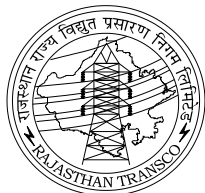


RAJASTHAN RAJYA VIDYUT PRASARAN NIGAM LIMITED
(AN ISO 9001-2000 CERTIFIED COMPANY)

(Office of the SE(TLPC), M.M.Building ,Old Power House
Premises(Back Side) ,Near Ram Mandir Jaipur-06)



TELEPHONE : 0141-2208916
TELEGRAM : TRANSPROC JAIPUR
FAX : 0141-2208916
TELEX : 365-278 SEPCIN

SPECIFICATION NO. RVPN/SE/TLPC/TL/A-III/ TN-3736
FOR CONSTRUCTION OF FOLLOWING EHV TRANSMISSION LINES
ON LABOUR CONTRACT BASIS

1. Stringing of 2nd Circuit of 220 KV D/C Debari - Banswara Line from Salumber to Debari (77 KMs)
2. LILO of existing 220KV Ratangarh (400KV) – Bikaner (220KV) line at Proposed 220KV GSS, Badnu (25 KMs)
3. 220KV S/C Sujangarh –Tehandesar Line (50 KMs)
4. LILO of 220 KV Barsinghsar LTPS - Phalodi line at 220 KV GSS, Bap (25 KMs)
5. Upgradation of existing 132 KV S/C line Sanganer - Chaksu line to 220 KV D/C line [For future connectivity to 400 KV Jaipur south(PG) (Approx. 34 KMs)] 20 Km line on 220 KV D/C Narrow base towers and balance 14 Km on 220 KV D/C Conventional towers
6. 132 KV S/C Beegod – Kachhola line (22 KMs)
7. 220 KV D/C Bhawad - Baithwasla line (40 KMs)
8. 132 KV S/C Baithwasla - Matora line (30 KMs)
9. 132 KV S/C Jakhrana - Mandan line (20 KMs)
10. 132 KV S/C Bansur (Proposed 220 KV GSS) - Mundawar line (35 KMs)
11. 220 KV D/C line from PGCIL's 400/220 KV Neemrana (PG) to proposed 220 KV GSS at Behror (20 KMs)

DUE DATE OF OPENING : -----

EARNEST MONEY : Rs.1,00,000.00 (Rs. One Lac only)

VALIDITY : 120 DAYS FROM THE DATE OF TENDER OPENING

COST OF SPECIFICATION : Rs. 2000.00 (Two Thousand Only)

NOTE :

1. Furnishing of Earnest Money/Exemption certificate as per **clause No.1.03 of Section-I** of this specification is essential otherwise the tender will not be opened.
2. The bidder will have to furnish EMD of Rs.1,00,000/-(Rs. One Lac only) with their offer.
3. Firms registered with RRVPNL under "Vendor's Registration Scheme" under class 'A' & Above as per **Clause No. 27 of Section-II** are not required to furnish earnest money deposit, However, they shall furnish proof of such registration with their tender along with proof of valid Bank Guarantee.
4. The Central and State Govt. undertaking/Corporations and companies are exempted from furnishing of earnest money deposit, However they have to furnish certificate/ documentary evidence in support of their being Govt. undertaking.
5. Technical and Commercial deviations, if any, shall only be mentioned in **Schedule-VIII 'Departure from the Specification'** attached with this specification. Mentioning of such deviations elsewhere in the offer will not be considered as deviation. The printed terms and conditions of firms, if any, attached with the tender will not be considered RVPN shall have right to accept or reject these deviations.
6. Offers of bids without Schedule – I to X and without relevant documents with respect to qualifying requirements shall not be considered.
7. Any cutting / over writing in the figures of tendered documents should also be clarified / indicated in the words duly signed.
8. The bidders are required to furnish the clarification/ confirmation/ documents sought subsequent to opening of bid within specified time failing which, the case shall be finalized/decided on the basis of available information. The responsibility of being ignored on account of delay in furnishing of desired information/documents shall be of the bidder.
9. The tender offer shall be furnished in the following manner:-
 - (i) One small size envelope for proof of deposition/ furnishing the earnest money/valid competency certificate as per **sub-clause 1.03(d) & (h) of Section-I**. This envelope shall be super scribed **EARNEST MONEY/VALID COMPETENCY CERTIFICATE AGAINST TN-3736 TO BE OPENED ON -**
-----.
 - (ii) One medium size envelope for "**Techno Commercial Bid**" which must be super scribed **TENDER OFFER "Techno Commercial Bid" AGAINST TN-3736 TO BE OPENED ON** -----.
 - (iii) The bidder shall quote the prices for each line (for which he intends to participate) separately which should be packed in smaller size envelope indicating the name of line on the smaller size envelope (i.e Price Bid for – (Name of Line)- and all these smaller size envelope for “ Price Bid” which

- shall be super scribed TENDER OFFER “Price Bid” AGAINST TN-3736 TO BE OPENED LATER ON (Opening date shall be intimated separately)
- (iv) And the fourth big size envelope for covering the above three envelopes which shall be super scribed **TENDER OFFER AGAINST RVPN/SE/ TLPC/TL-A3/TN-3736 TO BE OPENED ON -----**. Below this the following address shall be indicated. The Superintending Engineer(TLPC), RVPN, M.M. Building ,Old Power House premises(Back Side) ,Near Ram Mandir Jaipur-06. (All the above envelopes shall be duly sealed individually).
- 10.** The bidder , if is a Micro, Small or Medium enterprise as per the Micro , Small & Medium enterprise development act, 2006 (MSMED Act 2006) and registered with the authorities under the above Act for the items/services covered under this tender , then the party has to indicate the Entrepreneurs Memorandum No. (Twelve Digit) and enclose a copy of the certificate issued by the Authorities under the MSMED Act , 2006.
- 11.** Payment shall be made to supplier/ contractor through RTGS/NEFT for quick and safe transfer of funds across the country (both local and outstation). The charges for transfer through RTGS/NEFT shall be on the part of supplier/ contractor. The supplier / contractor shall furnish particulars to the payment making authorities of RVPN in prescribed format to be provided by the purchaser.
- 12.** This specification includes Section-I, Section-II, Section-III and Section-IV (Schedules).

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RAJASTHAN RAJYA VIDYUT PRASARAN NIGAM LIMITED
(AN ISO 9001-2000 CERTIFIED COMPANY)
(Office of the SE(TLPC), M.M.Building ,Old Power House
Premises(Back Side), Near Ram Mandir, Bani Park, Jaipur-06)

SECTION - I
INSTRUCTIONS TO TENDERERS

1.01 INTRODUCTION :

The tenderer ,in his own interest is requested to read very carefully these instructions and the terms and conditions as incorporated in Section II & III before filling the tender form. Submission of the tender shall be deemed to be the conclusive proof of the fact that the tenderer has acquainted himself and is in agreement with all the instructions, terms and conditions governing the specification, unless otherwise specifically indicated/ commented by him in his tender.

1.02 FILLING OF TENDERS :

- (a) Tenders shall be submitted in the forms attached here to and all blanks in the tender and the schedule to the specification shall be duly filled in. The completed forms, schedule(s) shall be considered as part of the contract documents in the case of successful tenderer(s).
- (b) No alteration should be made to the form of the tender specification and Schedules. The tenderer must comply entirely with specification. Alternative proposals, if any, shall be clearly stated in the covering letter and shall accompany each copy of the tender.
- (c) The tender and all accompanying documents shall be in Hindi/English Language and shall be signed by a responsible and authorised person. The name, designation and authority of the signatory shall be stated in the tender.
- (d) Tender should be filled in only with ink or typed. No tender filled in by pencil or otherwise shall be considered.
- (e) All additions, alterations and over-writings in the tender must be clearly initialed by the Signatory to the tender.
- (f) The tenderer must quote the prices strictly in the manner as indicated herein, failing which tender is liable for rejection. The rates/prices shall be entered in words as well as in figures. These must not contain any additions, alterations, over-writing, cuttings or corrections and any other marking which leave any room for doubt.
- (g) The NIGAM will not be responsible to accept any cost involved in the preparation or submission of tenders.
- (h) Any printed conditions of sale on the tender shall not be accepted by the NIGAM. The tenderer shall incorporate his conditions of sales, if any, in the text of the tender itself.
- (i) All tenders and accompanying documents shall be in duplicate and shall be addressed to the Superintending Engineer(TLPC), RVPN, M.M.Building ,Old Power House premises (Back Side) ,Near Ram Mandir , Jaipur-06.
- (j) The tenderer should sign the tender form at each page at the end.
- (k) Telegraphic quotation will not be considered.

1.03 EARNEST MONEY :

- (a) The tenderer shall furnish an amount of Rs.1,00,000/- (Rs. One Lac only) as Earnest Money either in cash or by crossed bank draft payable in the name of **Accounts Officer (TLPC), RVPN Ltd., Jaipur** and obtain a receipt thereof. No other mode of deposit shall be accepted.
- (b) Any tender not accompanied by a copy of receipt for Earnest Money/ crossed bank draft shall be rejected and the tender will not be opened.
- (c) In case of unsuccessful tenderers, the Earnest Money will be refundable on production of the original receipt, within a fortnight after finalization of the tender. In case of successful tenderers the Earnest Money will be taken into account in arriving at the amount of the Security deposit referred in clause No.4 of the General Conditions of Contract. (Section-II).
- (d) Request for adjustments/proposal for acceptance of Earnest Money deposits, if any, already lying with the NIGAM in connection with some other tenders/orders shall not be entertained.
- (e) No interest shall be payable on such deposits.
- (f) The purchaser reserves the right to forfeit Earnest Money Deposit or a part thereof in circumstance, which according to him indicate that the tenderer is not earnest in accepting/executing any order placed under the specification.
- (g) Firms registered with the respective Wings/Offices under the scheme for registration of firms/contractors, on furnishing in original or photostat copy duly attested by the responsible officer of the NIGAM regarding registration with the name of the material/Work for which registered, shall be exempted from furnishing of Earnest Money with the tenders.
Firms not registered for the material/Work under tender enquiry, would not be entitled for exemption from Earnest Money Deposit.

1.04 DOCUMENTS TO BE ENCLOSED WITH THE TENDER :

Each copy of the tender shall be accompanied with the following schedules, documents and the fact of their having been enclosed shall be indicated on the top of inner cover of the tender. The tender which is not accompanied by any or all of the following schedules, documents or is accompanied by incomplete annexures/schedules is liable for rejection :

A. Earnest Money as per Clause No.1.03 of this specification.

B. i) Price Schedules- I & II

The bidder shall quote the prices for each line (for which he intends to participate) separately which should be packed in smaller size envelope indicating the name of line on the smaller size envelope i.e. price bid for "Name of the line" and all these smaller size envelope shall then be packed in another medium size envelope for "Price Bid" which shall be super scribed TENDER OFFER "PRICE BID" AGAINST TN-3721 TO BE OPENED LATER ON (Opening date shall be intimated separately).

ii) Completion schedule in Schedule-III

iii) Departure from specification (Technical & Commercial) in Schedule VIII. Deviations indicated elsewhere will be ignored.

1.05 RECEIPT AND OPENING OF TENDERS :

- (a) Sealed covers, in which the tenders are enclosed shall be delivered in the office of the Superintending Engineer(TLPC), not later than 2.30 P.M. (unless otherwise

specified) on the date specified in the notice inviting the tender. Tenders shall not be accepted after the hour and date fixed for receipt of tenders. The bid will be opened in the office of the **Superintending Engineer(TLPC) at 3.00 P.M.** on the prescribed date in the presence of such tenderers or their authorised representative, who choose to be present.

(b) Should the date fixed for opening of the tenders be declared as a public holiday, the tenders shall be received and opened on the next date on which office re-opens after such holiday(s) .

1.06 VALIDITY OF OFFERS :

Tenders shall be valid for a minimum period of 120 days From the date of opening of tender. Tenders mentioning a shorter validity period than specified are likely to be rejected/ignored.

1.07 SIGNATURE OF TENDERER :

The tender must contain the name, designation and place of business of the person or persons making the tender and must be signed and sealed by the tenderer with his usual signatures. Tender by a partnership firm must be furnished with full names of all the partners and should be signed by one of the member of partnership firm or by a authorised representatives indicating the designation of the person or persons, with authority letter signed by the Chairman/ Secretary other person authorised to bind the Corporation/ Company in the matter.

1.08 QUALIFYING REQUIREMENT:

a)(i) The Bidder should have executed the construction work (i.e. survey, stub setting, tower erection and stringing) of at least 80% of total length of 110KV or above lines for which he intends to participate, during last five years , prior to date of tender opening.

(ii)The bidders having experience of execution of 132 KV or above transmission lines in RVPN for less than 80% but for 30% or more of the tender line length and meeting the qualifying requirement in other respects will be qualified for award of contract for 132 KV or above line(s) subject to maximum total lines of length of 50 KM (in different TN's) as trial order. The bidder shall be considered for award of further orders only after meeting the qualifying requirement for construction of 80% of the offered line length.

(iii) The bidders having experience of execution of 66kV Transmission Lines for 80% or more of the line length appearing in the NIT and meeting the qualifying requirement in other respects will be considered qualified for award of the contract for 132kV line(s) subject to maximum total lines of length of 50 KM (in different TN's) as trial order . The bidder shall be considered for award of next order only after successful completion of the awarded line(s).

b) The Bidder shall furnish documentary evidence to this effect in the form a certificate issued by user(s)/ Purchaser(s)/ Chartered Accountant containing the details of execution of transmission lines indicating activity-wise details (i.e. survey, stub setting, tower erection and stringing) with their voltage class. This certificate shall be furnished either in original or copy duly attested by a Notary Public.

In case of labour contractors executing works in Rajasthan against orders from TLPC, the requirement of certificate from Chartered Accountant/ User/ Purchaser may be waived, to the extent of orders placed by TLPC & executed by them.

c) Besides above only such contractors should apply who are already registered with provident fund Commissioner. Notarized copy of certificate in this respect is also to be furnished.

d)Offer received from Joint Venture bidders shall be ignored/ rejected

e) In case the bidder quotes for line length more than for which he is qualified based on criteria indicated in (a) to (d) above, then his price bid will be opened for the line or group of lines for which he becomes qualified as per (a) to (d) above, however consent of the bidder will be first obtained before opening of the price bid for such lines. In case the bidder does not furnish the details of lines before the notified date of price bid opening, for which he intends to participate

then the Purchase Committee reserves the right to either reject the bid or open the price bids for the lines as per their discretion.

f) In case the shortest tendered line length is more than the total qualified line length quoted by the bidder, then offer of the bidder will not be considered qualified.

g) The bidder shall furnish the price of each line in separate sealed envelope as per Instructions to the Tenderers clause No. 1.04 (B)

1.09 PRICES:

a) Tenderer must quote their prices indicating the percentage variation on total construction cost of each line mentioned in the Section- IV Schedule-I. The percentage variation above or below quoted by the bidder for a particular line in Schedule-I shall also be applicable for unit rate items indicated in Schedule-II for that line. These prices are variable price without any ceiling as detailed in following sub-clauses.

b) The bidder shall quote the prices inclusive of service tax.

c) The prices of the erection activities quoted in Schedule-I & II shall be according to the statutory price variation formula given below :-

$$E1 = Eo (0.25 + 0.20 D1/Do + 0.55 L1/Lo)$$

WHERE

E1 = Adjusted price.

Eo = Quoted price for erection in relevant schedules.

D1 = Unit price of H.S.D.at outlet in Jaipur inclusive of all taxes & duties prevailing on the first calendar day of the month prior to the month in which erection work is carried out.

Do = Unit price of H.S.D.at outlet in Jaipur inclusive of all taxes & duties prevailing 2 months prior to the date of tender opening.

L1 = All Indian Consumer price index (2001 = 100 series) for Industrial workers as published by labour bureau, Simla, Govt. of India, prevailing on the first calendar day of the month prior to the month in which erection work is done.

Lo = All India Consumer price Index (2001 = 100 series) for industrial workers as published by labour bureau, Simla, Govt. of India, prevailing 2 months prior to the date of tender opening.

The above price variation formula shall **not be applicable** to the following activities of erection:

1. Grounding of tower with pipe type/counter poise type earthing.
2. Original survey and preparation of profiles.
3. Check survey.
4. Taking delivery of all the material and keeping them in safe custody and transporting the same to erection site. But for the unit rate items the above price variation formula will be applicable.
5. The steel required for reinforcement of foundation work.

d) The price variation shall be applicable only for the works carried out during schedule completion period.

In case of delay in execution of the work, the price variation shall be restricted to as applicable during schedule completion period or during the month in which the actual work has been carried out whichever is advantageous to the NIGAM.

e) The price shall remain valid till completion of line. These prices shall also be valid irrespective of nature of location

- f) The rates of stringing of conductors and ground wire for major river crossing shall be as per KM basis considering the spans from one anchor tower to the other.
- g) The prices quoted should be inclusive of cost of transportation of line material from departmental stores, which are situated within the radius of 20 KM from the route of the line on either side. The price quoted should be inclusive of cost of transportation of line material with a lead of 20 KMs from the departmental stores. In case of lead more than 20 KMs, RVPN shall pay extra lead to the contractor on PWD BSR rates applicable for additional each 1 KM beyond 20 KM. The shortest lead shall be considered for the transportation through which vehicle tractor can go to the site location. The total weight of the tower shall be calculated as per approved bill of material, including accessories.
- h) The bidder quoting 'FIRM' prices are likely to be ignored. The basic prices/index considered for the various components of the price variation formula shall have to be indicated by the bidder's in their bids along with the date so that there may be no difficulty in finalizing the claim on the basis of such price variation formula. The bidders not indicating the basic prices/index as required are likely to be rejected.
- i) The rates/prices shall be quoted in the manner as desired in the schedule of prices.
- j) Any tender containing prices not quoted in the manner prescribed under the above sub clause (a) to (e) is liable to be ignored.
- k) No representation for enhancement of rates once accepted, will be considered.

1.10 SALES TAX :

In accordance with the scope of works, this is a labour contract of erection from the 'Free issue' material, hence no sales tax shall be leviable. However sales tax if levied shall be to the contractor's account.

1.11 QUANTITIES :

- a) The quantum of work indicated in the accompanied schedule(s) are only provisional and the purchaser reserves the right of revising the same at the time of placing the order. The NIGAM also reserves the right to entrust only part work of a particular transmission line.
- b) The NIGAM also reserves the right to split the quantities and to entrust the order for the erection work to one or more contractors. The tenderer shall agree to accept part works at the rates/prices mentioned in his tender and/or accepted by the NIGAM.

1.12 COMPLETION TIME

The transmission line mentioned in Schedule-I is required to be erected and commissioned within the period mentioned in Schedule-III. This targeted completion period is inclusive of monsoon period.

The commencement of completion period shall be counted after thirty days from the date of issue of Work order.

The Bar Chart provided by RVPN is for the purpose of monitoring of progress of work only however bar chart shall not be considered for calculation of price variation and penalty due to delay in work execution.

1.13 AMENDMENT IN SPECIFICATIONS :

The Superintending Engineer(TLPC),RVPN, Jaipur may revise or amend the specification and timings prior to the date notified for opening of the tenders. Such revision or amendment, if any will be communicated to all the tenderers as amendment or addenda to this invitation of the tender.

1.14 GENERAL :

- (a) Purchase of a copy of this specification by the tenderer is essential for the consideration of his tender.

Only one tender will be accepted against each copy of the specification purchased. This specification is not transferable. The value of tender form once sold will not be refunded under any circumstances.

(b) The contractor shall treat the details of the specification and other tender documents as private and confidential and they shall not be reproduced without the written authorization of the NIGAM.

(c) The NIGAM does not bind himself to accept the lowest or any tender or any part of the tender and shall not assign any reason(s) for the rejection of any tender or a part thereof.

(d) The fact of submission of tender to the NIGAM shall be deemed to constitute an agreement between the tenderer and NIGAM whereby such tender shall remain open for acceptance by the NIGAM and tenderer shall not have option to withdraw his offer, impair or derogate the same. If the tenderer be notified during the period of validity of tender that his tender is accepted by the NIGAM, he shall be bound by the terms of agreement constituted by his tender and such acceptance thereof by the NIGAM, until formal contract of the same tender has been executed between him and the NIGAM in replacement of such agreement.

(e) The successful tenderer shall have to execute the contract documents/agreement for the proper fulfillment of the contract. This shall be done by him and the NIGAM shall furnish such an executed stamped agreement free of charge.

1.15 Any action on the part of the tenderer to revise the rates/price at his own interest after the opening of the tender may result in rejection of the tender and also debar him from submission of tenders to the NIGAM at least for one year.

SECTION - II

RAJASTHAN RAJYA VIDHYUT PRASARAN NIGAM LTD GENERAL CONDITIONS OF CONTRACT INCLUDING ERECTION

Notwithstanding anything contained to the contrary in the specification or tender or any subsequent exchange of correspondences, these General Conditions of Contract shall prevail and shall be binding on the Contractor and any change or variation expressed or impressed howsoever made shall be inoperative, unless expressly sanctioned by the NIGAM. The Contractor shall be deemed to have fully informed himself and to have specific knowledge of the provisions of the General Conditions of Contract mentioned hereunder.

1. DEFINATION OF TERMS

a) In constructing these general conditions and the annexed specification, the following words shall have the meaning herein assigned to them unless there is anything in the subject or context inconsistent with such construction.

b) The "NIGAM" shall mean the RAJASTHAN RAJYA VIDHYUT PRASARAN NIGAM LTD represented by Chairman & Managing Director and shall include their legal personal, representative, successors and assignees. The "NIGAM" owner or customer shall mean the NIGAM.

c) The "Tenderer" shall mean and include one or more persons or any firm or any Company or Body incorporate who has submitted the Tender in response to "Invitation of Tender".

d) The "Contractor" shall mean the Tenderer whose Tender has been accepted by the NIGAM and shall include the Tenderer's heirs, legal representative, successors and assignees approved by the NIGAM.

e) The "Sub-contractor" shall mean the firm or the persons named in the contract for any part of the work or any person to whom any part of the contract has been sublet with the consent in writing of the NIGAM and shall include his heirs, legal representative, successors and assignees approved by the NIGAM.

f) The "CMD" shall mean the Chairman & Managing Director, RAJASTHAN RAJYA VIDHYUT PRASARAN NIGAM LTD, JAIPUR.

g) The "Engineer" shall mean the Chief Engineer, RAJASTHAN RAJYA VIDHYUT PRASARAN NIGAM LTD or other Engineer or officer for the time being or from time to time duly authorised and appointed in writing by the NIGAM to act as Engineer or Inspector for the purpose of the contract. In case where such Engineer has been so appointed, the word "Engineer" shall mean the NIGAM or his duly authorised representative.

h) "Plant", "Equipment", "Materials", "Stores", "Works", mean to include the plant and materials to be provided and work or works to be done by the Contractor under the Contract.

i) THE `CONTRACT' SHALL MEAN AND INCLUDE THE FOLLOWING :

1. Invitation of Tender.
2. Instructions to tenders.
3. Tender Form including schedule of prices.
4. Earnest money receipt/Security bank guarantee.
5. Letter of Intent and its acknowledgement.
6. Performance bond/Guarantee.
7. Formal work order.
8. Guaranteed test performance and penalty.
9. General Conditions of Contract.
10. Special instructions.

11. Site conditions.
 12. Specification, specific conditions, schedules and drawings.
 13. Addenda which may hereafter be issued by the NIGAM to the Contractor in the form of letter and covering letters and schedule of prices as agreed between the Contractor and the NIGAM.
 14. The Agreement to be entered into under Clause 2 of these General Conditions.
- j) The "Specification" shall mean the specification, specific conditions annexed to the General Conditions of the Contract and the schedule thereto, if any.
 - k) The month shall mean, English calendar month i.e. period of 30 days and week shall mean a period of 7 days.
 - l) The "Site" shall mean the place or places named in the Contract and include, where applicable, the lands and buildings upon or in which the works are to be executed.
 - m) The "Place of delivery" shall mean the place of delivery at which the Contractor/contractor is responsible to deliver the materials at the contract price.
 - n) The "Test of completion" shall mean such tests as are prescribed in the contract to be made by the Contractor before the Plant is takenover by the NIGAM as per the General Conditions.
 - o) "Letter of Intent" shall mean the NIGAM's letter conveying his acceptance of the tender subject to such reservations as may have been stated therein.
 - p) The "Contract price" shall mean the sum named in or calculated in accordance with the provisions of the Contract/purchase or any amendments thereto.
 - q) "CONSIGNEE", The consignee shall mean and include the Controller of Stores, Central Stores Officer, Asstt. Controller of Stores, Store Superintendents and or any other officer/official of the RAJASTHAN RAJYA VIDHYUT PRASARAN NIGAM LTD, all over Rajasthan, performing the duties of the consignee.
 - r) "Writing" Shall include any manuscript, type written or printed statement under or over signature or seal as the case may be.
 - s) The Word "Codes" shall mean and include the Indian Electricity Rules IS Code of practice and Factory Rules and Regulations applicable in the State of Rajasthan on the date of issue of the letter of intent of such modifications thereof as may be specially stipulated by competent State authorities i.e. Electrical Inspector and Chief Inspector of Factories, Rajasthan.
 - t) Words importing the singular only shall also include the plural and vice versa where the context requires.

2. CONTRACT :

The contractor and NIGAM shall as soon as possible, unless otherwise agreed upon enter into a sealed agreement for the proper fulfillment of the contract. The expenses of completing and stamping the agreement shall be paid by the contractor and the NIGAM shall be furnished free of charge with an executed stamped counter part of the agreement after the tender has been accepted by the NIGAM. All orders/instructions to the contractor shall, except as herein otherwise provided, be given by the Engineer on behalf of the NIGAM.

3. SUBLETING AND ASSIGNMENT :

The contractor shall not save with the previous consent in writing of the NIGAM, sublet, transfer or assign the contract, or any part thereof, interest therein or benefit or advantage whatsoever provided nevertheless that any such permission granted to the contractor shall not relieve him from any obligation, duty or responsibility under the contract.

3. SECURITY DEPOSIT :

a) In order to secure/assure the fulfillment of the contract, the successful tenderer(s) upon receipt of preliminary acceptance letter/detailed purchase order as the case may be shall furnish within a period of 15 days a security deposit amount equivalent to 2% (two percent) of the contract value in cash or by crossed Bank Draft or by way of Bank Guarantee from the scheduled Bank in the prescribed proforma to be obtained from the NIGAM on a Non judicial stamp paper of Rs. 100.00 of Rajasthan State duly authenticated by a Ist Class Magistrate or notary public or directly confirmed by the issuing Banker. Such Bank Guarantee shall be valid upto a period of 3 months from the date of commissioning of transmission lines (e.g. upto the last day of the calender month) and if required by the NIGAM, the validity of the Bank guarantee shall be further extended for such period as desired. The B.G. is to be furnished in whole Rupees. However contractors who are registered under category D or above vendor scheme of the board are exempted for furnishing of security deposit.

b) Unless otherwise specifically required to be retained/forfeited by the NIGAM, the Security deposit shall be refunded on request of the contractor after three months on completion of the entire work to the satisfaction of the NIGAM.

c) If the contractor fails or neglect to observe or perform any of his obligation under the contract, it will be lawful for the NIGAM to forfeit either in whole or in part at his absolute discretion, the Security deposit in the form of B.G. furnished by the contractor.

d) No interest shall be payable on such deposits. Bank charges or any other charges, if any, shall be to the Contractor's account. If the contractor fails to provide the Security within the period specified, such failure shall constitute a breach of the Contract and the NIGAM shall be entitled to make other arrangements at the risk and expenses of the contractor and the Earnest money deposited by the Contractor shall stand forfeited to the NIGAM.

e) The successful tenderers who are registered with the Nigam shall be exempted from furnishing of security deposit for the specific item for which they are registered except in the case of orders placed by generating projects.

5. SALES TAX, LEVIES & DUTIES:

a) In accordance with the scope of works, this is a labour contract of erection from the "FREE ISSUE" material, hence no sales tax will be leviable. However tax on such labour contracts if levied, shall be to the Contractor's account.

b) Service Tax:

The service tax is applicable on the services provided in respect of erection, commissioning, installation and testing part. The bidder shall quote the prices inclusive of applicable service tax. Any statutory variation in service tax will be to contractor's accounts.

c) Work Contract Tax:

The work contract tax will be deducted at the applicable Laws on the value of erection, testing & commissioning activities. Any liability arising on A/c of work contract tax will be to the contractor's account. Any statutory variation in the work contract tax will be to the contractor's accounts.

d) Income Tax :

If any income tax, surcharge on income tax or any other corporate tax is attracted under the law then the same shall be paid by him as per Government rules / deducted from his bills/ invoices at the prevailing rate and if such tax is not applicable, then the contractor can claim reimbursement of the same from the relevant competent authority. However necessary TDS certificate(s) shall be issued by Nigam's paying Authority.

6. ERECTION INSURANCE:

The contractor shall take suitable storage cum erection insurance policy for entire project at his own cost, the estimated cost of project for the purpose of insurance may be calculated as per the rates given in the Section-IV Schedule-VII.

The contractor shall also ensure the following

I) Contractor shall take storage cum erection insurance policies for entire project. However the insurance premium could be paid in installment basis, but it will be the responsibility of the contractor that the installment are paid well within the time. In case the insurance is on installment basis, the receipt of payment of each installment shall be submitted to SE(TLPC), line incharge and Sr. A.O. (CPC) by the contractor.

II) Deductible franchise should be minimum as per insurance rules. In case of any loss to the extent of deductible franchise, the same shall be borne by the contractor.

III) In case of contractor who have executed the work of at least one line in RVPN, stubs, SST & Earthing material will be issued in lots of 30 sets of stubs at a time for carrying out stub setting work without insisting for erection insurance. However insurance may be arranged by the contractor prior to issue of super structures and other line material to him and shall remain valid up to 30 days from the date of handing over of the line to the Engineer-incharge. Payment for survey, excavation, stub setting, concreting & earthing shall be made without insisting for insurance policy. However responsibility for any loss /damages will be to the contractor's account.

In case of new contractor insurance will be arranged by the contractor prior to issue of stub, super structures and other line material to him and shall remain valid up to 30 days from the date of handing over of the line to the Engineer-incharge. Payment for survey shall be made without insisting for insurance policy.

IV) A policy indicating discount on account of "EXCESS" is not to be accepted.

V) Insurance policy shall be drawn in favour of the project indicating the full name of transmission line.

VI) Insurance policy shall be taken from Jaipur based office of nationalised insurance companies, however for the contractor whose office is situated outside the Rajasthan, the insurance policy may be taken from place where such office is situated.

VII) Insurance policy shall be in combined name of RRVPNL and contractor.

VIII) Computerised and stamped insurance policy shall be furnished by the contractor to the SE(TLPC) for its Acceptance.

IX) A copy of Computerised and stamped insurance policy shall also be furnished by the contractor to the line incharge who on receipt of its acceptance issued by SE(TLPC) shall issue the line material.

If line is not completed within the schedule completion time, the extension of insurance policy shall be arranged by the contractor. A part of the premium paid to the Insurance company for this extension, corresponding to the delay on the part of RVPN, shall be reimbursed to the contractor on finalization of time extension case. However part of the premium corresponding to the delay on the part of the contractor shall be borne by the contractor.

Deviation to this clause will not be acceptable. It is in the interest of contractor to take insurance policy for a longer period.

7. COMPLETION TIME:

a) The completion time shall be governed by clause No.1.12 of Section-I.

b) The NIGAM reserves the right to defer the completion period as indicated in the work order. The period during which the works have been so deferred, shall not be reckoned as delay in completion in terms of clause "Delay in completion".

8. DELAY IN COMPLETION :

a) The time for and the date of completion specified in the work order shall be deemed to be essence of the contract and the work shall have to be completed not later than the period specified therein. Should the contractor fails to complete the work or any part thereof within the specified completion period, the NIGAM shall be entitled at his option.

(i) To recover from the Contractor, 1/4 % (quarter percent) per week for first four weeks and 1/2% (half percent) per week for remaining period of delay (for unexecuted works) subject to maximum of 5% (five percent).

(ii) After completion of the work the A.EN (Construction) incharge of the works should submit to the SE(TLPC), Jaipur the detailed report indicating the delay in execution of the work activitywise on weekly basis.

(iii) To cancel the contract and if so desired to complete the erection works by other agencies at the risk & cost of the contractor.

9. TERMS OF PAYMENT :

Payment for the erection of the line will be made to the contractor on submission of bills in accordance with the procedure as detailed below.

i) 90% (Ninety percent) payment of the total value of the works will be paid against monthly running account bills to be submitted to the A.EN (Const.) in-charge of the work.

ii) Balance 10% payment will be made within 3 months after the work is completed and accepted by the Engineer-incharge on furnishing of 10% performance bank guarantee. The payment will be made only after a material account statement of items received and used or returned to stores is settled. Any discrepancy in the quantity, will have to be made good by the contractor or deduction of its cost at double the issue rate applicable at the time of issue of material will be made while settling the balance payment.

(iii) If a firm supplying material to the RVPN or executing any work obtain finance from bank by way of discounting of the bills, in such cases RVPN shall not at all be responsible for arranging payments to banks nor shall bear any liability towards the bank in such cases. This is to safeguard interest of the NIGAM against the firms/suppliers taking advantage of bank finance.

(iv) The payment of the running bills, up to the work order value will be released without limiting to the individual item quantity.

(v) In case the survey work of the line is not completed in the period as mentioned in the bar chart, then 25% payment of subsequent R.A. bills as submitted by the contractor shall be deducted by the line incharge. Such deducted payment shall be released after completion of survey work by the contractor. However in case the delay in survey work is not attributable to the contractor then no deduction shall be made from the RA bill of the contractor.

Deduction, in respect of deficiencies etc. will be made by the AEN-Incharge while passing/verifying the bills and simultaneously be conveyed to the contractor.

The following time schedule is specified within which verification /countersignature of all bills shall be done.

	All R.A.Bills	OtherBills (PV, balance payment etc.)
a) Verification by AEN-Incharge & submission to XEN.	7 days	10 days
b) Countersignature by XEN & forwarding to CPC.	3 days	7 days

10. MODE OF PAYMENT:

i) Bills for 90% value of the erection work during each calendar month as per clause 9 shall be submitted to the A.EN (Const.) in-charge of the works at the end of that particular month, who will in turn process the same and forward it to X.EN(Const.) in-charge of the works for countersignatures and finally to the Sr. Accounts Officer(CPC) for payment, these bills shall be serially numbered with suffix E-1.

ii) Bills for 10% value of the erection work done as per clause 9 shall be submitted to the A.EN(Const.) in-charge of the works, who will in turn process the same and forward it to X.EN(Const.) in-charge of the works for countersignatures and finally to the Sr.Accounts Officer(CPC) for payment, These bills shall be serially numbered with suffix E-2.

iii) Price variation bills shall be submitted in triplicate to the A.EN(Const.) in-charge of the works at the end of that particular month, who will in turn process the same and forward it to X.EN(Const.) in-charge of the works for countersignatures. The original and duplicate copies of this bill shall be forwarded to Sr. Accounts Officer (CPC) Jaipur and one triplicate copy duly verified to the purchaser i.e SE(TLPC), Jaipur. The Sr.A.O.(CPC)RVPN Jaipur will release the payment after getting approval from the purchaser. These bills shall be serially numbered with suffix E-3.

iv) All the bills (in accordance with above clauses) shall be furnished alongwith following information:

- a) Itemwise work done during billing period, i.e., respective month
- b) Cumulative work done itemwise.
- c) Accounts for tower material, bolts-nuts and accessories consumed and balance stock.
- d) Account of cement consumed, wastage and balance stock
- e) Account of line material consumed, wastages and balance stock.

V) The payment shall be made within thirty days from the date of submission of complete document and completion of all contractual formalities as per requirement of the work order.

VI) The payment for survey, excavation, Stub setting, Concreting & earthing shall be made without insisting for Insurance Policy.

VII) The payment shall be made up to order value irrespective of individual item quantities appearing in price schedules of respective lines.

11. INSPECTION BY NIGAM'S REPRESENTATIVE:

i) The XEN (Const.) in-charge of the works or his representative will be free to visit the contractor's works, their site stores and erection site and also verify the NIGAM's materials in the custody of the contractor, as and when required.

ii) The contractor shall check the verticality of the tower in the presence of NIGAM's Engineer before tightening and punching of bolts and nuts. The towers erected should be truly vertical after erection and no straining will be permitted to bring them so. The maximum tolerance permissible is 2.5 cm per 9 meters of height. However, due allowance in verticality due to any possible difference in the levels of stub-tops of the location would be permissible.

iii) Wherever asked upon to do so, the contractor shall check the sag of the conductor and earthwire in the presence of NIGAM's Engineer before final sagging. The contractor shall intimate the date and time of final sag to the NIGAM's Engineer well in advance and the same will be done in the presence of NIGAM's Engineer.

iv) Chief Engineer (T&C) or Engineer appointed by him at his discretion may uncover any cast foundation to find out the workmanship of foundation. Contractor shall render necessary assistance during such fact finding operation and shall comply with the report of the investigating officer.

12. GUARANTEE:

The erection work will be covered under guarantee period against any defect arising from erection workmanship upto a period of 12 months from the date on which the line is completed in all respects, handing over of operation & material account is settled to the satisfaction of the NIGAM.

13. MODE OF GUARANTEE:

In order to ensure compliance of the provisions contained in Clause No. 12 above, the successful contractor irrespective of his being a registered vendor with NIGAM or not, shall be required to furnish a performance bank guarantee after completion of line and before claiming balance 10% payment from any scheduled bank for an amount equivalent to 10% of the contract value on Non judicial stamp paper of Rs.100.00 duly authenticated either by a first class Magistrate or Notary Public or directly confirmed by the issuing Bankers .

Such guarantee shall be valid initially for a period of 12 months and to be extended for the period as specified in Clause No. 12. The contractor shall have to extend the validity period of the Bank guarantee, if required on intimation from the purchaser. Such Bank guarantee should remain valid upto the last day of the calender month and be furnished in whole rupees.

14. METHOD OF MEASUREMENT :**14.1 SURVEY :**

No kilometric measurement shall be made at site in respect of survey. These measurements shall be based on the detailed survey tower spotting and route profile sheets submitted by the contractor as specified in Technical specification Section-III

14.2 EARTHWORK EXCAVATION :

For all earthwork excavation, measurement shall be made at site. Payment for earthwork excavation shall be made as per actual measurements or the ceiling quantity furnished in the bid whichever is lower and in accordance with the technical specification Section-III.

14.3 CONCRETING :

For all concreting work measurement shall be made at site. Payment for concreting work shall be made as per actual measurement or the ceiling quantity furnished in the bid whichever is lower and in-accordance with the technical specification Section-III.

14.4 TOWER ERECTION AND ASSEMBLY :

No measurements are to be taken, but payments shall be made in respect of fully assembled towers at the rates furnished in the bid and in accordance with the Technical Specification Section-III.

14.5 STRINGING OF CONDUCTORS :

Measurements shall be taken of the span lengths between different types of towers. Payments shall be made as per this span length and not on the length of the conductors used and in accordance with the Technical Specification Section-III.

15 LABOUR LAWS :

15.1 Contractor shall maintain a valid labour license under the Contract Labour (Regulation & Abolition Act) for employing necessary manpower required by him. In the absence of such license, the contract shall be liable to be terminated without assigning any reasons thereof.

NOTE:- "All contracts / Contractors with the Government shall require registration of workers under the Building & other Construction Workers (Regulation of Employment & Conditions of Service) Act, 1996 and extension of benefit to such workers under the Act. Deductions of cess at source will be made as per provisions of the said Act, in force from time to time."

15.2 EMPLOYEES PROVIDENT FUNDS :

The contractor Shall have to submit a certificate every month that he is an establishment covered under the employees provident fund and miscellaneous provisions act.1952 and is having a separate code number with the Provident Fund Commissioner and also that the Provident Fund contribution in respect of all the employees employed by him alongwith employer's share of contribution etc. is being deposited with the Provident Fund authorities and shall also submit certified photo copies of the challans of deposits. In absence of above, the contractor shall be liable to deposit employees, as well as, Employer's contribution and other charges in respect of all the employees engaged by him for the said work with RVPN alongwith details of the employees, their wages and the amount of contribution as per RVPN

CPF Rules every month. In case of failure, RVPN shall be entitled to deduct 16% of the amount from his bills.

15.3 CONTRACTOR TO INDEMNIFY THE NIGAM:

The contractor shall indemnify the NIGAM and every member, officer and employee of the NIGAM, also Engineer-in-charge and his staff against all actions proceedings, claims, demands, costs and expenses whatsoever, arising out of or in connection with the matters referred herein above elsewhere and against all actions, proceedings, claims, demands, costs and expenses which may be made against the NIGAM or Govt. for or in respect of performance of his obligation under the contract documents. The NIGAM shall not be liable for or in respect of or in consequence of any accident or injury to any workman or other person in the employment of the contractor or his sub-contractor, and the contractor shall indemnify and keep indemnified the NIGAM against all claims, demands, proceedings, cost, charge and expenses whatsoever in respect thereof or in relation thereto.

16. CLIMATIC AND ISOCERINIC CONDITIONS :

The Contractor shall be required to execute the work in the tropical conditions such as high temperature, excessive humidity, dust and salt-laden atmosphere as detailed below.

(a) Maximum ambient air temperature in shade	50 deg.C
(b) Minimum temperature of air in shade	0 deg.C
(c) Maximum relative humidity	90%
(d) Minimum relative humidity	10%
(e) Height above Mean sea level,	Upto 530 meters
(f) Dust storms are liable to occur during the period	from March to July
(g) Average no. of thunder storm days per annum	25
(h) Average no. of tropical monsoon(condition) per annum	4 months
(i) Average Rainfall	10 cms to 100 cms.

17. MATERIAL AND WORKMANSHIP :

All the work executed shall be of best quality and capable of satisfactory operation under the climatic humid tropical conditions mentioned under clause no.16 above. The workmanship shall be of the highest grade and the entire work shall be in accordance with the best modern Engineering practices.

18. INDIAN ELECTRICITY ACT :

All the works covered by the Contract shall be in accordance with the Indian Electricity Act, 1910 with the latest amendments and the Electricity rules made there under.

19. SITE TESTS :

The NIGAM reserves the right to carry out any site tests he may decide upon at his own expenses. In case the quality of work is not found as per work order, all expenses incurred during the site testing will be to contractor's account.

20. CHANGE OF NAME OF THE TENDERER/CONTRACTOR :

(a) At any stage after tendering the NIGAM shall deal with the Contractor only in the name and at the address under which he has submitted tender. All the liabilities / responsibilities for due execution of the Contract shall be that of the Contractor and in no circumstances, he shall be relieved of any obligations under the Contract. The NIGAM may, however, at his discretion deal with the Agents/ Representatives/ Distributors/ Manufacturers/ Associates/ Principals/ Sister concerns and such dealings shall not absolve the Contractor(s) from his responsibilities/ obligations/ liabilities to the NIGAM, under the contract.

(b) Any change/Alteration of name/Constitution/Organisation of the Contractor shall be duly notified to the NIGAM and the NIGAM reserves the right to determine the Contract, in case of any such Notification. In the event of such determination, the Nigam may get the work executed from elsewhere at the risk and cost of the contractor.

21. DEDUCTION FROM CONTRACT PRICES :

The amount of all cost, damage or expense or other sums which under a particular Contract shall be payable by the Contractor to the NIGAM, shall be deducted by the NIGAM from amount due or becoming due by him to the Contractor under the state or any other Contract without prejudice to the NIGAM's right to recover the same by ordinary process of law.

22 BANKRUPTCY :

If the Contractor shall commit any act of bankruptcy or being a Corporation commence to be wound up except for reconstruction purpose of carry on its business under a receiver, the executors, successors or other representative in law of the Contractor or any such receiver, liquidator or any person in whom the Contract may become vested, shall forthwith give notice thereof in writing to the NIGAM and shall for one month during which he shall take all reasonable steps responsible to prevent stoppage of the works, have the option of carry out the Contract subject to his or their providing such guarantee, as may be required by the NIGAM but not exceeding the value of the work for the time being remaining executed. In the event of stoppage of the works, the period of the option under this clause shall be fourteen days only. Provided that should the above option not be exercised, the Contract may be determined by the NIGAM by notice in writing to the Contractor and it shall be lawful for the NIGAM to take the work full or in part out of the Contractor's hands and recontract at reasonable prices with any other persons and the NIGAM shall be entitled to retain and apply any balance which may be otherwise due on the Contract by him to the Contractor, or such part thereof as may be necessary to the payment of the cost of executing such work as aforesaid.

23. CONTRACT DOCUMENTS :

You shall have to execute the contract agreement within 15 days from the date of receipt of detailed work order in triplicate in the prescribed (Form-VII) on non judicial stamp paper worth Rs. 100 (for contract amount up to Rs. 10.00 Lacs), Rs. 200 (for contract amount exceeding Rs. 10.00 Lacs & up to Rs.50.00 Lacs) & Rs. 1000 (for contract amount exceeding Rs. 50.00 Lacs) as per stamp duty applicable in Govt. of Rajasthan alongwith copy of work order, copy of "General Conditions of Contract", "Instructions to Tenderers" and "Specification" . It is advised that each and every page of relevant documents are signed by authorised person with stamp.

It may however be ensured that the one copy of the work order and other Documents as above, are signed by an authorised person holding valid power of attorney. The power of attorney on non judicial stamp paper worth Rs.100/- which should be attested by the notary public. For this a copy of power of attorney in favour of person signing these documents, duly notarised in original be also submitted alongwith the above documents.

The receipt of above documents in order shall be notified by the Chief Accounts Officer(MM), RVPN, Jaipur in due course of time under intimation to this office. No any payment shall be released without acceptance of the contract agreement .

24. FURTHER CORRESPONDANCE :

All correspondence pertaining to the work order in respect of any clarification required on the terms and conditions etc. should be addressed to the Superintending Engineer (TLPC), RVPN , M. M. Building ,Old Power House premises (Back Side) ,Near Ram Mandir , Jaipur-06.

25 DISPUTES :

i) All disputes, differences, questions, whatsoever arising between the NIGAM and Contractor upon or in relation to or in connection with the contract shall be deemed to have arisen at JAIPUR(RAJASTHAN) only and no courts other than courts in Jaipur shall have jurisdiction to entertain the same.

ii) The RVPN has constituted the centralized standing committee for settlement of disputed claims under conditions of contract relating to RVPN.

The committee shall consider all cases for settlement of disputed claims relating to purchases , works , turnkey contracts and labour contracts , civil works etc. The committee shall also take decision whether a particular matter is required to be referred to the Board for approval before settlement. The matter for settlement shall only be referred to the centralized standing committee of RVPN by following the guide lines detailed below :

- (1) Disputes will be referred contract wise.
- (2) Disputes involving amount above Rs.1.00 lacs only will be referred / entertained.
- (3) Non-refundable fee shall be deposited by the contractor / firm @ 2% of disputed amount as claimed by the contractor/firm subject to maximum fee of Rs.1.00 lac.
- (4) In case of disputes , Application for settlement (only in prescribed format) may be collected from the purchaser office.

The centralized standing committee fees shall be deposited in cash/ demand draft/ pay order with the Account Officer (TLPC), RVPN, Jaipur and shall furnish receipt thereof with a request for referring their disputes to the centralized standing committee for decision.

For settlement, the firm shall furnish their application (only in prescribed format) indicating the details of dispute / grievances alongwith requisite settlement fee **within a period of six months** after receiving communication from MM Wing giving rise to cause of dispute / grievances.

26. ACCEPTANCE OF THE ORDER :

The acceptance of the order shall be conveyed to the Superintending Engineer(TLPC), RVPN , M.M.Building ,Old Power House premises (Back Side) ,Near Ram Mandir , Jaipur-06, within ten days of the receipt of order in the prescribed proforma failing which it will be presumed that the terms and conditions incorporated in the order are acceptable to the contractor.

27. VENDOR'S REGISTRATION SCHEME:

Supplier's/Firms/Vendor's whose works are located in Rajasthan may get themselves registered in the NIGAM by making permanent deposit in the prescribed modes as given below. The class of registration of supplier,permitted extent of participation,amount of permanent deposit alongwith prescribed modes thereof are given below:-

S. No.	Class of suppliers	Permitted extent of participation in cash	Permanent Deposit Non-interest bearing	Bank Guarantee in the proforma at Appendix VIII
1.	E	Rs.50 Lacs	Rs.0.25 Lacs	-
2.	D	Rs.100 Lacs	Rs.0.25 Lacs	Rs.Two Lacs
3.	C	Rs.250 Lacs	Rs.0.50 Lacs	Rs.5 Lacs
4.	B	Rs.500 Lacs	Rs.0.75 Lacs	Rs.7.5 Lacs
5.	A	Any Amount	Rs.1.00 Lacs	Rs.10 Lacs

NOTE:- The amount of cash deposit shall be made only by way of Demand Draft/Banker's cheque/pay order in cash of local firms drawn in the name of Accounts Officer(TLPC), RVPN,Jaipur. SSI units located in Rajasthan will be eligible for registration after depositing half of the aforesaid amounts subject to furnishing valid SSI unit certificate of Industries Department,Government of Rajasthan.

Supplier's/ firms/ vendors whose works are located outside of Rajasthan may get themselves registered in the Nigam by making permanent deposit in the prescribed modes as

given below. The class of registration of suppliers permitted extent of participation amount of permanent deposit alongwith prescribed modes thereof are given below:-

S. No.	Class of suppliers	Permitted extent of participation	Permanent Deposit		
			Non Interest bearing cash	Interest bearing cash	Bank Guarantee in the proforma Appended at Appendix-XVIII
1.	E	Rs.50 Lacs	Rs.0.25 Lacs	-	-
2.	D	Rs.100 Lacs	Rs.0.25 lacs	Rs.1.00 Lacs	Rs.1 Lacs
3.	C	Rs.250 Lacs	Rs.0.50 Lacs	Rs.2.5 Lacs	Rs.2.5 Lacs
4.	B	Rs.500 Lacs	Rs.0.75 Lacs	Rs.3.75 Lacs	Rs.3.75 Lacs
5.	A	Any Amout	Rs.1.00 Lacs	Rs.5.00 Lacs	Rs.5.00 Lacs

SECTION - II(A)

COMMERCIAL TERMS & CONDITIONS FOR ERECTION OF TRANSMISSION LINE :

2.1 SCOPE :

2.1.1 The erection work covered under this section consist of following:-

- (i) Survey including preparation of profiles soil investigation for soft rock & hard rock, soil resistivity measurement
- (ii) Taking delivery of tower and line materials from the NIGAM, checking them,transporting to Contractors Stores and kept in safe custody
- (iii) To take suitable storage cum erection insurance
- (iv) Distribution of all materials to erection site.
- (v) Stub setting
- (vi) Tower erection
- (vii) Stringing of ACSR ZEBRA for 220KV line, ACSR PANTHER for 132KV line and ground wire including stringing of conductor and earthwire from sub station gantry to terminal tower at both ends as per standard practice. The bidder shall indicate in the offer the detailed description of the procedure to be deployed for stringing operation
- (viii) Testing commissioning and guarantee of all the activities carried out from(i) to (viii)
The erection work shall be carried out as per Technical details of this specification.

2.1.2 The erection works covered under this specification is for 220KV/132KV transmission lines as detailed in Schedule-I & II.

2.1.3 The successful contractor shall carry out all addition/alteration required to complete the line for commissioning at the same rates as indicated in schedule.

2.1.4 The cement required for concreting of all type shall be arranged by the contractor at his own cost.

2.1.5 The steel required for reinforcement of foundation work shall be arranged by the contractor at his own cost.

2.1.6 The successful contractor shall carryout/take up the work of erection activities awarded to him on as is where is basis.

2.1.7 The contractor shall deploy qualified engineer for supervision of construction work of transmission lines.

2.2 WAY LEAVE,TREE CUTTING AND OTHER OBSTRUCTIONS :

2.2.1 The NIGAM will arrange for right of way and clearance for other obstructions, however tree/crop cutting and corridor clearance as per IS 5613 Pt-II will be done by contractor at his own cost.Compensation for tree/crop if any shall be borne by the NIGAM Proposals for "Right of way" and clearance for other obstructions will have to be prepared and submitted by the contractor well in time. It will also be necessary on the part of contractor to instruct his labourers and staff to use minimum area while doing the work where there are standing crops. No person of the Contractor should pick any items from standing crops .The Contractor should take all possible steps to avoid or minimize damage to standing crops, etc.

2.2.2 The Contractor should immediately notify any obstructions or hindrance from local villagers or the local authorities in the execution of the work,to the concerned Engineer-in-charge but should not deal directly the matter. The Engineer-in-charge will arrange to remove the obstacles as soon as possible.

2.2.3 For the clearance,permissions,removal of obstructions in way leave,etc.the contractor shall not remain contended by simply informing the NIGAM but shall invariably assist and arrange for personal follow up to overcome the difficulties in the interest of progress of the work.

2.3 ACCESS TO LOCATIONS :

2.3.1 It will be the contractor's sole responsibility to take the materials upto the location. Any path way, temporary road, temporary bridge required will have to be provided by the Contractor at his cost.If ,for any reason the above is not feasible,the Contractor at his own cost shall have to arrange transportation by head loads. This is in connection with the transportation of material only and if any compensation is required to be paid for land (excluding construction) thus used, the same would be paid by the NIGAM to different agencies directly or through the contractor.

2.3.2 The Contractor will be deemed to be very well familiar with the route of the Transmission line before giving the offer. Notwithstanding, the difficulties of terrain, location approaches,way leave and other obstructions the price quoted for all the items of erection in the Schedule-I Section-IV shall not undergo any change at any stage of work (including the time limit extension,if of special, rates consideration).

2.4 DISTRIBUTION OF MATERIALS :

2.4.1 The contractor has to take delivery of tower and other materials directly from the NIGAM's store,and keep them in safe custody and transport to the respective tower erection site and will be responsible for any damage to or loss of all tower/line materials at any stage during transportation or erection. The materials that will be issued by the NIGAM will be in "as is where is" conditions at the stores centre of the purchaser in the area during working hours.

2.4.2 The line materials for these lines shall be given from our stores at different places indicated in Section-IV Schedule-IV. The line material shall be issued to the contractor only after furnishing of valid insurance policy and Indemnity Bond to the line incharge . The insurance policy shall be accepted by the SE(TLPC) as per clause No. 6 of Section-II whereas Indemnity Bond shall be accepted by the line incharge. The provision of clause 1.09 (g) PRICES shall be applicable for transportation of material.

Line material shall be given to the contractor as per the following manner / lots.

Transmission Line Length	Number of Lots in which material is to be supplied for each activity.
a) For lines having route length up to 50 KMs	- In two lots
b) For lines having route length above 50 KMs to 100 KMs.	- In three lots
c) For lines having route length above 100 KMs	- In four lots

The material shall be issued to the contractor atleast 15days prior to the starting date of corresponding activity as per bar chart enclosed with the specification / work order. For example in case of line up to 50KM 50% quantity of stubs, earthing material required stub setting template will be provided by the department. 15days prior to the commencement of the activity of stub setting as per bar chart and balance 50% material of the stub setting and earthing will be provided 15 days prior to completion date of the 50% of the stub setting work arrived at on the basis of time period allowed for this activity. Material for the tower erection & stringing work will be similarly provided, this is however subject to satisfactory progress by the contractor as per Bar Chart.

2.4.3 All the material shall be thoroughly checked before lifting from NIGAM stores. Once the material is lifted, no complaint for quantity or and quality will be entertained.

2.4.4 The empty drums of conductor and earthwire shall be retained by the contractor. The cost of Rs.300 per empty drum of conductor and Rs. 100 per empty drum of earth wire will be deducted from the bills payable to the contractor.

2.4.5 On completion of the work, all surplus tower and line materials including the excess bolts and nuts, spring washers, plain washers, hangers, D shackles, anticlimbing devices, step-bolts, etc. and stub-templates shall be returned by the Contractor to the stores of the NIGAM as per the instructions of the Engineer-in-charge of the works at no extra cost to the NIGAM.

2.4.6 The Contractor shall submit the complete materials account immediately after the work is completed and in any case not later than 3 months of completion of the line. The MAS A/c shall be settled within one month from the date of receipt of MAS by the line incharge.

2.4.7 Recovery of all line material including tower material (on per MT basis) shall be effected at double the issue rate. The recovery of shortages of tower material shall be made only for short members/ materials as per their weight.

2.4.8 All the surplus towers as mentioned above shall be returned to the purchaser, site Stores as per instruction of Engineer-in-charge of the works within one month of completion of towers erection. This includes unloading of tower material and stacking it as per instruction of the Engineer-incharge.

After completion of the line the contractor shall make his request for time extension if any within 30 days to line incharge. The line incharge shall prepare the time extension case and send the case to XEN within 10 days. The XEN shall submit the case to SE within 7 days and SE to CE(T&C) within next 7 days . CE(T&C) shall send case to CE(MM) with his comments /recommendations within 10 days of receipt from SE. The case shall be processed by SE(TLPC) and Accounts Officer (TLPC) for approval of competent purchase committee within 21 days of its receipt from ZCE(T&C).

2.4.9 After completion of all foundations, the bill of quantity of the line shall be informed to the order placing authority as prescribed here under:-

- | | | |
|--|---|--|
| (a) Initiation by AEN-Incharge & submission to XEN | - | Within 10 days |
| (b) Verification by XEN & submission to SE | - | Within 7 days of receipt from AEN. |
| (c) Verification by XEN & submission To CE/ZCE | - | Within 7 days of receipt from XEN. |
| (d) Comments if any of CE/ZCE(T&C) | - | Within 10 days of receipt from S.E. |
| (e) Checking by SE(TLPC) & Accounts Officer(MM). | - | Within 21 days of receipt from CE/ZCE(T&C) |

2.5 TESTING AND COMMISSIONING :

2.5.1 After completion of the work, as mentioned in Clause No.2.1 "Scope", the Contractor will ensure that all works connected with the line have been completed correctly as per Indian Electricity Rules and procedure. Any extra cost involved due to incompleteness of work or bad workmanship found out subsequently, shall be set right forthwith by the Contractor at his cost. The contractor shall arrange to handover the complete line.

2.5.2 TAKING OVER :

When the whole of the works have been completed and have passed all the tests on completion prescribed in the contract to the satisfaction of the Engineer-in-charge. The Engineer-in-charge shall issue to the contractor a taking over certificate as proof of the final acceptance of the line.

Such certificate shall not unreasonably be withheld nor will the Engineer-in-charge delay the issuance thereof on account of minor omissions or defects which do not affect the commercial operation and /or cause any serious risk to the transmission line. Such certificate shall not relieve the contractor of any of his obligation which otherwise become due by the terms and conditions of the contract. Contractor shall give an undertaking to finish any outstanding work expeditiously.

2.5.3 The line can be charged and taken over if the deficiencies do not materially affect the safety of the line and can be attended while the line is in charged condition. However, the deficiencies shall be jointly listed and intimated to the ordering authority.

2.6 ELECTRICITY RULES :

2.6.1 All works shall be carried out in accordance with the revised and latest provisions under Indian Electricity Act, and Rules made there under.

2.7 ERECTION TOOLS :

2.7.1 All the erection tools required during construction of lines shall be arranged by the contractor at his own cost. Adjustable Stub-setting template will however, be supplied by the NIGAM which shall be returned by the Contractor in good condition on completion of the works.

2.7.2 The Contractor shall only be completely responsible for any damage and or loss of erection tools.

2.8 WASTAGES :

2.8.1 The contractor shall make every efforts to minimize the breakages, losses and wastages of line materials etc. supplied "Free of Cost" by the NIGAM, for construction.

2.8.2 The maximum ceiling for wastages permitted is as under:

Item -----	% wastage per mitted(Max.) -----	Compensation payable for excess wastage. -----
i) Conductor and earth wire	1%	} } } Double the
ii) Insulators	1%	} issued } rate.
iii) Bolts-Nuts	2%(No extra bolts nuts will be supplied.)	} } } }
iv) Hardware & accessories	1%	} }

2.8.3 The erection contractor shall return to the NIGAM all the unused items. Conductor/groundwire length(s) less than 20 meters will be treated as wastage, but would be required to be returned as far as possible. However, the erection contractor shall compensate the NIGAM at double the issued rate for the quantities exceeding permitted wastage and material not returned by the contractor.

2.8.4. All the wastages are accountable except for items(i) of clause No.2.8.2.The account of permissible wastages shall be maintained at site in the registers as prescribed by the Engineer-in-charge of works, which will be subjected to periodical checking by NIGAM's authorised representatives.

2.8.5 The account of wastages shall also be submitted on monthly basis (with running accounts bills) to the Engineer-incharge of works. Please refer Statement 'B' Appendix-I of this specification. The copy of R.A.bill shall also be submitted to the concerned Superintending Engineer(TCC) and the Chief Engineer (T&C) of the NIGAM.

2.9 PROGRESS REPORT :

2.9.1 Fortnightly progress reports of works & for status of material availability in duplicate shall be regularly submitted to the concerned Executive Engineer (TCC), Assistant Engineer (TCC) incharge of works with a copy to Chief Engineer (T&C)/ (MM), Superintending Engineer (TCC), Superintending Engineer (TLPC). In this connection, please also refer statement `B' Appendix-I of this specification.

2.9.2 Progress review meeting with the contractor will be taken by SE(TCC) monthly and by CE/ ZCE(T&C) bimonthly. Minutes of such meeting shall be drawn and will include progress of works, site constraints, material constraints, delay on part of RVPN/ contractor, other bottlenecks, instructions given decisions taken, agreed targets and views of both parties. Copy of these minutes shall be sent to SE(TLPC), XEN concern and the Contractor.

Deficiencies in the work shall be communicated in writing to the contractor continuously and timely by all inspecting officers, and also taken up during progress review meetings.

Deficiencies which materially affect the safety and commercial use of the line will have to be attended by the contractor before the line is declared fit for charging or taken over.

2.10 QUANTITY OF WORK :

2.10.1 The quantities of various items of erection indicated in Schedule-I of Section-IV are tentative. Final quantities shall be determined after completion of detailed route survey. The contractor has to carry out the work according to quantities as determined so as to complete the line for commissioning for which the rates quoted in the tender shall be valid.

However after finalisation of detailed survey,for the increase in the bill of quantity upto 10% of the contract price ,the Engineer-Incharge may issue variation order for the purpose of payments which is subject to the approval of the owner.For the increase in the bill of quantity beyond 10% the Engineer-Incharge will refer the case to the purchaser for its approval.

2.11 CEMENT & R.C.C. STEEL :

2.11.1 No wastage is permitted for cement and reinforcement steel as cement and reinforcement steel is to be procured by the Contractor.

2.11.2 No price variation shall be applicable on reinforcement steel& cement to be procured by the Contractor.

2.11.3 The cement required for foundation shall be purchased by the contractor at his own cost. The contractor shall use any one of the following cement make or any other equivalent make as approved by the concerned SE(TCC).

- (a) VIKRAM OPC 43 GRADE
- (b) BINANI OPC 43 GRADE
- (c) BIRLA UTTAM OPC 43 GRADE

The quality of cement shall be as per IS 8112-1989 (43 grade ordinary Portland cement specification).

In case of non availability of 43 grade OPC cement contractor can use 53 grade PPC cement in place of 43 grade OPC cement however recovery towards difference of cost of 53 grade and 43 grade cement of similar make shall be made from the contractors bills by the line incharge.

2.11.4 STANDARDS

2.11.4.1 Except where otherwise specified or implies, the concrete shall conform to the provisions of IS 456-1978(as amended up to date).

2.11.4.2 The Indian Standard Specifications as mentioned below shall be applicable to the materials used in the preparation of concrete.

- a) IS 8112-1989 : 43 grade ordinary Portland cement specification.
- b) IS 383-1970 : Specification for Coarse and Fine Aggregate from Natural Sources for Concrete.
- c) IS 5613 : Code of practice for design installation and maintenance of overhead (Part 2 Section 2)-1985 power lines.
- d) IS 4091-19 : Code of practice for design&construction of foundation for transmission line tower and poles.

2.11.4.3 The water used for mixing and curing the concrete shall be potable, clean and free from injurious quantities of slit, oils, acids, alkalies, salts and organic material and other deleterious substances.

2.11.4.4 Admixtures shall be used, if necessary, only with the written permission of the Engineer-in-charge. Addition of admixtures shall not reduce the specified strength of concrete in any case. The admixtures shall conform to IS 9103 (Latest edition)

2.11.5 The NIGAM reserves right to test the quality of steel & cement procured by the Contractor and intended to be used for the tower foundation works.

2.12 PENALTY FOR DELAY :

The Tenderer should note that the completion time allowed for carrying out the work in the tender shall be strictly observed. In case of failure to complete the contracted works within the stipulated completion period, the contractor shall be liable to pay penalty as per Clause No.8 "Delay in Completion" of Section-II.

2.13 IMPORTANT :

2.13.1 The bidders should quote these rates strictly in accordance with commercial terms and conditions of erection of towers and other terms and conditions of this tender specification and they should not quote their own terms and conditions. The bids not falling in line with NIGAM's terms and conditions quoted in the tender, are liable to be summarily rejected.

2.13.2 In case of any doubt or interpretation of the terms and conditions, the decision of concerned Chief Engineer (T&C), RVPN will be final and binding to the bidder and no dispute in this regard will be entertained.

2.13.3 The Bidders should specifically note that the offer containing :

- a) Different rates for the same items i.e. rates quoted in two slabs.
- b) Deviations/addition/alterations/commissions in bidding schedules.
- c) Deviations and contradictions to terms and conditions specified in this tender are liable to be summarily rejected.

2.14 SPECIAL INSTRUCTIONS :

2.14.1 Offer containing split up rates for any item of Section-IV, Schedule-I & II will be outrightly rejected.

2.14.2 Offer with any change suggested in price variation formula will be outrightly rejected.

2.14.3 The Bidders shall specifically note that the NIGAM will not pay any extra amount towards any type of claim except for the description indicated in erection schedule.

2.14.4 Quantities given in the Section-IV, Schedule-I, are tentative and may vary according to requirement of the line to be erected. For the items where quantity is one(1) in Section-IV, Schedule-II , contractor has to execute the work as per requirement of line.

SECTION - III

----- TECHNICAL PARTICULARS

3.1 SCOPE :

3.1.1 Please refer to Clause No.2.1 of this specification.

3.1.2. The Contractor shall be fully responsible for completing all the above works and till they are taken over by the NIGAM.

3.1.3 The methods of erection activities not dealt in details are left to the Contractor who shall exercise his own judgement with regard to actual handling of materials and in deciding upon the best methods to be adopted.

3.2. SURVEY , ALIGNMENT & SOIL INVESTIGATION :

3.2.1 The tenders are presumed to have acquainted themselves with the route before submitting their offer. The detail of walk over survey should be submitted with tender. The walkover survey report should consist of soil strata, No. of river , road or railway crossing, and the topographical map of the route if possible.

Proposal regarding alternative line route shall be submitted by the contractor to the line incharge. The line route shall be approved by the concerned S.E. within 15 days of submission of the proposal.

3.2.2 The Contractor shall make a check survey of the line route, which will be shown to the successful tenderer and submit profile and plan drawings showing each and every proposed structure position, length of spans in Meters, clearances and type of structures required. These survey maps shall be prepared to the scale of 20 Meters = 1 Cm, horizontal and 2 Meters = 1 Cm. Vertical.

Deviation point angles should be marked in degrees with Right Left as the case may be. All Kuchha and metalled roads, trees, structures, Buildings, Canals, wells, river, railway, P&T lines, power line crossings, ponds and other obstructions, etc. within 50 metres on either side of line route should be clearly indicate. These maps should also indicate the profile and level of the proposed route and show the location of the towers with a ground clearance diagram.

3.2.3 The bidder should note that Employer will not furnish the topographical maps prepared by Survey of India but will make available any assistance that may be required in obtaining the topographical maps.

3.2.4 Soil resistivity, along the route alignment, shall be measured in dry weather by four electrode method keeping inter-electrode spacing of 50 meters. For calculating soil resistivity formula $2 \pi I a r$ (where $a=50$ metres and r =megger reading in ohms $\pi=3.14$) shall be adopted. Measurement shall be made at every 2 to 3 kms along the route of transmission lines. In case soil characteristics changes within 2 to 3 kms. the value shall also have to be measured at an intermediate locations. The megger reading and soil characteristics shall also be indicated in the soil resistivity results. No extra payment will be made to the contractor on this account.

3.2.5 ROUTE MARKING:

At the starting point of the commencement of route survey, an angle iron spike of 65x65x6 mm section and 1000 mm long shall be driven into the ground to project only 150 mm above the ground level. A punch mark on the top section of the angle iron shall be made to indicate location of the survey instrument. Teak wood peg 50x50x650 mm size shall be driven at prominent position at intervals of not more than 750 meter along the transmission line to be surveyed upto the next angle point. Nails of 100 mm wire should be fixed on the top of these pegs to show the location of instrument. The pegs shall be driven firmly into the ground to project 100 mm only above ground level. At angle position stone/concrete pillar with RVPN marked on them shall be put firmly on the ground for easy identification.

3.2.6 TOWER SPOTTING:

With the help of approved sag template and tower spotting data, tower locations shall be marked on the profiles. While locating the towers on the profile sheet, the following shall be borne in mind:

a) Span:

The number of consecutive spans between the section points shall not exceed 15. A section point shall comprise of tension point with DB type or DC type or DD type tower as applicable.

b) Extension:

An individual span shall be as near to the normal design span as possible. In case an individual span become too short with normal supports on account of undulations in ground profile, one or both the supports of the span may be extended by inserting standard body extension designed for the purpose according to technical specification.

c) Loading:

There shall not be any upward force on suspension towers under normal working conditions and the suspension towers shall support at least the minimum weight span as provided in the designs. In case uplift is unavoidable, it shall be examined if the same can be overcome by adding standard body extensions to the towers failing which tension towers designed for the purpose shall be employed at such positions.

d) Road crossing:

At all important road crossings, the towers shall be fitted with normal suspension or tension insulator strings depending on the type of towers but the ground clearance at the roads under maximum temperature and in still air shall be such that even with conductor broken in adjacent span, ground clearance of the conductor from the road surfaces will not be less than 7.015 meters. At all national highways tension towers with double insulator string on crossing side shall be used. The crossing span however will not exceed 250 meters in any case.

e) Railway crossing

All the railway crossings coming enroute the transmission line have already been identified by the Employer. At the time of detailed survey, the railway crossings shall be finalised as per regulation laid down by the Railway Authorities. The following are the important features of the prevailing regulations (revised in 1987)

i) The crossing shall be supported on DB or DD type tower on either side depending on the merits of each case and Double tension insulator string shall be used on both the towers on the side of the crossing.

ii) The crossing shall normally be at right angle to the railway track.

iii) The minimum distance of the crossing tower shall be at least equal to the height of the tower plus 6 meters away measured from the centre of the nearest railway track.

iv) No crossing shall be located over a booster transformer, traction switching station traction sub-station or a track cabin location in an electrified area.

v) Minimum ground clearance above rail level of the lowest portion any conductor under condition of maximum sag shall be maintained at 15.40 meters for 220kV lines and 14.60 metres for 132kV lines at conductor temperature of 75 degree C.

The approval for crossing railway track shall be obtained by the Employer from the Railway Authority however six copies of profile and plan tower and foundation design and drawings required for the approval from the Railway Authority shall be supplied by the Contractor to the Employer.

f) River crossing:

In case major river crossing towers shall be of suspension type and the anchor towers on either side of the main river crossing shall be "DD" type tower. Clearance required by navigation authority shall be provided. For non navigable river clearance shall be reckoned with respect to highest flood level (HFL)

g) Power Line Crossing:

Where this line is to cross over another line of the same voltage or lower voltage DA/DD type tower with suitable extensions shall be used. Where the line is to cross under the 400 KV power lines gantries shall be used. Provisions to prevent the possibility of its coming into contact with other overheadlines shall be made in accordance with the Indian Electricity Rules,1956. In order to reduce the height of the crossing towers it may be advantageous to remove the ground wire of the line to be crossed (if this is possible and permitted by the Owner of the line to be crossed) All the works related to the above proposal shall be deemed to be included in the scope of the Contractor except if modifications are required to line below, in which case, the conditions to be agreed upon.

h) Telecommunications Line Crossing

The angle crossing shall be as near to 90 deg. as possible. However deviation to the extent of 30 deg. may be permitted under exceptionally difficult situations. When the angle of crossing has to be below 60 deg. the matter will be referred to the authority incharge of the telecommunication system. On a request from the contractor, the permission of the telecommunication authority may be obtained by the purchaser. Also in the crossing span power line support will be as near the telecommunication line as possible to obtain increased vertical clearance between the wires.

i) Details Enroute:

All topographical details permanent features such as trees building etc. 17.5 m on either side of the alignment shall be detailed on the profile plan.

3.2.7 Before commencing the check-survey, the Contractor will get from the Engineer-incharge of the works all the data that have been collected of the proposed routes of the Transmission line, which will be mark on blue prints or topographical sheets. While marking the detailed survey if any better route is found free of roads, telegraph lines, power lines, river and canal crossings, etc. or due to other considerations such as avoiding tanks or reservoirs, etc. the contractor should survey the alternative route at no extra cost. Final approval to the route will be accorded by the concerned Chief Engineer(T&C) RAJASTHAN RAJYA VIDHYUT PRASARAN NIGAM LTD.

The successful bidder shall carry out all the erection works in accordance with tower spotting data, structural & foundation drawings, provided by the NIGAM.

3.2.8 On completion of the final survey, the Contractor should submit one tracing and three blue prints copies of final survey alongwith soil investigation report to the Chief Engineer(T&C),and one blue print to SE(TLPC) before commencement of digging of pits for foundation. When the route and profiles are finally approved by the concern C.E.(T&C), no alternative shall be allowed without written consent of the Chief Engineer(T&C)and the line shall be constructed exactly according to the approved survey. If any subsequent alternation is found necessary, the Contractor shall have to submit full details of such an alteration with justification and obtain approval of the Chief Engineer(T&C), before carrying out the work. The contractor will be responsible for any inaccuracies that may arise when finally locating the towers at site and should rectify such inaccuracies at his own cost.

3.3. WAY LEAVE, TREE CUTTING & OTHER OBSTRUCTIONS:

Refer clause No.2.2 of this specification(Section-IIA).

3.4 ACCESS TO LOCATIONS:

Refer clause No.2.3 of this specification(Section-IIA).

3.5 DISTRIBUTION OF MATERIALS:

Refer clause No.2.4 of this specification(Section-IIA).

3.6 STUB SETTING AND FOUNDATIONS:

3.6.1 The contractor shall be fully responsible for correct setting of stubs in accordance with approved methods at the exact locations and alignments and in precisely correct level. Stub setting templates to be supplied by the NIGAM should be used for proper setting of stubs. The contractor will be responsible for constructing the foundations in accordance with the approved design of each type of foundation.

3.6.2 The foundation work including stone revetment, concrete or earth filling above ground level wherever necessary and stacking and tamping on the site of all surplus excavated soil. Surplus stone should be stacked within the tower base.

3.6.3 The payment for excavation will be limited to the volumes as per approved excavation drawings even though the contractor may excavate more for the sake of his own convenience. If the excavated depth is more than the depth shown in the approved drawings, the additional depth should be filled in with lean concrete (1:4:8) at contractor's cost in respect of materials, labours etc.

3.7 CLASSIFICATION OF SOIL:

3.7.1

a) Normal Dry Soil:

The soil readily removable with ordinary spades, pick axe and shovels viz. murrum/sandy etc. and to be used for location in normal dry cohesive or non-cohesive soils of any colour.

b) Hard soil/ Hard murrum/ Dense soil:

Generally any soil which requires the close application of picks or jumpers or scribers to loosen, such as stiff clay, gravel and cobble stone.

c) Soft rock :

Where decomposed or fissured rock, hard gravel, kankar lime stone, laterite or any other soil of similar nature is met, undercut type foundation is to be used for soft rock locations. The ultimate safe bearing capacity of soil should be 45000kg/m².

d) Hard rock :

Where chaseling, drilling, blasting is required and the ultimate safe bearing capacity of soil should be 65600kg/m²

e) Wet:

i) Where subsoil water is met at 1.5m, or more below ground level.

ii) Which are in surface water for long period with water penetration not exceeding one meter below the ground level e.g. the paddy fields.

f) Full submerged soil :

Where sub-soil water table is met at less than 0.75 meter below ground level and up to complete depth of foundation.

g) Partially submerged soil :

Where the sub-soil water table is met between 0.75M to 1.5M below ground level, the top portion of the strata being normal dry soil.

3.7.2 Composite Soils: Guidelines for adopting various types of foundation in composite soils.

3.7.2.1 On the locations where composite soils are likely to be encountered, excavation shall be done very carefully.

3.7.2.2 The width of the normal soil excavation should be maintained till the layers of soil mentioned under normal soil classification are encountered.

If the layers of soil other than classified under normal soil are encountered, excavation width shall be restricted to minimum till normal soil foundation depth is reached.

3.7.2.3 Where soil is of composite nature, classification of foundation shall be according to the type of soil predominant in the footing and payment shall be made accordingly.

3.8. General on Excavation :

3.8.1 The rates for submerged soil are applicable to all locations, which will be classified as submerged including partially, or fully submerged locations by actual condition. If for the above case, the soil required shoring, shuttering and/or dewatering etc, these will be carried out at no extra cost to the NIGAM.

3.8.2 The volumes of excavation to be paid for chimney and pyramid type foundation will be the volume as per foundation drawings inclusive of 150 mm on all side to allow the workers to work in-side the pit.

3.8.3 The volumes of excavation for submerged foundation will be paid on the basis of volumes actually excavated or worked out from the approved drawings whichever is lower.

3.8.4 Whenever the necessity arises for levelling of soil, building revetment for dry stone or random stone revetment or concrete revetment or brick masonry with cement, these works shall be paid to successful tenderer at the revetment rates.

3.8.5 In addition to all above, whenever shuttering or shoring is necessary the same will be done at not extra cost to the NIGAM.

3.8.6 If for shallow foundation, the stub is required to cut, proper record shall be maintained for such locations in terms of cut lengths. The cutting of stub shall be arranged by the contractor at no extra cost to the NIGAM.

3.9 CONCRETE :

3.9.1 STANDARDS

3.9.1.1 Except where otherwise specified or implies, the concrete shall conform to the provisions of IS 456-1978(as amended up to date).

3.9.1.2 The Indian Standard Specifications as mentioned below shall be applicable to the materials used in the preparation of concrete.

- a) IS 8112-1989 :43 grade ordinary Portland cement specification.
- b) IS 383-1970 :Specification for Coarse and Fine Aggregate from Natural Sources for Concrete.
- c) IS 5613 : Code of practice for design, Installation and maintenance of overhead powerlines. Part-2 Section-2, 1985
- d) IS 4091- :Code of practice for design and construction of foundation for transmission line tower and poles.
- e) IS 12269- :Specification for Portland cement(53 Grade) 1987
- f) IS 1489 :Specification for Portland Pozolona cement (Fly Ash based) (Part-I)

3.9.2 The cement consumption for different types of concrete shall be considered as follows :

1:2:4 mix. - 6.5 bags, per Cu. meter If any layer of lean concrete is required to be used as per approved design, the consumption of cement shall not exceed :

For 1:3:6 mix. - 4.5 Bags, per Cu. meter.

For 1:4:8 mix. - 3.5 Bags, per Cu. meter.

3.9.3 The sand shall be of the best quality containing hard silicious materials, clean and of sharp angular grit type and free from earth or organic matter or salts and to the satisfaction of the Engineer-in-Charge. No saltish or brakish water shall be used for concreting.

3.9.4 The course aggregate shall be of the best quality to the satisfaction of the Engineer-in-charge and broken to maximum size of 20mm for concrete section. It should also be free from grit and dirt.

3.9.5 Mixing of concrete:

3.9.5.1 The concrete shall be mixed in a mechanical mixer. However in case of difficult terrain hand mixing may be permitted at the discretion of Engineer - Incharge.

3.9.5.2 Mixing shall be continued until there is uniform distribution of material and the mix is uniform in colour and consistency, but in no case the mixing be done for less than 2 minutes. Normally mixing shall be done close to the foundation, but in case it is not possible the concrete may be mixed at the nearest convenient place. The concrete shall be transported from the place of mixing to the place of final deposit as rapidly as practicable by the methods which shall prevent the segregation for loss of any ingredient. The concrete shall be placed and compacted before setting commences.

3.9.6 The mixture of concrete to be used shall be such as to produce a sound, compact and water proof concrete and shall not be weaker than 1:2:4 ratio with 20mm stone metal for chimney and pyramid. Unit rates may be quoted for concrete of 1:4:8 ratio. The concrete shall be as stiff as the requirements of placing the concrete in the form of moulds with ease and degree to which concrete resist segregation will permit. Hence; the quantity of water used should not be too much.

3.9.7 The dimensional drawing of form boxes shall be got approved from RVPN. Proper form or moulds adequately braced to retain proper shape while concreting, should be used for chimney or pyramid and slab portions. Form-boxes should be water tight so as not be allow cement cream to come out leaving only sand and gully to form honey combs in concrete. Form boxes should be made out of M.S. Sheet having adequate thickness for handling and should be cleaned and oiled before using for concreting.

3.9.8 All wet locations must be kept completely dewatered both during the placing of concrete and for 24 hrs. after completion. There should be no disturbance of concrete by water during this period. All arrangement for dewatering shall be done by the contractor as included in the scope of erection.

3.9.9 Form boxes should not be removed before 24 hrs. after concreting. Concrete surfaces where require, should be set right with rich cement and mortar immediately after removal of the forms.

3.9.10 After 24 hours of pouring, the concrete should be cured by keeping it continuously wet for 14 days. After 48 hours of pouring, the pit may be back filled with excavated selected earth (which is free from grass, dung, wooden waste, postures & fodder woods, shrubs, thorn etc.) sprinkled with necessary amount of water and well compressed & consolidated in layers not exceeding 150mm. Thereafter the exposed top and the fill shall be kept wet for the remainder of the prescribed curing. Extra ordinary care should be taken during back-filling. The Contractor and NIGAM's Engineers at site shall ensure that back-filling is done in the manner referred to above. So that back-filled earth becomes homogenous with surrounding parent soil with the passage of the time.

1.9.11 The Engineers of the contracting parties shall record the day/date of back-filling and jointly sign in the register for its correctness.

3.9.12 Adequate quantity of form boxes for all types for chimney and pyramids shall be prepared by the contractor as per approved foundation design ,drawing at his cost.

3.9.13 Payments for the quantity of excavation and concreting for each type of tower shall be made on pro-rata basis of actual work done subject to the maximum of guaranteed volumes as per the approved drawings to be furnished by the NIGAM.

3.9.14 The reinforcement steel shall be procured by the Contractor. No price variation shall be allowed on steel so supplied.

3.9.15 Protection of Tower Footing:

3.9.15.1 The work shall include all necessary stone revetments, concreting and earth filling above ground level and the clearance from stacking on the site of all surplus excavated soil, special measures for protection of foundation close to or in nallas, river bed hilly / undulated terrain etc. by providing suitable revetments or galvanised wire netting and meshing packed with boulders. The top seal cover of the stone revetments shall be done with M-150 concrete (1:2:4 mix). The details of protection of tower footing are given in drawing enclosed with the specification for reference purpose only.

Location where revetment are to be provided shall be identified by the AEN line incharge during the course of stub setting . The approval for such proposals of revetment shall be arranged by concerned SE(TCC) and shall be conveyed to the contractor up to the completion of stub setting activity . The contractor shall be liable to do the revetment work if intimated up to the completion of stub setting activity.

3.9.15.2 The quantity of excavated earth obtained from a particular location shall generally be utilised in back- filling work in protection of tower footing of same location, unless it is unsuitable for such purpose, in the later case, the back filling shall be done with borrowed earth of suitable quality irrespective of lead, as per the rate provided in the letter of award. The consolidation of earth shall however be done after backfilling free of cost.

3.10. TOWERS ERECTION :

3.10.1 Assembly

The method followed for the erection of towers, shall ensure the points mentioned below :

- a) Straining of the members shall not be permitted for bringing them into position. It may however be necessary to match hole position at joints and to facilitate this, tommy bars not more than 450 mm long may be used.
- b) Before starting erection of an upper section the lower section shall be completely braced and all bolts provided and tightened adequately in accordance with approved drawings to prevent any mishap during tower erection.
- c) All plan diagonals relevant to a section of tower shall be placed in position before assembly of upper section is taken up.
- d) The bolt position in assembled towers shall be as per IS:5613 (Part-II/Section.2)/1976.
- e) All blank holes, if any left, after complete erection of the tower, are to be filled up by bolts and nuts of correct size.

3.10.2 Tightening and Punching of Bolts & Nuts.

3.10.2.1 All nuts shall be tightened properly using correct size spanners. Before tightening, it will be ensured that filler washers and plates are placed in relevant gaps between members, bolts of proper size and length are inserted and one spring washer shall be placed under each nut, and in case of step bolts, spring washers have been placed under the outer nuts. The tightening shall progressively be carried out from the top downwards, care being taken that all bolts at every level are tightened simultaneously. The threads of bolts projecting outside the nuts shall be punched at three position on the diameter to ensure that the nuts are not loosened in course of time. If during tightening a nut is found to be slipping or running over the bolt threads, the bolt together with the nut shall be replaced.

3.10.2.2 The threads of all the bolts projected outside the nuts shall be welded with the nuts at two diametrically opposite places. The length of each welding shall be at least 10 mm. The welding shall be provided from ground level up to bottom cross arm level. After welding cold galvanised paint (Zinc rich paint) having at least 90% (percent) zinc contents shall be applied to the welded portion. At least two coats of the paint shall be applied. The cost of welding and paint including application of paint shall be deemed to be included in the erection price.

3.10.2.3 In addition to the welding of nuts with bolts as described above the contractor can also propose some alternative arrangements, like use of epoxy resin adhesive which can serve the purpose of locking the nuts permanently with the bolt and thus preventing pilferage of the tower members.

3.10.3 Standard tangent towers with reduced spans shall normally be used for all important road crossings.

3.10.4 On railway crossings 15 Deg., 30 Deg towers shall be used on either side depending on the merits of each case with double insulator strings.

3.10.5 The Super-structure of towers should be erected on foundation after 14 days of concreting. However, the method adopted for erection of tower is left to the discretion of the contractor subject to the condition that he takes responsibility for any damage to materials. No tower member should get strained or bent during erection. The towers must be truly vertical after erection and no straining would be allowed to bring it in alignment. Maximum tolerance in verticality that will be permitted is one mm per 360mm of tower height. All bolts and nuts shall be made fully tight and finally the bolt threads shall be centre punched to avoid nuts becoming loose. The bolt head shall be on outside faces & nuts & washers on inside faces of the tower.

Punching of bolts shall be made by chamfering the threads with centre punch at least at three places equally spaced on contact surface of bolts and nuts.

3.10.6 Tower erection shall include erection of all accessories like danger plate, number plate, phase plate, C.I. plate, Anti-climbing devices and fittings including attachments for step bolts, ladders, platforms, 'U' bolts, D-shackles, hangers strain plate, etc. and punching of bolts and nuts so that towers are complete in all respects.

In case if danger plate, number plate and phase plate (per set of three) is not provided to the contractor during tower erection then deduction of Rs.5/- per item shall be made by the line in-charge. If these items are arranged by RVPN before commencement of stringing activity then the contractor shall be liable to fix these accessories on respective tower and deducted amount on this account shall be verified for payment by the line in-charge.

The contractor shall only punch the bolts used for fixing these accessories by chamfering the threads with centre punch at least at three places equally spaced on contact surface of bolts and nuts, if these plates are issued to the contractor after completion of tack welding work of that particular tower.

3.10.7 Rates offered for erection of tower super-structure and footings shall be irrespective of final weights of towers.

3.10.8 Suitable tower extension shall be erected to get desired ground clearance whenever required which have been determined at the time of final survey.

3.11 GROUNDING :

It is necessary that in no case tower footing resistance should be more than 10 ohms. during dry weather.

3.11.1 PIPE TYPE EARTHINGS :

(a) At locations where footing resistance does not exceeds 10 ohms, the pipe type earthing as per method shown under Drawing No.RVPN/SE/TLPC/99/74(Photo copy enclosed) would be followed. The contractor will have to supply all materials required for grounding

including salt, fine broken coke/charcoal. The earthing is to be done by using augur & making a bore hole for insertion of pipe away from the tower leg excavation line.

(b) If it is observed that the earthing arrangement is done within leg excavation pit, the proportionate deductions will be made from the bills.

3.11.2 COUNTERPOISE EARTHING :

(a) In places of high resistivity soil conditions, counterpoise earthing shall be adopted as shown under drawing No. RVPN/SE/TLPC/99/74(Photo copy enclosed) to bring down the Tower footing resistance below 10 ohms. The counterpoise earthing shall be buried 500mm below ground level and for this purpose some space should be left out in chimney coping portion at the time of stub-setting. Copping should be completed after installation of counterpoise earthing. In case of rocky terrain the C.P. earthing have to be embedded at a depth of 100 mm.

(b)The galvanized stranded wire shall be of the size 7/3.15mm

(c) The record of footing resistance shall be maintained in consultation with Engineer-in-charge before and after providing of suitable earthing.

3.12 INSULATOR HOISTING :

3.12.1 Suspension insulator strings shall be used on all tangent type towers with deviation upto 2 deg and tension insulator strings on all small,medium,large angle and dead end type towers on all lines.

Technical particulars of conductor,earthwire and insulator strings are indicated in clause No.3.13.1(i), (ii), (iii), & (iv).

3.12.2 Insulators strings shall be as assembled on ground.These shall be cleaned and examined for hair cracks,chips or defective glazing(not exceeding half centimetre square) and than hoisted by careful handling.The work will include fittings of all hardwares and fittings in their proper places and order.

3.13. STRINGING OF CONDUCTOR AND GROUND WIRE

3.13.1 FOR 220KV LINES:-

(i) DETAILS OF CONDUCTOR :

A) Material	: ACSR `ZEBRA'
B) Size & Stranding	: 400 mm sq. nominal area 54/3.18 mm aluminium +7/3.18 mm steel.
C) Max. sag under max. temperature & still wind	: 9420 MM (at 75 deg C. including 2% for conductor creepage).

(ii)DETAILS OF EARTH WIRE :

a) Material	: Galvanised stranded steel wire 7/4.00 mm 100 kgf quality.
b) Max.sag under max. temperature and still wind.	: 6680 mm (at 65 Deg.C.)

(iii) DETAILS OF INSULATOR STRING:

a) Size of discs	: 255 x 145mm
b) No. of discs	
1) Suspension string	: 13
2) Tension string	: 14

c) Insulator string :

	Length without hanger(mm)	Weight KG.(Approx.)	EMS (KG.)
1. Single suspension	2256/1676	80/60	7000/4500
2. Double suspension	2515/1909	175/125	7000/4500
3. Single tension	2940/2230	130/100	11500/11500
4. Double tension	3215/2575	275/200	11500/11500

FOR 132KV LINES:-

i) DETAILS OF CONDUCTOR :

- A) Material : ACSR 'PANTHER'
 B) Size & Stranding : 220 mm sq. nominal area 30/3 mm aluminium +7/3.18 mm steel.
 C) Max. sag under max. temperature & still wind : 7770 MM (at 75 deg C. including 2% for conductor creepage).

(ii) DETAILS OF EARTH WIRE :

- a) Material : Galvanised stranded steel wire 7/3.15 mm quality.
 b) Max.sag under max. temperature and still wind. : 5840 mm (at 65 Deg.C.)

(iii) DETAILS OF INSULATOR STRING:

- a) Size of discs : 255 x 145mm
 b) No. of discs
 1) Suspension string : 9
 2) Tension string : 10
 c) Insulator string :

	Length without hanger(mm)	Weight KG.(Approx.)	EMS (KG.)
1. Single suspension	2256/1676	80/60	7000/4500
2. Double suspension	2515/1909	175/125	7000/4500
3. Single tension	2940/2230	130/100	11500/11500
4. Double tension	3215/2575	275/200	11500/11500

3.13.2(a) Before commencing of stringing work, contractor must obtain approval of sag tension charts (these shall have to be supplied by the Contractor) showing initial and final sags and tensions for various temperature and spans. The details of spans, temperature range etc, will be furnished to the successful tenderer after the check survey completed. If the NIGAM used the sag shall be adjusted to suit to the sag indicated against actual temperature for an individual span. The thermometer shall be provided at the conductor point during the stringing work.

3.13.3 HANDLING OF CONDUCTOR AND EARTH WIRE :

3.13.3.1 The Contractor shall be entirely responsible for any damage to the towers or conductors during stringing. While running out the conductors, care shall be taken that the conductors do not touch and rub against the ground or objects which cause scratched or damage to the strands. The conductors shall be run out of the drums from the top in order to avoid damage due to chafing, immediately after running out, the conductor shall be

raised at the supports to the levels of the clamp and placed into the running blocks shall be of such a design that the seat is semi-circular and larger than the diameter of the conductor groundwire and it does not slip over or rub against the sides. The grooves shall be lined with hard rubber or neoprene to avoid damage to conductor and shall be mounted on properly lubricated bearings.

3.13.3.2 The running blocks shall be suspended in a manner to suit the design of the cross-arm. All running blocks, especially those at the tensioning end shall be fitted on the cross arms with jute cloth wrapped over the steel work and under the slings to avoid damage to the slings as well as to the protective surface finish of the steel work. Normally, suspension towers shall not be used even for temporary termination. In case small or medium angle towers are used even for temporary terminations, these shall be well guyed and steps be taken by the Erection Contractor to avoid damage. Guying proposal alongwith necessary calculations shall be submitted by the Erection Contractor to Engineer-in-charge for the approval. Proper T&P shall also be made available to the Purchaser by the Erection contractor for checking the tensions in the guy wires. The drums shall be provided with a suitable braking device to avoid damages, loss running out and kinking of the conductor. The conductor shall be continuously observed for loss or broken strands or any other damage. When approaching end of a drum length, atleast three coils shall be left when the stringing operations are to be stopped. These coils are to be removed carefully and if another length is required to be run out, a joint shall be made as per the recommendations of the manufacturers.

3.13.3.3 Repairs to conductors, if necessary, shall be carried out during the running out operations, with repair sleeves. Repairing of conductor surface shall be done only in case of minor damage. scuff marks etc. keeping in view both electrical and mechanical safe requirements. The final conductor surface shall be clean smooth and shall be without any projections, sharp points, cuts, abrasions etc.

3.13.3.4 Conductor splices shall be so made that they do not crack or get damaged in the stringing operation. The Contractor shall use only such equipment/methods during conductor stringing which ensures complete compliance in this regard.

3.13.3.5 Derricks shall be used where roads, rivers, channels, tele-communication or overhead power lines, railway lines, fences or walls have to be crossed during stringing operations. It shall be seen that normal services are not interrupted or damage caused to property. Shut-down shall be obtained when working at crossing of overhead power lines. The Erection Contractor shall be entirely responsible for the proper handling of the conductor, groundwire and accessories in the field.

3.13.3.6 The sequence of running out shall be from top to downwards, i.e. the groundwire shall be run out first followed by the conductors in successions. Unbalances of loads on towers shall be avoided as far as possible.

3.13.3.7 The proposed transmission line may run parallel for certain distance with the existing transmission lines which may remain energized during the stringing period. As a result there is a possibility of dangerous voltage build-up due to electromagnetic and electrostatic coupling in the pulling wire conductors and groundwires, which although comparatively small during normal operations can be severe during switching operation, it shall be the Contractor's responsibility to take adequate safety precautions to protect his employees and other from this potential danger.

3.13.3.8 Towers not designed for one side stringing shall be well guyed and steps taken by contractor to avoid damage. The contractor has to submit the detailed proposal alongwith the calculation for guying which shall be approved by the employer. Proper T&P shall be made available to the Employer by the contractor for checking the tension in the guy wires. All the expenditure on account of the above work is deemed to be included in the tender and no extra payment shall be made for the same.

3.13.4 The conductor and groundwire shall be made to sag correctly as per stringing charts before they are finally transferred to the for conductors and to clamps for groundwire. No joint should be made at less than 30 meters from the tower and and no joint shall be permitted in Railway, River, Road and other important crossing spans. There shall not be more

than one joint in a span of each conductor. All conductors shall be stressed to their maximum working load at the time of stringing, as per approved stringing charts. The minimum clearance between the lowest point of conductor and ground shall not be less than 6100mm.

All compression joints should be carefully made and record of initial and final lengths of the joints jointly signed by Contractor's and NIGAM's Representative should be maintained. Dynamo-meters shall be used in tensioning the conductors, check for sag should also be made at intervals when conductors are drawn up. Over stressing, causing damage to towers should be avoided. Care should be exercised not to over tension the conductor. An extra sag of 150mm be allowed at all the important tension locations like Railway/River crossings.

After being pulled the conductor/groundwire shall not be allowed to hang in the stringing sheaves for more than 72 hours, before being pulled to the specified sag. During the time the conductor/ground wire is on, the stringing sheaves before sagging-in, it shall be ensured that the conductor/groundwire is not damaged due to wind, vibration, vehicles or other causes, So affolding should be used to cross the important roads and Railway for minimum interruption to traffic.

3.13.5 The conductor shall be pulled upto desired sag and left in serial stringing sheaves for at least one hour after which the sag shall be re-checked and adjusted, if necessary, before clipping in and transferring the conductors from the serial stringing sheaves to the suspension clamp.

3.13.6 Conductors shall be clamped within 24 hours of sagging in. The sag will be checked in the larger spans of the section in case of sections upto eight spans and in one intermediate larger span also for section with more than eight spans..

3.13.7 The stringing sheaves, when suspended on the transmission structure for sagging, shall be so adjusted that the conductor will be on the sheaves at the same height as the suspension clamp to which it is secured.

3.13.8 The stringing of the groundwire shall be done in accordance with the stringing charts approved by the purchaser. The details of operations proposed to be followed by the tenderer shall be indicated in the tender.

The galvanised steel groundwire of size 7/4.00 mm for 220KV lines and 7/3.15 mm for 132KV lines shall be strung to run continuously over the conductors. The groundwire shall be pulled, sagged and clamped in from tension tower to tension tower before the phase conductors are pulled in that section.

3.13.9 All the line conductors shall be terminated at sub-station structures whose details shall be furnished by the NIGAM at the appropriate time. The conductor shall fix strain insulators on the sub-station structures

3.13.10 Armour rods and vibration dampers shall be fitted at each suspension towers before final clamping of conductor with insulator strings. Vibration dampers are to be fixed using aluminium tape with each clamping bolt and in correct vertical position in relation to conductor.

Compression type joints are to be used for joining of conductors. Each part connected with joints shall be perfectly cleaned by wire brush and properly greased before final compression. All the joints of conductor and earthwire shall be made in the best workmanship manner and shall be perfectly straights and having maximum possible strength V.D. shall be fitted on each location on G.W also.

3.13.11 Stringing work includes hoisting the insulators fixing hardware, fitting armour rods and vibration dampers, making joints, repair sleeves etc. All stringing tools special or otherwise should be arranged by the conductor at their cost.

3.13.12 Proper guys shall be provided to counter balance the paying out tension of conductor/groundwire at the tension locations, to avoid damage to towers and/or accidents.

3.13.13 ERECTION OF SPECIAL STRUCTURES:

3.13.13.1 The per tower rates as per unit rates for special structures will be applicable to all structures other than normal tower.

3.13.13.2 The rates of stringing for regular flowing river crossing section shall be on per km. basis i.e., for distance from one special tower to other erected on both the ends of river bed.

3.14. TESTING & COMMISSIONING :

After the erection is completed in all respects, the line should be roughly patrolled and checked for continuity and clearances. The line should be meggered to check its insulation level. Afterwards a line clear should be given to the Engineer-in-charge that the line is clear and free of man and materials and is fit to be charged. If on charging the line is found not to hold, the contractor should arrange to patrol the line and find out the causes for the tripping and rectify the defect at no extra cost to the NIGAM

The Contractor shall ensure that at the end of each sub-activity the surplus material is immediately removed from the work-site to avoid loss and injury to the public.

SCHEDULE OF RATES FOR UNIT QUANTITY ITEMS FOR CONSTRUCTION OF 220/132kV
TRANSMISSION LINES AGAINST TN-3736 ON LABOUR CONTRACT BASIS (BSR w.e.f 01.08.08)

Section-IV
Schedule-II

S.No.	Particulars	Unit	Unit Rate in Rs.
1	<u>Detail Survey as per tentative route</u> which includes the following major activities- Pegging of line route, providing of survey pillar at an interval of 3-4 KM in the line route with required jungle clearance for survey, profile preparation of approved route on graph sheet and marking of offset on either side of line, marking of side clearance for hills, sand dunes etc, as per specification and tower scheduling.	kM	4875
2	<u>Check survey as per approved route of line which includes -</u> Re-checking of the line route as per approved profile, chainage, tower center marking, pit marking, bisection of angle tower as required at site.	kM	1812
3	<u>Excavation</u> Excavation, excluding back filling, including shoring, shuttering, dewatering, etc. up to the required depth as per foundation specification/drawings.		
	(i) Normal soil	CUM.	144
	(ii) Murram/Black cotton/Hard Soil.	CUM.	305
	(iii) Soft rock/disintegrated rock.	CUM.	337
	(iv) Hard rock (blasting prohibited).	CUM.	770
	(v) Hard rock (with blasting)	CUM.	706
	(vi)Submerged Hard/Normal marine soil.	CUM.	209
4	<u>SETTING OF TEMPLATE & STUB/ANCHOR BOLT</u> Setting of template & stub/ anchor bolt & removal after concreting, excluding cost of excavation and concreting but including back filling with excavated/ borrowed earth (with lead & lift) in layers with ramming and watering as per specification.		
	<u>(A) 132 KV Single Circuit Tower upto +6m.extension.</u>		
	(i) Tangent Tower (TTA)	Nos.	1427
	(ii) Small angle Tower (TTB)	Nos.	1635
	(iii) Medium angle Tower (TTC)	Nos.	2388
	(iv) Large angle cum dead end Tower (TTD)	Nos.	2470
	<u>(B) 132 KV Double Circuit Tower upto +6m.extension.</u>		
	(i) Tangent Tower (TTA)	Nos.	1861
	(ii) Small angle Tower (TTB)	Nos.	2597
	(iii) Medium angle Tower (TTC)	Nos.	2806
	(iv) Large angle cum dead end Tower (TTD)	Nos.	3014
	<u>(C) 220 KV Single Circuit Tower upto +6m.extension.</u>		
	(i) Tangent Tower (TTA)	Nos.	2068
	(ii) Small angle Tower (TTB)	Nos.	2485
	(iii) Medium angle Tower (TTC)	Nos.	2902
	(iv) Large angle cum dead end Tower (TTD)	Nos.	3319
	<u>(D) 220 KV Double Circuit Tower upto +6m.extension.</u>		
	(i) Tangent Tower (TTA)	Nos.	2485
	(ii) Small angle Tower (TTB)	Nos.	2902
	(iii) Medium angle Tower (TTC)	Nos.	3528
	(iv) Large angle cum dead end Tower (TTD)	Nos.	4152
	<u>(E) 220 KV Double Circuit Special Tower (TTA) upto +18m. extension for span up to 550m</u>	Nos.	4152
	<u>(F) 220 KV Double Circuit Special Tower (TTA) upto +18m. extension for span exceeding 550m</u>	Nos.	4152
5	<u>CONCRETING:</u> Providing and laying cement concrete for all types of foundation as per latest ISS:456 including cement, sand, stone aggregate 20mm nominal size, water etc., preparing surfaces, shuttering, mixing, placing, ramming, curing, finishing as per specification and drawings.		
	(i) 1:4:8 Mix	CUM.	4217
	(ii) 1:3:6 Mix	CUM.	4746

6	(iii) 1:2:4 Mix	CUM.	4890
	(iv) 1:1.5:3 Mix	CUM.	5965
	Cutting, bending, welding of joints if required, fixing and placing of steel reinforcement as per specification and drawings including material.	MT.	42795
7	<u>EARTHING:</u> (A) Earthing of towers with pipe type earthing excluding the supply of pipes, wires, flats & connectors, but including coke/charcoal, etc., excavation, augering and backfilling in all types of soil.	Set	1091
	(B) Earthing of towers legs with counterpoise type earthings excluding supply of materials but including excavation and backfilling in all types of soil. (i) each set by laying 4 wires each 15m long at a depth of 600mm (ii) each set by laying 4 wires each 25m long at a depth of 600mm	Set Set	1364 2276
8	<u>ERECTION OF TOWERS:</u> Erection of super structures including D-shackles, ACD, Hangers, U-Bolts, step bolts, danger plate, phase plate, number plate etc. Also including tack welding of bolts & nuts up to bottom cross arm/beam level including application of Zinc Rich paint		
	<u>(A) 132 KV Single Circuit Tower</u> (i) Tangent Tower (TTA) (ii) Small angle Tower (TTB) (iii) Medium angle Tower (TTC) (iv) Large angle cum dead end Tower (TTD)	Nos. Nos. Nos. Nos.	5291 6222 6639 9332
9	<u>(B) 132 KV Double Circuit Tower</u> (i) Tangent Tower (TTA) (ii) Small angle Tower (TTB) (iii) Medium angle Tower (TTC) (iv) Large angle cum dead end Tower (TTD)	Nos. Nos. Nos. Nos.	7343 10583 12474 17093
	<u>(C) 220 KV Single Circuit Tower</u> (i) Tangent Tower (TTA) (ii) Small angle Tower (TTB) (iii) Medium angle Tower (TTC) (iv) Large angle cum dead end Tower (TTD)	Nos. Nos. Nos. Nos.	7969 10150 11593 15232
9	<u>(D) 220 KV Double Circuit Tower</u> (i) Tangent Tower (TTA) (ii) Small angle Tower (TTB) (iii) Medium angle Tower (TTC) (iv) Large angle cum dead end Tower (TTD)	Nos. Nos. Nos. Nos.	11593 17413 18857 25270
	<u>(E) 220 KV Double Circuit Special Tower for span up to 550m</u> (i) Normal Structure (ii) +4.5M Extn. to Normal Structure (iii) +9.0M Extn. to Normal Structure (iv) +18.0M Extn. to Normal Structure	Nos. Nos. Nos. Nos.	25367 6237 12715 25943
9	<u>(F) 220KV Double Circuit Special Tower for span exceeding 550m</u> (i) Normal Structure (ii) +4.5M Extn. to Normal Structure (iii) +9.0M Extn. to Normal Structure (iv) +18.0M Extn. to Normal Structure	Nos. Nos. Nos. Nos.	34153 6173 12394 26152
	Erection of 3 meters extension including tack welding of all bolts & nuts and application of zinc rich paint		
9	<u>(A) 132 KV Single Circuit Tower</u> (i) Tangent Tower (TTA) (ii) Small angle Tower (TTB) (iii) Medium angle Tower (TTC) (iv) Large angle cum dead end Tower (TTD)	Nos. Nos. Nos. Nos.	882 1235 1459 1779
	<u>(B) 132 KV Double Circuit Tower</u> (i) Tangent Tower (TTA) (ii) Small angle Tower (TTB) (iii) Medium angle Tower (TTC) (iv) Large angle cum dead end Tower (TTD)	Nos. Nos. Nos. Nos.	1123 1571 1861 2261
9	<u>(C) 220 KV Single Circuit Tower</u>		

	(i) Tangent Tower (TTA) (ii) Small angle Tower (TTB) (iii) Medium angle Tower (TTC) (iv) Large angle cum dead end Tower (TTD) <u>(D) 220 KV Double Circuit Tower</u> (i) Tangent Tower (TTA) (ii) Small angle Tower (TTB) (iii) Medium angle Tower (TTC) (iv) Large angle cum dead end Tower (TTD)	Nos. Nos. Nos. Nos. Nos. Nos. Nos. Nos.	1203 1684 1988 2421 1603 2918 3688 4875
10	Erection of 6 meters extension including tack welding of all bolts & nuts and application of zinc rich paint <u>(A) 132 KV Single Circuit Tower</u> (i) Tangent Tower (TTA) (ii) Small angle Tower (TTB) (iii) Medium angle Tower (TTC) (iv) Large angle cum dead end Tower (TTD) <u>(B) 132 KV Double Circuit Tower</u> (i) Tangent Tower (TTA) (ii) Small angle Tower (TTB) (iii) Medium angle Tower (TTC) (iv) Large angle cum dead end Tower (TTD) <u>(C) 220 KV Single Circuit Tower</u> (i) Tangent Tower (TTA) (ii) Small angle Tower (TTB) (iii) Medium angle Tower (TTC) (iv) Large angle cum dead end Tower (TTD) <u>(D) 220 KV Double Circuit Tower</u> (i) Tangent Tower (TTA) (ii) Small angle Tower (TTB) (iii) Medium angle Tower (TTC) (iv) Large angle cum dead end Tower (TTD)	Nos. Nos. Nos. Nos. Nos. Nos. Nos. Nos. Nos. Nos. Nos. Nos.	1764 2325 3014 3511 2164 2855 3704 4313 2405 3175 4105 4794 3046 4025 5211 6061
11	Erection of substation structures including levelling, setting of stub & Tightening, Punching of Nuts& Bolts and tack welding up to beam level as per specification.	MT.	2950
12	<u>CONDUCTOR STRINGING</u> (A) Stringing of ACSR Panther including hoisting of insulator string, laying, jointing & tensioning of conductor, clamping with Armour rods and fixing of vibration damper per route KM of the line. (i) 3 conductor for S/C Line (ii) 6 conductor for D/C Line (B) Stringing of ACSR Zebra including hoisting of insulator string, laying, jointing & tensioning of conductor, clamping with Armour rods and fixing of vibration damper per route KM of the line. (i) 3 conductor for S/C Line (ii) 6 conductor for D/C Line (C) Stringing of ACSR Panther including hoisting of insulator string, laying, jointing & tensioning of conductor, clamping with Armour rods and fixing of vibration damper per route KM of the line for river crossing section, i.e., from Anchor tower to Anchor tower for for regular flowing river only (i) 3 conductor for S/C Line (ii) 6 conductor for D/C Line (D) Stringing of ACSR Zebra including hoisting of insulator string, laying, jointing & tensioning of conductor, clamping with Armour rods and fixing of vibration damper per route KM of the line for river crossing section, i.e., from Anchor tower to Anchor tower for regular flowing river only (i) 3 conductor for S/C Line (ii) 6 conductor for D/C Line	kM kM kM kM kM kM	22079 32148 29005 41192 28011 41898 37344 53939

13	<p><u>EARTHWIRE STRINGING</u> (A) Stringing of galvanised steel stranded wire including laying, jointing & tensioning, clamping,clipping and fixing vibration damper and earth bond etc. (i) One No. 7/3.15mm galvanised wire (ii) One No. 7/4.00mm galvanised wire (iii) Two No. 7/3.66mm galvanised wire</p> <p>(B) Stringing of galvanised steel stranded wire including laying, jointing & tensioning, clamping,clipping and fixing vibration damper and earth bond etc.per route KM of the line for river crossing section, i.e., from Anchor tower to Anchor tower for regular flowing river only. (i) One No. 7/3.15mm galvanised wire (ii) One No. 7/4.00mm galvanised wire (iii) Two No. 7/3.66mm galvanised wire</p>	 KM KM KM KM KM KM	 3737 4361 6542 4858 5676 8498
14	<p><u>DISMANTLING OF TOWERS:</u> Dismantling of super structures alongwith extensions, having tack welded Bolts & Nuts, including removing of D shackles, hangers, U-Bolts, step bolts, ACD, Danger plate, number plate, Phase plate of tower including transportation from site to our store and stacking of all material (A) 132 KV and 220KV S/C & D/C Towers (all types) (B) 400 KV S /C & D/C Towers (all types) (C) 220KV D/C Special Tower (D) 400KV S/C & D/C Special Tower (E) Sub-Station Structures</p>	 MT. MT. MT. MT. MT.	 3255 3752 4570 5291 3255
15	<p><u>DESTRINGING OF CONDUCTOR/ EARTH WIRE</u> (A) De-stringing of ACSR panther conductor : Dismantling of vibration dampers and armour rods, removal of conductor from clamps and fitting in rollers, detensioning, dehoisting of insulator string as required and collecting the material & depositing the same in our store and stacking. store and stacking. (i) 3 conductor for S/C Line (ii) 6 conductor for D/C Line</p> <p>(B) De-stringing of ACSR Zebra conductor : Dismantling of vibration dampers and armour rods, removal of conductor from clamps and fitting in rollers, detensioning, dehoisting of insulator string as required and collecting the material & depositing the same in our store and stacking. (i) 3 conductor for S/C Line (ii) 6 conductor for D/C Line</p> <p>(C) Destrining of Earth wire : Dismantling of earth bonds, vibration dampers, declipping & fitting in rollers, detensioning and collecting the material & depositing the same in our store and stacking. (i) One No. 7/3.15mm galvanised wire (ii) One No. 7/4.00mm galvanised wire (iii) Two No. 7/3.66mm galvanised wire</p>	 KM KM KM KM KM KM KM	 24291 35371 31907 45312 4105 4794 7199
16	<p><u>RESTRINGING OF CONDUCTOR/EARTH WIRE</u> (A) Restringing of ACSR Panther conductor: Dismantling of vibration dampers and armour rods, fitting in rollers, de-tensioning, holding & lowering of conductor, de-hoisting of insulator string as required, adding/ removing and jointing of conductor, hoisting of insulator string, lifting of conduct into rollers and re-tensioning, jointing, fitting of armour rods and vibration dampers and clamping per route KM of the line section to be restrung dismantled material not re-used to be deposited in our stores & stacked. (i) 3 conductor for S/C Line (ii) 6 conductor for D/C Line</p>	 KM KM	 22079 32148

	<p>(B) Restraining of ACSR Zebra conductor: Dismantling of vibration dampers and armour rods, fitting in rollers, de-tensioning, holding & lowering of conductor, de-hoisting of insulator string as required, adding/ removing and jointing of conductor, hoisting of insulator string, lifting of conductor into rollers and re-tensioning, jointing, fitting of armour rods and vibration dampers and clamping per route KM of the line section to be restrung dismantled material not re-used to be deposited in our stores & stacked.</p> <p>(i) 3 conductor for S/C Line (ii) 6 conductor for D/C Line</p>	<p>KM KM</p>	<p>29005 41192</p>
17	<p>(C) Restraining of Earthwire: Dismantling of earth bond, vibration dampers, de-clipping & fitting in rollers, de-tensioning, holding & lowering of Earthwire, adding/removing and jointing of Earthwire, lifting into rollers and re-tensioning, jointing, clipping & fitting of vibration dampers & earthbond per route KM of the line section to be restrung. Dismantled material not re-used to be deposited in our stores & stacked.</p> <p>(i) One No. 7/3.15mm galvanised wire (ii) One No. 7/4.00mm galvanised wire (iii) Two No. 7/3.66mm galvanised wire</p> <p><u>RIVETMENT OF TOWERS</u></p> <p>(A) Providing and laying cement concrete including curing, compaction etc. complete using stone aggregate 40 mm nominal size (crusher broken) in foundation plinth, using 1 Cement: 5 Sand: 10 aggregate mix.</p> <p>(B) Random rubble stone masonry for rivetment in 1:5 cement sand mortar including providing and fixing 100mm dia PCC drain pipe & raised and cut-pointing on stone masonry in 1:3 cement sand mortar excluding excavation but including Back filling inside rivetment using excavated/ borrowed earth (with all lead & lift) in layers not exceeding 20cm in depth & consolidating each deposited layer by ramming and watering.</p> <p>(C) Random rubble dry stone pitching including preparing surface etc. complete with raised & cut pointing in cement sand mortar 1:3, curing etc.</p> <p>(D) Cement concrete coping grade 1:2:4(1cement:2coarse sand :4 graded stone aggregate) rounding off edges etc. but excluding the cost of nosing of steps etc. complete for 75mm thick with 20mm thick nominal size aggregate</p> <p>(E) Brick masonry in foundation & plinth with bricks of class designation 75 in cement mortar 1:5 (1 cement : 5 coarse sand) (F) Brick on edge flooring with bricks of class designation 75 including pointing in cement mortar (1:3) complete laid on 12mm thick bed of cement sand mortar 1:6.</p>	<p>KM KM KM CUM. CUM. CUM. Sq.Mtr. CUM. Sq.Mtr.</p>	<p>3737 4361 6542 1575 1508 543 242 1939 248</p>
18	<p><u>SETTING OF TEMPLATE & STUB/ANCHOR BOLT</u> Setting of template & stub/ anchor bolt & removal after concreting, excluding cost of excavation and concreting but including back filling with excavated/ borrowed earth (with lead & lift) in layers with ramming and watering as per specification.</p>		
19	<p><u>(A) 132 KV Double Circuit Narrow Base Towers</u> (i) Tangent Tower (TTA) (ii) Small angle Tower (TTB) (iii) Medium angle Tower (TTC)</p> <p><u>ERECTION OF TOWERS:</u> Erection of super structures including D-shackles, ACD, Hangers, U-Bolts, step bolts, danger plate, phase plate, number plate etc. Also including tack welding of bolts & nuts upto bottom cross</p>	<p>Nos. Nos. Nos.</p>	<p>1725 2601 2794</p>

	arm/beam level including application of Zinc Rich paint <u>(A) 132 KV Double Circuit Narrow Base Towers</u> (i) Tangent Tower (ii) Small angle Tower (TTB) (iii) Medium angle Tower (TTC)	Nos. Nos. Nos.	6136 13779 19419
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SIGNATURE OF AUTHORISED
REPRESENTATIVE OF COMPANY/AGENCY
NAME
STATUS
NAME OF THE TENDERING COMPANY
SEAL/STAMP

SECTION-IV
SCHEDULE-III

SCHEDULE OF ERECTION OF 220/132 kV TRANSMISSION LINES.

S. No.	Name of the Line	Period of completion for Erection & commissioning of transmission lines
1	Stringing of 2 nd Circuit of 220 KV D/C Debari - Banswara Line from Salumber to Debari (77 KMs)	6 Months
2	LILO of existing 220KV Ratangarh (400KV) – Bikaner (220KV) line at Proposed 220KV GSS, Badnu (25 KMs)	6 Months
3	220KV S/C Sujangarh –Tehandesar Line (50 KMs)	10 Months
4	LILO of 220 KV Barsinghsar LTPS - Phalodi line at 220 KV GSS, Bap (25 KMs)	6 Months
5	Upgradation of existing 132 KV S/C line Sanganer - Chaksu line to 220 KV D/C line [For future connectivity to 400 KV Jaipur south(PG) (Approx. 34 KMs)] 20 Km line on 220 KV D/C Narrow base towers and balance 14 Km on 220 KV D/C Conventional towers	10 Months
6	132 KV S/C Beegod – Kachhola line (22 KMs)	6 Months
7	220 KV D/C Bhawad - Baithwasla line (40 KMs)	8 Months
8	132 KV S/C Baithwasla - Matora line (30 KMs)	8 Months
9	132 KV S/C Jakhrana - Mandan line (20 KMs)	6 Months
10	132 KV S/C Bansur (Proposed 220 KV GSS) - Mundawar line (35 KMs)	8 Months
11	220 KV D/C line from PGCIL's 400/220 KV Neemrana (PG) to proposed 220 KV GSS at Behror (20 KMs)	6 Months

- Note:-** 1. There will be one month time for mobilization of resources in addition to the above mentioned completion time .
2. Above targeted completion period is inclusive of monsoon period.

(Signature)
Name & Designation
With seal of the firm

SECTION-IV**SCHEDULE-IV****SCHEDULE OF ERECTION OF 220/132 kV TRANSMISSION LINES.**

S. No.	Name of the Line	Destination/Stores for issue & credit of line materials.
1	Stringing of 2 nd Circuit of 220 KV D/C Debari - Banswara Line from Salumber to Debari (77 KMs)	Salumber - Debari
2	LILO of existing 220KV Ratangarh (400KV) – Bikaner (220KV) line at Proposed 220KV GSS, Badnu (25 KMs)	Ratangarh – Bikaner - Badnu
3	220KV S/C Sujangarh –Tehandesar Line (50 KMs)	Sujangarh –Tehandesar
4	LILO of 220 KV Barsinghsar LTPS - Phalodi line at 220 KV GSS, Bap (25 KMs)	Barsinghsar - Phalodi - Bap
5	Upgradation of existing 132 KV S/C line Sanganer - Chaksu line to 220 KV D/C line [For future connectivity to 400 KV Jaipur south(PG) (Approx. 34 KMs)] 20 Km line on 220 KV D/C Narrow base towers and balance 14 Km on 220 KV D/C Conventional towers	Sanganer - Chaksu
6	132 KV S/C Beegod – Kachhola line (22 KMs)	Beegod – Kachhola
7	220 KV D/C Bhawad - Baithwasla line (40 KMs)	Bhawad - Baithwasla
8	132 KV S/C Baithwasla - Matora line (30 KMs)	Baithwasla - Matora
9	132 KV S/C Jakhrana - Mandan line (20 KMs)	Jakhrana - Mandan
10	132 KV S/C Bansur (Proposed 220 KV GSS) - Mundawar line (35 KMs)	Bansur - Mundawar
11	220 KV D/C line from PGCIL's 400/220 KV Neemrana (PG) to proposed 220 KV GSS at Behror (20 KMs)	Neemrana - Behror

(Signature)
Name & Designation
With seal of the firm

SECTION-IV
SCHEDULE- V

SCHEDULE SHOWING TENTATIVE (Approx.)WEIGHT OF TOWERS AND EXTENSIONS
TO BE USED ON 220/132KV SINGLE CIRCULT / DOUBLE CIRCUIT LINES.

S.NO.	TYPE OF STRUCTURE	APPROX.UNIT WEIGHT (MT)		
		STEEL	BOLTS & NUTS	Steel Reinforcement
132KV SINGLE CIRCUIT				
1. STUB & SUPER STRUCTURE				
	TTA	2.01149	0.12235	0.046
	TTB	2.43377	0.14381	0.061
	TTC	2.399	0.125	
	TTD	3.247	0.157	
2. +3M EXTENSION TO				
	TTA	0.42764	0.02720	
	TTB	0.45212	0.02697	
	TTC	0.445	0.022	
3. +6M EXTENSION TO				
	TTA	0.96096	0.06187	
	TTB	1.00268	0.05015	
132KV DOUBLE CIRCUIT				
1. STUB & SUPER STRUCTURE				
	TTA	3.1500	0.14200	
	TTB	3.619	0.176	
	TTC	4.168	0.183	
	TTD	5.300	0.224	
2. +3M EXTENSION TO				
	TTA	0.39000	0.01900	
	TTB	0.547	0.025	
	TTD	0.880	0.030	
3. +6M EXTENSION TO				
	TTA	0.760	0.034	
	TTB	1.045	0.041	
	TTD	1.730	0.046	
220KV SINGLE CIRCUIT				
1. STUB & SUPER STRUCTURE				
	TTA	2.87624	0.143940	
	TTB	4.060	0.200	
	TTC	3.950	0.164	
	TTD	5.229	0.189	

S.NO.	TYPE OF STRUCTURE	APPROX.UNIT WEIGHT (MT)		
		STEEL	BOLTS & NUTS	Steel Reinforcement
2. +3M EXTENSION TO				
	TTA	0.43628	0.020164	
	TTB	0.660	0.024	
	TTC	0.747	0.026	
	TTD	1.096	0.030	
220KV DOUBLE CIRCUIT				
1. STUB & SUPER STRUCTURE				
	TTA	4.53954	0.23451	0.064
	TTB	6.95535	0.32602	0.451
	TTC	7.86121	0.34396	0.9317
	TTD	9.2420	0.4340	1.737
2. Special Towers				
	Normal Tower	6.10863	0.328381	
	+4.5M EXTENSION	1.499701	0.062769	
	+9M EXTENSION	3.062778	0.119405	
	+18M EXTENSION	6.247393	0.234336	

**SIGNATURE OF AUTHORISED
REPRESENTATIVE OF THE
BIDDER**

SEAL/STAMP

SECTION-IV**SCHEDULE-VI**

SCHEDULE OF CAPACITY OF THE BIDDER IN RESPECT OF 132/220 KV TRANSMISSION LINES.

ERECTION OF TRANSMISSION LINES:

i) Details of orders executed

S. No.	Order No./Date	Item	Order Qty.	Name of order & placing Authority	Date of commencement of work	Date of completion of work	REMARKS
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ii) Average erection work done :

Period	ERECTION ACTIVITY			
	Survey(Kms)	Foundation(Cu.m.)	Tower erection (Nos)	Stringing (Kms)
2006-2007				
2007-2008				
2008-2009				
2009-2010				
2010-2011				
2011-2012(UP TO LATEST)				

(iii) List of available machinery, tools, tackles, name of engineers/persons and oil, etc, for erection work.

SIGNATURE OF AUTHORISED REPRESENTATIVE OF THE BIDDER

SEAL/STAMP

SECTION-IV**SCHEDULE-VII**

SCHEDULE SHOWING PER KM ESTIMATE COST OF THE PROJECT INCLUDING MATERIAL AND ERECTION COST FOR THE PURPOSE OF STORAGE CUM ERRECTION INSURANCE ONLY.

S.No.	Name of Line	Estimate cost of the line for insurance purpose only.
1.	220 KV S/C Line	Rs. 11.51 Lacs per KM
2	220 KV D/C Line	Rs. 16.12 Lacs per KM
3.	132 KV S/C Line	Rs. 8.64 Lacs per KM
4.	132 KV D/C Line	Rs. 12.10 Lacs per KM

The successful bidder will be required to take storage cum erection insurance at his own cost for the entire line on the basis of above rates.

**SIGNATURE OF AUTHORISED
REPRESENTATIVE OF THE
BIDDER**

SEAL/STAMP

**SECTION-IV
SCHEDULE-VIII**

DEPARTURE FROM SPECIFICATION.

The tenderer shall state under this schedule the departure from the purchaser's specification in respect of both technical and commercial terms & conditions :-

S.No.	Main Deviations from Specification
-------	------------------------------------

1) **Technical Deviations :**

2) **Commercial :**

Certified that we agree to all Technical Specification and Commercial Terms and conditions as laid down in "General Conditions of Contract" except for the deviations to the extent indicated above.

**(Signature)
Name & Designation
with Seal of the firm.**

SCETION-IV

SCHEDULE-IX

(TO BE FILLED IN BY THE TENDERERS & SEND WITH THE TENDER)

Manufacturer's and/or their authorised agents who are quoting against this tender are requested to furnish the following information along with the tender. The Chief Engineer will have the discretion to ignore the tender without the under noted particulars and / or ignore the tender particulars.

- 1.Name and Address of Manufacturer.
- 2.Place where works exist.
- 3.Details of machinery particularly with B.H.P. of each item installed,
- 4.Details of staff employed in the works.
- 5.Date when started the manufacturing of item under reference.
- 6.List of items manufactured.
7. Literature and drawings of items manufactured showing their description, size, design and other important technical particulars.
8. Details of order so far, executed along with the names of organization to whom supplied.
9. Manufacturing capacity.
10. Is the workshop open for inspection by the representative of the NIGAM, if required?
11. Statement of financial resources and Banking reference along with Balance Sheet for previous two years.
12. Testing facilities available for the manufactured articles in the testing laboratory of works.
- 13.Whether the firm is a small/ medium scale/large scale industry.
14. Registration No. with :
 - (i) Small Scale, National/State.
 - (ii) D.G.T.D.State Industries Department.

(Signature)
Name & Designation with
Seal of the firm.

SCHEDULE-X

(Must be filled in by the tenderer and attach with Technical Bid)

To,
The Superintending Engineer(TLPC),
Raj.Rajya Vidyut Prasaran Nigam Ltd.,
JAIPUR.

Dear Sirs,

With reference to your invitation to the tender against Specification No.RVPN/SE/TLPC/TL/A-3/TN-3736, we agree to construct following Transmission Line/s on Labour contract Basis.

S.No .	Name of the Line

The offer is valid for a period of 120 days from the date of opening of Techno Commercial Bid .

2. The prices are variable with based on enclosed price variation formula without ceiling.
4. We confirm that we agree to all the terms and conditions as well as the technical stipulations of your Specification No.RVPN/SE/TLPC/TL-A3/TN-3736 and there are no deviations other than as specified in the Schedule-VIII.

Yours faithfully,

(Signature)
Name & Designation with seal of the firm.