included in this section.

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. Headings 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. Contract Agreement
 - b. Conditions of Contract (including Special Conditions of Contract)
 - c. Instructions to Bidders
 - d. Contract Data
 - e. Letter of Financial Bid; Priced Bill of Quantities
 - f. Letter of Award/Work order, Confirmation Letter
 - g. Performance Security
 - h. Technical Specifications and
 - i. Any other document listed in the Contract Data / Bid Document as forming part of the contract (addendum and clarifications if any)

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 Contractors 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. CONSTRUCTION OF CONTRACT:

- 6.1 The Contract shall in all respects be construed and operated as a Contract as defined in the Indian Contract Act, 1972 as amended from time to time.

6.2 Communication

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)

6.3 PATENT RIGHTS:

In the event of any claims or demand being made or action being brought against the TNRDC for infringement or alleged infringement of any patent rights in respect of any design, machine, plant, work materials or things used or supplied by the Contractor under the Contract, the Contractor shall indemnify the TNRDC against all costs and expenses arising from or incurred by reasons of any claims. The TNRDC shall notify the Contractor immediately any claims so made. The Contractor may, if he so desires, and shall if so required by the TNRDC and with the assistance of the TNRDC/TANTRANSCO defend such claims at the Contractor's own expenses or carry on negotiations for settlement of the claim. No such design, machine, work, material, plant or thing shall be used by the Contractor for any purpose, or in any manner other than that for which the Contractor has supplied them or specified or implied under the Contract.

6.4 DEATH, BANKRUPTCY ETC.:

If the Contractor dies or commits an act of Bankruptcy or being a corporation goes into liquidation, except for reconstitution purposes, or if his business is carried on by a receiver, the executors/successors of Contractor or any such receiver, liquidator or any person in whom the contract may become vested shall forthwith be given notice thereof in writing to the TNRDC and shall for one month, during which he shall take all reasonable steps to prevent stoppage of the works, have the option of carrying out the contract subject to his or their providing such guarantee as may be required by the TNRDC/TANTRANSCO but not exceeding the value of the work for the time being remaining unexecuted. In the event of stoppage of the works, the period of option under this clause shall be fourteen days only provided that the above option should not be exercised, the contract may be terminated by the TNRDC by notice in writing to the Contractor.

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 Subcontractor, 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 “**Work means “Fabrication and supply of 110 KV Single Circuit and Double Circuit Galvanized Tower parts and supply of Hot dip galvanized steel bolts and nuts as per IS standard and approved drawings with washers and Tower accessories, inspection by TANTRANSCO before despatch, packing and deliver at work site for the work of “ Construction of two bypasses at Kelambakkam and Thiruporur along OMR”**” a part of this work / contract and any other works that the Employer may decide. The Contractor acknowledges that the Employer has no liability what so ever 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 and atleast 25% of the personnel employed shall be certified skilled/semi killed personnel.

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 date, 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 in a year.

- 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.

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 Deleted

17. 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:

18.6 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.

18.7 '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.

18.8 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.

18.9 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. Deleted

20. Deleted

21. Access to the Site

21.1 The Contractor shall allow the Engineer/TANTRANSCO 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/TANTRANSCO which comply with the applicable laws where the Site is located.
- 22.2 This work should be carried out under the supervision of the Engineer-in-charge of TANTRANSCO.
- 22.3 The contractor shall only use high quality material conforming to the standards approved by TANTRANSCO and as per relevant ISS.
- 22.4 The contractor/their appointed authorities shall intimate in advance, their plan of action to carry out the work to the local TANTRANSCO officer.
- 22.5 All the works shall be carried out under direct supervision of TANTRANSCO officials and their decisions in this regard shall be final and binding on the contractor.
- 22.6 The Contractor shall execute and complete the works in strict adherence of time schedule and to the satisfaction of TANTRANSCO Engineers and adhere strictly the direction of TANTRANSCO in any matter.
- 22.7 Any accident that may arise in the course of execution of the works and shall indemnify TANTRANSCO for any claim for damages/injuries to person/property resulting from any such accident and also where the provision of Workmen's Compensation Act, apply shall take steps to properly insure against the claims there under by way of accident risk insurance to meet all purpose of relief, failing which the compensation awarded under the said Act.
- 22.8 The contractor/authorized contractors shall undertake to employ qualified technical men to carry out the work.
- 22.9 The contractor shall undertake to apply line clear well in advance for carrying out the works. TANTRANSCO shall consider their request and arrange for L.C. (Line Clear) depending upon the exigencies. This has to be strictly adhered.
- 22.10 The contractor should give to TANTRANSCO full and complete particulars of the work to be done well in advance and the period required for completing and also providing free access by the officers of TANTRANSCO and workman for inspection and supervision.
- 22.11 The contractor undertakes to ensure free flow of traffic during execution of the works and shall also be responsible for any accident/loss of lives/property.
- 22.12 The source of supply of materials used and guarantee for the materials used shall be furnished to TANTRANSCO. Any failure of the materials used within the period of guarantee shall be replaced free of cost.

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.

23.4 Arbitration is not applicable

24. Deleted

B. Time Control

25. Deleted

26. Deleted

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. Deleted

B. Quality Control

30 **Identifying Defects**

30.1 The contractor shall permit the Employer 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 contract Period.

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.

- a. 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.
- b. Bill of Quantities for the work should also be submitted along with the bid in the single 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 the 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 & 38 Deleted

39. Payment

- 39.1
 - (a) the estimated value of work executed (Works executed & payable) in accordance with conditions of contract, at base unit rates and prices;
 - (b) The actual value certified for payment for the Works executed at base unit rates and prices;
 - (c) the estimated value at base unit rates and prices of the Works 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.

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, on receipt of certification from TANTRANSCO officer, payment shall be made to the contractor by the Engineer to account for liquidated damages and other deductions, and

add/deduct amounts to account 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;

TANTRANSCO officer 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 Deleted

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 the GST@18%, 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 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 **Deleted**

46. Deleted

47. Advance Payment

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 shall be provided to the Employer no later than the date specified in the work order 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 only. The Performance Security value shall be **5%** of the Contract price. If the Performance Security is in the form of Bank Guarantee the same valid for a period of **44 Months** from the date of Bank Guarantee or **03 Months** beyond the defect liability period whichever is later. 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 rectified 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/TANTRANSCO 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 during the Defect Liability Period, 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 with in 1 month of the Engineer issuing a certificate of Contract Completion in terms of Clause 50.2.

52. Final Account

- 52.1 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 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) 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.
- (j) 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
- (k) 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 if 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 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.

58 Deleted

59 Field Laboratory with Equipment and Tests

- 59.1 Deleted
- 59.2 The cost of making any test to be conducted on all types of materials as per IS/ BIS specifications shall be borne by the contractor, and the contractors quoted rates shall include the same.
- 59.3 Third Party Inspection on Factory / Site shall be arranged by the contractor as per the instruction of the Employer. The Employer (or) Third Party Quality Auditor(s) appointed by the Employer shall be entitled to visit Factory / Site, Conduct sampling and testing on the Products/works in accordance with relevant specifications. The entire expenses towards the third party inspection shall be borne by the contractor.

60 Deleted

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 TNRDC shall affect or prejudice the right of TNRDC 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 TNRDC 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 TNRDC from all claims or expenses on account thereof and if TNRDC has to pay any money in respect thereof the sum so paid and the costs incurred by TNRDC 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 TNRDC 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. TNRDC 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 TNRDC for supervision of the work under his contract and the contractor shall save TNRDC 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 TNRDC / 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 TNRDC 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 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 TNRDC 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 Employees' 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 Employees' State Insurance Contribution & Employees Provident Fund contribution (both for employer and 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 TNRDC indemnified in case any action is taken against TNRDC 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 TNRDC 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 / TNRDC shall have the right to deduct any money due to the contractor including his amount of performance security. TNRDC/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 TNRDC.

The employees of the Contractor and the Sub-Contractor in no case shall be treated as the employees of TNRDC 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 TNRDC 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 TNRDC. 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 TNRDC 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. _____
- iii) ESI / Workman Comp. Policy. _____
- iv) EPF _____

**1% Cess to be paid for the Contract Value as per the notification of Tamil Nadu
Manual Workers Act,1982**

(Format to be filled by the successful bidder)

- 1. Name of the Person
In charge of the Construction Work :
- 2. Place of Construction :
- 3. Total Cost of Construction :
- 4. 1% of the Total Cost of
Construction Work :
- 5. DD No., Date, Amount and Bank
On which Demand Draft is drawn :

Special Conditions of Contract (SCC)

SPECIAL CONDITIONS:

The tenderers should indicate clearly in the tenders whether the Company is a potentially sick Industrial Company or a sick Industrial Company in terms of Section-23 or Section-15 of sick industrial companies special provisions Act 1985. Failure to supply this information will make the tender liable for rejection.

The Tenderers are requested to procure the equipments/materials only from reputed /qualified manufacturer as per Technical requirement stipulated in Technical Section.

The Type Test for all the equipments/materials used for this project should have been conducted in any approved Government/Govt. recognized laboratories conforming to latest IS/IEC.

All the intending Tenderers are informed that in the event of documents furnished with the offer being found to be bogus or the documents containing false particulars, the EMD paid by such tenderers will be forfeited in addition to blacklisting them for future orders/contracts in Tamil Nadu Transmission Corporation Limited.

The Tenderers should submit all the type tests as per ISS, drawings obtained from approved suppliers of TNEB/ Power utilities (State /Central) within fifteen days from the date of receipt of LOI and should get approval for each equipments/materials from the engineer in charge at site.

All the above test certificates shall be approved by the engineer in charge during execution

1. Inspection :

The TNRDC/TANTRANSCO or his representative shall have the right to inspect and/or test the goods /works to confirm their conformity to the Contractor. The Purchaser/owner shall notify the Contractor/supplier in writing of the identity of any representatives authorized for these purposes.

The inspections and tests may be conducted on the premises of the supplier/Contractor or his Sub Contractor at the point of delivery and /or at the goods' final destination. Where tests are conducted in the premises of Supplier/Contractor, all reasonable facility and assistance including access to drawings and production data shall be furnished at no charge to the Purchaser/Owner.

Should any inspected or tested goods fail to conform to specifications, the Owner/Purchaser may reject them and the supplier/contractor shall either replace the rejected

goods or make all alterations necessary to meet specification requirements free of cost to the Purchaser/Owner within one week of intimation.

The Purchaser/Owner's right to inspect, test and where necessary reject the goods after the goods; arrival at the site, shall in no way be limited or waived by reason of the goods having been previously inspected,. Tested and passed by the Purchaser/Owner or his representative prior to the goods' dispatch.

Not less than 15 (Fifteen) days advance intimation shall be given about the quantity of materials that will be ready for inspection by the officers of TANTRANSCO/TNRDC. The materials should not be dispatched without instruction from the Corporation.

2. QUALIFICATION REQUIREMENT FOR PROCUREMENT & SUPPLY OF MATERIALS:

The bidder should have assured access to Supply Tower parts ,Hardware fittings &Accessories for conductor and Earth wire, GI Bolt & nut, GI Anti theft Bolt & nut and washers etc. qualified manufacturers meeting the following minimum requirement and must demonstrate that based on known commitments they will be available for use in the proposed contract.

The qualified manufacturer should have designed, manufactured, type tested and supplied hardware fittings for 110 KV or above voltage transmission line at least 25% of the quantity offline materials (like Tower parts , Earth wire, OPGW Insulators, Hardware fittings & Accessories for conductor and Earth wire) required for transmission line, directly to Electricity Boards/Power utilities in India or to the Turnkey contractors who have executed the line to Electricity Boards/Power utilities in India in any one year during the last five years and at least 10% of the quantity required for the transmission line should have been in satisfactory operation for a minimum period of two years as on date of technical bid.

After award and at the time of execution of work in case of any sub vendor substituted for the originally proposed and approved sub vendor, the new sub vendor shall also satisfy the requirements specified and the approval obtained from the Board for the new sub vendor. If the line materials are proposed for procurement from sub vendor companies approved earlier for similar 110 KV transmission line projects executed by TANTRANSCO, furnishing of required documents for sub vendor approval for this project is not required, however prior intimation shall be given & acceptance to be obtained from TANTRANSCO/TNRDC before initiating the procurement process.

The successful bidders shall procure any individual item(s) from the manufacturer(s) meeting the above requirement after obtaining approval for the respective item(s). The list of sub vendors from whom the line materials proposed to be procured shall be furnished along with the tender.

The manufacturer(s) meeting the above requirement for any individual item or items shall be considered qualified for the respective item or items. The tenderer shall furnish the end user certificate of the qualified manufacturers to prove their experience in Supply and satisfactory performance of materials. The tenderer shall furnish the type test certificates for all the

materials conducted in a period not later than 5 years as on date of opening of technical bid or after opening of tender i.e. at the time of sub vendor approval from a reputed/approved laboratory (by Government /Power utility) for having conducted these tests as per relevant, latest IS. All the type test shall be approved by the engineer in charge at site before the execution.

3. GUARANTEE:

The supplier shall guarantee that the goods under the Contract are new, unused of the most recent or current models and incorporated all recent improvements in design and materials unless provided otherwise in the Contract. The supplier shall further guarantee that the goods supplied under this Contract shall have no defects arising from design, materials or workmanship, installation and erection, if that may develop under normal use of the supplied goods. The supplier shall also guarantee the performance of the works executed by him including the performance of all the materials/goods supplied by him.

This guarantee for goods and works shall remain valid for 36 months for the specified works from the date of completion of works in all respects and taking over by the TANTRANSCO.

The purchaser shall promptly notify supplier/Contractor in writing of any claims arising under this guarantee in respect of goods. Upon receipt of such notice, the Contractor shall, with all reasonable speed, repair or replace the defective works or parts thereof, free of cost at site. All the expenses towards transportation of defective parts to Contractor's works and of repaired/replaced parts to site shall be borne by the Contractor.

If the Contractor, having been notified, fails to remedy the defects within 14 days, the Contractor will proceed to take such remedial action as may be necessary, at the Contractor's risk and expenses and without prejudice to any other rights which the Contractor may have against the Supplier under Contract. All expenses in this regard will be recovered from Contractor.

4. CONTRACTOR TO INFORM HIMSELF FULLY:

The Contractor shall be deemed to have carefully examined the general conditions and specifications. If he shall have any doubt as to the meaning of any portion of these general conditions of the Contract, he shall set forth the particulars thereof, and send them to the Engineers in writing, in order that such doubt may be clarified.

5. ENHANCEMENT OF RATES:

No representation for enhancement of rates will be considered during the currency of the Contract.

6. DEPARTURE FROM CONTRACT TERMS:

No alterations, amendments, omissions, additions, suspensions or variations off works (hereinafter referred to as variation under the Contract as shown n the Specifications) shall be made by the Contractor except as directed in writing by the Engineer. However the Engineer shall have full powers subject to the provision hereinafter contained from time to time during the execution of the Contract by notice in writing, to instruct the Contractor to make such variations without prejudice to the Contractor and the Contractor shall carry out such variations occurred in the Specifications. If any suggested variations occurred in the Specification, and in the Contractor's opinion, if carried out, prevent the Contractor from fulfilling any of the Contractor's

obligations or guarantee under the Contract, the Contractor, shall notify the Engineer thereof in writing and the Engineer shall decide forthwith whether or not the same shall be carried out, and if the Engineer confirms Contractor's instructions, Contractor's obligations and guarantee shall be modified to such an extent as may be justified. The difference of cost, if any, occasioned by any such variations, shall be added to or deducted from the Contractor's price as the case may require.

The amount of such difference, if any, shall be ascertained and determined in accordance with the rate specified in the Schedule of prices, so far as the same may be applicable and where rates are not contained in the schedule or not applicable, they shall be settled as indicated elsewhere. But the TNRDC shall not become liable for the payment of any charges in respect of any such variations unless the instructions for the performance of the same shall have been given in writing by the Engineer.

In the event of the Engineer requiring any variation, such reasonable and proper notice shall be given to the Contractor as will enable him to make his arrangements accordingly and in cases where goods or materials or works are already prepared, executed and required to be altered, a reasonable sum in respect there of, shall be allowed by the Engineer, provided that no such variations shall except with the consent in writing from the Contractor, be such as will involve as an increase or decrease of the total price payable under the contract by more than 25% thereof, in any case in which

either then or later will in the Contractor's opinion involve a claim for additional payment, then the Contractor shall as soon as reasonably possible after the receipt of instructions aforesaid, advise the Engineer to that effect.

7. ENGINEER'S DECISION:

Engineer's decisions shall be final in respect of all matters, which are left to the decision of Engineers. The Engineer shall if required to do so by the Contractor give in writing a decision, there on and his reasons for such decision.

8. CONSTRUCTION OF CONTRACT:

The Contract shall in all respects be construed and operated as a Contract as defined in the Indian Contract Act, 1972 as amended from time to time.

9. PATENT RIGHTS:

In the event of any claims or demand being made or action being brought against the TNRDC/TANTRANSCO for infringement or alleged infringement of any patent rights in respect of any design, machine, plant, work materials or things used or supplied by the Contractor under the Contract, the Contractor shall indemnify the TNRDC/TANTRANSCO against all costs and expenses arising from or incurred by reasons of any claims. The TNRDC/TANTRANSCO shall notify the Contractor immediately any claims so made. The Contractor may, if he so desires, and shall if so required by the TNRDC/TANTRANSCO and with the assistance of the TNRDC/TANTRANSCO defend such claims at the Contractor's own expenses or carry on negotiations for settlement of the claim. No such design, machine, work, material, plant or thing shall be used by the Contractor for any purpose, or in any manner other than that for which the Contractor has supplied them or specified or implied under the Contract.

10. DEATH, BANKRUPTCY ETC.:

If the Contractor dies or commits an act of Bankruptcy or being a corporation goes into liquidation, except for reconstitution purposes, or if his business is carried on by a receiver, the executors/successors of Contractor or any such receiver, liquidator or any person in whom the contract may become vested shall forthwith be given notice thereof in writing to the TNRDC and shall for one month, during which he shall take all reasonable steps to prevent stoppage of the works, have the option of carrying out the contract subject to his or their providing such guarantee as may be required by the TNRDC but not exceeding the value of the work for the time being remaining unexecuted. In the event of stoppage of the works, the period of option under this clause shall be fourteen days only provided that the above option should not be exercised, the contract may be terminated by the TNRDC by notice in writing to the Contractor.

11. RESOLUTION OF DISPUTES:

The Purchaser and the supplier / Contractor shall make every effort to resolve amicably by negotiations any disagreement or dispute arising between them in connection with the Contract.
STANDARD:

The goods supplied under this contract shall conform to the standards mentioned in the Technical Specifications and when no applicable standard is mentioned, to the standard specified by the Institution of Central / State Government or internationally recognized Institutions shall be applicable and such standards shall be the latest issued by the concerned institution.

12. INSPECTION AND TESTS:

The purchaser or his representative shall have the right to inspect and/or test the goods/works to confirm their conformity to the Specification. The Purchaser/Owner shall notify the Contractor in writing of the identity of any representatives authorized for these purposes.

The inspections and tests may be conducted on the premises of the Supplier/Contractor or his Sub-Contractor at the point of delivery and/or at the goods' final destination. Where tests are conducted in the premises of Supplier/Contractor, all reasonable facility and assistance including access to drawings and production data shall be furnished at no charge to the Purchaser/Owner.

Should any inspected or tested goods fail to conform to specifications, the Owner/Purchaser may reject them and the supplier/contractor shall either replace the rejected goods or make all alterations necessary to meet specification requirements free of cost to the Purchaser/Owner within one week of intimation.

The Purchaser/Owner's right to inspect, test and where necessary, reject the goods after the goods arrival at the site, shall in no way be limited or waived by reason of the goods having been previously inspected, tested and passed by the Purchaser/Owner or his representative prior to the goods dispatch.

Nothing in clause 28.0. shall in any way release the Contractor from any guarantee or other obligations under this Contract.

13. PACKING:

The Contractor shall provide such packing of the goods as is required to prevent their damage or deterioration during transit to their final destination as indicated in the Contract. The packing shall be sufficient to withstand, without limitation, rough handling during transit to their final destination as indicated in the Contract and exposure to extreme temperatures, salt and precipitation etc., during transport and open storage. Packing case size and weights shall be taken into consideration wherever appropriate, the remoteness of the 'goods' final destination and absence of heavy mechanized handling facilities, at all points in transit.

The packing, marking and documentation within and outside the package shall comply strictly with such special requirements as shall be expressly provided for in the Contract or in any subsequent instructions issued by the Purchaser.

14. DELIVERY OF GOODS AND DOCUMENTS RELATED THERETO:

Delivery of goods shall be made by the Contractor in accordance with the terms specified by the Purchaser in its schedule of requirements and under the conditions listed in para 26.2.

The Contractor shall open stores at the site and all the materials/ equipments required for the works shall be consigned in the name of Officer designated by TNEB. All incidental liabilities like demurrage, damage, loss, etc., shall be the sole responsibility of the contractor.

15. INCIDENTAL SERVICES:

The Contractor is required to provide any or all the services broadly outlined in the Technical specification. Any other minor incidental service related to the scope of work like providing necessary assistance whether specifically mentioned or not must be carried out by the Contractor at his own cost. All tools, Tackles Plant etc., required for completion of above works shall be brought by the Contractor.

16. DELAY IN THE CONTRACTOR'S PERFORMANCE:

Delivery of the goods and performance of services shall be made by the Contractor in accordance with the time schedule specified by the purchaser.

Any unexecuted delay by the Contractor in the performance of his obligations shall render the Contractor liable to any or all of the following sanctions, Forfeiture of Performance Guarantee / Security Deposit / Imposition of liquidated damages and / or termination of the Contractor for default.

If at any time during the performance of the Contract, the Contractor should encounter emergent conditions of services, the Contractor shall promptly notify the Purchaser in writing within a Fortnight of such occurrence of the eventualities its likely duration and its cause(s). As soon as practicable after receipt of Contractor's notice, the Purchaser shall evaluate the situation and may at his discretion extend the Contractor's time for performance, in which case the extension shall be ratified by the parties by amendment of the Contract.

17. TERMINATION FOR DEFAULT:

The purchaser may, without prejudice to any other remedy for breach of contract, by written notice of default sent to the Contractor, terminate the contract in whole or in part:

- a. If the Contractor fails to delivery any or all the goods and services within the time period(s) specified in the contract or any extension granted by the purchaser.
- b. If the Contractor fails to perform any other obligations under the contract.

In the event, the purchaser terminates the contract in whole or in part, pursuant to Clause 34.1, the purchaser may procure, upon such terms and in such manner, as it deems appropriate, goods and services similar to those undelivered/unexecuted and the Contractor shall be liable to the Purchaser for any excess costs including L.D. for such similar goods/services. However, the Contractor shall continue performance of the contract to the extent not terminated.

If for any reason the tenderer has to resort to a mode of transport other than what was contemplated by him at the time of tendering to step up his delivery commitment and consequently has to incur more expenditure, the TNRDC shall not under any circumstances, reimburse such extra expenditure and the price will not exceed the first rates accepted by the TNRDC.

Under no circumstances shall a tenderer alter his price during the validity period after tenders are opened. Any tenderer who does so resulting in recalling of tenders by the TNRDC or additional expenditure to the TNRDC shall not only lose his earnest money deposit but also run the risk of being black listed by the TNRDC/TANTRANSCO which reserve the right under the law to recover damages resulting there from in addition to forfeiture of Performance Security.

18. TAXES AND DUTIES AND STATUTORY LEVIES :

Contractor is entirely responsible for all taxes, levies, duties, license fees, etc., incurred until delivery of the contracted goods to the Purchaser.

The rates quoted by the Contractor should be inclusive of all taxes & duties if any for the materials to be brought to the site. TNRDC will not pay any tax and Duty to the Contractor other than GST@18%.

The Certificate of deduction of work Contract tax shall be issued. However no deduction will be made where,

The TNRDC will not reimburse any works contract tax but excluding GST or Duties. Based on the notification on GST , the tax implication will be changed as per GST rules

In case any bidder quotes as the rates is inclusive of or not mentioning about the GST, it will be construed that the rate quoted is inclusive of applicable GST and the rates will be back worked and the prevailing tax will be deducted from the running bills. The GST so deducted will be admitted and paid on production of evidences as mentioned above based on the guidance given in the government notification on GST.

The TDS rate is 1% under CGST Act 2017, 1% under SGST Act 2017 and 2% under IGST Act 2017. In other words if the supply of goods or service attract SGST AND CGST then TDS at 1% will be deducted under SGST Act and 1% under CGST Act and remitted accordingly. If the Supply of goods or services attracts IGST, TDS @2% will be deducted and remitted to the GOI.

19. LABOUR WELFARE FUND:

Contribution towards Labour Welfare Fund at 1% of the civil work portion of bill will be deducted from the Contractor's bill and the same will be deposited in the Labour Welfare Office as per the G.O.Ms.No.95, Dt.02-06-1997.

20. INCOME TAX RECOVERY:

As per the standing instruction of the Government of India on the deduction of Income Tax at source, recovery towards Income Tax of the values of the work done will be made from relevant bills. The tenderer should also furnish PAN number.

21. COMPLIANCE WITH REGULATIONS:

1. Unless otherwise specified, works shall be carried out in accordance with the Indian Electricity Act 1910, Indian Electricity Rules or any revisions thereof, which may be issued during the currency of the contract and the requirements of any other Regulations and Acts in India to which the TNRDC/TANTRANSCO may be subjected to.

22. MATERIALS BROUGHT TO THE SITE OF WORKS:

All materials, tools and tackle brought to be delivered at the site for the purpose of the work shall from the time of their being so brought vest in and be the property of purchaser but may be used for the purpose of the work but for that purpose only and shall not on any account be removed or taken away by the Contractor or any other person without the express permission in writing of the Engineer but the Contractor shall nevertheless be solely liable and responsible for any loss or destruction thereof or damage thereto unless resulting from causes beyond the Contractor's control.

The purchaser shall have lieu of such materials, tools and tackle etc. for any sum or sums which may at any time prior to the completion of the works be due or owing to him by the Contractor in respect of or by reason of the contract and shall have liberty to sell and dispose of any such materials, tools and tackles etc. for any sum which may at any time prior to the completion of the works be so due or owing to him by the Contractor, in respect of or by reason of the contract and in such manner as he thinks fit and to apply the proceeds in or towards the satisfaction of such sum or sums so due, for owing as aforesaid but subject to lien and power of sale and disposal, such surplus materials tools and tackle shall belong to the Contractor and may be removed and disposed off by him as he shall think fit.

23. CONTRACTOR TO KEEP INVENTORY OF PLANTS ETC:

The Contractor shall prepare and maintain an inventory of all materials, temporary rolling stock, tools, plant purchased or hired or use of employment for any of the purposes of this contract and such inventory or a copy thereof shall at all times be available for inspection by the Engineer. On the completion of the contract all such materials, rolling stock and plant as shall have been hired

shall be removed forthwith by the Contractor and returned to the parties from whom the same have been hired.

24. LIABILITY FOR ACCIDENTS TO PERSONS:

The Contractor shall indemnify and save harm to the purchaser against all actions, suits, claims, demands, cost or expenses arising in connection with injuries suffered, prior to the date when the works or plant shall have been taken over by person employed by the Contractor or his sub-Contractor on the works whether under the General Law or under the Workers Compensation Act 1923 or any other statute in force at the date of the contract dealing with question of liability of employer for injuries suffered by employees and have taken steps properly to insure against any claims there under. Contractor should take insurance cover to all his workmen for injuries, disablement and death. All compensation against workmen's compensation act should be settled by the Contractor.

On the occurrence of an accident which results in the death of the workmen employed by the Contractor or which is due to the contract work and of so serious as to be likely to result in the death of any such workman, the Contractor shall within 24 hours of happening of such accident intimate in writing to the concerned Engineer and such Officers required by the provision of the Workmen's Compensation Act, the fact of such accident. The Contractor shall indemnify the TNRDC against all loss or damage sustained by the TNRDC resulting directly or indirectly from his failure to give information in the manner aforesaid including the penalties or fines if any payable by the TNRDC as a consequence of the TNRDC's failure to give notice under the Workmen's Compensation Act or otherwise conform to the provisions of the said act in regard to such accident.

In the event of any claim being made, or action brought against the purchaser involving the contractor and arising out of the matters referred to and in respect of which the Contractor is liable under the clause the Contractor shall be immediately notified thereof, and he shall with the assistance, if so required, of the purchaser but at the sole expense of the Contractor, conduct all negotiations for the settlement of the same or any litigation that may arise there from. In such cases the Purchaser shall at the expenses of the Contractor afford all available assistance for any such purpose.

In the event of an accident in respect of which compensation may become payable under Workmen's Compensation Act VIII of 1923 and any subsequent amendment thereof, whether by the Contractor or by the TNRDC, as principle it shall be lawful for the Engineer to retain out of moneys due and payable to the Contractor such sum or such sums of money as may be in the opinion of the said Engineer be sufficient to meet such liability. The opinion of the Engineer shall be final in regard to all matters arising under this Clause and will not be subject to any claim.

Liability for damage or loss to third party including inspection Officers due to act of the Contractor or by his sub-contractor connected with the execution of this contract shall be fully borne by the Contractor. The Contractor shall maintain such detailed records to furnish information regarding engagement and discharge of all workmen employed under this contract as to be adequate for the timely and full settlement of claims under the Workmen's Compensation Act. All cases of accidents or injuries shall be reported to the Engineer with all full details required for the settlement under the Workmen's Compensation Act. The Contractor should report about all accidents within 24 Hours to the Engineer of the TNRDC/TANTRANSCO in the preliminary accident form. He should furnish other particulars such as medical certificates, wage particulars, fitness certificates, and proof of having paid the compensation fixed by the TNRDC/TANTRANSCO etc. in the due course without delay.

25. CONSTRUCTION MATERIALS:

The tenderer has to verify the quarries and availability of materials himself personally about quality and quantity required for the work. It is the responsibility of the tenderer to arrange for the best class of materials as per ISS.

Section IV Contract Data

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 :-</p> <p>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
The liquidated damages for non-completion of works within the Intended Completion date shall be 0.5% of the contract value 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 10% of final contract price for works.	45.1
<p>The Performance Security shall be provided to the Employer no later than the date specified in the work order and shall be issued in an amount and form indicated in Contract Data from:</p> <ol style="list-style-type: none"> State Bank of India or subsidiaries; Any Indian Nationalised Bank; or Any Scheduled bank <p>as acceptable to the Employer, and denominated in Indian Rupees only. The Performance Security value shall be 5% of the Contract price. If the performance security is in the form of Bank Guarantee, the same shall be valid for a period of 44 Months from the date of Bank Guarantee or 03 Months beyond the defect liability period whichever is later. 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.</p>	48

Section V

Bill of Quantities

Bill of Quantities (BoQ) for works

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.

Fabrication and supply of 110 KV Single Circuit and Double Circuit Galvanized Tower parts and supply of Hot dip galvanized steel bolts and nuts as per IS standard and approved drawings with washers and Tower accessories, inspection by TANTRANSCO before despatch, packing and deliver at work site for the work of “ Construction of two bypasses at Kelambakkam and Thiruporur along OMR”

Bill of Quantities

S.No	Description of the work	Qty	Unit	Rate (Rs) inclusive of GST@18%		Amount (Rs) inclusive of GST @ 18%
				In Figures	In Words	
1	Fabrication galvanising and supply of 110 KV tower parts in accordance with boards design as per drawings furnished by TANTRANSCO and per IS:2062 Grade A and as detailed in this specification of TANTRANSCO including cost of all materials, labour, leads and lifts etc., complete and as directed by the Engineer-in-charge of TNRDC/TANTRANSCO	97.292	MT			
2	Supply of GI bolt and nuts of various sizes for 110 KV tower including cost of all materials, galvanising all labour, leads and lifts etc., complete as per drawing furnished by TANTRANSCO and as per standard specification of TANTRANSCO and as directed by the Engineer-in-charge of TNRDC/TANTRANSCO	6.911	MT			
Total Amount (Rs) inclusive of GST@18%						
Rupees _____ only inclusive of GST and all other applicable taxes						

Section VI

Technical Specifications

TECHNICAL SPECIFICATION

Section-A

Design and supply of Tower and Tower Accessories

1.1 Fabrication of all types of Towers as specified, body and leg extensions as per the GA drawings, bill of materials, detailed engineering, fabrication, proto inspection, Supply of galvanized towers including Supply of Hot dip galvanized steel, bolts, nuts, washers, and Supply of tower accessories, inspection before despatch, packaging and delivery free at destination site.

1.2 The scope of works envisaged in the Specification for the 110 KV Line.

Fabrication and supply of 110 KV Single Circuit and Double Circuit Galvanized Tower parts and supply of Hot dip galvanized steel bolts and nuts as per IS standard and approved drawings with washers and Tower accessories, inspection by TANTRANSCO before despatch, packing and deliver at work site for the work of " Construction of two bypasses at Kelambakkam and Thiruporur along OMR"

1.3 COMPLETENESS:

All the necessary equipments and materials required for works even though they have not been specifically included in this Specification but are necessary for the successful operation of the line are deemed to be included in the Specification.

2.0 STANDARDS :

The Indian Standard specification (IS) mentioned below or equivalent JIS and International Standards as amended up to date shall be applicable to the material and process used in the manufacture of towers and tower accessories, equivalent JIS and International Standards, with English translation, will also be applicable.

The copies of any JIS or International Standards to which the goods conform shall be furnished with the bid.

SI. No.	Indian Standards (IS)	Title	International & Internationally recognized Standard
1.	IS: 2	Rules for rounding off numerical values	
2.	IS: 209	Specification for Zinc.	
3.	IS: 278	Specification for Galvanized steel barbed wire for fencing	
4.	IS: 432	Mild steel & medium tensile steel bars & hard drawn steel wire for concrete reinforcement.	

5.	IS:802(part 1/sec1) IS:802(part-1/sec-2)	Code of practice for use of structural steel in overhead transmission line towers: Materials and loads permissible stresses	
6.	IS:802(Part-2)	Code of practice for use of structural steel in overhead transmission line: Fabrication, galvanizing, inspection and packing	
7.	IS: 802 (Part-3)	Code of practice for use of structural steel in overhead transmission line: Testing.	
8.	IS: 809 Part-V Part-VI	Dimensions for hot rolled steel beams, column channels & Angle sections. Equal leg angles Unequal leg angles	
9.	IS: 1367 (Part-1)	Technical sSupply conditions for threaded steel fasteners	
10.	IS: 1573	Specification for Electroplated coatings for zinc on iron and steel.	
11.	IS: 1893	Criteria for earthquake resistant design of structures	
12.	IS: 2016	Specification for Plain washers	ISO/R887 - 1968
13.	IS: 2062	Specification for Steel for general purpose	
14.	IS: 2551	Danger notice plates	
15.	IS: 2629 4759	Recommended practice for hot dip galvanizing of iron and steel	
16.	IS: 2633	Method of testing uniformity of coating on zinc Coated articles	
17.	IS: 3063	Specification for single coil rectangular section spring washers for bolts, nuts and screws	DIN-127 1970
18.	IS: 3757	High strength structural bolts	

19.	IS: 5358	Specification for Hot dip zinc coating on structural steel and other allied products	
20.	IS: 5358	Specification for Hot dip galvanized coating on fasteners	
21.	IS: 6610	Specification for Heavy washers for steel structures	
22.	IS-6639	Specification for Hexagonal bolts for steel structures	
23.	IS: 6745	Specification for Methods for the determination of the weight of zinc coating on zinc coated iron and steel articles	
24.	IS: 7215	Specification for Tolerance for Fabrication of steel structures	
25.	IS: 8500	Specification for welded structural steel (Medium and High Strength Quality)	
26.	IS: 10238	Step bolts for steel structures	
27.	IS:12427 &1367 Part 3-1991	Transmission tower bolts	

28.		Indian Electricity Rules 1956	
29.	C B I & P Publication No. 268 & 290	Transmission line Manual	

The standards mentioned above are available from:

Abbreviation	Name and address
BS	British Standards, British Standards Institution, 101, Pentonville Road, NI 9ND United Kingdom.
IEC/CISPR	International Electro-technical Commission, Bureau Central de La Commission, Electro Technique International, 1 Rue de Verembe, Geneva, Switzerland
BIS	Bureau of Indian Standards, Manak Bhavan, 9, Bahadur Shah Zafar Marg, New Delhi 230018, India

ISO	International Organisation for Standardization, Danish Board of Standardization, Danish Standardizing Srast, Aurehoegvej-12 DK-2900, Heelstrup, DENMARK.
NEMA	National Electric Manufacture Associate, 115, East 44 th Street, New York NY 10187, U.S.A.
JIS	Japanese Standards Association 1-24 Akasaka 4-Chome Minato-ku, Tokyo, Japan

3.0 MATERIALS AND WORKMANSHIP:

All materials used in the manufacture of the tower and tower accessories shall be conforming to relevant standards given in Clause 2.0.

4.0 TYPE OF TOWERS :

The Towers shall be of TANTRANSCO approved Tower Schedule

4.1.0. EXTENSIONS :

4.1.1.0. The Double circuit towers shall be designed so as to be suitable for adding 3 M, 6 M, 9 M and 12 M body extensions for maintaining adequate ground clearance. The strength of tower members for all loading cases shall be adequate with and without extensions. Wherever 18 M & 25 M extensions are required the spans shall be reduced to 300 M.

5.0. TRANSPOSITION TOWERS:

5.1.0. DC type Tower with suitable modification shall be used for transposition of the line maintaining all the clearances and shielding. The proposed transposition

arrangement shall be as per Drawing available with TANTRANSO. The contractor shall make necessary modifications to the cross arms to facilitate jumpering for transposition.

6. SPECIAL TOWERS REQUIREMENT:

No special tower is envisaged at present. In case of necessity, special towers shall be designed as per the specifications contained herein.

The design parameters shall be as per the latest code IS:802 for special towers and CBIP manual on Design of towers for long span river crossing. Publication No 290.

SHIELDING ANGLE:

The shielding angle shall not be greater than 10°.

7. STATUTORY REQUIREMENTS :

7.1 Statutory requirements as laid down in the Indian Electricity Rules 1956 or by any other statutory body applicable to such structures shall be satisfied/ observed.

7.2.0. TOWER STEEL SECTIONS :

Steel section in conformity to IS: 809 are to be used in towers, extensions and stub setting templates shall be of tested quality conforming to IS: 2062. No individual members shall be longer than 7000 mm. Use of high tensile steel as per IS: 8500 is permitted for fabrication of towers.

The steel strength as per any other International Standards, if used shall be of equal or superior quality with corresponding Indian Standards.

For designing of towers only rationalized steel sections shall be used. During execution of the project, if any particular section is not available, the same shall be substituted by higher section at no extra cost to the purchaser. However, design approved for such substitution shall be obtained from the purchaser.

7.3.0. THICKNESS OF MEMBERS:

The minimum thickness of angle section used in the design of towers, unless otherwise specified elsewhere in this specification, shall be kept not less than the following values:

- a) Main corner leg members including the 6 mm ground wire peak, lower and upper members of cross areas
- b) For all other members 5 mm

7.3.1 ALLOWABLE STRESS :

Structural steel angle section manufactured according to the latest IS: 809- (Part V and VI) and tested according to the latest edition of IS: 2062 or any other equivalent or superior International Standards will be used in the fabrication of the towers having its yield strength not less than 250 N/sq.mm. and where the yield strength required is 340N/Sq.mm high tensile steel (Fe 490 high tensile and Fe 540-

High tensile grade) according to IS: 8500 shall be used.

7.4 AXIAL STRESS IN TENSION:

The estimated tensile stress on the net effective area in various members shall not exceed 250 N/sq.mm for mild steel or the specified yield stress of the High tensile steel sections if proposed to be used in the fabrication of towers as per stress value of high tensile steel according to IS:8500 or any other equivalent to International Standards.

7.5 AXIAL STRESS IN COMPRESSION:

The estimated compressive stress in various members shall not exceed the value given by the formulae specified in clause 5.2 of IS.802 (Part-1) Section (2) latest revision.

7.6.4. STRESSES IN BOLTS AS PER IS-802/PART-1/SECTION-2

7.6.5. SLENDERNESS RATIO AS PER IS-802/PART-1/SECTION-2

7.7. QUANTITIES AND WEIGHTS :

7.7.1. The quantities stated in the schedule are provisional. The rates, terms and conditions quoted in the bid shall be valid throughout the period of the contract and any period extended.

7.7.2. After the award of contract, the contractor shall submit for Purchaser's approval, the detailed design calculations, drawings for each type of tower, extension and stub template etc. The weights of towers shall be calculated by using the standard sectional weights of steel structural of the sizes indicated in the approved fabrication drawings and bill of materials, without taking into consideration the reduction in weight due to drilling of bolt holes, skew cuts, chamfering, etc. or increase in weight due to galvanization but taking into consideration the weight of bolts, nuts, washers, hangers, D-shackles, 'U' bolts, strain plates etc.

In case, the weight of the tower, finally approved and accepted by the purchaser on the basis of designs and drawings so submitted and the tests successfully carried out is more than the guaranteed weight, no extra payment shall be made to the contractor on this account. If, however, the weight of the finally approved and adopted tower is less than guaranteed weight, the weight as per the finally approved design shall be adopted.

7.7.3. The contractor, while designing towers, shall use only such sizes of steel structural, which are easily procurable. If for any reason, the sections approved are not easily procurable, it is the contractor's responsibility to procure the alternative sizes, which are satisfactory from the point of design, fabrication, and galvanization and supply the same at no additional cost to the purchaser.

7.8. ERECTION STRESS:

Where erection stresses combined with other possible co-existent stresses could produce a working stress in any member appreciably above the permissible

stress, such additional strengthening of the member shall be effected or such other provision made as is necessary for bearing the working stress within the permissible limit.

7.9 CLEARANCES

7.9.1 NUMBER OF PARTS:

Tower members shall be so fabricated with least number of parts to be bolted together easily at site, which offers best facilities for transport, erection and maintenance. In designing towers for a minimum number of parts, the contractor shall not, however, employ parts of such dimensions will prove difficult to handle. The length of the longest piece shall not exceed 7 M.

7.9.2. INSULATOR STRINGS AND EARTHWIRE CLAMP ATTACHMENTS:

a) For the attachment of 'I' type suspension insulator strings a suitable swinging hanger on the tower shall be provided so as to obtain requisite clearance under extreme swinging conditions and free swinging of the string. The hanger shall be designed to withstand highest possible load, which may be imposed on it.

b) Earth wire suspension clamps shall be supplied as per the reference drawing enclosed in Vol-II of the specification. Earth wire peaks/cross arms are to be suitably designed to accommodate the shackle of the suspension clamp.

At tension towers strain plates of suitable dimensions on the bottom of the each cross-arm tip and at the top of earth wire peak, should be provided for taking the D- shackles of the tension insulator strings or earth wire tension clamps as the case may be. Full details of the attachments shall be submitted by the bidder for purchaser's approval before starting the mass fabrication.

7.9.3. STEP BOLTS & LADDERS :

a) Each tower shall be provided with step bolts on one of legs which shall conform to IS: 5613 Part/Sec-1 of not less than 16mm diameter and 175mm long, spaced not more than 450mm apart and extending from about 3.5 meters above the ground level to the top of the tower. Bolt holes shall be provided below 3.5 m level and step bolts will not be filled but the same will be handed over to the Purchaser. Each step bolts shall be provided with two nuts on one end to fasten the bolt securely to the tower and button head at the other end to prevent the feet from lipping away. The step bolts shall be capable of withstanding a vertical load not less than 1.5 KN.

b) If the height of superstructure exceeds 60 metres, a ladder along with protection rings of approved design shall be provided in continuation of the step-bolts on the longitudinal face of the tower from 60 metres above ground level to the top of the structure. Suitable platforms using flats and chequered plates not less than 6 mm thick along with suitable railing for access from step-bolts to the ladder and from the ladder to each cross-arm

and the ground wire support shall also be provided.

7.9.4. NUMBER, DANGER AND PHASE PLATES:

Bidder shall supply number plates, danger plates, and phase plates for all towers as shown in drawing enclosed in Vol-II of the specification.

Danger plates shall conform to IS: 2551. The number and phase plates shall conform to IS: 5613 (Part 2/Section-1).

7.9.5. ANTI-CLIMBING DEVICE:

a) Towers shall be fitted with anti-climbing devices, which shall be as per drawing enclosed in Vol-II of the specification and conform to IS:5613 (Part 2/Section-1). Anti-climbing devices shall be installed on the tower at the height duly approved by the Purchaser.

b) Necessary holes shall be provided on the tower members for installation of the anti-climbing device. C) The tenderer shall quote for anti-climbing device inclusive of structural and barbed wire.

7.9.6. BIRD GUARDS:

The bird guards for suspension towers shall be made of galvanized iron sheet and shall be as per drawing enclosed in Vol.II of the specification and shall conform to IS: 5613 (Part- 2 / Section -1) .

8.0. FABRICATION:

8.1.0. The fabrication of towers shall be in accordance with the provisions made in the following sub-clauses.

8.1.1. Except where, hereinafter modified, details of fabrication shall conform to the relevant clauses of IS: 802 (Part-II).

The contractor during fabrication of tower members shall ensure that mild steel and

high tensile steel do not get mixed up during fabrication and as such identification mark shall be embossed on each and every H.T. steel section at the time of shearing of members. The tenderer in his tender shall clearly bring out the means adopted to identify the mild steel and high tensile steel sections during fabrication.

All parts of the towers shall be cut to correct lengths and fabricated in accordance with the shop drawings approved by the purchaser. Welding of two or more pieces to obtain the length of member specified will not be allowed. Members shall be straight to the permissible tolerances or better when required to ensure proper fit before being laid off or worked and after galvanizing.

Normally butt splices shall be used. The components constituting the joint shall have a total strength greater than the heavier of the members connected. Lap splices may be used for connecting members of unequal sizes. The inside angle of lap splice shall be ground at the heel to fit the fillet of the outside angle. All splices shall develop full strength of the members connected through bolts. Butt as well as lap splices shall be made above and as close to the main panel points as possible.

8.1.2. Joints shall be so designed and detailed as to avoid eccentricity as far as possible. However, where the connections are such that the elimination of gusset plates would result into eccentric joints gusset plates and spacer plates may be used in conformity with modern practices. The thickness of gusset plates shall not be less than 6mm. Where a gusset plate is required to transmit stress, its thickness shall not be less than the thickness of the thickest connected bracing members, The use of fillers in the connections shall be avoided as far as possible. The diagonal web members in tension may be connected entirely to the gusset plate where necessary to avoid the use of fillers. Each diagonal shall be in one piece without splices or center gusset, and it shall be connected at the point of intersection by one or more bolts. The tower members shall be accurately fabricated to bolt together easily at site without any undue strain on them or the bolts. No angle member shall have the two leg flanges brought together by closing the angle. All parts of the towers shall be accessible for inspection and cleaning. Drain holes shall be provided at all points where pockets or depressions are likely to hold water. All similar parts shall be made strictly interchangeable. No rough edges shall be permitted anywhere throughout the work.

8.2.1. OPERATION IN FABRICATION:

8.2.2. STRAIGHTENING:

Straightening shall be so done that it does not injure the material. Hammering shall not be permitted for straightening/or flattening of members. Sharp bends shall be a cause for rejection.

8.2.3. CUTTING:

The cut surfaces shall be clean, smooth, reasonably square and free from any distortion.

8.2.4. BENDING:

Mild steel angle sections up to 75x75 mm (thickness up to and including 6 mm) shall be bent cold up to and including bend angles of 10 deg. Mild steel angle sections above 75x75 mm (thickness up to and including 6 mm) and up to and including 100x100 mm (thickness up to 8 mm) may also be bent cold up to bend angles of 5 deg. All other angle sections and bend angles not covered above shall be bent hot. All plates up to 12 mm thickness shall be cold worked up to a maximum bend angle of 15 deg. Hot bending shall be employed for greater bend angles and thicker plates. All hot bent material shall be air-cooled. The bends shall be of even profile and free from any surface damages. Bends on all high tensile steel sections shall be done hot.

8.2.5. HOLING:

Holes in the members shall either be drilled or punched to jig and shall not be formed by flame cutting process. All burrs left by punching or drilling shall be completely removed. Punching may be adopted for M.S. sections with thickness up to 16 mm. For thicker sections, drilling shall be done. The holes near the bend line of a bent member on both sides of bend line should be punched/drilled after bending and relative positions of those holes shall be maintained with the use of proper templates/jigs and fixtures. The limit of punching for H.T. steel section may be indicated in the bid.

8.3.0. EASTENERS: BOLTS, NUTS AND WASHERS :

8.3.1 All bolts & nuts shall conform to IS: 6639, and IS: 12427 or and hexagonal nut. The heads being forged out of the solid, truly concentric, and square with the shank, which must be perfectly straight. Ultimate stresses in the bolts shall be as given in Table-I and clause 5.4.1 of IS: 802 (Part -1 / section - 2)

8.3.2 Fully threaded bolts shall not be used. The length of bolts shall be such that the threaded portion will not extend into the plane of contact of the member.

8.3.3. All bolts shall be threaded to take the full depth of the nut and threaded for enough to permit firm gripping of the members, but not further. It shall be ensured that the threaded portion of each bolt protrudes not less than 3 mm and not more than 8 mm when tightened. All nuts shall fit and tight to the point where the shank of the bolt connect to the thread.

8.3.4. Flat and tapered washers shall be provided wherever necessary. Spring washers designated as B-16, IS-3063 Electro galvanized/hot dip galvanized shall be provided for insertion under all nuts. These washers shall be of steel and electro-galvanized, conforming to IS: 1573- or hot dip galvanized as per IS: 2629 and positive lock type and 3.5 mm in thickness for 16 mm dia bolt and 4 mm for 20 mm dia bolt and 4.5 mm for 24 mm bolt as per IS: 3063- 1972.

8.3.5. The bidder shall furnish bolt schedules giving thickness of members connected, the nut and the washer and the length of shank and the threaded portion of bolts and sizes of holes and other special details of this nature.

8.3.6. To obviate bending stress in bolts or to reduce to minimum, no bolt shall connect aggregate thickness of more than (3) times the bolt diameter and also the number of members carrying stresses to be connected by a single bolt shall not generally exceed three (excluding gusset and packing).

The bolt positions in assembled towers shall be as per **IS: 5613** (Part - 3 / section-2). Bolts at the joints shall be so staggered that nuts may be tightened with spanners without fouling.

SPACING OF BOLTS AND EDGE DISTANCE:

a) The minimum spacing of bolts and edge distances shall be as given below:

Bolt Diameter (mm)	Hole Diameter (mm)	Minimum bolt spacing	Minimum bolt centre to rolled or sawn edge	Distance hole centre to sheared Cut edge
16	175	40	20	23
20	21.5	48	25	28
24	25.5	60	33	38

Technical data for all the structural steel proposed for tower members and bolts. Detailed design calculations including stress tables, member & bolt sizes, foundation loads etc. for tangent tower(s).

Drawings and /or catalogues of bidder's equipment.

Outline drawings of foundations of each type which are proposed with typical calculations.

Final conductor and shield wire sag/tension charts.

Full description of the proposed method of tension stringing.

8.4 The tenderers shall furnish the following designs and drawings after award of contract.

Fully dimensioned drawing for each standard type of tower complete with cross arms showing sizes of all steel sections, fittings, bolts; attachments etc. and clearance diagrams,

Dimensioned drawings for extensions with sizes of steel sections employed.

Dimensioned drawings for stub.

Dimensioned drawings for stub setting templates.

Dimensioned drawings for anti-climbing device.

Loading diagram for all towers under different working conditions.

Stress diagrams for all towers inclusive of 3-metre, 6-metre, 9-metre and 12-metre tower extensions and cross-arms.

Tabulation of stresses under different design assumptions, permissible Stresses for various members employed in the towers, extensions, and cross arms complete with the following information:

Member reference for identification on stress-diagrams.

Individual loads, due to transverse, longitudinal, vertical, and torsional load, etc. under normal and broken wire conditions.

Measured unsupported lengths. Effective unsupported lengths. Appropriate radii of gyration. Sizes of members proposed.

Slenderness ratios.

Permissible crippling stresses. Gross areas of sections.

Permissible crippling loads.

Number and size of bolts provided. Nett areas of sections. Permissible tensile loads.

Aggregate cross sectional areas of bolt. Shearing stress on bolts.

Aggregate bearing areas of bolts. Bearing stress on bolts calculated weight of each member.

a) Shop Drawing: Shop drawings shall list in a space above the title, the part number and required quantity of each member detailed on the drawing. Members may be detailed separately or in place in any assembly.

b) Erection Drawings: Erection drawings shall be furnished for each type of tower and extension & shall show assembly diagram of structures clearly indicating the position of each member and the quantity and size of bolts for each joint.

Bill of Materials: A complete bill of material in a floppy as format required by purchaser for each type of tower shall be submitted with the erection drawings indicating each part number, required quantities for one tower section of member length, calculated weight and relevant design drawing reference.

Bolts, Nuts and Washer Schedule: Bolts, nuts and washers schedules shall list the number of bolts and washers required per tower along with the sizes and lengths of bolts and number, type and size of washers. The shank length and length of threaded portion of various types of bolts shall be indicated in drawing/table.

9.0 TESTING OF TOWERS:

9.1 All standard tests, including quality control tests in accordance with relevant Indian Standards shall be carried out.

9.2 A galvanized/Black tower of each type complete with 9M extension shall be subject to design and destruction tests by first applying tests

load equivalent to the specified ultimate tower loading and applied in a manner approved by the purchaser. The tower shall withstand these tests without showing any sign of failure or permanent distortion in any part. Thereafter the tower shall be subjected to destruction by increasing the loads further in an approved manner till it fails. The tower shall be tested for all the conditions considered for the design of tower. The successful bidder shall submit to the purchaser, for approval, the detailed program and proposal for testing the towers showing the methods of carrying out the tests and manner of applying the loads. After the purchaser has approved the test procedures and program the contractor will intimate the purchaser about carrying out of the test at least 15 days in advance of the scheduled date of tests during which the purchaser will arrange to depute the representatives to be present at the time of carrying out of the tests. Six copies of the test reports shall be submitted.

The testing shall be conducted in Government approved test pads like CPRI, SERC test pad at Pallavaram, Chennai and also in their own Test bed in presence of the TANTRANSCO representative. The contractor shall submit one set of shop drawings along with the bill of materials at the time of prototype tower testing for checking the tower material. Further at the time of submitting test report, the contractor has to submit the final tracings of

shop drawings and Bill of Materials for purchaser's reference and record.

9.3. In case of premature failure the tower shall be retested and steel already used in the earlier test shall not be used again. However, in case of minor failures, the contractor can replace the members with higher section and carry out the testing. The contractor shall provide facilities to the purchaser or their representatives for inspection of materials during manufacturing stage and also during testing of the same.

9.4 In case of any premature failure even during waiting period, the tower is to be retested with rectified members. However, if the failures are major in nature and considerable portion of tower is to be re-erected, in such cases all the tests which has been carried out earlier to be re-conducted again to the entire satisfaction of purchaser.

9.5 No part of any tower subject to test shall be allowed to be used on the line. The scrap value of the tower material, which will be retained by the successful bidder may be taken into consideration while working out the unit rate/Km.

9.6 The contractor shall ensure that the specification of materials and workmanship of all towers actually supplied conform strictly to the towers which have successfully undergone the tests. In case any deviation is detected the contractor shall replace such defective towers free of cost to the purchaser. All expenditure incurred in erection, to and fro transportation; any other expenditure or losses incurred by the purchaser on this account shall be fully borne by the successful bidder. No extension in delivery time shall be allowed on this account. The purchaser, however, reserves the right to waive off the testing of the towers, provided the successful bidder had earlier successfully tested, erected and commissioned same towers and certificate for such tests carried out earlier are furnished duly certified by that purchaser and are found acceptable.

9.7 Each type of tower to be tested shall be a full scale prototype black/galvanized tower and shall be erected vertically on rigid foundation and the stub protruding above ground level as provided in the design drawing between ground level and concrete level. This portion of the stub shall be kept unbraced while testing. The tower erected on test bed shall not be out of plumb by more than 1 in 360.

9.8 All the measuring instruments shall be calibrated in systematic approved manner with the help of standard weight/device. Calibration shall be done before commencing the test of each tower up to the maximum anticipated loads to be applied during testing.

The sequence of testing shall be at the discretion of the purchaser.

9.8.2. The purchaser may decide to carry out the tensile test, bend test etc. as per relevant IS on few members of the test tower after completion of the test. The decision of the purchaser's representative regarding which member and number of members to be tested is final and binding. The successful bidder shall make suitable arrangement for the same.

9.8.2. Prefix "T" shall be marked on all members of test tower in addition to the mark no. already provided.

9.9. CALIBRATION OF MEASURING INSTRUMENTS:

All measuring instruments shall be calibrated at least 20% above the maximum anticipated load to be applied. Loads shall be corrected with the help of calibration curves. Strain gauge (Transformer Type) shall be placed on selected members of tower as chosen by Purchaser to record the maximum force experienced by the members in the critical load condition.

9.10. TESTS:

The procedure for conducting the tower test shall be as specified in IS: 802 (Part - 3) (latest edition)

9.10.1. BOLT SLIP TEST :

The test loads shall be gradually applied up to the design loads according to rigging diagram, kept constant for two (2) minutes at the design loads and then released gradually. The initial and final readings on the scales before application and after the release of loads respectively shall be taken with the help of theodolite and the bolt slip shall be determined from the readings so obtained.

9.10.2. NORMAL LOAD/BROKEN WIRE LOAD TESTS:

All the loads shall be applied gradually up to the ultimate design loads in the following steps and shall be released in a similar manner:

25%, 50%, 75%, 90%, 95% and 100 %

Under normal and broken wire load tests, the tower shall be kept under observation for any sign of failure for two minutes (excluding the time for adjustment of loads) for all intermediate steps of loading up to and including 95% of ultimate design loads.

For normal as well as broken wire tests, the tower shall be kept under observation for five minutes with 100% ultimate design load applied to it.

While the loading operations are in progress, the tower shall be constantly watched, and if it shows any tendency of failure anywhere, the loading shall be immediately

stopped, released and then the entire tower shall be inspected. The re-loading shall be started only after corrective measures are taken.

The deflection of the tower shall be recorded at each intermediate and final stage of normal load/broken-wire load test by means of a theodolite and graduated scales fitted on the tower. The structures shall be considered to be satisfactory if it is able to support the specific ultimate load for (5) minutes with no visible deformation after unloading (such as bowing, buckling) and no breakage of elements of constituent parts. Ovalization of holes and permanent deformation of bolts shall be considered as failure.

9.10.3. Destruction Tests: If desired by the purchaser, all types of towers shall be tested to destruction. The test shall be carried out under normal condition. All the provisions as stated in clause 9.10.2 shall be applicable to destruction test. However, the loads shall be increased in steps of 5% after the ultimate design loads have been reached.

9.10.4. Material Test: In case of failure of towers after retest, coupons shall be cut from test tower members and tested in a laboratory to ascertain conformity of the material to the governing standard.

9.11. RETEST:

In the event of premature failure of tower, the part that has failed may be replaced by another with a greater mechanical strength. The modified structure shall be required to pass the test for the specified ultimate load values (100% step).

9.12. PACKING:

The material shall be boxed or bundled for transport in the following manner:

9.12.1. Angles shall be packed in bundles securely wrapped four times around at each end and at every meter with No.9 gauge galvanized steel wire with ends twisted tightly. Gross weight of any bundle shall not exceed approximately 450 kg.

9.12.2. Cleat angles, brackets, filled plates and similar small loose pieces shall be nested and bolted together in multiples, and securely wired together through holes, wrapped round at least four times with no.9 gauge galvanized steel wire and ends twisted tightly. Gross weight of each bundle shall not exceed approximately 70kg,

9.12.3. The correct number of bolts, nuts and washers to be packed in heavy gunny bags accurately tagged in accordance with the contents and a number of bags packed in a solid box of 22mm thick lumber with panelled ends to be securely nailed and further reinforced with 22mm x No. 18 gauge ironbound stretched entirely around the buttons with ends overlapping at least 150 mm Gross weight of each box shall not exceed 70 kg.

All packing shall be subject to the approval of the purchaser, or his appointed representatives.

The packing shall be carried out with caution to protect the material from moisture, salt or any impurities, which may cause rust or harmful effects.

The packages shall be new and sufficiently sturdy in construction to withstand normal service incident to shipping and field handling.

9.15. PLACE OF MANUFACTURE AND MANPOWER:

9.13.1. The tenderer must have established steel fabrication facilities in his works or at the works of his Associates. The galvanizing bath plant & equipment available for fabrication, testing facilities available in their works and other institution, which they intend to make use of, shall be stated in the schedules and shall not be changed without the approval of the purchaser. The tenderer shall also submit the details of manpower available with his Organization indicating clearly the number of personnel engaged in the design, fabrication of supporting structures and for erection/construction

of the transmission lines. The tenderer shall give a brief profile of the organization (s).

9.14. PERFORMANCE SCHEDULE:

The tenderer shall furnish the details of his performance in respect of the major works carried out by him involving supplies of materials for and / or erection of such EHV lines preferably 400 KV lines which are in service, at least for the last five years.

9.15. QUALITY ASSURANCE PLAN:

The contractor shall submit the quality assurance plan and shall get it approved by the purchaser. If desired by the purchaser, he shall give access to all the documents and materials to satisfy the purchaser that the quality assurance plan is being properly followed.

9.16 SCHEDULE OF DEVIATION / VARIATIONS:

If the tenderer has any exception to any of the clause laid down in this specification, these should be clearly stated in the schedule of deviations / variations (technical or commercial) otherwise it shall be presumed that the tenderer agrees to the provision /s of this specification and same shall be included in the purchase order and the contract in case of successful tenderers.

TECHNICAL SPECIFICATION

Section-B

TECHNICAL SPECIFICATION FOR TRANSMISSION TOWER BOLTS

1.0 SCOPE:

This specification covers design, manufacture, testing at manufacturer's works before despatch, supply and delivery of transmission tower bolts, nuts, step bolts, plain washers and spring washers for 400 KV overhead power lines.

2.0 STANDARDS:

Except as modified by this specification the transmission tower nuts, step bolts, plain washers and spring washers to be supplied shall conform to the latest edition with revisions of the following Bureau of Indian Standards (IS) & British Standards specifications.

IS 209 - IS 10238 structures	Zinc (Third Revision) Specification for step bolts for steel
IS 12427 (with latest amendments)	Specification for transmission tower bolts
IS 14355 product	Industrial fasteners-hexagon nuts of grade C- Hot dip galvanized- Specification (size range M12 to M36).
IS 1363 (Part 3) ISO 4034:1986	Hexagon head bolts, screws and nuts of product grade C: Hexagon nuts (size range M5 to M64) (Third revision)
IS 1367(Part 1) Threaded steel	Technical supply Conditions for Fasteners: Part 1 Introduction and general information(second revision)
IS 1367(Part 2)	Technical Supply Conditions for Threaded steel Fasteners: Part 2 Product grades and Tolerances (second revision)
IS 1367(Part 3)	Fasteners- Threaded steel- Technical Supply conditions: Part 3 Mechanical properties and test methods for bolts ,screws and studs with full load ability (third revision)

IS 1367(Part 6)

Technical Supply Conditions for Threaded steel

Fasteners: Part 6 Product grades and Tolerances (second revision)

IS 1367(Part 9/Sec 2)

Fasteners- Threaded steel- Technical Supply

ISO 6157-3:1988

Conditions for threaded steel fasteners:
Surface discontinuities, Section 2 Bolts, screws and studs for special applications (third revision)

IS 1367 (Part 11)	Technical Supply conditions for Threaded steel Fasteners- Electroplated coating on Threaded fasteners (second revision)
IS 1367(Part 13)	Technical Supply conditions for Threaded steel Fasteners- Hot dip galvanized coatings on Threaded fasteners (second revision)
IS 1367(Part 17)	Fasteners- Threaded steel- Technical Supply Conditions : Part 17 Inspection, sampling and acceptance procedure
IS 1367(Part 18)	Fasteners- Threaded steel- Technical Supply conditions: Part 18- Packaging.
IS 1368: (Second revision)	Dimensions of end of bolts and screws
IS 1369: IS:2016- IS 2614- (First revision)	Dimensions of screw thread run- outs and Undercuts (Second revision) Specification for plain washers (First revision) Methods for sampling of fasteners
IS 2633	Methods for testing uniformity of coating on zinc coated articles (Second revision)
IS 4218 (Part 1)- ISO 68-1:1998 (Part 2)-2018 ISO 261:1998 (Part 3) -1999 ISO 724:1993	ISO general purpose metric screw threads- Basic profile (Second revision) General plan (Second revision) Basic dimensions (Second revision)
(Part 4) -2018	Selected sizes for screws, bolts and nuts
ISO 262:1998 (Part 5) -1979	(Second revision) Isometric screw threads- Tolerances (First revision)
IS 4218 (Part 6)-	Isometric screw threads-Part 6-Limits of sizes for commercial bolts and nuts(diameter range 1 to 52 mm) - First revision

IS 4759-	Hot dip zinc coating on structural steel and other allied products (Second revision)
IS 1570 (Part I)	Steel specified by tensile and/or yield properties (first Revision) with amendment No.1)
IS -1573	Electroplated coatings of zinc on iron and steel (First revision)
IS 2004	Carbon steel forging for general engineering purposes (2 nd revision)
IS 6745	Methods for determination of weight of zinc coating on zinc coated iron and steel articles (with amendment No.1)

DEVIATIONS IN SPECIFICATIONS:

All discrepancies and or deviations in specifications shall be brought out by the bidder and detailed clause by clause in the deviation schedule. Deviations brought out elsewhere or in any other format will not be considered by the purchaser and are liable for being rejected. It shall also be by the purchaser in such an event that the bidder has conformed to the clauses in this specification scrupulously. Deviations in specifications shall if possible be quoted with reference to standards. The bidder shall then furnish an authentic English Version of such standards.

INSPECTION :

The accredited representatives of the purchaser shall have access to the contractor's works at any time during working hours, for the purpose of inspecting the manufacture of the materials and for testing of the selected samples from the materials covered by this specification. The contractor or the sub-contractor shall provide facilities for the above.

Random samples of supplies as per IS 2614/1968 or the latest issue will be tested for quality, workmanship, mechanical strength and Galvanising and sSupply will rejected, if they fail in the tests. The samples will be subjected to tests as set out in IS 1367-1967 amended upto date.

4.0 Type Tests: These shall mean those tests which are to be carried out to prove conformity with the specification. These are intended to prove the general qualities and design of a given type of insulator. The Bidders shall enclose the Type test certificates of recent origin (within 5 years on the date of

opening of technical bid) from a reputed laboratory for having carried out the type tests.

In addition to furnishing the type test certificates as per specification along with the Bids, the successful tenderer shall repeat all the type test as per the relevant ISS after the placement of award on the same type and make approved for construction of the line which will be witnessed by the purchaser's representative. The cost for repeating these type tests shall be indicated in the price schedule. No material shall be despatched without approval to the acceptance tests.

4.1. The Hot Dip Galvanised Bolts and Nuts shall be subjected to the following Type Tests as set out in the latest issue of IS Specifications specified.

Tensile Test
Proofing load test
Wedge Loading
Test
Surface Integrity Test
Vicker's Hardness Test
Head Soundness Test
Mass of Zinc coating
Test
Price Test for Hot Dip Galvanising
Percentage elongation Test
Cantilever Test/permanent Set
Impact Test.

Marking, Sampling, Inspection and Acceptance criteria shall be as stipulated in IS 12427 of latest issue.

The supplier should give the offer for inspection at least 15 days in advance of the actual date of despatch and should despatch only after getting despatch instructions.

4.3 Acceptance Tests: Tests shall be carried out on samples taken from the lot for purpose of acceptance of the lot as per relevant IS. The Contractor shall maintain all test reports of tests conducted during manufacture. These shall be produced for verification as and when requested by the Purchaser.

All the above type test certificates for tower materials , bolt and nut and other accessories supplied by the bidder tested as per the relevant IS in the approved testing centres shall be approved by the engineer in charge at site