ASSAM POWER DISTRIBUTION COMPANY LTD.

BID DOCUMENT
FOR

CONSTRUCTION OF UNDER GROUND RLY. TRACK CROSSING BY 11 KV CABLES IN BETWEEN POST NOS. 36/1 KMS & 36/2 KMS SITUATED BETWEEN POWAI & MARGHERITA RAILWAY STATION-UNDER TINSUKIA ELECT. CIRCLE.

ON "TURNKEY" BASIS

SCHEME: “ANNUAL PLAN 2013-14

NIT No: GM / DZ / ANNUAL PLAN- 2013-14 / 01
## CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Item Sl. No</th>
<th>Particulars</th>
<th>Page Nos.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>NOTICE INVITING TENDER</td>
<td></td>
<td>3 - 7</td>
</tr>
<tr>
<td></td>
<td>(1)</td>
<td>Tender Notice</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>(2)</td>
<td>Details of Tender Notice</td>
<td>5 - 7</td>
</tr>
<tr>
<td>2</td>
<td>TENDER INVITING PROPOSAL</td>
<td></td>
<td>8 - 20</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tender inviting proposal with terms &amp; conditions</td>
<td>9 – 15</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tender Format Part – I (Techno Commercial Bid)</td>
<td>16 - 17</td>
</tr>
<tr>
<td></td>
<td></td>
<td>List of ongoing project(s)</td>
<td>18 – 19</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Financial Situation</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Annual Turn Over / Financial Resources</td>
<td>19-20</td>
</tr>
<tr>
<td>3</td>
<td>BILL OF QUANTITY &amp; PRICE BIDDING SCHEDULE FORMAT</td>
<td></td>
<td>21 - 26</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Bill of Quantity</td>
<td>22</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Price Bidding Format</td>
<td>23 - 25</td>
</tr>
<tr>
<td>4</td>
<td>GENERAL REQUIREMENTS</td>
<td></td>
<td>26 - 29</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Quality Assurance Plan</td>
<td>28</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(2) Inspection</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(3) Additional Test</td>
<td>27 – 29</td>
</tr>
<tr>
<td>5</td>
<td>FORMS OF BID</td>
<td></td>
<td>30 - 37</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Proforma of Bank Guarantee for Bid Guarantee / Security</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(2) Proforma of Bank Guarantee for Contract Performance</td>
<td>31 - 32</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(3) Proforma for Bank Guarantee Extension</td>
<td>33</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(4) Proforma of Agreement</td>
<td>34 - 36</td>
</tr>
<tr>
<td>6</td>
<td>TECHNICAL SPECIFICATION</td>
<td></td>
<td>38 - 55</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(1) Climatic Isocuraunic Condition</td>
<td>39</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(2) Technical specifications for XLPE Cable for 33 KV system</td>
<td>39-47</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(3) Technical specifications for Cable Kit</td>
<td>47-48</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(4) Technical specifications for MS Channel</td>
<td>48-49</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(5) Technical specifications for CI Pipe</td>
<td>49-50</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(6) Technical specifications for GI Wire</td>
<td>50-51</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(7) Technical specifications for Danger Plate</td>
<td>51-52</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(8) Technical specifications for PG Clamp for Wolf Conductor</td>
<td>52-53</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(9) Technical specifications for 33KV Polymeric Pin Insulator</td>
<td>53-54</td>
</tr>
<tr>
<td>7</td>
<td>GUARANTEED TECHNICAL PARTICULARS</td>
<td></td>
<td>55 – 60</td>
</tr>
<tr>
<td>8</td>
<td>GENERAL CONDITIONS OF SUPPLY &amp; ERECTION OF APDCL</td>
<td></td>
<td>61 – 74</td>
</tr>
<tr>
<td>9</td>
<td>Drawing for underground 11 KV cable crossing (NH-38 &amp; Rly Track)</td>
<td></td>
<td>75</td>
</tr>
<tr>
<td>10</td>
<td>Sketch showing details of civil work for HT U/G Rly Track crossing</td>
<td></td>
<td>76</td>
</tr>
</tbody>
</table>
SECTION :1
NOTICE INVITING TENDER
ASSAM POWER DISTRIBUTION CO. LTD.

Tender Notice No. GM/ DZ / ANNUAL PLAN- 2013-14 / 01

The General Manager, Dibrugarh Zone, UAR Assam Power Distribution Co. Ltd. Kadamoni, Dibrugarh-1 invites sealed Tenders from experienced & financially sound Electrical Contractor(s) (individual or joint venture)/Firm(s) having valid electrical contractor license up to 33kV issued by the competent authority of the Govt. of Assam for construction of Railway track crossing by 11 kV U/G cable in between Post No. 36/1 Kms. & 36/2 Kms situated between Powai & Margherita Rly.Stn. under Tinsukia Electrical Circle, APDCL, UAR under Annual Plan 2013-14 on “Turnkey” mode.

Cost of Tender Paper is Rs. 3000.00 (Rupees three thousand) only in the form of A/C payee Demand Draft/Bankers cheque (non refundable) duly pledged in favour of “DGM, Dibrugarh Electrical Circle, APDCL. UAR, Dibrugarh”. Tender papers can be purchased in all working days up to 27.03.2015 from the office of the General Manager, Dibrugarh Zone, APDCL, UAR, Kadamoni, Dibrugarh.

Interested firms/contractors may view the detail Tender Notice and specification by visiting APDCL website www.apdcl.gov.in

Memo No. GM / DZ / ANNUAL PLAN /2013 – 14 / 01
Copy to: -

1. The Chief General Manager, APDCL (UAR), Bijulee Bhawan, Paltan Bazar, Guwahati-1- for favour of information. He is requested to publish the tender notice in daily News Paper(English/ Assamese)
2. The Chief General Manager, APDCL (PP&D), Bijulee Bhawan, Paltan Bazar, Guwahati –1- for favour of information.
3. The Chief General Manager(F&A), APDCL, Bijulee Bhawan, Paltan Bazar, Guwahati-1-for favour of information.
4. The Chief Executive Officer, Tinsukia Electrical Circle, APDCL, UAR, Tinsukia.-for information and necessary action.
5. The Asstt. General Manager, Digboi Electrical Division , APDCL, UAR, Digboi
6. The OSD to Chairman, APDCL, Bijulee Bhawan, Paltan bazaar, Guwahati-1 for uploading the tender in the official website.

General Manager

Memo No. GM / DZ / ANNUAL PLAN /2013 – 14 / 01

Copy to: -

1. The Chief General Manager, APDCL (UAR), Bijulee Bhawan, Paltan Bazar, Guwahati-1- for favour of information. He is requested to publish the tender notice in daily News Paper(English/ Assamese)
2. The Chief General Manager, APDCL (PP&D), Bijulee Bhawan, Paltan Bazar, Guwahati –1- for favour of information.
3. The Chief General Manager(F&A), APDCL, Bijulee Bhawan, Paltan Bazar, Guwahati-1-for favour of information.
4. The Chief Executive Officer, Tinsukia Electrical Circle, APDCL, UAR, Tinsukia.-for information and necessary action.
5. The Asstt. General Manager, Digboi Electrical Division , APDCL, UAR, Digboi
6. The OSD to Chairman, APDCL, Bijulee Bhawan, Paltan bazaar, Guwahati-1 for uploading the tender in the official website.

General Manager
Sealed Tenders are invited from experienced & financially sound Electrical Contractor(s)/individual or joint venture)/Firm(s) having valid electrical contractor license up to 33 KV issued by the competent authority of the Govt. of Assam & having sufficient experience of construction of UP TO 33KV underground crossing of BG Railway Track within last 5 (five) years for the following work.

**Name of the Work:**
Construction of underground Railway Track crossing by 11KV cables in between Post No. 36/1 Kms. & 36/2 Kms situated between Powai & Margherita Rly. Stn. under Tinsukia Electrical Circle, APDCL (UAR) on “Turnkey” basis.

**Scope of Work:**
The works shall be on “Full Turnkey” basis i.e supply of materials & erection. The entire work will be executed as per direction of field Engineers. During execution of work the turn key contractor on behalf of APDCL is to make liaison with the Railway Authority to obtain the necessary permission from the Railway. The work consists of underground crossing of the Railway Track by 11KV XLPE Cable & connected with Over Head lines at both sides of the Track , outside the Railway’s land.

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Description of work</th>
<th>Parameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Construction of 11 KV underground crossing of the Rly. Track by 11 KV Cable lines with 1 core, 185 sq.mm, XLPE insulated Cables in four nos. in between Post No. 36/1 Kms. &amp; 36/2 Kms situated between Powai Rly. Station &amp; Margherita Rly. Stn. Under Tinsukia Elect. Circle, APDCL (UAR) on “Turnkey” basis.</td>
<td>Length of underground portion : Approx. 90M &amp; over ground portion will be approx. 8.5M at both sides up to connection with O/H line termination points.</td>
</tr>
</tbody>
</table>

**Estimated Value of the Work :** Rs. 16,85,700/- (Rupees sixteen lac eighty five thousand seven hundred ) only.

**Scheme of work: Annual Plan: 2013 - 14**

**Completion period:** 45 ( forty five) days from the date of issue of work order.

**Bid Validity:** The validity of the bid shall be at least 180 (One hundred eighty) days from the date of tender opening.

**Earnest Money** for the work will be Rs.1,00,000.00 (Rupees one lakh)only for general category and Rs. 50,000.00 (Rupees fifty thousand only) in case of ST/SC/OBC subject to submission of cast certificate issued by competent authority. In case of joint venture for ST/SC/OBC category both the partners must have cast certificate issued by competent authority. EMD should be submitted along with Techno-Commercial bid in the form of BG/Term Deposit/ Demand Draft from any Nationalized Bank or scheduled bank of RBI, pledged in favour of “the Deputy General Manager, Tinsukia Electrical Circle, UAR, APDCL, Tinsukia”. The EMD will be released to the unsuccessful bidder’s on finalization of tenders. Any tender without EMD will be rejected outright.
**Eligibility Criteria:**

1. The Bidder must have valid electrical contractor’s and supervisor’s license (up to 33KV) from the competent authority, Govt. of Assam.
2. The bidder must not be involved in any litigation with ASEB/APDCL or any other successor company of ASEB. The bidder should submit a declaration to that effect.
3. The bidder must be financially solvent so as to execute the proposed work. Financial solvency certificate from the concerned Bank is to be submitted.
4. The average annual financial turnover of the bidder for last 3 (three) consecutive financial years should be Rs. 15.00(Lakhs). A certificate from a Chartered Accountant to that effect clearly mentioning the financial years as per format given in the Bid Document must be furnished along with the Techno-commercial bid of the offer.
5. Past & present performance of a bidder in execution of awarded work under ASEB or any of the successor companies shall be taken into Account in deciding the eligibility of the bidder.
6. The bidder must have sufficient experience of doing underground Rly. Track Crossing works of up to 33KV or 11 kV line within last 5 (five) years which is to be substantiated through certificate issued by an Engineer not below the rank of Superintending Engineer/DGM along with supporting copies of the works executed under any department.

**Cost of Tender paper:**
The tender paper will be issued on payment of Rs.3,000/- (Rupees three thousand) only in the form of Demand Draft/Bankers Cheque (which is non refundable) duly pledged in favour of "DGM, Tinsukia Electrical Circle, UAR, APDCL Tinsu" Tender paper will be issued from the office of the GM, Dibrugarh Zone, APDCL (UAR), Dibrugarh, on all working days from 16.03.2015 to 27.03.2015.

**Submission of Bids:**
The Techno-commercial & price bids must be submitted in two separate sealed cover, super scribing the following on both the covers:

1. Name of bidder with full address
2. NIT No.
3. Name of the bid i.e “Techno-commercial bid with Earnest Money” for envelope containing Techno-commercial bid and “Price Bid” for envelope containing the price bid.

Both the bids should be placed in one bigger sealed envelope super scribing Name of Bidder & NIT No. and to be addressed to the General Manager, Dibrugarh Zone, APDCL (UAR), ASEP Complex, Kadamon, Dibrugarh.

The Pre bid Meeting will be held on 27.03.2015 in the Office Chamber of the GM, DZ, APDCL, UAR, Kadamon, Dibrugarh at 13-00 Hrs. The prospective bidders or their authorized representatives may attend the meeting for any clarification / confirmation etc.

The tender (bid) will be received up to 13.00 hours of 30.03.2015 in the O/O the General Manager Dibrugarh Zone, APDCL (UAR), Dibrugarh. Techno-commercial bid will be opened on the same date & time in presence of the intending tenders or their authorized representative. The price bids of the eligible bidders will be opened on a subsequent date to be notified later.

The undersigned reserves the right to accept or reject any or all tender in part or in full or split the work without assigning any reasons thereof. He is not bound to accept lowest offer also. In case of dispute the decision of the tender committee will shall be final & binding to all.

*General Manager*
*Dibrugarh Zone*
*APDCL, UAR, Dibrugarh*
Memo No. GM / DZ / ANNUAL PLAN 2013 – 14 /01  
Dt. 13.03.2015
Copy to: -

1. The Chief General Manager, APDCL (UAR), Bijulee Bhawan, Paltan Bazar, Guwahati - 1. For favour of information. This has with reference to his letter vide No. CGM(D)/UAR/APDCL/FP(PS)(DM/SDM)/2013/112 Dt. 11.02.2015
2. The Chief General Manager, APDCL (PP&D), Bijulee Bhawan, Paltan Bazar, Guwahati –1- for favour of information.
3. The Chief General Manager(F&A), APDCL, Bijulee Bhawan, Paltan Bazar, Guwhati-1-for favour of information.
4. The Chief Executive Officer, Tinsukia Electrical Circle, APDCL, UAR, Tinsukia- for information and wide publication.
5. The Asstt. General Manager, Digboi Electrical Division , APDCL, UAR, Digboi-for information.
6. The OSD to the Chairman, APDCL, Bijulee Bhawan, Paltan bazar, Guwahati-1 for updating in the official website.

General Manager
SECTION: 2

TENDER INVITING PROPOSAL
ASSAM POWER DISTRIBUTION CO. LTD
(DIBRUGARH ZONE)

TENDER INVITING PROPOSALS WITH TERMS & CONDITIONS FOR

Intent of the Tender Enquiry

The intent of the Tender Enquiry is to invite proposals from the prospective and relevantly experienced and financially sound contractor(s) (individual or joint venture)/firms to carry out the works as mentioned above on turnkey mode.

1. Scope of Work

The various activities under the scope of work shall among other related aspects cover the following.

i. Procurement and supply of those materials as specified for the Turn Key Contract for the work.

ii. Arrange inspection / testing of any/all items ordered at manufacturer's works for officer deputed by APDCL for such inspection/testing.

iii. Site unloading, storage and handling of all materials supplied including watch and ward for safe custody.

iv. Site fabrication work as per requirement.

v. Submission of implementation schedule from the date of award of contract for:
   - Route survey for laying new underground line. Submission of working drawing.
   - Erection, testing installation and commissioning of all materials/equipment supplied by Turn Key Contractor.

vi. Project management and site organization.

vii. Obtaining clearance from Statutory Agencies, Government Departments, Village Panchayats etc. wherever necessary.

viii. Submission of technical specification/Test Certificate/Drawings/GTPs etc. of all materials supplied.

ix. A list of various items normally involved in proposed type of work is provided in this document. This, however, is not to be considered as limiting but only typical. Vendors' scope will include all other items and materials as may be required to effectively complete the work.

x. Undertake all liaison with Railway Authority on behalf of APDCL for obtaining the permission from Railway for inspection by Railway department & any other related works.

xi. Above all, the scope of work of the vendor/contractor will include all items and facilities as may be necessary to complete the work on turnkey basis and as binding requirement.

xii) A drawing of track crossing is attached which may be taken as guidance. (At Page No.-75)

2. Basic specification of the various equipment/ works to be supplied /carried out.

i. All equipment/materials supplied shall conform to the requirement of relevant ISS (BIS) as approved by ASEB or its successor Company and that of APDCL specification and construction standards.

ii. All materials supplied shall be erected, protected as per approved standard practice for proposed type of electrical work so as to supply the electricity to the consumers most effectively and in an intrinsically safe manner.

iii. All equipment supplied and installed shall provide easy and effective:
   - Maintainability
   - Reliability
   - Availability
   - Long life

   All equipment supplied and installed shall be provided stable and adequate weather protection, system earthing etc. LA should be earthed separately.

iv. All items, which may require frequent opening up/ dismantling for maintenance, shall be adequately sealed against any tampering/ theft etc.

v. General supply and erection of materials and system shall meet the requirement of construction standard being followed in the electrification work.

3. Basic qualifying requirement:

To be qualified for the package the bidder must compulsorily meet the following minimum criteria

A. Technical.

The prospective bidder must fulfill the following qualifying requirements

a. The bidder must have valid electrical Contractor’s and Supervisor’s License (HT) issued by the Licensing Authority of Govt. Of Assam.

b. The bidder must have sufficient experience of construction of similar works within last 5 (five) years and which must be in satisfactory operation as on the date of bid opening. The bidder must have the above mentioned experience of working in the state of Assam.

c. The bidder shall furnish details of the Railway Track Crossing work / works done along with its value or already in hand either of APDCL / any other successor companies of ASEB or any other department along with date of completion as per Letter of Award and likely date of completion duly certified by the competent authority as per format enclosed as Annexure-IA. This shall be treated as one of the major qualifying criteria for technical evaluation of the bid. The bidder must also fill up the format as per Annexure-(B), (C), (D).
B. Financial

a. The average annual financial turnover of the bidder for last 3 (three) consecutive financial years should be Rs. 15.00(Lakhs). & a certificate from a Chartered Accountant to that effect clearly mentioning the financial years as per format given in the Bid Document must be furnished along with the Techno-commercial bid of the offer. This should be supported by the copy of the income tax return submitted by the firm for the last three previous years. In case of joint venture firms, the figures of average annual turnovers for each Joint Venture partners shall be added together to determine the bidder’s compliance with the minimum average turnover requirement for the bid. However, the lead partner must meet at least 40% and each of the other partners must meet at least 25% of the minimum average annual turnovers criteria required for the bid.

b) If the total work in hand under APDCL / any successor companies of ASEB or under other agencies-exceed more than three (three) times the average annual turnover of the bidder, the bid submitted may be treated as non-responsive.

c) The bidder shall furnish latest VAT registration, WCT, CST Registration certificate, Service tax registration, Employee - Provident Fund and valid Labour License (wherever applicable).

d) The bidder shall furnish copy of their Pan Card. The card must be in the name of the firm if the bidder is a firm. If it is a joint venture copy of Pan Card of both the partner must be submitted.

e) Joint venture agreement should be a registered one or certified by Notary.

f) Power of attorney should be a registered one.

g) Formal authority, Registered / Notarized for signing the tender or other documents on behalf of the firm/ individual must be submitted along with the bid. In case of registered company Board’s resolution of the company for authorized signatory should be furnished.

h) Notwithstanding anything stated herein above, APDCL reserves the right to assess the capacity and capability of the bidder to execute the work, should the circumstance warrant such assessment in the overall interest of APDCL

4. Joint Venture Requirement

i. The Bid and, in case of successful Bid, the form of agreement shall be signed so as to be legally binding both the partners.

ii. One of the partners shall be authorized to be as the lead partner and this authorization shall be evidenced by submitting a Power of Attorney signed by legally authorized signatories of the partners. Also the lead partner must have valid electrical Contractor’s and Supervisor’s License (HT) issued by the Licensing Authority of Govt. Of Assam

iii. The lead partner shall be authorized to incur liabilities, receive payments and receive instructions for and on behalf of any or all partners of the joint venture and the entire execution of the contract.

iv. All the partners of the joint venture shall be jointly and severally liable for the execution of the contract in accordance with the contract terms and a relevant statement to this effect shall be included in the authorization mentioned under (ii) above as well as in the bid form and the form of agreement (in case of successful bidder).

v. A copy of the agreement entered into by the joint venture partners shall be submitted with the bid.

vi. The figure of average annual turnovers for the joint venture partners shall be added together to determine the bidder’s compliance with the minimum average turnover requirement for the package. However, the lead partner must meet at least 40% and other partner must meet the at least 25% of the minimum average annual turnover criteria given in the Tender.

vii. The bidder must fill up Financial format as per FIN-I, FIN-II, FIN-III

5. Other requirements:

The Bidder

i) Should be acquainted himself / herself / themselves with relevant conditions of the local geography and socio economic setup of the different location of the State and being capable accordingly to mobilize, organize and expedite the activities.

ii) Should have adequate working personnel comprising of Electrical/ Mechanical engineers, electrical supervisor, skilled and unskilled labour to be deputed to the proposed assignment.

iii) Should be conversant with the code/ standards applicable to proposed type of work. ISS / APDCL guidelines
6. Submission of bid

The bidder shall submit the bid/bids in sealed envelope/envelopes as follows:

a. Techno-commercial bid

Techno-commercial bid should be submitted in a sealed envelope, superscripting “Techno-commercial bid with EMD” with name of bidder, full address and NIT reference and under this will be included and defined vendors scope of work, responsibilities, guarantees, specification of equipment, commercial terms and conditions, vendor's company credentials, experience of similar assignments, registration details, etc. as per requirement. Bidding format for techno-commercial Bid is enclosed as Annexure-I(A).

b. Earnest Money Deposit (EMD):

The Tender must be accompanied with earnest money as mentioned in the NIT against the work, to be deposited in the form of BG/Term Deposit/ Demand Draft from any Nationalized Bank or scheduled bank of RBI pledged in favour of “DGM, TEC, UAZ, APDCL, Tinsukia”. The EMD should be submitted along with Techno-Commercial bid. The earnest money will be released to the unsuccessful bidders on finalization of the tenders. The EMD to the successful bidder will be released on submission of performance Security Deposit at the time of execution of the agreement as per clause 13.

c. Submission of documents with technical bids

i) Detail list of makes and materials offered with catalogues, technical specification, type tests certificate, performance certificate from utilities, authorization letter from manufacturer, customer list etc.

ii) Certificates and testimonials in support of credentials of the bidder’s organization.

iii) Details of past experience along with present works in hand with awarded amount and progress report.

iv) Brief write-up on methodology to carry out the assignment, if awarded.

v) Details of manpower to be engaged for the assignments.

vi) Any other information, the vendor may feel facilitative in evaluating the bid.

e) Submission of documents with technical bids

vii) Copies of bidder and supervisor’s license, etc.

viii) Certificate from Registered Charted Accountant in support of Annual turn over

ix) Solvency certificate from Bank

x) Certificate in support of performance of the bidder

xi) If the bidder is involved in any litigation with ASEB/ or any successor company of ASEB. The bidder should furnish the information to that effect.

xii) The bidder should submit the list of materials that are to be brought from outside of the state.

xiii) GTPs of major items as described in BOQ. requirements should invariably be submitted along with the tender otherwise tender is liable to be rejected.

d. Price Bid

Price bid should be submitted in a sealed envelope superscripting “Price Bid” with name of bidder, NIT reference No. This will include rates of supply and erection of different items for erection. The bidding format for price Bid is enclosed as Annexure-II(A).

e. Submission of bid

Both the envelope should be placed in a bigger envelope duly sealed superscripting name of bidder, NIT reference and addressed to GM, Dibrugarh Zone, APDCL(UAR), Dibrugarh.

Note:-

a. If there is discrepancy between the unit price and the total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail and total price should be corrected. If there is a discrepancy between the words and figures, the amount in word should prevail. If the bidder does not accept the correction of the errors as above, his bid will be rejected.

b. No separate declaration offering discount on price will be allowed. Offered price in the price schedule will be final.

c. All custom duties, excise duties, import duties, toll, octroi royalty, entry tax etc. whichever is applicable shall be included in the tender price and no claim of any account of any of the above shall be entertained by APDCL. WCT and service tax should be shown separately. E-1 transaction shall not be allowed.

7. Estimation of material requirement:

The total quantity of materials required is indicated in the BOQ.

a. Quantity Variation: There may increase or decrease in quantity of individual item subject to the condition that the corresponding change in total contract value does not increase or decrease by more than 10% keeping the unit rate of individual material and labour unchanged.

b. A maximum of 5% wastage/damage on dismantled items shall be allowed on the total quantity dismantled and deposited to departmental store against conversion works if any.

8. Award of work:

i) The evaluation of bids will be carried out, first of techno-commercial bid and thereafter opening the price bid of only those who qualify and meet the technical requirement.

ii) Work should be started within fifteen (15) days from the date of issue of the work order, failing which order will be cancelled without further correspondence.

iii) The successful bidder must have to complete survey works within 10 (ten) days from the date of issue of Work Order.
iv) The equipments installed shall be under custody of the contractor till the date of commissioning and charging. The properties will be taken over by APDCL, UAR after satisfactory commissioning and charging.

9. Period of completion: 45 (seventy) days from the date of issue of work order.

9.1 Implementation schedule:

<table>
<thead>
<tr>
<th>Sl no.</th>
<th>Description</th>
<th>EXECUTION PERIOD</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>3 days</td>
</tr>
<tr>
<td>1</td>
<td>Signing of Agreement</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Survey works</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Manufacture &amp; supply of materials</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Erection of equipments</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Testing &amp; commissioning</td>
<td></td>
</tr>
</tbody>
</table>

10. Termination of work order:

Company reserves the right to terminate the work order at any stage in accordance with the Company’s General Condition of Supply and Erection.

11. Terms of Payment:

a) Payment will be made on completion of full work including testing and commissioning. Bill to be submitted in triplicate to the concerned SDE and same will be verified from the Sub Division along with entry in Measurement book and to be forwarded to the Assistant General Manager, Digboi Electrical Division. The Bill will be passed from the office of the Asst. General Manager, Digboi Electrical Division and forwarded to the office of the CEO, TEC, Tinsukia and payment will be made by the CGM(F & A) on recommendation of the CGM(D), APDCL, UAR. Bills shall be entertained only after completion of both supply and erection of works.

b) The right of the contractor/supplier to have payment or reimbursement of any cost for execution of works/supply of materials as the case may be, against this order will be forfeited or deemed to have been relinquished if the claim for it is not preferred to the appropriate authority within 6 (Six) months from the date of completion or deemed completion as per cause No. 25.0 of Company’s General Conditions of Supply and Erection.

c) A Performance Bank Guarantee from any Nationalized Bank in Board’s Standard Proforma, with a validity of eighteen months from the date of successful commissioning of the work, for an amount equal to 10% of the total value of works executed shall have to be furnished by the contractor before releasing the final payment to the CGM(D), APDCL. The PBG should be drawn in favour of DGM, TEC, APDCL, Tinsukia.

12. Agreement and Security deposit

The successful bidders shall have to made an agreement with the GM, Dibrugarh Zone, APDCL, UAR, Dibrugarh and shall have to deposit security money in the form of Bank Guarantee issued by any Nationalized Bank or scheduled bank of RBI in Company’s standard proforma on non-judicial stamp of appropriate value for an amount equal to 2.5% of the contract value at the time of execution of agreement in favour of “the Deputy General Manager, TEC, APDCL, UAR Tinsukia”. The security deposit is liable to be forfeited in case of non-execution of contract / work order. The security deposit will be released on successful commissioning and testing of the materials ordered and after depositing performance B/G.

a. If the contractor fails or neglects to perform any of his obligations under the contract within the guarantee period, APDCL shall have the right to forfeit the BG submitted against performance either in full or in part at its absolute discretion.

b. No interest shall be payable on such deposits.
All Bank Guarantees (BG) submitted along with the bid or to be submitted later should be from those branches of nationalized or scheduled Bank of RBI having their regional offices in Assam or at least a branch office at Guwahati (In case of those, whose regional office is not located in the state of Assam) with a certificate from the Bank to the effect that the verification or any confirmation in regard to the BG issued by the bank can be taken up with the Branch office at Guwahati.

13. Project Management and site Organizations:
In Consideration of the tight schedule of the project, the successful bidder(s) /Contractor(s) shall exercise systematic closely controlled project management system with the aid of commonly used soft tools. Following are the major activities/deliverables to be organized /generated for submission to the Board.

(I) Liaison/Construction offices will be established in each Circle of APDCL, UAR.

(II) Work Progress Report:
- Progress monitoring by the contractor as per implementation schedule and approved milestones.
- Fortnightly progress report will be submitted to the concern Deputy General Manager, Asstt. General Manager & Sub-Divisional Engineers. The progress report will highlight the points like, work completion vis-à-vis planned, plan for next working period, delay analysis vis-à-vis committed schedule with reasons and remedies, etc.

(III) Site Organization.

The vendor at each working site shall establish the following.
- Store house
- Site fabrication facilities
- Construction supervision office

All offices shall be adequately furnished and staffed so as to take all site decisions independently without frequent references to head Work’s/offices.

14 Guarantees and Penalties

a) Liquidated Damages (LD): The proposed work is on top priority of Government of Assam and therefore has to be completed within stipulated/agreed schedule. Any delay beyond that will attract penalty as per Company’s General condition of supply and erection.

b) Equipment and system supplied & installed shall be guaranteed individually for integrated operations for a period of 18 (Eighteen) months from date of commissioning.

c) Warranty from the manufacturer shall be produced along with manufacturer’s test certificate for all equipment/materials covered under Manufacturer’s warranty.

15 Approvals/Clearances:

1. The concerned CEO, APDCL shall approve all site/location and documents prepared by the contractor for construction of the Rly. Track Crossing as per tender.

2. GTP and drawings of all equipment/materials shall be approved by the CEO, Tinsukia Elect. Circle, APDCL, Tinsukia.

3. The contractor shall obtain all statutory approvals and clearances from the statutory authorities before charging the system at his/her own cost.

16 Testing & Inspection:

All the equipments/materials to be supplied and erected shall be tested/inspected at manufacturer’s works by authorized officer/Engineers of APDCL before dispatching them to worksite. The contractor shall intimate the CEO, Tinsukia Elect. Circle, APDCL, Tinsukia sufficiently in advance regarding the date of inspection of materials/equipments at manufacturer’s works. The materials shall be dispatched to site only after receipt of dispatch clearance to be issued by the CEO, Tinsukia Elect. Circle, after satisfactory testing of the same.

17 Environmental Considerations:

While carrying out the assignment, no damage to environment/forests will be caused by the contractor. If so done, the contractor will have to compensate the same to the satisfaction of the concerned Authority.

18 Submission of documents.

a) With bids. ----- As per clause 6(c)

(b) During project execution
   i) All documents for approval shall be submitted in 6 copies.
   ii) All final documents to be submitted to statutory organizations will be furnished as per requirement of the authority.
Ceiling on acceptance of bid value
As a deterrent for cartel formation APDCL at its discretion have the right to scrap the tender if values quoted by all the bidders is above 25% of the estimated cost. Also the price bids whose total quoted value is below 15% of the estimated cost, the bid is liable to be rejected by APDCL.

Termination of contract on Contractor's default
If the Contractor shall neglect to execute the Works with due diligence and expertise or shall refuse or neglect to comply with any reasonable order given to him, in the Contract by the Engineer in connection with the works or shall contravene the provisions of the Contract, the owner may give notice in writing to the contractor to make good the failure, neglect or contravention complained of. Should the contractor fail to comply with the notice within thirty (30) days from the date of serving the notice, then and in such case the Owner shall be at liberty to employ other workmen and forthwith execute such part of the works as the Contractor, may have neglected to do or if the owner shall think fit, without prejudice to any other right he may have under the Contract to take the work wholly or in part out of the contractor’s hands and re-contract with any other person or persons to complete the works or any part thereof and in that event the Owner shall have free use of all Contractor’s equipment that may have been at the time on the site in connection with the works without being responsible to the Contractor for fair wear and tear thereof and to the exclusion of any right of the contractor over the same, and the Owner shall be entitled to retain and apply any balance which may otherwise be 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 the said part of the work or of completing the Works as the case may be. If the cost of completing of Works or executing a part thereof as aforesaid shall exceed the balance due to the contractor, the contractor shall pay such excess. Such payment of excess amount shall be independent of the liquidated damages for delay which the contractor shall have to pay if the completion of works is delayed.
In addition, such action by the Owner as aforesaid shall not relieve the Contractor of his liability to pay liquidated damages for delay in completion of works as defined in clause no.26 of GCSE
Such action by the Owner as aforesaid, the termination of the Contract under this clause shall neither entitle the contractor to reduce the value of the contract Performance Guarantee nor the time thereof. The contract Performance Guarantee shall be valid for the full value and for the full period of the contract including guarantee period.

Termination of contract on owners' initiative
The Owner reserves the right to terminate the Contract either in part or in full due to reasons other than those mentioned under clause entitled “Contractor’s Default.” The Owner shall in such an event give fifteen (15) days notice in writing to the Contractor of his decision to do so.
The Contractor upon receipt of such notice shall discontinue the work on the date and to the extent specified in the notice, make all reasonable efforts to obtain cancellation of all orders and contracts to the extent they are related to the work terminated and terms satisfactory to the Owner, stop all further sub-contracting or purchasing activity related to the work terminated, and assist the Owner in maintenance, protection, and disposition of the Works acquired under the Contract by the Owner.
In the event of such a termination, the Contractor shall be paid compensation, equitable and reasonable, dictated by the circumstances prevalent at the time of termination.
If the Contractor is an individual or a proprietary concern and the individual or the proprietor dies and if the contractor is a partnership concern and one of the partners dies then unless the Owner is satisfied that the legal representatives of the individual contractor or of the proprietor of propriety concern and in the case of partnership, the surviving partners, are capable of carrying out and completing the Contract, the Owner shall be entitled to cancel the Contract as to its uncompleted part without being in any way liable to payment of any compensation to the estate of deceased Contractor and/or to surviving partners of the contractor’s firm on account of the cancellation of the contract. The decision of the owner that the legal representatives of the deceased contractor or surviving partners of the contractor’s firm cannot carry out and complete the contract shall be final and binding on the parties. In the event of such cancellation, the Owner shall check the deceased Contractor and/or the surviving partner of the Contractor’s firm liable to damages for not completing the Contract

Frustration of contract
In the event of frustration of the contract of supervening impossibility in items of Section 56 of the Indian Contract Act, parties shall be absolved of their responsibility to perform the balance portion of the contract.
In the event of non-availability or suspension of funds for any reasons whatsoever (except for reason of willful or flagrant breach by the Owner and/or contractor) then the Works under the contract shall be suspended. Furthermore, if the Owner is unable to make satisfactory alternative arrangements for financing to the contractor in accordance with the terms of the Contract within three months of the event, the parties hereto shall be relieved from carrying out further obligations under the Contract treating it as frustration of the Contract. In the event Performance Bank Guarantee, the parties shall mutually discuss to arrive at reasonable on all issues including amounts due to either party for the work already done on “Quantum merit” basis which shall be determined by mutual agreement between the parties.
While the Company will make every endeavor to extend necessary facilitation in expediting the work, the contractor shall be responsible to organize and arrange all necessary inputs right from mobilization activities up to completion of the project. Company will not entertain any failure / delay on such accounts. Also, Company will not be responsible for any compensation, replenishment, damage, theft etc. as may be caused due to negligent working, insufficient coordination with Government / non Government / Local Authority by the contractor and/ or his personnel deputed for work. The contractor shall take necessary insurance coverage under LIC/GIC. Etc. for his working personnel and the goods in store as well as in transit. The contractor will be deemed to have made him acquainted with the local working conditions at site(s) and fully provide for into the bid submitted.

25. If for any reason the last date of receiving and opening of tender or the date of pre-bid discussion is a declared holiday the next working day will be considered for receiving and opening of bid or pre bid discussion.

26. In case any clause mentioned in the bid document contradicts or differ any clause of the APDCL's General condition of Supply and Erection the clauses append in this document will prevail.

27. The intending bidders are requested to physically survey the location of proposed Railway Track Crossing site. The BOQ shown in the bid document are only indicative and in case the bidder feel that some additional item are required to complete the work in totality they may indicate the same separately with unit rate along with the price bid but in a separate sheet. The evaluation of the bid shall however be done on the basis of materials stated in the BOQ of the bid. Also Before submitting the tender the bidder should have discussion with concerned Sub-divisional Engineer / Asstt. General Manager of APDCL.

28. The quantity mentioned in the bill of quantity (BOQ) and price bidding schedule are purely provisional and shall be finalized on completion of detailed survey work and submission of bill of materials thereof subject to quantity variation clause mentioned in clause 8.

Terms and conditions, which are not specified, herein above will be governed by Company's General Conditions of supply and erection in force.
Tender Format part – I (Techno-commercial Bid)

NIT No: GM /DZ /ANNUAL PLAN 2013-14/01

1. Name and full address of the Bidder. :

2. Particulars of payment made for Purchase of tender document in the shape of : 

3. Amount of earnest money paid in the shape of : 

4. Whether Sales Tax clearance certificate submitted : Yes / No 

5. VAT Registration. No/ Service Tax Regd. No. :

6. Acceptance of guarantee clause of Materials/equipment and system Installed individually and for integrated Operation. :

7. Acceptance of penalty clause :

8. Acceptance of terms of payment :

9. Acceptance of Time Period for completion of the job. :

10. Certificate/ documents regarding adequate Experience of doing similar job :

11. Details of work presently in hand with amount : (Awarded by APDCL and other successor Companies of ASEB)- a separate sheet if Required may be enclosed.

12. Details of manpower and T&Ps including Vehicles available with the firm to be Enclosed separately. :

13. List of documents enclosed :
   a) ....
   b) ....
   c) ....

Signature with full name and designation of bidder or his/her authorized representative with seal
<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Qualification Requirement</th>
<th>Furnished at Annexure</th>
<th>Page</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1</td>
<td>Document in support of legal status of firm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A2</td>
<td>Memorandum of Association &amp; Registered/Notorised Joint venture Agreement if JV</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A3</td>
<td>Registered / Notorised power of attorney of the signatory of the Bidder to participate in the Bid.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A4</td>
<td>Board resolution of the company to authorizing the signatory</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A5</td>
<td>Information regarding any litigation, current or during the last five years, in which the Bidder is involved, the parties concerned, and disputed amount</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A6</td>
<td>Valid Electrical Contractor’s License</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A7</td>
<td>Valid Electrical &amp; Supervisory License</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A8</td>
<td>VAT/CST/WCT/Service Tax registration certificate</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A9</td>
<td>Provident Fund Registration Certificate</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A10</td>
<td>Valid Labour licence</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B1</td>
<td>Audited Balance sheet, Profit &amp; Loss account, Auditor’s report for last three year</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B2</td>
<td>CA Certified Turnover of bidder during the last 3(three) years.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B3</td>
<td>Evidence of adequacy of working capital for this contract (access to line(s) of credit and availability of other financial resources)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B4</td>
<td>Authority to seek references from the Bidder's Bankers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B5</td>
<td>Income Tax return for last 3(three) years</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B6</td>
<td>Value of similar work performed by the bidder in each of the last five years – Statement</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B7</td>
<td>Proposals for subcontracting components of the Works amounting to more than 10 percent of the Contract Price</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B8</td>
<td><strong>Details of the Bank Guarantee as EMD (BG/TD/Bank Call Deposit)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C1</td>
<td>Experience in works of a similar nature and volume for each of the last 5(five) years and details of works under way or contractually committed including full address of client for communication-Statement</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C2</td>
<td>Certificates issued by an Engineer not below the Cadre of Deputy General Manager/CEO / SE along with supporting photo-copies of agreements for the works executed.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C3</td>
<td>Detailed activity plan and methodology supported with layout and necessary drawings and calculations (detailed) to allow the employer to review their proposals.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C4</td>
<td>Quality Assurance plan with Bar Chart</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C5</td>
<td>List of technical personnel and their qualification and experience with organization chart</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C6</td>
<td>Proof of availability of the tools, tackles, spare parts, etc. for carrying out the works.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D1</td>
<td>Technical particulars of equipments and Materials offered in the Bill of Material and their GTPs</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## List of Ongoing & Completed Projects

List of ongoing & completed projects of APDCL & Other successor companies of ASEB

<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Name of the work</th>
<th>Order No</th>
<th>Contract value</th>
<th>Scheme</th>
<th>Stipulated date of completion</th>
<th>Present Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Bidder’s Information Sheet:

<table>
<thead>
<tr>
<th>Bidder’s Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bidder’s legal name</td>
</tr>
<tr>
<td>In case of JV, legal name of each partner</td>
</tr>
<tr>
<td>Bidder’s country of constitution</td>
</tr>
<tr>
<td>Bidder’s year of constitution</td>
</tr>
<tr>
<td>Bidder’s legal address in country of constitution</td>
</tr>
<tr>
<td>Bidder’s authorized representative (name, address, telephone numbers, fax numbers, e-mail address)</td>
</tr>
</tbody>
</table>

Attached are copies of the following original documents.
Each bidder or member of JV must fill in this form

### Financial Data for Previous 3 Years [Rs in lakhs]

<table>
<thead>
<tr>
<th>Year 1:</th>
<th>Year 2:</th>
<th>Year 3:</th>
</tr>
</thead>
</table>

#### Information from Balance Sheet

<table>
<thead>
<tr>
<th>Description</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Assets</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Liabilities</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Net Worth</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current Assets</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current Liabilities</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Information from Income Statement

<table>
<thead>
<tr>
<th>Description</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Revenues</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Profits Before Taxes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Profits After Taxes</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Attached are copies of financial statements (balance sheets including all related notes, and income statements) for the last three years, as indicated above, complying with the following conditions.
Form FIN - 2: Average Annual Turnover

Each Bidder or member of a JV must fill in this form

<table>
<thead>
<tr>
<th>Year</th>
<th>Amount (Rs. In lakhs)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Average Annual Turnover

The information supplied should be the Annual Turnover of the Bidder or each member of a JV in terms of the amounts billed to clients for each year for contracts in progress or completed in ₹ (Rupees).

Form FIN – 3: Financial Resources

Specify proposed sources of financing, such as liquid assets, unencumbered real assets, lines of credit, and other financial means, net of current commitments, available to meet the total construction cash flow demands of the subject contract or contracts as indicated in Section 3 (Evaluation and Qualification Criteria)

<table>
<thead>
<tr>
<th>Financial Resources</th>
</tr>
</thead>
<tbody>
<tr>
<td>No.</td>
</tr>
<tr>
<td>-----</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>3</td>
</tr>
<tr>
<td>4</td>
</tr>
</tbody>
</table>
SECTION: 3

BILL OF QUANTITIES

&

PRICE BIDDING SCHEDULE
BILL OF QUANTITY

Name of the Work:

Construction underground, BG Railway Track crossing by 11KV cables in between Post No. 36/1 Kms. & 36/2 Kms situated between Powai Rly. Station & Margherita Rly. Stn. under Tinsukia Electrical Circle, APDCL (UAR) on “Turnkey” basis.

Scheme : ANNUAL PLAN 2013 – 14

<table>
<thead>
<tr>
<th>SL. No.</th>
<th>Material</th>
<th>Unit</th>
<th>Total Qty.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Physical Survey for 11 KV underground Railway Track Crossing</td>
<td>Job</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>GI Steel Tubular Pole SP 76</td>
<td>Nos</td>
<td>6</td>
</tr>
<tr>
<td>3</td>
<td>Supply fitting &amp; fixing of GI Pole Clamp as per T S of supply and erection</td>
<td>Nos</td>
<td>40</td>
</tr>
<tr>
<td>4</td>
<td>GI CHANNEL CROSS ARM SIZE 75 X 40 X 6 X 3200 MM</td>
<td>Nos</td>
<td>26</td>
</tr>
<tr>
<td>5</td>
<td>11 KV XLPE Cable ( 1 Core , 185 sqmm )</td>
<td>Mtr</td>
<td>600</td>
</tr>
<tr>
<td>6</td>
<td>11 KV XLPE Cable kit for 1 core 185 sqmm Outdoor</td>
<td>Nos</td>
<td>8</td>
</tr>
<tr>
<td>7</td>
<td>Stay Set ( HT)</td>
<td>Set</td>
<td>10</td>
</tr>
<tr>
<td>8</td>
<td>Stay Wire ( 7 / 10 swg)</td>
<td>Kg.</td>
<td>100</td>
</tr>
<tr>
<td>9</td>
<td>Guy Insulator</td>
<td>Set</td>
<td>10</td>
</tr>
<tr>
<td>10</td>
<td>11 KV Disc Insulator Polymer ( T &amp; C, 45 KN)</td>
<td>Nos</td>
<td>12</td>
</tr>
<tr>
<td>11</td>
<td>Hardware fitting for Disc Insulator ( 45 KN)</td>
<td>Set</td>
<td>12</td>
</tr>
<tr>
<td>12</td>
<td>11 KV Pin Insulator ( Polymer ) as per TS</td>
<td>Nos</td>
<td>21</td>
</tr>
<tr>
<td>13</td>
<td>AAA Raccoon conductor</td>
<td>Km.</td>
<td>0.3</td>
</tr>
<tr>
<td>14</td>
<td>Supply of HDPE pipe 110 mm outside dia x 6 kgf/cm2 6 mtr each length</td>
<td>Nos</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>conforming to IS : 4984/1995, (for protection of each single core cable from GL to pole top)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Supply of class 1 A type 350 mm dia CI pipe 5.5 mtr each length as per ISS-1536-1989 1.5m.below ground level of measureable length 5.5 m as per Railway specification.</td>
<td>Nos</td>
<td>20</td>
</tr>
<tr>
<td>16</td>
<td>CI Earth Pipe</td>
<td>Nos</td>
<td>8</td>
</tr>
<tr>
<td>17</td>
<td>G.I Wire 6 Swg</td>
<td>Kg.</td>
<td>80</td>
</tr>
<tr>
<td>18</td>
<td>11 KV LA , 9 KA line type ( A Set of three)</td>
<td>Set</td>
<td>2</td>
</tr>
<tr>
<td>19</td>
<td>11 KV DO Fuse 150 A</td>
<td>Set</td>
<td>1</td>
</tr>
<tr>
<td>20</td>
<td>Danger Plate (11KV)</td>
<td>Nos</td>
<td>6</td>
</tr>
<tr>
<td>21</td>
<td>Barbed Wire Size 10 SWG for anticlimbing protection.</td>
<td>Nos</td>
<td>40</td>
</tr>
<tr>
<td>22</td>
<td>Supply of cable marker (metallic) showing the details of cable size,</td>
<td>Nos</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>voltage grade and number of cables on ground by CC foundation.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>GI Nuts &amp; bolts(assorted)</td>
<td>Kg.</td>
<td>50</td>
</tr>
<tr>
<td>24</td>
<td>GI through bolts (assorted)</td>
<td>Kg.</td>
<td>15</td>
</tr>
<tr>
<td>25</td>
<td>Pipe Clamp.</td>
<td>Nos</td>
<td>32</td>
</tr>
<tr>
<td>26</td>
<td>GI Channel &quot;X&quot; arm (50x50x6) for&quot; X &quot;brassing other works</td>
<td>Mtr</td>
<td>180</td>
</tr>
</tbody>
</table>
**Annexure - II**

**Tender Performa Part-II (PRICE BID) NIT No: GM / DZ /TDF 11 – 14 / 01**

**Name of the Work** : Construction underground, Railway Track crossing by 11 KV cables in between Post No. 36/1 Kms. & 36/2 Kms situated between Powai Station & Margherita Rly. Stn. under Tinsukia Elect. Circle, APDCL (UAR) on “Turnkey” basis.

The schedule of item wise rates for the Single Package of Works consisting of following works on “Turnkey” mode under ANNUAL PLAN: 2013 – 14 Scheme NB. Bidder should fill up all columns properly. If any column of taxes and duties is left blank or written as NA, the applicable taxes against that item shall be added in bid evaluation.

<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Brief Item Description</th>
<th>Unit</th>
<th>Qty</th>
<th>Supply of materials</th>
<th>Erection of materials</th>
<th>Total cost of supply and erection (Rs)</th>
<th>Work contract Tax @ 5% on 9 (Rs)</th>
<th>Service Tax @ 12.36% on 8 (Rs)</th>
<th>Grand Total Rs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Supply and erection of ErectionGI Steel Tubular Pole SP 76 perpendicular to ground level including excavation of earth pit having depth equal to 1/5th of the length of the pole and cross section 0.75 Mtr x 0.5 Mtr with grouting in proportion 1:2:4 CC foundation including supply of Cement, Sand, Stone, Shuttering, labour complete as per TS of Supply &amp; Erection.</td>
<td>Nos</td>
<td>6</td>
<td></td>
<td></td>
<td>(6x4x5)</td>
<td>7</td>
<td>9</td>
<td>11</td>
</tr>
<tr>
<td>2</td>
<td>Supply, fitting and fixing of GI Channel Cross Arm 100 x 50 x 3200 mm on SP / DP structure with necessary GI Pole Clamp, Nuts &amp; Bolts &amp; drilling of holes etc.for 11 KV line as per TS of Supply &amp; Erection.</td>
<td>Nos</td>
<td>26</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Supply,fitting and fixing of 11 KV XLPE Cable (1 Core , 185 sqmm) as per drawings and TS of supply &amp; erection.</td>
<td>Mtr</td>
<td>600</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Supply,fitting and fixing of 11 KV XLPE Cable kit for 1 core 185 sqmm Outdoor as per direction and TS of supply &amp; erection.</td>
<td>Nos</td>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Supply, fitting &amp; fixing of HT Stay Set complete with digging earth pit of area 0.9 Mtr x 0.6 Mtr, and 1.4 Mtr, placing stay rod with 7/10 SWG Stay Wire &amp; Guy Insulator on the pole clamps fixing thimble bow with CC Grouting, boulder packing &amp; hard ramming to fill up the half pit &amp; earth packing up to ground level including supply of Cement, Boulder, Sand etc. Nuts &amp; Bolts per TS of Supply &amp; Erection</td>
<td>Set</td>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Supply, fitting and fixing of Polymer Disc 45 KN with proper Hardware fitting on cross arm as per TS of Supply &amp; Erection.</td>
<td>Set</td>
<td>12</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sl. No.</td>
<td>Brief Item Description</td>
<td>Unit</td>
<td>Qty</td>
<td>Supply of materials</td>
<td>Erection of materials</td>
<td>Total cost of supply and erection (Rs)</td>
<td>Work contract Tax @ 5% on 9 (Rs)</td>
<td>Service Tax @ 12.36% on 8 (Rs)</td>
<td>Grand Total Rs.</td>
</tr>
<tr>
<td>--------</td>
<td>---------------------------------------------------------------------------------------</td>
<td>------</td>
<td>-----</td>
<td>---------------------</td>
<td>-----------------------</td>
<td>----------------------------------------</td>
<td>---------------------------------</td>
<td>---------------------------------</td>
<td>----------------</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Supply, fitting and fixing of 11 KV Pin Insulator (Polymer) as per TS supply &amp; erection.</td>
<td>Nos</td>
<td>21</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Supply and stringing of AAA Raccoon Conductor with laying conductor on ground, lifting on poles, tensioning with Tension Clamps binding on insulator jumpering with P. G. Clamp on SP / DP / TP / FP structure including supply &amp; fitting of Tension Clamp, P. G. Clamp nuts &amp; bolts as per TS of Supply &amp; Erection.</td>
<td>Km.</td>
<td>0.3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Supply, fitting and fixing of HDPE pipe 110 mm outside dia x 6 kgf/cm² 6 mtr each length conforming to IS : 4984/1995, (for protection of each single core cable from GL to pole top) as TS of supply &amp; erection.</td>
<td>Nos</td>
<td>16</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Supply, fitting and fixing of class 1 A type 350 mm dia CI pipe 5.5 mtr each length as per ISS-1536-1989 1.5m below ground level of measureable length 5.5 m as per Railway specification.</td>
<td>Nos</td>
<td>20</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Supply, fitting &amp; fixing of C.I. Earth Pipe by digging of pit as per direction with necessary connection with strips, G.I. wire 6 SWG for Earthing including supply of G.I. wire 6 SWG as per direction of TS of Supply &amp; Erection. CI Earth Pipe.</td>
<td>Nos</td>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Supply, fitting &amp; fixing of 11 KV line Type Lighting Arrestor including supply of GI Wire for earthing, Pole clamps, Nuts &amp; Bolts as per TS of Supply &amp; Erection. (A Set of three)</td>
<td>Set</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Supply, fitting &amp; fixing of 11 KV Drop Out Fuse 150 Amps on cross arm including supply of GI wire for earthing, Pole clamps, nuts &amp; bolts etc. as per direction of TS of Supply &amp; Erection.</td>
<td>Set</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Supply, fitting &amp; fixing of Danger Plate (11KV) as per TS of supply &amp; erection.</td>
<td>Nos</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>B Supply, fitting &amp; fixing of Barbed wire size 10 SWG on SP 76 Pole as Anti Climbing Device as per direction and as per TS of Supply &amp; Erection.</td>
<td>Nos</td>
<td>40</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Supply, fitting and fixing of cable marker (metallic) showing the details of cable size, voltage grade and number of cables on ground by CC foundation.</td>
<td>Nos</td>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sl. No</td>
<td>Brief Item Description</td>
<td>Unit</td>
<td>Qty</td>
<td>Supply of materials</td>
<td>Erection of materials</td>
<td>Total cost of supply and erection (Rs)</td>
<td>Work contract Tax @ 5% on 9 (Rs)</td>
<td>Service Tax @ 12.36% on 8 (Rs)</td>
<td>Grand Total Rs.</td>
</tr>
<tr>
<td>-------</td>
<td>------------------------</td>
<td>------</td>
<td>-----</td>
<td>---------------------</td>
<td>----------------------</td>
<td>--------------------------------------</td>
<td>----------------------------------</td>
<td>----------------------------------</td>
<td>----------------</td>
</tr>
<tr>
<td>1</td>
<td>Supply, fitting and fixing of GI Channel &quot;X&quot; arm (50x50x6) for &quot;X&quot; bracing as per direction and TS of supply &amp; erection</td>
<td>Mtr</td>
<td>180</td>
<td>6 = (4x5)</td>
<td>7 = (4x7)</td>
<td>9 = (6+8)</td>
<td>10 = (9 X 5%)</td>
<td>11 = 8x12.36%</td>
<td>12=9+10+11</td>
</tr>
<tr>
<td>17</td>
<td>Civil work for HT Underground Rly Track Crossing as per details drawings &amp; specification enclosed.</td>
<td>Job</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>Horizontal boring of 350mm dia hole across the Rly. Embankment at a depth of 2.5m below the Ground level</td>
<td>Mtr</td>
<td>90</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**GRAND TOTAL**

GRAND TOTAL IN WORDS: _____________________________________________________________

**Signature of the Bidder with seal**

Name of Signatory:

Telephone/Mobile No: E-Mail Address:

FAX No. Full Postal Address:

GM/ DZ /ANNUAL PLAN13 – 14 / 01
SECTION: 4

GENERAL REQUIREMENTS
GENERAL REQUIREMENTS

The bidder shall comply with the following general requirements along with other specifications.

1.0 QUALITY ASSURANCE PLAN

1.1 The bidder shall invariably furnish the following information along with his offer failing which the offer shall be liable for rejection. Information shall be separately given for individual type of equipment offered.
   i) The structure of organization
   ii) The duties and responsibilities assigned to staff ensuring quality of work
   iii) The system of purchasing, taking delivery and verification of materials
   iv) The system for ensuring quality of workmanship
   v) The quality assurance arrangements shall confirm to the relevant requirement of ISO 9001 on ISO 9002 as applicable.
   vi) Statement giving list of important raw materials, names of sub-supplies for the raw materials, list of standards according to which the raw material are tested, list of tests normally carried out on raw material in the presence of suppliers representative, copies of test certificates.
   vii) Information and copies of test certificates as on (i) above in respect of bought out items
   viii) List of manufacturing facilities available
   ix) Level of automation achieved and list of areas where manual processing exists.
   x) List of areas in manufacturing process, where stage inspections are normally carried out for quality control and details of such test and inspection.
   xi) List of testing equipment available with the bidder for final testing of equipment specified and test plant limitation, if any vis-à-vis the type. Special acceptance and routine tests specified in the relevant standards. These limitations shall be very clearly brought out in “Schedule of Deviations” from the specified test requirement.

1.2 The contractor shall within 30 days of placement of order, submit the following information to the purchaser.
   i) List of the raw material as well as bought out accessories and the names of sub-suppliers selected from those furnished along with the offer.
   ii) Type test certificate of the raw material and bought out accessories if required by the purchaser.
   iii) Quality Assurance Plant (QAP) with hold points for purchasers inspection. QAP and purchasers hold points shall be discussed between the purchaser and contractor before the QAP is finalized.
   The contractor shall submit the routine test certificates of bought out accessories and central excise asses for raw material at the time of routine testing if required by the purchaser and ensure that the quality assurance requirements of specification are followed by the sub-contractor.

1.3 The Quality Assurance Programme shall give a description of the Quality System and Quality Plans with the following details.
   i) Quality System
      • The structure of the organization.
      • The duties and responsibilities assigned to staff ensuring quality of work.
      • The system of purchasing, taking delivery of verification of materials
      • The system of ensuring of quality workmanship.
      • The system of control of documentation.
      • The system of retention of records.
      • The arrangement of contractor internal auditing.
      • A list of administrator and work procedures required to achieve contractor’s quality requirements. These procedures shall be made readily available to the purchaser for inspection on request.
   ii) Quality Plans
      • An outline of the proposed work and program sequence.
      • The structure of contractor’s organizations for the contract.
      • The duties and responsibilities ensuring quality of work.
      • Hold and notification points.
• Submission of engineering documents required by this specification.
• The inspection of the materials and components on request.
• Reference to contractor's work procedures appropriate to each activity.
• Inspection during fabrication/construction.
• Final inspection and test.

2.0 Inspection

2.1 The Owner's representative or third party nominee shall at all times be entitled to have access to the works and all places of manufacture, where insulator, and its component parts shall be manufactured and the representatives shall have full facilities for unrestricted inspection of the Contractor's and sub-Contractor's works, raw materials, manufacture of the material and for conducting necessary test as detailed herein.

2.2 The material for final inspection shall be offered by the Contractor only under packed condition as detailed in the specification. The Owner shall select samples at random from the packed lot for carrying out acceptance tests. Insulators shall normally be offered for inspection in lots not exceeding 5000 nos. the lot should be homogeneous and should contain insulators manufactured in the span of not more than 3-4 consecutive weeks.

2.3 The Contractor shall keep the Owner informed in advance of the time of starting and the progress of manufacture of material in their various stages so that arrangements could be made for inspection.

2.4 No material shall be dispatched from its point of manufacture before it has been satisfactorily inspected and tested unless the inspection is waived off by the Owner in writing. In the latter case also the material shall be dispatched only after satisfactory testing for all tests specified herein have been completed.

2.5 The acceptance of any quantity of material shall be no way relieve the Contractor of his responsibility for meeting all the requirements of the specification and shall not prevent subsequent rejection, if such material are later found to be defective.

3.0 Additional Tests

3.1 The Owner reserves the right of having at his own expense any other test(s) of reasonable nature carried out at Contractor's premises, at site, or in any other place in addition to the type, acceptance and routine tests specified in these bidding documents against any equipments to satisfy himself that the material comply with the Specifications.

3.2 The Owner also reserves the right to conduct all the tests mentioned in this specification at his own expense on the samples drawn from the site at Contractor's premises or at any other test center. In case of evidence of non-compliance, it shall be binding on the part of the Contractor to prove the compliance of the items to the technical specifications by repeat tests or correction of deficiencies, or replacement of defective items, all without any extra cost to the Owner.

4.0 Test Reports

4.1 Copies of type test reports shall be furnished in at least six (6) copies along with one original. One copy shall be returned duly certified by the Owner only after which the commercial production of the concerned materials shall start.

4.2 Copies of acceptance test reports shall be furnished in at least six (6) copies. One copy shall be returned duly certified by the Owner, only after which the material shall be dispatched.

4.3 Record of routine test reports shall be maintained by the Contractor at his works for periodic inspection by the Owner's representative.

4.4 Test certificates of test during manufacture shall be maintained by the Contractor. These shall be produced for verification as and when desired by the Owner.

5.0 List of Drawings and Documents:

5.1 The bidder shall furnish the following along with bid.

   i) Two sets of drawings showing clearly the general arrangements, fitting details, electrical connections etc.
ii) Technical leaflets (users manual) giving operating instructions.

iii) Three copies of dimensional drawings of the box for each quoted item.

The manufacturing of the equipment shall be strictly in accordance with the approved drawings and no deviation shall be permitted without the written approval of the purchaser. All manufacturing and fabrication work in connection with the equipment prior to the approval of the drawing shall be at the supplier’s risk.

Approval of drawings/work by purchaser shall not relieve the supplier of his responsibility and liability for ensuring correctness and correct interpretation of the drawings for meeting the specification.

5.2 The requirements of the latest revision of application standards, rules and codes of practices. The equipment shall conform in all respects to high standards of engineering, design, workmanship and latest revisions of relevant standards at the time of ordering and purchaser shall have the power to reject any work or materials which, in his judgment is not in full accordance therewith.

5.3 The successful Bidder shall within 2 weeks of notification of award of contract submit three sets of final versions of all the drawings as stipulated in the purchase order for purchaser’s approval. The purchaser shall communicate his comments/approval on the drawings to the supplier within two weeks. The supplier shall, if necessary, modify the drawings and resubmit three copies of the modified drawings for their approval. The supplier shall within two weeks. Submit 30 prints and two good quality report copies of the approved drawings for purchaser’s use.

5.4 Eight sets of operating manuals/technical leaflets shall be supplied to each consignee for the first instance of supply.

5.4.1 One set of routine test certificates shall accompany each dispatch consignment.

5.4.2 The acceptance test certificates in case pre-dispatch inspection or routine test certificates in cases where inspection is’ waived shall be got approved by the purchasers.

6.0 Any Item specification if not available in this document Contractor shall supply and execute the items meeting the relevant IS specification with the approval of the purchaser.
SECTION : 5

FORMS OF BID
PROFORMA OF BANK GUARANTEE FOR BID GUARANTEE/SECURITY
(To be stamped in accordance with Stamp Act)
The non-Judicial stamp paper should be in the name of issuing bank

Ref………………………… Bank Guarantee No…………..
………………………… Date……………………

To
The Deputy General Manager
Tinsukia Electrical Circle
Assam Power Distribution Company Ltd
Tinsukia.

Dear Sir/ Madam,

In accordance with invitation to bid under your Bid No………………. M/s………………. having its Registered/Head Office at ……………..( hereinafter called the ‘Bidder’) wish to participate in the said Bid or ………………… and you, as a special favour have agreed to accept an irrevocable and unconditional Bank Guarantee for an amount of ……………….. valid upto……………………. On behalf of Bidder in lieu of the Bid deposit required to be made by the bidder, as a condition precedent for participation in the Said Bid.

We, the …………………. Bank at ………………… have our Head Office at…………..( local address) guarantee and undertake to pay immediately on demand by , the Amount of …………………………………………………………………………………………………..( in words & figures) without any reservation, protest, demur and recourse. Any such demand made by said ‘Owner’ shall be conclusive and binding on us irrespective of any dispute or difference raised by the Bidder.

The Guarantee shall be irrevocable and shall remain valid up to and including …………. @…………………… if any further extension of this guarantee is required, the same shall be extended to such required period (not exceeding one year) on receiving instruction from M/s ………… ……… on whose behalf this guarantee is issued.

In witness whereof the Bank, through its authorized office, has set its hand and stamp on this ………….. day of ………………….. 20………… at ………………………

WITNESS

……………………. (Signature) ………………………. ( Signature)
……………………. (Name) ………………………. (Name)
……………………. (Official Address) ………………………. (Official Address)

@ This date shall be thirty (30) days after the last date for which the bid is valid.
PROFORMA OF BANK GUARANTEE FOR CONTRACT PERFORMANCE
(To be stamped in accordance with Stamp Act)

Ref………………………….. Bank Guarantee No…………..
Date……………………..

To
The Deputy General Manager
Tinsukia Electrical Circle
Assam Power Distribution Company Ltd
Tinsukia

Dear Sir/Madam,

In consideration of Assam Power Distribution Company Ltd., (herein after referred to as the ‘Owner’ which expression shall unless repugnant to the context or meaning thereof include its successors, administrators and assigns) having awarded to M/s…………………………………….with registered/ Head office at ……………….( hereinafter referred to as “ Contractor” which expression shall unless repugnant to the context or meaning thereof include its successors, administrators, executors and assigns), a Contract by issued of Owner’s Letter of Award No…………… dated……………….. and the same having been acknowledged by the contractor, resulting in a contract bearing No…………….. dated contractor having agreed to provide a Contract Performance Guarantee for the faithful performance of the entire Contract equivalent to……………… being(%) (percent *) of the said value Contract to the Owner.

We………………………………………………………………………………………….. (Name & Address) having its Head Office at …………………( hereinafter referred to as the “ Bank”, which expression shall, unless repugnant to the context or meaning thereof, include its successors, administrators, executors and assigns) do hereby guarantee and undertake to pay the owner, on demand any all monies payable by the contractor to be extent of …………………. As aforesaid at any time up to ………………………..**( day/month/year) without any demur, reservation , contest , recourse or protest and / or without any reference to this contractor. Any such demand made by the owner on the bank shall be conclusive and binding notwithstanding any difference between the Owner the Contractor or any dispute pending before any Court, Tribunal, Arbitrator or any other authority. The bank undertakes not to revoke this guarantee during its currency without previous consent of the owner and further agrees that the guarantee herein contained shall continue to be enforceable till the owner discharges this guarantee.

The Owner shall have the fullest liberty without affecting in any way the liability of the Bank under the guarantee, from time to time to extend the time for performance or the contract by the contractor. The owner shall have the fullest liberty, without affecting this guarantee, to postpone from time to time the exercise of any power vested in them or of any right which they might have against the contractor, and to exercise the same at any time in any matter, and either to enforce or to for bear to enforce any covenants, contained or implied, in the contract between the owner and the contractor or any other course or remedy or security available to the owner. The Bank shall not be released to its obligations under these presents by any exercise by the owner of its liberty with reference to the matters aforesaid or any of them or by reason of any other act of omission or commission on the part of the owner or any other indulgences shown by the owner or by any other matter or thing whatsoever which under law would, but for this provision have the effect of relieving the Bank.

The bank also agrees that the owner at its option shall be entitled to enforce this guarantee against the Bank as a principal debtor, in the first instance without proceeding against the contractor and not withstanding any security or other guarantee the owner may have in relation to the Contractor's liabilities.

GM/ DZ /ANNUAL PLAN13 - 14 / 01
Notwithstanding anything contained herein above our liability under this guarantee is restricted to
……………………. And it shall remain in force up to an including ……………………… and shall be extended
from time to time for such period( not exceeding 1 year) as may be desired
M/s………………………………………………………………on whose behalf this guarantee has been given.

Dated this…………………… Day of ……………………….. 20……………… at…………

WITNESS
……………………………
(Signature)
…………………………
(Signature)

…………………………
(Name)
…………………………
( Name)

…………………………
(Official address)
…………………………
(Official address)

Attorney as per power
Of Attorney No.………..
Date……………………..

Notes
* This sum shall be 2.5%( two & half) of the Contract price.
** The date will be 90( Ninety) days after the end of the Warranty Period as specified in the contract.
1. The stamp paper of appropriate value shall be purchased in the name of issuing bank.
PROFORMA OF EXTENSION OF BANK GUARANTEE

Ref………………………….. Date…………………………

To
The Deputy General Manager
Tinsukia Electrical Circle
Assam Power Distribution Company Ltd
Tinsukia

Dear Sir/Madam,

Sub: Extension of Bank Guarantee No………………….. for Rs………………….. Favouring yourselves, expiring on …………………. On account of M/S………………………….. in respect of contract no…………………….. dated ……………….. (hereinafter called original Bank Guarantee).

At the request of M/s ……………………… we …………………… bank, branch office at ………………….. and having its Head Office at ………………………. Do hereby extend our liability under the above mentioned Bank Guarantee No…………………..dated…………………………for a further period of ……………………… (Years/ Months) from………………….. to expire on………………….. expect as provided above, all other terms and conditions of the original Bank Guarantee No………………………….. dated ……………….. Shall remain unaltered and binding.

Please treat this as an integral part of the original Bank Guarantee to which it would be attached.

Yours faithfully

For………………………………
Manager/ Agent/Accountant …………………..
Power of attorney No……………………
Dated……………………………………
SEAL OF BANK

Note: The non-judicial stamp paper of appropriate value shall be purchased in the name of the Bank who has issued the Bank Guarantee.
PROFORMA OF “AGREEMENT”  
(To be executed on non-Judicial stamp paper)

This Agreement made this .................. day of ........ two thousand.................. Between Assam Power Distribution Company Ltd. having its head office at Bijulee Bhawan, Paltanbazar, Guwahati-1 (hereinafter referred to as ‘Owner’ or ”, which expression shall include its administrators, successors and assign on one part and (hereinafter referred to as the ‘Contractors ‘X’ ( Name of the contracting Co.) which expression shall include its administrators, successors, executors and permitted assigns) on the other part.

WHEREAS desirous of ......................... in ................. Circle associated with at ................. (District) invited Bids for………………………………………………………………………………………………………... (Briefly describe scope of works) for the first state of the project as per its Bid Specification No..........................

AND WHEREAS………………………….”X” ………………………. Had participated in the above referred Bidding vide their proposal No……………………………….. dated………………. And awarded the Contract to…………….”X”…………….. on terms and conditions documents referred to there in which have been acknowledged by……………….”X”…………………..resulting into a “Contract”

NOW THEREFORE THIS DEED WITNESS AS UNDER:-

1.0 Article
1.1 Award of Contract
   Awarded the contract to……………..”X”…………….. for the work of ................... on the terms and conditions contained in its letter of Award No…………….. Dated…………….. and the documents referred to therein. The award has taken effect from aforesaid letter of award. The terms and expression used in this agreement shall have the same meaning as are assigned to them in the ‘Contract Documents’ referred to in this succeeding Article.

2.0 Documentation
2.1 The contract shall be performed strictly as per the terms and condition stipulated herein and in the following documents attached herewith( hereinafter referred to as “Contract Documents”.)
   i. Section 1-8 of the Bidding Document,
   ii. Proposal Sheets, Data Sheets, Drawing work schedule submitted by “X”.

Letter of Award No…………….. dated……………..duly acknowledged by “X”.
   Quality Plans for manufacturing and field activities entitled as Quality Plan.

All the aforesaid Contract Documents shall form an integral part of this agreement , in so far as the same or any part conform to the bidding documents and what has been specifically agreed to by the Owner in its letter of Award. Any matter inconsistent therewith, contrary or repugnant thereto or any deviations taken by the Contractor in its ‘Proposal’ but not agreed to specially by the Owner in its Letter of Award shall be deemed to have been withdrawn b y the Contractor. For the sake of brevity, this agreement along with its aforesaid Contract Documents shall be referred to as the ‘Agreement’.

3.0 Conditions & Covenants
3.1 The scope of Contract, Consideration, Terms of Payment, Price Adjustments, Taxes wherever applicable, Insurance, Liquidated Damage, Performance Guarantees and all other terms and conditions are contained in ’s Letter of Award No…………….. dated…………….. read in conjunction with other aforesaid contract documents. The contract shall be duly performed by the Contract Documents , but which are needed for successful, efficient, safe and reliable operation of the equipment unless otherwise specifically excluded in the specification under ‘exclusion’ or Letter of Award.
3.2 The scope of work shall also include supply and installation of all such items which are not specifically mentioned in the contract Documents, but which are needed for successful, efficient, safe and reliable operation of the equipment unless otherwise specifically excluded in the specifications under ‘exclusions’ or ‘Letter of Award’.
3.3 Time Schedule
3.3.1 Time is the essence of the Contract and schedules shall be strictly adhered to “X” shall perform the work in accordance with the agreed schedules.

3.4 Quality Plans

3.4.1 The Contractor is responsible for the proper execution of the Quality Plans. The work beyond the customer’s hold points will progress only with the owners consent. The Owner will also undertake quality surveillance and quality audit of the Contractor’s /Sub-contractor’s works, systems and procedures and quality control activities. The Contractor further agrees that any change in the Quality Plan will be made only with the Owner’s approval. The contractor shall also perform all quality control activities, inspection and tests agreed with the Owner to demonstrate full compliance with the contract requirements.

3.4.2 The contractor also agrees to provide the Owner with the necessary facilities for carrying out inspection, quality audit and quality surveillance of contractors and its Subcontractor’s Quality Assurance Systems and Manufacturing Activities.

These shall include but not limited to the following:
- Relevant plant standards, drawing and procedures;
- Detailed Quality Assurance System manuals for manufacturing activities.
- Storage procedures and instructions for welding, NDT, heat treatment prior to commencement of manufacture;
- Complete set of log sheets (blank) mentioned in the Quality Plans.

It is expressly agreed to by the contractor that the quality test and inspection by the owner shall not in any way relieve the contractor of its responsibilities for quality standards and performance guarantee and their other obligations. The contractor is to submit quality Assurance Documents to for review and record after completion and within 3 weeks of dispatch of material.

The package will include the following:
- Factory test result, inspection report duly signed by Quality Assurance personnel of both APDCL and “X” for the agreed customer hold points.
- Report of the rectification works where and if applicable.

3.5 It is expressly agreed to by the Contractor that notwithstanding the fact that the Contract is termed as Supply-cum-Erection Contract or indicates the break-up of the Contract consideration, for convenience of operation and for payment of sale tax on supply portion, it is in fact one composite Contract on single source responsibility basis and the Contractor is bound to perform the total Contract in its entirety and non-performance of any part or portion of the Contract shall be deemed to be breach of the entire Contract.

3.6 The Contractor guarantees that the equipment package under the Contract shall meet the ratings and performance parameters as stipulated in the technical specifications (Section 6) and in the event of any deficiencies found in the requisite performance figures, the Owner may at its option reject the equipment package or alternatively accept it on the terms and conditions and subject to levy of the liquidated damages in terms of Contract documents. The amount of liquidated damages so leviable shall be in accordance with the contract document and without any limitation.

3.7 It is further agreed by the contractor that the contract performance guarantee shall in no way be constructed to limit or restrict the owner’s equipment right to recover the damages/compensation due to shortfall in the equipment. The amount of damages/compensation shall be recoverable either by way of deduction from the contract price, contract performance guarantee and or otherwise. The contract performance guarantee furnished by the contractor is irrevocable and unconditional and the owner shall have the power to invoke it notwithstanding any dispute or difference between the owner and the contractor pending before any court tribunal, arbitrator or any other authority.

3.8 This Agreement constitutes full and complete understanding between the parties and terms of the payment. It shall supersede all prior correspondence terms and conditions contained in the Agreement. Any modification of the agreement shall be effected only by a written instrument signed by the authorized representative of both the parties.

4.0 SETTLEMENT OF DISPUTES:

4.1 It is specifically agreed between parties that all the differences or disputes arising out of the agreement or touching the subject matter of the agreement shall be decided by process of settlement and Arbitration as per General Condition of the Contract and provision of the Indian Arbitration Act, 1996. Guwahati Courts alone shall have exclusive jurisdiction over the same.
4.2 NOTICE OF DEFAULT

Notice of default given by either party to the other under agreement shall be in writing and shall be deemed to have been duly and properly served upon the parties hereto if delivered against acknowledgement or by telex or by registered mail with acknowledgements due addressed to the signatories at the addresses mentioned at Guwahati.

IN WITNESS WHEROF, the parties through their duly authorized representatives have executed these presents (execution where of has been approved by the competent authorities of both the parties) on the day, month and year first above mentioned at Guwahati.

WITNESS:
1. …………………… (Owner’s signature) (Printed Name)
2. …………………… (Designation) (Company’s Stamp)
3. …………………… (Contractor’s Signature) (Company’s Name)
4. …………………… (Designation) (Company’s Stamp)

- Applicable in case of single award is placed on one party on Supply-cum-Erection basis. In two separate awards are placed on single party/two different parties this clause is to be modified suitably while signing the contract agreement to be signed separately for two awards to incorporate cross fall breach clause.
SECTION: 6

TECHNICAL SPECIFICATION
1. CLIMATIC AND ISOCERAUNIC CONDITIONS

The climatic and isoceraunic conditions at site under which the materials /equipment shall operate satisfactorily are as follows:-

a) Maximum temperature of air in shade: 40º C
b) Minimum temperature of air in shade: 2º C
c) Maximum Humidity: 93 %
d) Isoceraunic level: 60
e) Average of rainy days per annum: 150
f) Average number of days of thunderstorm per annum: 25
g) Average number of days of dust storm per annum: 10
h) Average annual rainfall: 2280 mm
i) Number of months of tropical monsoon per annum: 5 (May to Sept.)
j) Maximum wind pressure: 150Kg/sq. m.
k) Altitude (above mean sea level): 50 to 250m

a. The reference ambient temperatures assumed for the purpose of this specification are:
   a) Maximum ambient temperature: 45º C
   b) Maximum average daily ambient temperature: 35º C
   c) Maximum average yearly ambient temperature: 30º

2. TECHNICAL SPECIFICATION OF XPLE CABLE FOR 11kV SYSTEM

1.0 SCOPE:

The specification covers the design, testing, supply and delivery in proper packed condition of different grade of 1 core. Aluminum Conductor, Cross-linked polyethylene (XLPE) insulated, PVC sheathed, armoured, screened Power Cables.

2.0 LOCATION:

2.1 The cables may be laid buried directly in ground at a depth of one meter in average, anywhere in Assam and terminate for outdoor connection to a power transformer or to overhead lines and also indoor connection for indoor switchgear.

2.2 The 11 kV XLPE cables to be laid inside HDPE pipes are also intended for underground railways crossings.

2.3 The cables may also be laid within covered cable trenches, in cable racks or open-air ladder trays etc. for certain portion of lengths.

3.0 SYSTEM DETAILS:

   i) Voltage grade (KV) of cable required: 6.35/11
   ii) Service Voltage: 11 KV
   iii) Highest Voltage: 12 KV
   iv) Earthing System: Solidly Earthed
   v) B.I.L. for Cables: 170 kV for 33 KV
   vi) Fault Level (Maxim.) Refer specs

(vii)Frequency: 50Hz
4.0  **STANDARDS:**

The cable shall conform to the following Indian Standards or equivalent international specifications to the extent of fulfillment of requirements of APDCL.

1) IS : 7098 (Part – II) (Latest) : Specification for cross-linked polyethylene Insulated PVC Sheathed Cables for working Voltage from 3.3 KV up to and including 33 KV.


4) IS: 3975 – 1979 : Armoured for cables (for 3 Core).


4.1 The cable, joints, outdoor and indoor termination and their accessories and fittings may conform to other Indian and/or equivalent standards or important publications to improve upon their performance, but shall not fall short of the requirement of this specification. TheBidder shall clearly indicate such standards in their offers.

4.2  **ELECTRICAL CHARACTERISTICS & PERFORMANCE:**

4.3  **Description of Cable:**

Standard compacted circular Aluminium (H4 Grade) Conductor, XLPE insulated, core shielded with black extruded semi-conducting compound, black semi-conducting tape and a copper tape, coloured strips having Red, Yellow & Blue for core identification, shielded cores laid up with fillers, binder taped and Black extruded PVC (Type ST-2) inner sheath, single layer of round galvanised steel wire armoured and black extruded PVC (Type ST-2), overall sheathed, conforming generally to IS:7098(Part-II).

4.4  **SPECIFIC TECHNICAL REQUIREMENTS**

Technical parameters of the cable shall be as follows:

<table>
<thead>
<tr>
<th>Sl No</th>
<th>Particulars</th>
<th>Unit</th>
<th>33KV</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Rated voltage</td>
<td>KV</td>
<td>11</td>
</tr>
<tr>
<td>2</td>
<td>Type of insulation</td>
<td></td>
<td>XLPE</td>
</tr>
<tr>
<td>3</td>
<td>Single Core</td>
<td></td>
<td>Single</td>
</tr>
<tr>
<td>4</td>
<td>Armoured / Unarmoured</td>
<td></td>
<td>Armoured</td>
</tr>
<tr>
<td>5</td>
<td>Material of Conductor</td>
<td></td>
<td>Material to IS: 8130, H4 Grade Aluminum Conductor, Stranded compacted Circular.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>System</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Highest System Voltage</td>
<td>kV</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Materials</td>
<td>Stranded Aluminum</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Voltage Grade</td>
<td>6.35/11 kV</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Conductor Size</td>
<td>Sq. mm</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Nominal dimension of Al. round wire</td>
<td>2.0 mm</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Nominal thickness of XLPE insulation sheath</td>
<td>3.6mm</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Approx overallcable diameter</td>
<td>[35.5mm for 1 x 185 sq mm]</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Current rating</td>
<td>360 A</td>
<td></td>
</tr>
<tr>
<td>a</td>
<td>In ground at 30°C</td>
<td>296A for (1 x 185 sq mm)</td>
<td></td>
</tr>
<tr>
<td>b</td>
<td>In air at 40°C</td>
<td>378A (1 x 630 sq mm)</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Max. Conductor Temp</td>
<td>90 °C at max. Continuous current</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Short Circuit Current for 1 se duration</td>
<td>17.5 kA for 630 sq mm</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Max. Permissible emergency overload temp. at 25% overload to 100 hrs. per year or 500 hrs. in life of cable</td>
<td>130 °C for one hour</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>Max. Permissible short circuit temperature</td>
<td>250 °C for one hour</td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>Conductor Screening</td>
<td>Extruded, cross linked, semi conducting compound of 0.5 mm for 11 kV</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>Insulation</td>
<td>XLPE of thickness, 3.6 mm (Nominal) for 11 kV</td>
<td></td>
</tr>
<tr>
<td>a</td>
<td>Insulation Screening</td>
<td>For 33 kV</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Combination of black extruded semi-conducting tape as the non-metallic part and annealed copper 0.06 mm (minimum) thick tape lapping as metallic part. For 1 core cable, the non-magnetic metal Armour will act as metallic part insulation screening.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b</td>
<td>For 11 kV</td>
<td>It is same but semi-conducting taps is not required</td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>Inner Sheathing</td>
<td>Black extruded PVC, Type ST-2 compound for 33 kV as per ISS. For 1 core there will be no inner sheath.</td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>Armouring</td>
<td>Single layer of round galvanized steel wires/strip for 11 kV as per IS. for 1 core, there will be non-magnetic metal armour</td>
<td></td>
</tr>
</tbody>
</table>
armour.

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>23</td>
<td>Overall Sheathing</td>
<td>Coloured PVC, type ST-2 compound to IS: 5831, extruded for both 33kV and 11kV thickness shall be as per ISS</td>
</tr>
<tr>
<td>24</td>
<td>Approx. length of cable in a Drum</td>
<td>250 meters with a tolerance of ± 5% (for 3 core), 500 meters ± 5% (for 1 core)</td>
</tr>
<tr>
<td>25</td>
<td>End Sealing</td>
<td>H.S. Caps (Heat Shrinkable)</td>
</tr>
<tr>
<td>a</td>
<td>Max. ‘Tan-delta’ at room temp. At nominal phase to neutral voltage (Uo):</td>
<td>0.004</td>
</tr>
<tr>
<td>b</td>
<td>Max. Increment of ‘tan-delta’ between 0.5 Uo to 2 Uo at room temp:</td>
<td>0.002</td>
</tr>
<tr>
<td>26</td>
<td>Partial discharge value</td>
<td>20 Pc (Max.) at 1.6 Uo.</td>
</tr>
<tr>
<td>27</td>
<td>Impulse Tests</td>
<td>170 KV for 33 kV and as per ISS for 11 KV</td>
</tr>
<tr>
<td>28</td>
<td>H.V. Tests between Conductors &amp; Screen/Armour</td>
<td>48 KV (rms) for 33 kV for 5 minutes and as per ISS</td>
</tr>
<tr>
<td>29</td>
<td>Max. D.C. Resistance/Km</td>
<td>As per relevant I.S.S</td>
</tr>
</tbody>
</table>

* NB the above parameters are applicable for three core and single core cable, if not otherwise specified.

### 4.5 CABLE CONSTRUCTION:

XLPE underground cable is to be manufactured in continuous catenaries process at controlled elevated temperature and pressure in inert atmosphere with use of suitable materials for XLPE semi-conducting, insulation and XLPE screen. The inner and outer semi-conducting sheaths and main polyethylene insulation between the sheaths are to be simultaneously extruded during the Triple Extrusion Process of manufacturing and main insulation of the Cable is to be extruded unified. The XLPE Cables in this specification does not have any metal sheath and the short circuit rating of the cable will depend on the conductivity and continuity of the strands of the armour wires, which shall be ensured by guarding against corrosion.

### 4.6 CONDUCTOR SCREENING

A semi-conducting cross-linked polyethylene (XLPE) screening shall be extruded over the conductor to act as an electrical shield which together with elimination of the so called “Strand Effect” prevents to a great extent air ionization on the surface of the conductor.

### 4.7 INSULATION:

The main insulation of the Cable shall be extruded unfilled, chemically cross-linked polyethylene (XLPE) inert gas cured satisfying the requirement of ISS: 7098 (Part-II)

### 4.8 INSULATING SCREEN:

The screen shall be made up as given in specifications the metal screen eliminates tangential stress electrostatic field surrounding the conductor and uniform electrical stress in the insulation.

The semi conducting polyethylene (XLPE) screen shall be extruded over the main poly ethylene-insulating wall to prevent partial discharge at the surface of the insulation. The copper tape shall be
wrapped over the semi conducting tape or extrusion as mentioned earlier for 1 core cables. The metal screen so formed around the cores shall be in contact with one another as the cores are laid up at triangular configuration. For single core cable, Aluminium wires armoring shall constitute the metallic part of insulation screen. Conductor screening, insulation and insula

4.9 The mechanical and chemical properties of the materials for semi conducting screens are much more important than their electrical properties, but for obtaining the high overall degree of electrical properties of an E.H.V. cable, the inner and outer semi conducting, sheaths and the main polyethylene insulation between the sheaths shall be simultaneously extruded during the manufacturing, process known as “triple extrusion”. The advantages are:

i) The partial discharge level at the surface of the insulation is brought to a minimum.

ii) There will be no displacement of the semi conducting screen and insulation during expansion and contraction due to load cycles and bending.

iii) The semi conducting screens are easily removable during joining and termination operations.

Note: Manufacturers not having “triple extrusion” process will be disqualified. The Tenderer shall have to produce necessary process line at the time of bidding.

4.10 LAYING UP:

The phase identification of the cores shall be either by colour or numerals as per I.S.S. for 1 core cables only.

<table>
<thead>
<tr>
<th>Core Colour</th>
<th>Numeral</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red</td>
<td>1</td>
</tr>
<tr>
<td>Yellow</td>
<td>2</td>
</tr>
<tr>
<td>Blue</td>
<td>3</td>
</tr>
</tbody>
</table>

The screen cores shall be laid up with interstices filled with PVC fillers and taped a binder tape as to obtain a reasonably circular cable.

4.11 INNER SHEATH:

The cable core shall be supplied with bedding of PVC (Inner sheath) in the form of extruded PVC sheath for 33 KV cables.

4.12 ARMOUR:

The cable shall be wire armoured /steel strip in case of 33KV 1 core cables to insure an adequate return path for the flow of fault current and also provide suitable mechanical protection. Steel wires/aluminum wire / steel strips of required size in requisite number as per special technical parameters shall be laid closely in the spiral formation to protect the circumference of the cable fully and to provide adequate cores section area for flow of maximum fault current within limits of specified temperature rise and duration of fault. Direction of the lay of the armour shall be opposite to that of the cable cores In case of single core cable armour should be of non-metallic material.

4.13 OUTER SHEATH:

A reliable serving shall be necessary for maintaining conductivity of the armour particularly under corrosive condition in the form of jacket. Cable shall be therefore finished with extruded PVC over sheath of thickness as per the special technical parameters.

The quality of PVC over sheath (jacket) shall be ensured for service reliability against moisture intrusion and shall confirm to type ST-2 of IS: 5831.

The colour of the outer sheath shall be follows: For 11 KV cable: GREEN

The sheaths shall be protected against white ants, vermin and termites by suitable, durable and reliable
measures.

The suppliers shall suggest suitable materials for use, in the event of damage to the over sheath to prevent the passage of moisture along the cable.

4.14 **CABLE IDENTIFICATION:**

The following shall be embossed on the outer sheath for the identification.

a) Manufacturer's Name or Trade Mark.
b) Voltage Grade.
c) Nominal section and material of conductors and number of cores.
d) Year of manufacture.
e) Inscription of length of cables at 1.0 m interval.
f) Name of purchaser APDCL;
g) Marking "Power" shall be embossed throughout the length of the cable at 10 m spacing.

h) Type of insulation i.e. XLPE

4.15 **SEALING OF CABLE ENDS:**

The cable ends of the cable in the wooden drum for delivery shall be sealed with heat shrinkable caps.

5.0 **WOODEN DRUMS:**

The cable shall be packed in non-returnable wooden drums.

The following information shall be marked on each drum.

a) Drum identification number.
b) Manufacturer’s name, Trade name / Trade mark, if any.
c) Nominal sectional area of the conductor of the cable.
d) Number of cores
e) Type of cable and voltage grade with cable code
f) Length of cable in cable drum
g) Direction of rotation of drum (by means of an arrow)
h) Approx. Weight: tare: gross:
i) Year and country of manufacture
j) Purchase order number
k) Date of delivery
l) Name of the purchaser: APDCL

Drum shall be proofed against attack by white ant or termite conforming to IS: 10418. The Drums may also be marked with ISI certificate mark, as applicable.

Safe pulling force: 30 N/mm² (for conductor)

8.0 **Tests to be performed as per IS:7098 (part II)or equivalent international specifications:**

Bidder shall have to submit type test report (tested at CPRI Bangalore/Bhopal or equivalent facility) along with the Bid. Bidder will be disqualified for non-submission of type test reports.

8.1 Type test all the test mentioned below are to be made as per details given in IS:10810or equivalent international specifications

a) Test on conductor
i. Tensile test (For aluminum)
ii. Wrapping test for aluminum
iii. Resistance test.

b) Test for armoring wire strips.

c) Test for thickness of insulation and sheath.

d) Physical test for insulation.
   i. Tensile strength and elongation at break
   ii. Ageing in air oven.
   iii. Hot test
   iv. Shrinkage test.
   v. Water absorption (Gravimetric)

e) Physical tests for outer sheath
   i. Tensile strength and elongation at break
   ii. Ageing in air oven.
   iii. Shrinkage test.
   iv. Hot deformation
   v. Heat shock
   vi. Loss of mass in air oven
   vii. Thermal stability
   viii. Thermal Stability

f) Partial discharge test

g) Bending test

h) Dielectric power factor test
   i. As a function voltage
   ii. As a function of temperature

i) Insulation resistance (volume resistivity) test

j) Heating cycle test

k) Impulse with stand test

l) High voltage test

m) Flammability test

8.2 The following test on screen cable shall be performed successfully on the same test sample of completed cable, not less than 10 m. in length between the test accessories.

a) PD test

b) Bending test followed by PD test

c) Di-electric power factor as function of voltage

d) Di-electric power factor as a function of temperature

e) Heating cycle test followed by Di-electric power factor as a function of voltage and PD test.
f) Impulse with stand test and  
g) High voltage test as per paragraph 30 of special technical parameters

If a sample fails in test (g) one more sample shall be taken for this test, preceded by test (b) and (e)

8.3 **Acceptance test**: the following shall constitute acceptance test:
   a) Tensile test (For aluminum)
   b) Wrapping test for aluminum
   c) Conductor resistance test
   d) Test for thickness of insulation and sheath
   e) Hot set test for insulation
   f) Tensile strength and elongation at break test for insulation and outer sheath
   g) PD test (Screen enables) only on full drum length
   h) High voltage test
   i) Insulation resistance (volume resistivity) test
   j) Spark test on extruded un-insulated outer PVC sheath as per provision clause no 3.2 IEC standard (Publication no.229 of 1982)

8.4 **Routine test**:  
The routine test shall be carried out on all cables manufacturer in accordance with this specification. The following routine test shall be made on cable length as specified in ISS.
   a) Conductor resistance test
   b) Partial discharge test on full drum length
   c) High voltage test as per special technical parameters

8.5 **Test witness**:  
   a) All tests shall be performed in presence of purchaser representatives if so desired by the purchaser.
   b) The contractor shall give at least 15 days advance notice for witnessing such tests.

9.0 **Test Certificate**:  
9.1 Certified copies of all routine test carried out at work shall be furnished in 6 copies for approval of the Purchaser.

9.2 The cable shall be dispatched from works only after receipt of Purchaser’s written approval of shop test report.

9.3 Type test certificates of the cable offered shall be furnished. Otherwise the cable shall have to be type tested on similar rating as per clause 10 free of any charges to prove the design.

10.0 **Descriptive literatures test results etc.**

The following details for the cable shall be submitted with bid
   a) Manufacturers catalogue giving cable construction details and characteristics
   b) Manufacturing process in details for cables highlighting the steps of control
      i. Contamination
      ii. Formation of water trees
      iii. Effects of byproducts of cross linking
      iv. Stress control etc.
   c) Cross section drawing of the cable
   d) Cable current ratings for different types of installation inclusive of de-rating factors due to
ambient temperature, grouping etc.

e) Over-load characteristics of the cable without endangering the normal life and electrical quality of the insulation.

f) Complete technical date of the cables.

g) Type test certificate from government testing units/government authorized testing units.

11.0 Guarantee:
The guarantee period should either be 60 (Sixty) month from the date of commissioning or 68 (Sixty eight) month from the date of material received at site. The Bidder shall have to replace the damage cable (electrical damage/physical deformation) within 30 days from reporting.

3. TECHNICAL SPECIFICATION FOR CABLE END TERMINAL KIT (OUTDOOR)

Heat shrinkable termination Kit for 19/33kV XLPE,Cable (1-core,630sq mm) for outdoor should be as per IS: 13753 and relevant international standard. The terminal cable kit should be for the following technical parameter of cable.

3.2.1 SPECIFIC TECHNICAL REQUIREMENTS:
Technical parameters of the cable shall be as follows:

<table>
<thead>
<tr>
<th>SI No</th>
<th>Particulars</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Rated voltage of cable</td>
<td>kV</td>
</tr>
<tr>
<td>2</td>
<td>Type of insulation</td>
<td>-</td>
</tr>
<tr>
<td>3</td>
<td>Core</td>
<td>-</td>
</tr>
<tr>
<td>4</td>
<td>Armoured /Unarmoured</td>
<td>-</td>
</tr>
<tr>
<td>5</td>
<td>Material of Conductor</td>
<td>-</td>
</tr>
<tr>
<td>6</td>
<td>System Voltage</td>
<td>-</td>
</tr>
<tr>
<td>7</td>
<td>Highest System Voltage</td>
<td>kV</td>
</tr>
<tr>
<td>8</td>
<td>Conductor Size</td>
<td>Sq. mm</td>
</tr>
</tbody>
</table>

3.2.2 ELECTRICAL PERFORMANCE FOR TERMINAL KIT

<table>
<thead>
<tr>
<th>SI No</th>
<th>Particulars</th>
<th>Parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>AC Dry withstand voltage</td>
<td>75 kV / 1 minute</td>
</tr>
<tr>
<td>2</td>
<td>DC withstand voltage for 30 minute</td>
<td>As IEC 60 for 33kV systems</td>
</tr>
<tr>
<td>3</td>
<td>Lighting impulse withstand voltage</td>
<td>170/200kV(peak)</td>
</tr>
<tr>
<td>4</td>
<td>Partial Discharge</td>
<td>22.5 kV &lt;20 pc</td>
</tr>
<tr>
<td>5</td>
<td>Standard tail length for outdoor</td>
<td>1200 mm</td>
</tr>
</tbody>
</table>

3.2.3 KIT COMPONENT

<table>
<thead>
<tr>
<th>SI No</th>
<th>Particulars</th>
<th>Qnty</th>
</tr>
</thead>
</table>
### TECHNICAL SPECIFICATION FOR M.S. CHANNEL

#### 1.0 SCOPE:

This specification covers the design, manufacture, testing at manufacturer's works, transport to site, insurance, storage, erection and commissioning of M.S. Cross Arm and Channel used for lines and S/S complete with all accessories as specified.

#### 2. Standards

The M.S Cross Arm and channel supplied under this specification shall conform to the latest issue of the relevant Indian Standards IS – 226:1975, Regulations etc. except where specified otherwise.

The rolling and cutting tolerance for steel product conforming to IS: 266 shall be those specified in the IS: 1852-1973 with latest revision.

#### 3.0 GENERAL REQUIREMENT:

i. The cross arm shall be fabricated grade of mild steel of channel section as per requirement.

ii. All steel members and other parts of fabricated material as delivered shall be free of warps, local deformation, unauthorized splices, or unauthorized bends.

iii. Bending of flat strap shall be carried out cold. Straightening shall be carried out by pressure and not by hammering. Straightness is of particular importance if the alignment of bolt holes along a member is referred to its edges.

iv. Holes and other provisions for field assembly shall be properly marked and cross referenced. Where required, either by notations on the drawing or by the necessity of proper identification and fittings for field assembly, the connection shall be match marked.

v. A tolerance of not more than 1mm shall be permitted in the distance between the center lines of bolt holes. The holes may be either drilled or punched and, unless otherwise stated, shall be not more than 2mm greater in diameter than the bolts.

vi. When assembling the components force may be used to bring the bolt holes together (provided neither members nor holes are thereby distorted) but all force must be removed before the bolt is inserted. Otherwise strain shall be deemed to be present and the structure may be rejected even though it may be, in all other respects, in conformity with the specification.

vii. The back of the inner angle irons of lap joints shall be chamfered and the ends of the members cut where necessary and such other measures taken as will ensure that all members can be bolted together without strain or distortion. In particular, steps shall be taken to relieve stress in cold worked steel so as to prevent the onset of embitterment during galvanizing.

viii. Similar parts shall be interchangeable.

ix. Shapes and plates shall be fabricated and assembled in the shop to the greatest extent practicable. Shearing flame cutting and chipping shall be done carefully, neatly and accurately. Holes shall be cut, drilled or punched at right angles to the surface and shall not be made or enlarged by burning. Holes shall be clean-cut without torn or ragged edges, and burrs resulting from drilling or reaming operations shall be removed with the proper tool.

x. Shapes and plates shall be fabricated to the tolerance that will permit field erection within tolerance, except as otherwise specified. All fabrication shall be carried out in a neat and workmanlike manner so as to facilitate cleaning.

---

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Terminal Lug</td>
<td>1 No</td>
</tr>
<tr>
<td>2</td>
<td>Heat Shrinkable Adhesive Lined Terminal Sleeve</td>
<td>1 No</td>
</tr>
<tr>
<td>3</td>
<td>Lug Sealing Tape / Mastic</td>
<td>1 Strip</td>
</tr>
<tr>
<td>4</td>
<td>Rain Shed for 11 KV System</td>
<td>2 Nos.</td>
</tr>
<tr>
<td>5</td>
<td>Anti Tracking Sleeve</td>
<td>1 No</td>
</tr>
<tr>
<td>6</td>
<td>Stress Control Sleeve</td>
<td>1 No</td>
</tr>
<tr>
<td>7</td>
<td>Stress Control Mastic</td>
<td>1 Strip</td>
</tr>
<tr>
<td>8</td>
<td>Constant Force Spring Roll</td>
<td>1 No</td>
</tr>
<tr>
<td>9</td>
<td>Copper Braid for Screen Earthing</td>
<td>1 No</td>
</tr>
<tr>
<td>10</td>
<td>Worm Drive Clip</td>
<td>1 No</td>
</tr>
<tr>
<td>11</td>
<td>Adhesive Line Gland Sleeve</td>
<td>1 No</td>
</tr>
<tr>
<td>12</td>
<td>Tinned Copper Braid duly fitted with</td>
<td></td>
</tr>
</tbody>
</table>
painting, galvanizing and inspection and to avoid areas in which water and other matter can lodge.

xi. Contact surfaces at all connections shall be free of loose scale, dirt, burrs, oil and other foreign materials that might prevent solid seating of the parts.

xii. Welded joints not permissible.

xiii. The rolling and cutting tolerance for steel product conforming to IS: 266 shall be those specified in the IS: 1852-1973 with latest revision.

all dimensions are subject to the following tolerances:

a) dimensions up to and including 50mm: +1mm: and
b) dimensions greater than 50mm: +2%

xiv. The channel cross arm shall be properly brushed to make it free from rust.

All ferrous parts including all sizes of nuts, bolts, plain and spring washers, support channels, structures, shall; be hot dip galvanized conforming to latest version of IS:2629 or any other equivalent authoritative standard.

The weight of zinc deposited shall be in accordance with that stated in Standard IS 2629 and shall not less than 0.61kg/m² with a minimum thickness of 86 microns for items of thickness more than 5mm, 0.46kg/m² (64 microns) for items of thickness between 2mm and 5mm and 0.33kg/m² (47 microns) for items less than 2mm thick.

xv. The raw materials and fabrication thereof in respect of cross arm shall be furnished along with dimension.

xvi. The hole for fixing of insulator and pole clamp shall be provided as per requirement.

xvii. One copy of the drawing of cross arm for each size shall be furnished along with the technical bid.

a. REQUIRED TECHNICAL SPECIFICATION FOR MS CHANNEL CROSS ARM

<table>
<thead>
<tr>
<th>Sl.no.</th>
<th>Description</th>
<th>Particular</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Type of cross arm</td>
<td>G.I Channel</td>
</tr>
<tr>
<td>2</td>
<td>Size</td>
<td>100 x 50 x 6</td>
</tr>
<tr>
<td>3</td>
<td>Material</td>
<td>Mild Steel channel</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Breath</td>
<td>100 mm</td>
</tr>
<tr>
<td>6</td>
<td>Width</td>
<td>50 mm</td>
</tr>
<tr>
<td>7</td>
<td>Thickness</td>
<td>6 mm</td>
</tr>
<tr>
<td>8</td>
<td>Hole for fixing of insulator</td>
<td>26 mm</td>
</tr>
<tr>
<td>9</td>
<td>Center to center distance of hole</td>
<td>1525 mm</td>
</tr>
<tr>
<td>10</td>
<td>Hole for pole clamp</td>
<td>18 mm</td>
</tr>
<tr>
<td>11</td>
<td>Weight</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Standard applicable</td>
<td>IS: 266; IS: 1852-1973 or equivalent international specifications</td>
</tr>
</tbody>
</table>

5. TECHNICAL SPECIFICATION FOR CAST IRON EARTH PIPE

1.0 Scope

This specification covers design, manufacture, testing, transport to site, insurance, storage, erection and commissioning of the cast iron earth pipe for use on line & substation as earthing pipe.

2.0 Standard

The Earth pipe shall comply with the Indian Standard specification IS: 1729/1964 and as amended from time to time except where they conflict with the specific requirements in this specification.

3.0 Manufacture

Metal used for the manufacture of pipes shall be good quality cast iron.

Casting shall be stripped with all precautions necessary to avoid wrapping and shrinkage defects. They shall be free from defects which effect the use of castings. By agreement between the purchaser and the manufacturer, minor defects may be rectified.

Pipes shall be such that they could be cut, drilled or machines.

Bolts, nuts & washers shall be made of Steel and well galvanized. The bolts shall be of 200 mm length, 16 mm diameter with 2(two) nos. plain washers, one locknut & one check nut. Threaded length of the bolts should be 50 mm.

4.0 Sizes

Dimensions of pipe & socket shall be conform to the sizes shown below and as per drawing enclosed:

| Nominal length of the pipe with socket | 1800 mm |
| Nominal diameter of pipe              | 100 mm  |
| External diameter of pipe             | 110 mm  |
Thickness of pipe                   5 mm  
Projection of spigot bead       3 mm  
Width of spigot bead           15 mm  
Internal dia of socket         129 mm  
Thickness of socket             6 mm  
Internal depth of socket       70 mm  
Internal Radius of socket      5 mm  
Width of grooves of socket     10 mm  
External dia of grooves socket 155 mm  
Depth of grooves of socket     5 mm  
Nominal weight of pipe (Exclusive of ear)  21.67 Kg  

5.0 Tolerance  
The Tolerance of the 100 mm nominal diameter pipe shall be ±3.5 mm  
The Tolerance of pipe thickness shall be - 15 percent  
The Tolerance of length of the pipe shall be - ± 20mm  
The Tolerance of weight of the pipe shall be - 10 Percent  

Pipes weighing more than the nominal weight may be accepted provided they comply in every other respect with the requirements of this standard.

6.0 TEST  
Hammer test: Each pipe when tested for soundness by striking with a light hand hammer shall emit a clear ringing sound.  
Hydraulic test: If so required by the purchaser, pipe shall be tested hydraulically at a pressure of 0.4 kg/cm² without showing any sign of leakage, sweating or other defect of any kind. The pressure shall be applied internally and shall be maintained for not less than 15 seconds. The tests shall be conducted before coating of pipe.

7.0 Inspection  
All tests and inspection shall be carried out at the place of manufacturers unless otherwise agreed by the purchaser and the manufacturer at the time of purchase. A manufacturer shall afford the inspector representing the purchaser or third party nominee all reasonable facilities without charge to satisfy that the materials are being purchased as per specification. The purchaser reserves the right to have the test carried out at his cost by an independent agency, whenever there is dispute regarding the quality of materials supplied. All incoming consignment shall be checked at stores.

8.0 Coating  
Normally pipes, unless specially ordered, shall be supplied free of coating on surfaces.

9.0 Marking  
Each pipe shall have the Trade mark of the manufacturer and nominal size suitably marked on it. The pipe marked with the ISI certificate mark, shall be preferred. The equipments shall be marked with name of manufacturer, year and name of project.

6. TECHNICAL SPECIFICATION FOR G.I. WIRE  
a) Scope  
This specification covers the manufacturing, testing at works, transport to site, insurance, storage, erection and commissioning of Galvanised Iron Wire of sizes 4 mm and 5 mm diameter.

1.0 General requirements  
It relating to the supply of mild steel wire shall be as per IS: 1387/1967 and the wire shall be drawn from the wire rods conforming to IS: 7887/1975. 
The requirements for chemical composition for the wires shall conform to IS:7887/1975. 
Mild steel wire for General Engineering purpose shall be of following sizes:  
   I) 5mm - diameter (6 SWG)  
Tolerance permitted on the diameter of wire shall be as per Table -1 of IS:280/1978.

7.0 Climatic Conditions  
The cross arms should be suitable for the climatic condition mentioned in these bidding documents:

8.0 Mechanical Properties  
4.1 Tensile Test: Tensile strength of wire when tested in accordance with IS:
4.2 Wrapping Test: Wires shall be subjected to wrapping test in accordance with IS: 1755-1961. The wire shall withstand without breaking or splitting, being wrapped eight times round its own diameter and subsequently straightened.

9.0 Surface finish

a. The wire shall have galvanized finishes. The galvanized coating of steel wire shall conform to the requirements for anyone of the types of coatings given in IS: 4826-1968 as per agreement with the purchaser.

b. The coating test for finishes other than galvanized, copper coated or tinned shall be subject to between the purchaser and the manufacturer.

c. Unless otherwise agreed to the method of drawing representative samples of the material and the criteria for conforming shall be as prescribed in Appendix (A) of IS: 280/1978.

d. All finished wires shall be well and cleanly drawn to the dimensions specified. The wire shall be sound, free from splits, surface flaws, rough jagged and imperfect edges and other harmful surface defects.

e. Each coil of wire shall be suitably bound and fastened compactly and shall be protected by suitably wrapped.

10.0 Marking

Each coil of wire shall be marked legibly with the finish size of wire, lot number and trade mark of the name of the manufacturer. The material may also be marked with the ISI certification mark and name of the project TDF.

11.0 INSPECTION

Inspection may be carried out by the purchaser or third party nominee at any stage of manufacture. The supplier shall grant free access to the purchaser's representative or third party nominee at a reasonable time when the work is in progress. Inspection and acceptance of any equipment under this specification by the purchaser shall not relieve the supplier of his obligation of furnishing equipment in accordance with the specification and shall not prevent subsequent rejection if the equipment is found defective.

07. TECHNICAL SPECIFICATION FOR 11 KV DANGER NOTICE PLATE

1.0 SCOPE:

This specification covers Danger Notice Plates to be displayed in accordance with rule No.35 of Indian Electricity Rules, 1956.

2.0 APPLICABLE STANDARDS.

Unless otherwise modified in this specification, Danger Notice Plates shall comply with IS:-1982 or the latest version thereof.

3.0 DIMENSIONS.

Size of Danger Notice Plates as follows are recommended
For display at 33KV installation - 250 x 200 mm.

The corners of the plate shall be rounded off.
The location of fixing holes as shown in Figs. 1 to 4 is provisional and can be modified to suit the requirements at site.

4.0 LETTERINGS

All letterings shall be centrally spaced. The dimensions of the letters, figures and their respective position shall be as shown in figs. 1 to 4. The size of letters in the words in each language and spacing between them shall be so chosen that these are uniformly written in the space earmarked for them.

5.0 LANGUAGES
I. Under Rule No. 35 of Indian Electricity Rules, 1956, the owner of every medium, and extra high voltage installation is required to affix permanently in a conspicuous position a danger notice in Hindi or English and in addition, in local language, with the sign of skull and bones.

II. The type and size of lettering to be done in Hindi is indicated in the specimen danger notice plates shown in fig: 2 and 4 and those in English are shown in fig. 1 and 3.

III. Adequate space has been provided in the specimen danger notice plates for having the letterings in local language for the equivalent of Danger, 33000 'Volts'

6.0 MATERIAL AND FINISH

The plate shall be made from mild sheet of at least 1.6 mm thick and vitreous enameled white, with letters, figures and the conventional skull and cross-bones in signal red colour (refer IS: 5-1978) on the front side. The rear side of the plate shall also be enameled.

7.0 TESTS.

The following tests shall be carried out.

ii) Dimensional check as per IS: 2551-1982.
iii) Test for weatherproof capacity as per IS: 8709-1977 (or its latest version).

8.0 MARKING.

Maker’s name and trade mark and the purchaser's name shall be marked in such a manner and position on the plates that it does not interfere with the other information.

9.0 PACKING.

The plates shall be packed in wooden crates suitable for rough handling and acceptable for rail/road.

10. Operating Mechanism: The isolators should be assembled on M.S. Galvanised channel base with holes suitable for fixing on the mounting structures and should be complete with the follows:

08. TECHNICAL SPECIFICATION FOR P.G CLAMP FOR WOLF CONDUCTOR

1.0 Scope:

The scope covers design, manufacturing, testing at work, transport at site, insurance, storage, erection and commissioning of P.G. Clamp suitable for Conductor size Wolf/Raccoon/Weasel/3 Bolt Type strictly conforming to IS : 2121 and Galvanising conforming to IS : 2633 as per the following:

2.0 Standards:

- P.G. Clamps suitable for conductor size, wolf/raccoon/weasel 3 bolt types strictly conforming to IS : 2121 and galvanizing conforming to IS: 2633 as per the following:
- P.G. clamp body to be made from aluminium alloy
- Clamps nuts and bolt and washer should be made of hot deep galvanized steel
- Spring washer be made of electro-galvanize special steel.
4.0 **Climatic Conditions.**

a) Maximum temperature of air in shade  
   40°C
b) Minimum temperature of air in shade  
   2°C
c) Maximum temperature of air in Sun  
   40°C
d) Maximum Humidity  
   93%
e) Average number of thunderstorm days  
   45
f) Average numbers of dust storms per annum  
   10
g) Maximum rainfall/annum  
   3500 mm
h) Average rainfall  
   2280 mm
i) Wind Pressure  
   97.8 Kg/Sq.mm
j) Altitude above MSL  
   100 m to 1000 m

5.0 **INSPECTION**

Inspection may be carried out by the purchaser or third party nominee at any stage of manufacture. The supplier shall grant free access to the purchaser’s representative or third party nominee at a reasonable time when the work is in progress. Inspection and acceptance of any equipment under this specification by the purchaser shall not relieve the supplier of his obligation of furnishing equipment in accordance with the specification and shall not prevent subsequent rejection if the equipment is found defective.

9. TECHNICAL SPECIFICATION FOR POLYMERIC 11 KV PIN INSULATOR

1.0 **Scope**

This specification covers design, manufacture, testing at manufacturer’s works, transport to site, storage, insurance, erection and commissioning of polymeric 33 KV pin insulator for 33 kV lines.

2.0 **Standard**

Polymeric compact insulator with suitable groove in upper pin and long threads in lower part of the pin with nuts, suitable for 33 KV lines shall be conforming to IEC : 1109 with its latest amendments and revision and having minimum mechanical failing load of 10 K.N. Insulators conforming to any other internationally accepted standards which ensure equal or higher quality than the standard mentioned would also be acceptable. A high class quality, corrosion resistant, fiberglass reinforced rod is the core of every insulator with ultimate mechanical strength at least twice the maximum working load.

3.0 **General Requirements**

4.0 The composite polymer insulator should be uni-body design and injection molded directly to the rod and sealed to the end fittings with bead of silicon to give the insulator high dielectric strength and protect it from all environmental conditions. The design of the insulator shall be such that stress due to expansion and contraction in any part of the insulator shall not lead to deterioration.

5.0 The insulator shall be in one piece.

The dimensions of the pins insulator shall be as follows:

- a) Composite insulator length  
  33 KV  
  310 mm
- b) Failing minimum load  
  10 KN
- c) Creepage distance (min) mm  
  925 mm
- d) Dry power frequency 1 min withstand voltage  
  70 kV (RMS)
6.0 Tests

Pin shall comply with the following tests.

1.1 Type test:
   a) Visual examination test
   b) Verification of dimensions
   c) Checking of threads
   d) Galvanizing test
   e) Mechanical strength tests

1.2 Routine test:
   a) Visual examination test

1.3 Acceptance test:
   Checking of threads on heads
   a) Galvanizing test
   b) Mechanical test

7.0 Inspection

All tests and inspections shall be carried out at the place of manufacturers unless otherwise agreed by the purchaser and the manufacturers at the time of purchase. A manufacturer shall afford the inspector or third party nominee representing the purchaser all reasonable facilities, without charge to satisfy that the materials are being purchased as per specification. The purchaser reserved the right to have the test carried out at his cost by an independent agency, whenever there is dispute regarding the quality of the materials supplied.

8.0 Marking

The pins shall be marked with name of manufacturer, year and name of project.

N.B: ANY TECHNICAL SPECIFICATION FOUND MISSING/ NOT PROVIDED IN THE BID MAY BE COLLECTED FROM THE O/O THE CGM (PP&D), APDCL.
SECTION :7

GUARANTEED TECHNICAL PARTICULARS
1. **GUARANTEED TECHNICAL PARTICULARS FOR C.I. PIPE (EARTH)**
   (TO BE FILLED BY THE BIDDER)

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Length of Pipe</td>
<td>:</td>
</tr>
<tr>
<td>2.</td>
<td>Diameter of Pipe</td>
<td>:</td>
</tr>
<tr>
<td>3.</td>
<td>External Dia of Pipe</td>
<td>:</td>
</tr>
<tr>
<td>4.</td>
<td>Thickness of Pipe</td>
<td>:</td>
</tr>
<tr>
<td>5.</td>
<td>Internal Dia of Socket</td>
<td>:</td>
</tr>
<tr>
<td>6.</td>
<td>Thickness of Socket</td>
<td>:</td>
</tr>
<tr>
<td>7.</td>
<td>Internal Depth of Socket</td>
<td>:</td>
</tr>
<tr>
<td>8.</td>
<td>Internal Radius of Socket</td>
<td>:</td>
</tr>
<tr>
<td>9.</td>
<td>Width of Grooves of Socket</td>
<td>:</td>
</tr>
<tr>
<td>10.</td>
<td>External Dia of Grooves Socket</td>
<td>:</td>
</tr>
<tr>
<td>11.</td>
<td>Weight of Pipe</td>
<td>:</td>
</tr>
<tr>
<td>12.</td>
<td>Hydraulic Test</td>
<td>:</td>
</tr>
<tr>
<td>13.</td>
<td>Guarantee</td>
<td>:</td>
</tr>
</tbody>
</table>

2. **GUARANTEED TECHNICAL PARTICULARS FOR G.I. WIRE**
   (TO BE FILLED BY THE BIDDER)

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>A.</td>
<td>G.I.Wire (5 mm dia)</td>
<td>:</td>
</tr>
<tr>
<td>1.</td>
<td>Size of Wire</td>
<td>:</td>
</tr>
<tr>
<td>2.</td>
<td>Tolerance in size of wire</td>
<td>:</td>
</tr>
<tr>
<td>3.</td>
<td>Tensile strength</td>
<td>:</td>
</tr>
<tr>
<td>4.</td>
<td>Wrapping list</td>
<td>:</td>
</tr>
<tr>
<td>5.</td>
<td>Galvanising conforming to IS : 4826 – 1968</td>
<td>:</td>
</tr>
<tr>
<td>6.</td>
<td>Guarantee</td>
<td>:</td>
</tr>
<tr>
<td>Sl.No.</td>
<td>Description</td>
<td>Particulars</td>
</tr>
<tr>
<td>-------</td>
<td>-------------------------------------------------------</td>
<td>----------------------</td>
</tr>
<tr>
<td>1</td>
<td>Manufacturer’s Name &amp; Address</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Type of Insulator</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Standards to which insulator will conform</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Dimensions</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Hole diameter (mm)</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Color glaze</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Dry power Frequency Withstand Voltage (kV)</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Wet power Frequency Withstand Voltage (kV)</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Dry power Frequency Flashover Voltage (kV)</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Wet power Frequency Flashover Voltage (kV)</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Power Frequency Puncture Withstand Voltage (kV)</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Minimum failing load (kN)</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Minimum Creepage Distance (mm)</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Weight per piece (Kg)</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Temperature cycle test (as per ISS)</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Porosity test (as per ISS)</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Tolerance, if any (as per ISS)</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>PERFORMANCE GUARANTEE</td>
<td></td>
</tr>
</tbody>
</table>
### 3. GUARANTEED TECHNICAL PARTICULARS FOR XLPE INS. ARMOURED CABLE

*(TO BE FILLED BY THE BIDDER)*

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Particulars</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Manufacturer’s Name &amp; Address</td>
</tr>
<tr>
<td>2</td>
<td>Voltage Grade</td>
</tr>
<tr>
<td>3</td>
<td>Core &amp; Cross Section</td>
</tr>
<tr>
<td>4</td>
<td>Type &amp; Designation (as per ISS)</td>
</tr>
<tr>
<td>5</td>
<td>List of Standards applicable Suitable for system with</td>
</tr>
<tr>
<td></td>
<td>(a) Service Voltage</td>
</tr>
<tr>
<td></td>
<td>(b) Neutral Earthing</td>
</tr>
<tr>
<td>6</td>
<td>Maximum Conductor temperature</td>
</tr>
<tr>
<td></td>
<td>(a) Continuous (in Deg. C)</td>
</tr>
<tr>
<td></td>
<td>(b) Short time (in Deg.C)</td>
</tr>
<tr>
<td>7</td>
<td>Conductor</td>
</tr>
<tr>
<td></td>
<td>(a) Material to IS-8130(Class/Grade)</td>
</tr>
<tr>
<td></td>
<td>(b) Size (Sq.mm.)</td>
</tr>
<tr>
<td></td>
<td>(c) No./Nominal diameter of wires in each conductor (No./mm.)</td>
</tr>
<tr>
<td></td>
<td>(d) Form of Conductor (Circular/shaped)</td>
</tr>
<tr>
<td>8</td>
<td>Shielding/screening on Conductor</td>
</tr>
<tr>
<td></td>
<td>(a) Material</td>
</tr>
<tr>
<td></td>
<td>(b) Type</td>
</tr>
<tr>
<td></td>
<td>(c) Whether thermosetting</td>
</tr>
<tr>
<td>9</td>
<td>Insulator</td>
</tr>
<tr>
<td></td>
<td>(a) Material</td>
</tr>
<tr>
<td></td>
<td>(b) Thickness(mm.)</td>
</tr>
<tr>
<td></td>
<td>(c) Whether triple co-extrusion with radiant curing process</td>
</tr>
<tr>
<td>10</td>
<td>Shielding/screening on insulation</td>
</tr>
<tr>
<td></td>
<td>(a) Material</td>
</tr>
<tr>
<td></td>
<td>(b) Type</td>
</tr>
<tr>
<td></td>
<td>(c) Thickness (mm.)</td>
</tr>
<tr>
<td></td>
<td>(i) Non-metallic</td>
</tr>
<tr>
<td></td>
<td>(ii) Metallic</td>
</tr>
<tr>
<td>11</td>
<td>Inner-sheath</td>
</tr>
<tr>
<td></td>
<td>(a) Material</td>
</tr>
<tr>
<td></td>
<td>(b) Type</td>
</tr>
<tr>
<td></td>
<td>(c) Thickness (mm.)</td>
</tr>
<tr>
<td></td>
<td>(d) Extruded/Wrapped</td>
</tr>
<tr>
<td></td>
<td>(e) Approx. Outside diameter over sheath(mm)</td>
</tr>
<tr>
<td>12</td>
<td>Armouring</td>
</tr>
<tr>
<td></td>
<td>(a) Material</td>
</tr>
<tr>
<td></td>
<td>(b) Size</td>
</tr>
<tr>
<td></td>
<td>(c) D.C. resistance at 20 °C(Ohm/Km.)</td>
</tr>
<tr>
<td></td>
<td>(d) A.C. resistance at 20 °C</td>
</tr>
<tr>
<td>13</td>
<td>Overall Sheath:</td>
</tr>
<tr>
<td></td>
<td>(a) Material</td>
</tr>
<tr>
<td></td>
<td>(b) Type</td>
</tr>
<tr>
<td></td>
<td>(c) Thickness (mm.)</td>
</tr>
<tr>
<td>14</td>
<td>Approx. Overall dia. of the Cable (mm.)</td>
</tr>
<tr>
<td>15</td>
<td>Standard Drum length with tolerance (Mtr.)</td>
</tr>
<tr>
<td>16</td>
<td>Net Weight of Cable (approx.) Kg/Km.</td>
</tr>
<tr>
<td>----</td>
<td>------------------------------------</td>
</tr>
<tr>
<td>17</td>
<td>Continuous current rating for standard condition, laid direct</td>
</tr>
<tr>
<td></td>
<td>(a) In ground at temp. 30°C</td>
</tr>
<tr>
<td></td>
<td>(b) In duct at temp. 20°C</td>
</tr>
<tr>
<td></td>
<td>(c) In air at temp. 40°C</td>
</tr>
<tr>
<td>18</td>
<td>Charging current at rated system voltage</td>
</tr>
<tr>
<td>19</td>
<td>Short Circuit Current at rated system voltage</td>
</tr>
<tr>
<td></td>
<td>(a) for 1 sec.</td>
</tr>
<tr>
<td></td>
<td>(b) for 0.5 sec.</td>
</tr>
<tr>
<td>20</td>
<td>Electrical Parameters</td>
</tr>
<tr>
<td></td>
<td>(a) Maxm. D.C. resistance/Km of conductor at 20°C</td>
</tr>
<tr>
<td></td>
<td>(b) AC resistance/kilometer (approx.)</td>
</tr>
<tr>
<td></td>
<td>(c) Reactance/kilometer (approx.)</td>
</tr>
<tr>
<td></td>
<td>(d) Capacitance/Kilometer(approx.)</td>
</tr>
<tr>
<td></td>
<td>(e) Di-electric losses at rated(Uo/U) system KV, 50 cycles/sec, in watts/KV/Phase)</td>
</tr>
<tr>
<td></td>
<td>(i) Tan-delta at 0.5 Uo</td>
</tr>
<tr>
<td></td>
<td>(ii) Tan-Delta at Uo</td>
</tr>
<tr>
<td></td>
<td>(iii) Tan-Delta at 1.5 Do</td>
</tr>
<tr>
<td></td>
<td>(iv) Tan-Delta at 2 Uo</td>
</tr>
<tr>
<td>21</td>
<td>Vol. Resistively at 27°C (Ohm/Cm)</td>
</tr>
<tr>
<td>22</td>
<td>Recommended minimum bending radius</td>
</tr>
<tr>
<td>23</td>
<td>Derating factor for following ambient temperature in Air/Ground.</td>
</tr>
<tr>
<td></td>
<td>(a) at 30°C</td>
</tr>
<tr>
<td></td>
<td>(b) at 35°C</td>
</tr>
<tr>
<td></td>
<td>(c) at 45°C</td>
</tr>
<tr>
<td></td>
<td>(d) at 50°C</td>
</tr>
<tr>
<td>24</td>
<td>Type test results of the similar Cable to be furnished with Tender as specified under Clause -8.0 of the Spec.</td>
</tr>
<tr>
<td></td>
<td>(a) Tests on Conductor:</td>
</tr>
<tr>
<td></td>
<td>(i) Tensile test (for aluminum)</td>
</tr>
<tr>
<td></td>
<td>(ii) Wrapping test (for aluminum)</td>
</tr>
<tr>
<td></td>
<td>(iii) Resistance test</td>
</tr>
<tr>
<td></td>
<td>(b) Test for armoring wires/strips.</td>
</tr>
<tr>
<td></td>
<td>(c) Test for thickness of insulation &amp; sheath</td>
</tr>
<tr>
<td></td>
<td>(i) Tensile strength &amp; elongation at break</td>
</tr>
<tr>
<td></td>
<td>(ii) Ageing in air oven</td>
</tr>
<tr>
<td></td>
<td>(iii) Hot test</td>
</tr>
<tr>
<td></td>
<td>(iv) Shrinkage test</td>
</tr>
<tr>
<td></td>
<td>(v) Water absorption (Gravimetric)</td>
</tr>
<tr>
<td></td>
<td>(d) Physical:</td>
</tr>
<tr>
<td></td>
<td>(i) Tensile strength &amp; elongation at break</td>
</tr>
<tr>
<td></td>
<td>(ii) Ageing in air oven</td>
</tr>
<tr>
<td></td>
<td>(iii) Shrinkage test</td>
</tr>
<tr>
<td></td>
<td>(iv) Hot deformation</td>
</tr>
<tr>
<td></td>
<td>(v) Loss of mass in air oven</td>
</tr>
<tr>
<td></td>
<td>(vi) Heat shock</td>
</tr>
<tr>
<td></td>
<td>(vii) Thermal stability</td>
</tr>
<tr>
<td></td>
<td>(e) Partial discharge test</td>
</tr>
<tr>
<td></td>
<td>(f) Banding test</td>
</tr>
<tr>
<td></td>
<td>(g) Di-electric power factor test</td>
</tr>
<tr>
<td></td>
<td>(i) As a function of Voltage</td>
</tr>
<tr>
<td></td>
<td>(ii) As a function of temperature</td>
</tr>
<tr>
<td></td>
<td>(h) Insulation Resistance (Volume receptivity)* Test</td>
</tr>
<tr>
<td></td>
<td>(i) Heating Cycle test</td>
</tr>
<tr>
<td></td>
<td>(j) Impulse with stand test</td>
</tr>
<tr>
<td>(i) High Voltage test</td>
<td></td>
</tr>
<tr>
<td>-----------------------</td>
<td>---</td>
</tr>
<tr>
<td>(j) Flammability test</td>
<td></td>
</tr>
</tbody>
</table>

(a) Tests on Conductor:
- (i) Tensile test (for aluminum)
- (ii) Wrapping test (for aluminum)
- (iii) Resistance test

(b) Test for armoring wires/strips.

(c) Test for thickness of insulation & sheath
- (i) Tensile strength & elongation at break
- (ii) Ageing in air oven
- (iii) Hot test
- (iv) Shrinkage test
- (v) Water absorption (Gravimetric)

(d) Physical:
- (i) Tensile strength & elongation at break
- (ii) Ageing in air oven
- (iii) Shrinkage test
- (iv) Hot deformation
- (v) Loss of mass in air oven
- (vi) Heat shock
- (vii) Thermal stability

(e) Partial discharge test

(f) Banding test

(g) Di-electric power factor test
- (i) As a function of Voltage
- (ii) As a function of temperature

(h) Insulation Resistance (Volume receptivity)* Test
- (i) Heating Cycle test
- (j) Impulse with stand test

GTPs for other major items like XLPE Cable Kit (Outdoor), L.A. etc. are to be submitted as per the Technical Specification given in Section 6.
SECTION:8

General Conditions of Supply & Erection of APDCL
GENERAL CONDITIONS
OF SUPPLY AND ERECTION

1.0 INTRODUCTION:
1.1 Assam Power Distribution Company Limited was constituted under the provisions of Electricity Act, 2003 and is a public sector company registered under ‘Company Act,1956’. It was formed out of Assam State Electricity Board in 2003 and was notified as the State Electricity Distribution Utility. It is entrusted with the responsibility of promoting the co-ordinated development of power distribution and its efficient management in the entire state of Assam.
1.2 Assam Power Distribution Company Limited hereinafter referred to as APDCL, has its Corporate Office at Bijulee Bhawan, Paltanbazar, Guwahati, Assam. For further information, one may refer to APDCL’s official web site: www.laedcl.gov.in.
1.3 Assam is one of the seven states of North East India and its boundary encompasses almost the entire valleys of Brahmaputra and Barak rivers. The state is well connected with rest of the country by broad gauge railways and several national highways, one of which is a part of the four lane east-west corridor. It also has important airports at Guwahati, Jorhat, Silchar, Tezpur & Dibrugarh.
1.4 Relevant guidelines and rules connected with all departmental supply and erection works have been laid down in this document General Conditions of Supply & Erection of Assam Power Distribution Company Limited adopted in 2009. This document supersedes earlier conditions of contract. It is intended that contractual clauses of this document will be generally followed in all contractual works. Any modification of a contractual clause considering requirement of a particular project shall be made in the NIT/ Tender document for the specific project.

2.0 DEFINITION OF TERMS:
2.1 The following terms appearing in the General Conditions of Supply & Erection of Assam Power Distribution Company Limited shall have the meaning herein indicated unless there is anything repugnant in the subject or context.
2.2 “Purchaser/ Employer” shall mean the Assam Power Distribution Company Limited (in short APDCL) and its assignees.
2.3 “Contractor/Supplier/Owner” shall mean the tenderer/ bidder whose tender/ bid has been accepted by the “Purchaser/ Employer” and shall include the bidder’s/ tenderer’s legal personal representatives, successors and assignees.
2.4 “Engineer” shall mean the Officer in-charge of Project/ Work/ purchase for the supply and/ or erection contract or such other Officer or Offices as may be duly authorized and appointed in writing by the Purchaser to act as “Engineer” for the purpose of the contract.
2.5 “Sub-Contractor” shall mean the person 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 “Purchaser/ Employer” and the legal representatives, successors and assignees of such person.
2.6 “Materials” or “Works” shall mean and include plant and materials to be provided and work to be done by the contractor under contract.
2.7 “Contract” shall mean and include the general conditions, specifications, schedules, drawings, tender forms, bidding schedules, covering letter, schedule of prices, any special conditions applying to the particular contract specification, amendments if any, letter of acceptance and contract agreement to be entered into.
2.8 “Contract period” means the period from the contract commencement date to the date on which the warranty period is over. Date of acceptance of ‘Purchase/ Work Order’ shall be treated as the “date of commencement of contract”.
2.9 “Specification” shall mean the relevant ISS/ IEC specification with up to date amendments and revisions and/or APDCL specification wherever applicable.
2.10 “Site” shall mean the site of the station, where proposed work is to be executed under the contract and to which the plant and machinery are to be delivered and any other places as may be specifically designated in the contract as forming part of the site.
“Consignee” shall mean the Executive Engineer/ Senior Manager or any other authorized Officer performing the duty of the consignee as specified in the Order.

“Commercial use” shall mean use in the work which the contract contemplates or to which it is to be commercially capable.

“Day” shall mean a calendar day.

“Month” shall mean a calendar month.

“Writing” shall include any manuscript, type written or printed statement properly signed.

“Persons” shall include firm, company, corporation and other body of persons whether incorporated or not.

“Word” indicating in the singular only shall also include the plural and vice versa where the context requires.

“Bid” will mean “Tender”

3.0 PREPARATION OF TENDER I BID:

3.1. DEFINITION OF TENDERER / BIDDER:

3.1.1. When the tenderer is a firm, the names and addresses of the partners must be indicated and a copy of the certificate of registration with the concerned Registrar of firms should be enclosed.

3.1.2. When the tenderer is a Company, the company registration document along with Memorandum of Association shall be submitted.

3.1.3. When the tenderer is an individual carrying on business in a firm’s name, the tender should be submitted by the owner of the firm, who may describe himself as carrying on business in the firm’s name.

3.1.4. When the tenderer is a Joint Venture (JV) of two or more firms as partners, one of the partners shall be legally authorized as the lead partner for the purpose of submitting the tender, incur liabilities; receive payments and instructions on behalf of the others. A copy of the registered agreement, executed on Non judicial stamp paper, shall be submitted with the tender. However, in case of a successful tender, the agreement shall be signed by all the partners, so as to be legally binding on all the partners.

3.2. PURCHASE OF TENDER / BIDDING DOCUMENTS:

3.2.1. Tenderer may purchase the tender document by paying the requisite fee as stipulated in the NIT. Alternatively, the tenderer may download tender document from the company’s website: www.laedcl.gov.in and pay the above requisite fee by way of a demand draft separately along with earnest money. Tenderer shall be responsible for any error etc., on the downloaded tender document.

3.2.2. The General Conditions of Supply & Erection of Assam Power Distribution Company Limited will be treated as a part of the NIT. The Contractor shall be deemed to have carefully examined the aforesaid general conditions of supply & erection besides all specifications.

3.2.3. The tender should be complete in all respects so as to eliminate further correspondences and clarifications. A tender which is not complete in all respects, will be liable for rejection. However the Purchaser, in its discretion, may seek clarification from the tenderer where necessary. The discretion of the Purchaser in this regard shall be final.

3.3. LANGUAGE AND SIGNING OF TENDER:

3.3.1. The tender, and all correspondence and documents related to the tender, exchanged between the Tenderer and the Purchaser shall be written in English. Supporting documents and printed literature furnished by the tenderer shall also be in English.

3.3.2. Tender shall be written in ink or typed. No tender filled in pencil or otherwise shall be considered. The tender shall be signed by a responsible and authorized person and the designation and authority of the signatory shall be stated in the tender. All corrections in the proposal will have to be signed with date and seal of the tenderer. Such correction even though signed, may make the tender liable for rejection.

3.3.3. Any printed document promoting sales may not be accepted by the Purchaser.
3.4. **DOCUMENTS COMPRISING TECHNO-COMMERCIAL BID:**
The particulars and supporting documents required in respect of the techno-commercial bid should be strictly as per following sub-clauses (clauses 3.4.1 to 3.4.10). In case, any of the details are either not furnished or inadequately furnished, the entire tender may be rejected without informing the tenderer. A techno-commercial bid may have to be submitted under separate sealed cover if so stipulated in the NIT. *The price bid may not at all be opened for examination in case the techno-commercial bid, which shall be opened first is not found substantially responsive.*

3.4.1. **EARNEST MONEY OR BID SECURITY:**
(a) Every tender must be accompanied with Earnest Money of value as stipulated in the NIT. Mode of depositing the earnest money shall be clearly indicated in the NIT. Earnest money or Bid security may be furnished in the shape of Bank Call Deposit/ Bank Draft as may be prescribed in the NIT. Without this, the tender may be deemed to be incomplete and liable for rejection. The earnest money shall be pledged in favour of the Officer as indicated in the NIT.
(b) In case of unsuccessful tenderer, earnest money will be released on request from the tenderer on a date subsequent to contract agreement with the successful tenderer.
(c) In case of successful tenderer, the earnest money will be retained until submission of the performance security deposit referred to in clause 9.0.
(d) No interests shall be payable on such deposit
(e) The Purchaser/ Employer reserve the right to forfeit the earnest money or part thereof, in circumstances which according to him indicate that the tenderer is not earnest in accepting/ executing any order placed under specification.

3.4.2. **GUARANTEED TECHNICAL PARTICULARS:**
The GTP (Guaranteed Technical Particulars) of the materials offered along with their complete technical description supported by drawings shall be furnished by the tenderer. Relevant specifications like IS/ BS/ IEC etc. will be mentioned.

3.4.3. **TEST REPORTS:**
(a) A list showing various type tests and routine tests as required under the relevant specifications shall be furnished by the tenderer and all such tests shall be carried out on the materials and the components offered for supply in the event of award of contract. Against each such test, the results of test performance shall be mentioned along with the name of laboratories/ testing houses, where tests were so conducted. In support of the results whether type tests or factory tests, certified copies of the test certificates shall be furnished. In case any of the prescribed tests has not been carried out, the same shall be clearly mentioned in this list stating the reasons for not carrying out the test. The tenderer also shall furnish a separate list of tests which they have carried out on their products for ensuring their better quality, but are not stipulated explicitly, in the relevant ISS or BSS specifications. Type test reports to be acceptable, the tests have to be carried out at an NABL accredited laboratory. Reports of Type test conducted in laboratories other than the above will be acceptable only if witnessed by an officer from a power utility.
(b) Type test reports of equipment of higher capacity or voltage class than those specified shall be acceptable for the purpose of bidding. However, in that case, the successful tenderer shall conduct type tests on the offered equipment free of charge.
(c) Type test reports, conducted 5 years prior to the date of opening of tender, in general, will not be accepted.

3.4.4. **SPARE PARTS:**
Each tenderer shall indicate the expected life in use of their products. A list of spares which may be necessary for replacement during the maintenance of the equipment in service shall be furnished indicating if these are of proprietary nature or of standard make available in the market. In case these spares are of proprietary nature, their prices and the likely quantities that may be necessary during the useful life of the equipment shall also be mentioned.
3.4.5. **BIS. CERTIFICATION:**
The tenderer shall state clearly if the particular product offered by him is covered by any IS certification mark and if so, the tenderer will furnish the particulars of the IS Specification, the year of obtaining the certification and a copy of the certification.

3.4.6. **PAST EXPERIENCE:**
A Complete list of supplies/ works/ services in respect of the particular supplies / works / services offered to various parties during the period of last 5 (five) years along with total value of supplies shall be furnished. A separate list of supplies/ works/ services not exactly same as the one offered but similar to it, supplied during the last five years shall also be furnished. The tenderer shall state clearly if they had supplied similar material including the offered product, to Assam Power Distribution Company Limited/ ASEB in the past. If so, reference of the purchase orders, the ordering authority and the consignees shall also be furnished.

3.4.7. **SOURCES OF SUPPLIES:**
3.4.7.1. The tenderer shall clearly state the names of the manufacturer, the brand name of the product and the place/ places of its manufacture. In case, the components of the product are obtained from ancillary manufacturers, the names and addresses of such manufacturers also shall be furnished. It shall be mentioned clearly how the tenderer ensures quality control over such ancillary components and if manufacturer of such components is covered by any IS/ BS/ IEC or any other relevant specification.
3.4.7.2. The tenderer shall mention clearly whether he is a manufacturer, a sole selling agent or a commission agent of the product.
3.4.7.3. When the tenderer is not a manufacturer, submission of manufacturer's authorization for supply of the offered materials by the tenderer along with warranty pledged by the manufacturer is compulsory.
3.4.7.4. Further, the manufacturing experience of the manufacturer in respect of the particular product or similar product also shall be furnished, indicating chronological development of the industry or the manufacturing unit.
3.4.7.5. The sources of receipt of the raw material whether indigenous or imported shall be clearly mentioned against each type of such raw materials used. The methods by which quality control of such raw materials being enforced shall be clearly described.

3.4.8. **DELIVERY/ WORK SCHEDULE:**
3.4.8.1. The delivery/ work schedule as stipulated in the NIT or. in the APDCL specification shall be binding on the tenderers. In case the APDCL delivery/ work schedule is not acceptable to the tenderer, then the tenderer may give their own delivery schedule stating clearly the reasons for deviations whether statutory or otherwise.
In any case such schedules must satisfy the completion time specified. Acceptance of such deviations in the delivery/ completion schedule is entirely optional to the Purchaser.
3.4.8.2. The commencement period and the quantity of each item to be supplied per month shall be specifically mentioned.
3.4.8.3. Quantities offered ex-stock as well as with earlier delivery schedule shall be mentioned.

3.4.9. **SAMPLES:**
A sample shall be submitted along with the tender if asked for in the NIT and as per its terms. Non-submission or late submission of sample may disqualify the tender.

3.4.10. **TAX CLEARANCE CERTIFICATES AND REGISTRATION:**
3.4.10.1. The tender shall be accompanied with income tax and sales tax clearance certificates.
3.4.10.2. The Contractor must register for VAT with the concerned department of Government of Assam within a reasonable time after award of contract if not already registered.

3.5. **PRICE BID**
3.5.1. The particulars and supporting documents in respect of the price bid should be as follows:
3.5.2. The total FOR destination price of the product offered unit wise and quantity wise both in words and in figures shall be clearly furnished. Such FOR destination price also shall be supported by a breakup of the price indicating separately Ex-works price, station of dispatch, Freight and Insurance Charges. The
offer may be straightway rejected if the FOR destination price and its break up against the components as aforesaid are not furnished. The FOR destination price will be on door delivery basis and shall be inclusive of cost of unloading of materials at site.

3.5.3. The Ex-works price shall not include Sales Tax whether central or state and the same will be indicated separately in words and in figures by the tenderer.

3.5.4. Excise duty on the finished product also shall be indicated separately if applicable. This should be worked out both unit wise and quantity wise indicating the excise rates applicable.

3.5.5. Any other levy, entry tax, excise or otherwise on finished products and of statutory nature also shall be indicated separately stating the reasons for claim of such levies.

3.5.6. **For imported equipment:-**

   (a) The tenderer shall quote price for:-

   i. FOB Port of shipment, inclusive of seaworthy packing.
   ii. CIF Kolkata
   iii. Indian Agent Commission, if any.

   (b) When prices quoted are for delivery FOB port of shipment, the Contractor shall agree to arrange for the shipment and insurance of the machinery from the port of shipment to Kolkata on behalf and to the account of the Purchaser should the Purchaser so desires. The actual expenses incurred by the Contractor for Sea freight and insurance will be paid by the Purchaser. The Purchaser shall provide for all incidental and statutory charges beyond the port of shipment such as customs duty clearance, loading and unloading, Railway freight and Octroi or terminal and other taxes.

   (c) Firm FOB port of shipment shall be quoted. An alternative price CIF Kolkata shall be quoted separately. The customs duty applicable and the category (Import Trade Control Classification as brought up to date) under which the “applicant’s plant is assessable” shall be stated. If firm FOB price cannot be offered, price subject to contract price adjustment may be quoted, but a ceilings limit must be stated. Any claim for contract price adjustment shall be supported by authentic documents which shall be to the satisfaction of the Purchaser. Preference will be given to the firm offering FOB/CIF price. The currency in which payments have to be affected shall be clearly mentioned in the tender.

   (d) The best delivery FOB port of shipment shall be clearly stated in the tender as it shall have a vital bearing on the selection of the final successful tender.

   (e) In either cases of goods supplied from within and outside India, the tenderer will quote separately the freight and insurance for delivery of the goods at site.

3.5.7. Price quoted should be firm. If however a variable price is permitted as per provisions of the NIT, the tenderer shall specifically stipulate the price variation formula by indicating the base price and base date. Normally the price variation formula and indices as per IEEMA and CACMAI will be accepted.

3.5.8. In case the tenderer quotes variable price as per any formula of his own/ other sources, the tenderer will state clearly the reasons for quoting such variable price and submit the source of the formula and indices. However, his offer may be rejected at the discretion of the Purchaser if the Purchaser finds the quoted formula to be complex and it is difficult to compare the outcome with other bids.

3.5.9. In any case, if price variation is allowed, it will be limited to a ceiling of 10% (ten percent) upward only. However, there shall be no limit for downward price variation.

3.5.10. The rate quoted shall remain valid for a minimum period of 180 (one hundred eighty) days from the date of opening of the tender. Any tender offering a shorter validity period than specified in the NIT may be rejected outright. The price quoted shall remain FIRM during the period of validity and any post revision of rate after opening of the tender will make it liable for rejection. The Purchaser, however, reserves the right to negotiate with the tenderer or offer lowest/ reasonable rate to any/ all of the tenderers.

3.5.11. The tenderer shall explain clearly if there is any DGS & D rate contract available for the product offered and if on the positive, copies of such rate contract shall invariably be furnished. For such DGS & D prices, the tenderer should state clearly the period of validity of the rate contract.

3.5.12. The tenderer shall mention clearly if any quantity discount or payment discount is offered.

3.5.13. The price bid shall be furnished clause wise and in the same order as above.

4.0 **RIGHT TO REJECT:**

4.1. The Purchaser reserves the right to reject any or all the tenders without assigning any reason thereof and the Purchaser further reserves the right to split up the supply order in favour of more than one contractor. The Purchaser also reserves the right to reject the lowest or any other price without assigning any reason.
5.0 ACCEPTANCE OF THE ORDER / CONTRACT:
5.1. Acceptance of the order(s) in writing shall be conveyed by the supplier to the Purchaser/ Employer within 10 (ten) days from the date of issue of the purchase order failing which, it will be presumed that all the terms and conditions of the purchase order are acceptable by him in full.
5.2. Before finalization of the contract, if discussion with the successful tenderer is considered necessary by the Engineer, the tenderer shall turn up for the same within 10 (ten) days from the receipt of intimation by FAX / e-mail at no extra cost to the Purchaser.
5.3. Also, if it is for executing a separate agreement the successful tenderer will turn up for the same within 10 (ten) days from the receipt of intimation at no extra cost to the Purchaser.

6.0 CONDITION OF CONTRACT: COMMERCIAL & GENERAL:
6.1. If so required by the Purchaser, a formal agreement with or without guarantee at the option of the Purchaser shall be entered into between the Contractor and the Purchaser for the proper fulfilment of contract.
6.2. Such contracts shall be drawn up in non-judicial stamp paper.
6.3. The expenses of completing and standing the agreement shall be paid by the Contractor and Purchaser shall be furnished free of charge with an executed stamped counterpart of the agreement along with ten copies thereof.
6.4. After the tender has been accepted by the Purchaser, all orders or instructions to the Contractor shall except as wherein otherwise provided, be given by the Engineer on behalf of the Purchaser.

7.0 CONSTRUCTION OF CONTRACT:
7.1. The contract shall in all respects be constructed and operated as defined in the Indian Contract Act 1972 and any statutory modification thereof.

8.0 EXECUTION OF AGREEMENT:
8.1. The contract agreement to be executed at O/O the CEO, TEC, APDCL, UAR, Tinsukia (Assam) by the parties.

9.0 PERFORMANCE SECURITY DEPOSIT:
9.1. The successful tenderer shall have to deposit through a Bank Guarantee from a nationalized or scheduled Bank of RBI for an amount equivalent to 10% (ten percent) of the total value of the order as performance security, immediately on acceptance of letter of intent/detailed orders (as the case may be), duly pledged in favour of the Purchaser concerned and such security deposits shall be valid up to 30 (Thirty) days beyond the warranty period.
9.2. If the supplier fails or neglects to observe perform any of his obligations under the contract, the Purchaser shall have the right to forfeit either in full or in part at his absolute discretion, the security deposit furnished by the supplier.
9.3. No interest shall be payable on such deposits.

10.0 RETENTION MONEY:
10.1. In addition to above performance security deposit, 5% value of each progressive bill will be retained by the Engineer/ Purchaser as ‘retention money’. The amount will be held by the Purchaser till the work under the contract is completed and the completion certificate is issued in pursuance to clause 25.0.
10.2. If the supplier fails or neglects to observe and perform any of his obligations under the contract, the Purchaser shall have the right to forfeit either in full or in part at his absolute discretion, the security deposit furnished by the supplier.
10.3. No interest shall be payable on such deposits.

11.0 RAW MATERIALS:
11.1. Raw materials will be arranged by the suppliers from their own quota and the Purchaser does not have any responsibility in this regard. If, however raw materials are obtainable against purchaser’s quota due to statutory compulsion, allotment orders in respect thereof will be issued by the Purchaser. In case of raw materials for which supplier has own quota, no recommendation or advice for release of
raw materials shall be issued by the Purchaser. If issue of raw materials from purchaser quota is desired by the tenderer, he must indicate the price of the same raw material considered in the offer. In the event of actual cost of such supply by the Purchaser, being lower than the price stipulated in the tender, the difference will be recovered from the tenderer.

11.2. Where imports are unavoidable, the items shall be imported by the supplier in good time against his import license without affecting the delivery schedule.

12.0 WARRANTY:

12.1. Each tender shall stipulate a warranty clause of products offered covering a minimum period for rectification/free replacement thereof. The term “period of warranty” shall mean the period of 12 (Twelve) months from the date of commissioning and successful operation of the equipment. In any case, this period shall not be less than 18 months from the date the materials are received in the purchaser’s store in good and acceptable conditions. During the period of warranty, the Contractor shall rectify all defects in design, materials and workmanship that may develop under normal use of the equipment upon written notice from the Engineer who shall indicate in what respects the equipment is faulty. This rectification/ free replacement must be carried out within a reasonable period as determined and directed by the Engineer. The cost of rectification/ free replacement will be to the Contractor’s account.

12.2. If the Contractor fails to rectify the defects within the reasonable time, the Purchaser/ Employer may fix a date by which the Contractor would rectify the defects, failing which the Engineer may

(a) Carry out remedial works himself or through by others, in a reasonable manner and at the contractor’s risk and cost. The costs incurred by the Purchaser/ Employer in remedying the defect shall be recoverable from the Contractor by the Purchaser/ Employer;

(b) Determine and certify a reasonable reduction in the contract price; or

(c) May terminate the contract in respect of such parts of the works and the Engineer shall be entitled to recover all sums paid for such parts of the work.

13.0 DETAILS OF AUXILIARIES / MATERIALS:

13.1. Within a reasonable time from the date of acceptance of notification of award of contract, the Contractor shall provide the Purchaser with details of all the auxiliaries/ materials being supplied and also of others, not forming part of the Contractor’s supply but essential for the safe and satisfactory working of the equipment/ system.

The Contractor shall send for approval on or before the date indicated by the Engineer, outline drawings of all equipment/ materials to be furnished under the contract, together with weights and sufficient overall dimensions to enable the design of the foundations, structures and associated equipment to be prepared and also for transportation purpose.

14.0 CONTRACTOR'S DRAWINGS:

14.1. All working drawings shall preferably be prepared in AutoCAD 2000 software or its later version. The Contractor shall also submit the soft copies of all working drawings.

14.2. Within 30 days from the date of acceptance of notification of award of contract, the Contractor shall send to the Purchaser a preliminary list of all the drawings with their respective identification numbers, titles and expected date of submission.

This list shall be amended or extended by the Contractor as and when necessary during the progress of the work under the contract.

14.3. All titles, notes and inscriptions on the drawings shall be in English.

14.4. All drawings which the Contractor shall send to the Purchaser for approval shall be approved or rejected or returned for modification within 15 days of receipt by the Purchaser. In case of modification or rejection the Contractor shall submit the correct drawings within 15 days from receipt of communication from the Purchaser.

Contractor shall be responsible for any delay in the contract processing and its award caused by non conforming technical particulars furnished by the Contractor requiring query, confirmation etc.

14.5. Upon approval by the Engineer, the drawings shall become the contract drawings and thereafter, the Contractor shall not depart from them in anyway whatsoever except with the written permission of the Purchaser.

14.6. FINAL AS-BUILT DRAWINGS:

In the final stages of the contract, the Contractor shall submit to the Purchaser hard copies as well as soft copies of complete set of built up drawings.
14.7. **MISTAKES/ ERRORS IN DRAWINGS:**
14.7.1. The Contractor shall be responsible and liable for any change in the work due to any discrepancies, errors, or omissions in the drawings or other particulars which have arisen due to inaccurate information or particulars furnished by the Contractor, even though approved by the Purchaser/Employer.
14.7.2. However, the Purchaser/ Employer shall be responsible for drawings and information supplied by him. The Purchaser/ Employer shall compensate for any change in the work caused due to inaccurate information supplied by him to the Contractor.

15.0 **COPY RIGHT ETC.:**
15.1. The Contractor shall indemnify the Purchaser against all claims, actions, suits and proceedings for the infringement or alleged infringement of any patent, design or copyright protected either in the country of origin or in India for the use of any equipment supplied by the Contractor but such indemnity shall not cause any use of the equipment other than for the purposes indicated by or reasonably to be inferred from the specification.

16.0 **SUBLETTING CONTRACT:**
16.1. The Contractor shall not, without the consent in writing of the Purchaser/ Employer assign or sublet his contract, or any substantial part thereof, or interest therein or benefit or advantage whatsoever, other than for raw materials or for minor details or for any part of the work of which the Sub-contractors are named in the tender provided any such consent shall not relieve the Contractor from any obligation, duty or responsibility under the contract.

17.0 **PACKING & MARKING:**
17.1. The contract shall include provisions for secured/ protective packing of equipment so as to avoid damage in transit, and the Contractor shall be responsible for all loss or damage caused or occasioned by a defect in the packing.
17.2. All bright metal parts shall be thoroughly protected from rust during transit.
17.3. All materials shall be packed in suitable strong cases or crates as per standard practice, unless otherwise specified. Large equipment such as power transformers, circuit breakers etc. which are not packed in cases, shall have all screwed holes plugged with wood and all machined faces shall be properly protected. Each package should be suitably marked with APDCL marking as specified in the purchase order.

18.0 **VARIATION OF QUANTITY:**
18.1. Purchaser/ Employer shall have the right to increase/ decrease the ordered quantity by 20% within 50 days of the period of completion of supply order and the same shall be supplied at the same rates/ prices and terms and conditions stipulated in the order except in regard to delivery schedule, which shall be mutually agreed upon in case of increase in the ordered quantity.

19.0 **CO-OPERATION WITH OTHER MANUFACTURERS:**
19.1. The Contractor shall agree to co-operate with the Purchaser’s other contractors for associated supplies and freely exchange with them such technical information as is necessary to obtain the most efficient and economical design and to avoid unnecessary duplication. No remuneration shall come from the Purchaser for such technical co-operation.

20.0 **INSPECTION AND TESTING:**
20.1. The Purchaser/ Employer and his duly authorized representative shall have at all reasonable time access to the Contractor’s premises or works and shall have the power to inspect and examine the materials including raw materials used and the workmanship of the product during manufacture. If a part of the goods is manufactured at other’s premises or works the Contractor shall obtain for purchaser’s duly authorized representative, permission to similarly inspect at the other premises/works.
21.0 **INSPECTION AT SITE FOR ERECTION WORK:**
21.1. A representative of the Purchaser shall have access to the Contractor/ Sub-Contractor’s work at site at any time and the Contractor/ Sub-Contractor or his authorized agent shall be present and shall provide facilities for necessary inspection.

22.0 **TEST AT SITE FOR ERECTION WORK:**
22.1. The Contractor after erection and commissioning of the equipment shall arrange testing to prove correct workmanship as per specification. The Contractor shall give in writing the Purchaser's representative thirty (30) days notice of the date the equipment would be ready for testing. The Contractor shall bear all testing cost at site of work and shall become responsible for rectification of defects found on testing within reasonable time as decided by the Engineer.

23.0 **INSURANCE:**
23.1. The Contractor shall, unless otherwise specified by the Purchaser, insure the materials through their underwriter at their cost and shall keep it insured against any loss/ damage/ pilferage in transit, destruction or damage by fire/ flood, exposure to vagaries of weather or through riot, civil commotion, war or rebellion, for the full value of the materials until the materials are received at the Purchaser's destination store.
23.2. The Contractor shall be responsible for safe arrival of the goods at destination, their unloading and their receipt by the consignee. The Assam Power Distribution Company Limited will discharge consignee's responsibilities only and shall not be responsible for any damage/ loss/ pilferage/ non-delivery by the carriers.
23.3. In case of any loss / damage / pilferage / non-delivery / short delivery by carriers etc. the supplier shall replace free of cost the missing / damaged / lost materials within 30 (thirty) days from the receipt of report thereof from the consignee without waiting for settlement of their claims with their carriers/ under-writers. Normally such reports from the consignee to the supplier shall be initiated within a period of 30 (thirty) days from the date of receipt of each consignment by him.
23.4. If it is considered necessary that the damaged equipment either in part or in full be sent back to the manufacturer's works for repair, the manufacturers/ suppliers will furnish the Bank Guarantee for the full value of equipment needing repairs and such Bank Guarantee shall remain valid till such time the equipment are repaired and returned to the consignee in good condition. The to and fro freight, handling and insurance charges in such cases will be borne by the Contractor.
23.5. Unless otherwise mutually agreed upon, in case of failure by the supplier to replenish/ make good of the loss/ damage/ short supplied quantities, within the stipulated period, the Purchaser reserves the right to forfeit the security deposit and/ or adjust any outstanding payment to the Contractor with APDCL or take any other appropriate action.
23.6. All materials will be dispatched against clear door delivery basis unless otherwise agreed by the Purchaser.

24.0 **TERMS OF PAYMENT:**
24.1. The standard terms of payment of APDCL for supply of equipment/ materials are indicated below:-
(A) 100% payment would be admissible within three (3) weeks from the date of receipt of the materials/ equipment at site in full and good condition less deduction of retention money and advance applicable as per clause 10.0 and 24.2 and as per terms and conditions stipulated in the purchase order
(B) However, in special case, the following terms of payment may be agreed to at the discretion of Purchaser.
(1) Payment of 90% (ninety percent) of the consignment value on receipt of all dispatch and other documents by the consignee through Bank.
(2) Balance 10% (ten percent) on-receipt of the equipment/ materials at site in full and in good condition and as per terms & conditions stipulated in the Purchase order.
(3) Payment vide clause (B)(1) & (B)(2) would be made provided the Contractor submits to the Purchaser/ Employer a bank guarantee equivalent to 90% of the consignment value, which will be released after the consignment is received in full and good condition.
(4) Payments as per sub-para (A), (B)(1) & (B)(2) above will be made under the following conditions:-
(a) Advance copies of bills in duplicate and other information such as challan packing list etc. are furnished sufficiently in advance.

(b) Any demurrage charges on account of late intimation and/or delivery of documents by the Bank is borne by the supplier.

(c) The supplier intimates the dispatch of each and every consignment to the Purchaser and the Consignee.

(d) All Bank charges are borne by the supplier.

(5) Payment through Bank in respect of material/equipment dispatched by road transport shall be allowed if required, provided the transport agency is approved by the Banking Association and prior approval thereof is given by the Engineer.

(C) TERMS OF PAYMENTS FOR ERECTION WORK:
Payment up to 100% of erection items will be made against progressive monthly bills within a reasonable time from the date of submission of bills less deduction of retention money and advance applicable as per clause 10.0 and 24.2 respectively.

24.2. ADVANCE PAYMENT:
10% of the contract value as interest free advance against a Bank Guarantee for a sum equivalent may be permitted if specifically provided in the NIT. The advance amount will be gradually adjusted/amortized by suitable instalments from the progressive bills. Number of instalments will be specified in the NIT.

25.0 TIME FOR COMMENCEMENT AND COMPLETION:
25.1. For the purpose of determining the completion time of supply and/or erection works, the date on which the Contractor accept the purchase/ work order in pursuance to clause 5.0 shall be taken as commencement date of the contract.

25.2. The Contractor shall attain Completion of the supply and/or works (or of a part where a separate time for Completion of such part is specified in the NIT/ Contract), within the time stated in the NIT / Contract.

25.3. As soon as the works, in the opinion of the Contractor, are completed as per requirements of the specification/ contract, the Contractor shall so notify the Engineer in writing.

25.4. The Engineer shall, within fourteen (14) days after receipt of the Contractor’s notice under Sub-Clause 25.3 either issue a Completion Certificate in the form specified by the Engineer, stating that the supply/ works thereof have reached Completion on the date of Contractor’s notice under Sub-Clause 25.3 or notify the Contractor in writing of any defects and/or deficiencies.

25.5. If the Engineer notifies the Contractor of any defects and/or deficiencies, the Contractor shall then correct such defects and/or deficiencies, and shall repeat the procedure described in Sub-Clause 25.3

25.6. If the Engineer is satisfied that the supplies/ works have reached completion, the Engineer shall, within seven (7) days after receipt of the Contractor’s repeat notice, issue a Completion Certificate stating that the supplies/ works have reached Completion on the date of the Contractor’s repeat notice.

25.7. If the Engineer is not so satisfied, then he shall notify the Contractor in writing of any defects and/or deficiencies within seven (7) days after receipt of the Contractor’s repeat notice, and the above procedure shall be repeated.

25.8. If the Engineer fails to issue the Completion Certificate and fails to inform the Contractor of any defects and/or deficiencies within fourteen (14) days after receipt of the Contractor’s notice under Sub-Clause 25.4 or within seven (7) days after receipt of the Contractor’s repeat notice under Sub-Clause 25.6 then the supplies / works shall be deemed to have reached completion on the date of the Contractor’s notice or repeat notice, as the case may be.

25.9. EXTENSION OF TIME FOR COMPLETION: Should progress be delayed because of delay in approval of drawings or any cause beyond reasonable control of the Contractor, reasonable extension of time may be granted on the application made by the Contractor in writing to the Purchaser but without prejudice to other terms and conditions of the contract. It shall be the duty of the Contractor to notify to the Purchaser the reason for delay which the Contractor considers to be beyond his control. The decision of the Purchaser as to whether the delay was beyond the control of the Contractor shall be final.

25.10. Price variation, if any, applicable as per purchase order shall not apply to any quantity not delivered as per delivery schedule of the purchase order. If, however, the prices in respect of delayed deliveries are
found to have gone down, payment will be made at the reduced price or penalty levied at the discretion of the Purchaser.

26.0 LIQUIDATED DAMAGE FOR DELAY IN DELIVERY / COMPLETION OF WORKS AND PENALTY:
26.1. The date of delivery/ completion of work shall be deemed to be the essence of the contract and shall be completed not later than the date specified in the purchase order/ contract. In case of failure to deliver the materials/ equipment in full or to complete the delivery within the stipulated delivery period or delay in the erection work beyond completion schedule, the Purchaser/ Employer shall be entitled to:

(1) Recover an amount at the rate of 1% (one percent) of the Contract Price per week or part thereof of delay, subject to maximum of 10% (ten percent) of the contract price as liquidated damage to APDCL. However, the payment of liquidated damages shall not in any way relieve the Contractor from any of its obligations to complete the works or from any other obligations and liabilities of the Contractor under the Contract.

(2) Purchase the undelivered material/ equipment from elsewhere or to complete the balance work giving notice to the supplier and to recover any extra expenditure incurred thereby for having to purchase these materials or complete the work at a higher price, at the risk and responsibility of the Contractor.

(3) Cancel the contract wholly or in part and to purchase materials/ equipment at the full risk and cost of the supplier and forfeit the security deposit.

27.0 CONTRACTUAL FAILURE:
27.1. In the event of contractual failure of any respect on the part of the supplier, the Purchaser shall be entitled to forfeit the security deposit or any deposit or any payment due to Supplier from this or his other contracts towards the recovery of Purchaser's claim for damages arising out of the failure. In addition, APDCL may black-list or ban the Contractor or pending enquiry, suspend him or take any other steps considered suitable.

28.0 REJECTION:
28.1. In the event, any of the Equipment supplied by the Contractor is found defective in materials or workmanship or otherwise not in conformity with the requirements of the contract specifications, the Purchaser shall either reject the equipment or request the Contractor in writing to rectify the same. The Contractor, on receipt of such notification shall either rectify or replace the defective equipment free of cost to the Purchaser. If the Contractor fails to do so, the Purchaser may at his option:

(a) Replace or rectify such defective equipment and recover the extra cost so involved from the Contractor plus 15% fifteen percent thereof, or

(b) Terminate the contract for default, or

(c) Acquire the defective equipment at a reduced price as considered equitable under the circumstances.

The provision of this article shall not prejudice the Purchaser's right under clause 26.0

29.0 DEDUCTION FROM CONTRACT PRICE:
29.1. All cost, damages or expenses which the Purchaser may have made for which, under the contract, the Contractor is liable, may be deducted by the Purchaser from any money due or becoming due by him to the Contractor or may be recovered by action at law or otherwise from the Contractor.

29.2. In the event of recovery to the necessary extent becoming impossible owing to insufficiency of the earnest money/ security deposit and withheld amounts, the balance due to the Purchaser may at the option of the Purchaser be recovered from any money due to the Contractor from LAEDCL under other contracts with the Contractor.

30.0 FORCE MAJEURE:
30.1. Normally, force majeure shall cover only act of God, fire, war, riots and, act of Government etc. Any constraints other than those specified above, will not constitute a force majeure condition. In view of other constraints beyond the control of the supplier, primarily due to statutory compulsion, extension of delivery time may also be considered on merit of individual case. In case of a force majeure condition, the Contractor shall notify the Purchaser in writing such condition within 10 (ten) days from the beginning of such delay for consideration and acceptance.
31.0 CHANGE OF NAME OF THE TENDERER:
31.1. At any stage after tendering, the Purchaser/ Employer shall deal with the Supplier/ Contractor only in the name and the address under which he submitted the tender. All the liabilities/ responsibilities for due execution of the contract shall be that of the Supplier/ Contractor. The Purchaser may however, in his discretion deal with agents/ representatives/ distributors/ manufacturers/ associates/ principals/ sister concerns and such dealings shall not absolve the Supplier/ Contractor from the responsibilities/ obligations/ liabilities to the Purchaser/ Employer under the contract.
31.2. Any change/ alteration of name/ constitution/ organization of supplier shall be duly notified to the Purchaser/ Employer and the Purchaser/ Employer reserves the right to determine the contract, in case of any such notification.

32.0 DEATH, BANKRUPTCY ETC.:
32.1. If the Contractor becomes bankrupt or being a corporation is in the process of winding up, amalgamation or reorganization, the Purchaser shall be at liberty to:
   (a) Terminate the contract forthwith by notice in writing to the Contractor or to the liquidator or receiver or to any person in whom the contract may become vested.
   (b) Give such liquidator, receiver or other person the option of carrying out the contract subject to his providing a guarantee for the due and faithful performance of the contract up to an amount to be determined by the Purchaser.
32.2. In case of death of the Contractor before completion of work and supply, the Engineer or Purchaser shall be at liberty to:
   (a) Close up the contract and take over the completed portion of work/ supply done and made as per specification and make final payment to the legal heir of the Contractor on receipt of claim from such legal heir.
   (b) Give the contract to the legal heir of the Contractor subject to his depositing a performance security for the due and faithful performance of the contract. The performance security amount shall be determined by the Purchaser/ Engineer commensurate with the incomplete portion of the work/ supply. The Purchaser will enter into a fresh contract with the legal heir of the Contractor on the same terms and conditions of the earlier contract.

33.0 ARBITRATION:
33.1. If at any time, any question, disputes or differences whatsoever shall rise between the Purchaser and the Contractor, upon or in relation to or in connection with the contract, either party may forthwith give notice to the other in writing of the existence of such question of dispute or difference and the same shall be referred to the adjudication of three Arbitrators, one to be nominated by the Purchaser the other by the Contractor and the third by the President of the International Chamber of Commerce in the case of foreign contractors and in case of local contractors by the President of the Institution of Engineers, India/ Retired or Sitting Judge not below the status of a retired Judge of High Court of India. If either of the parties fail to appoint its arbitrators within 60 (sixty) days after receipt of notice of the appointment of arbitrators then President of International Chamber of Commerce or the President of the Institution of Engineers retired or sitting Judge of India, as the case may be shall have the power at request of either of the parties, to appoint an Arbitrator. A certified copy of the President of the ICC or IOE making such an appointment shall be furnished to both parties
33.2. The arbitration shall be conducted in accordance with Rules and procedures for Arbitration of the International Chamber of Commerce (Paris) in the case of foreign contractors as per provisions of the Arbitration Act 1940 or any statutory modification thereof and in case of local contractors, shall be held at Guwahati or any other place as may be decided by the Managing Director, APDCL. The decision of the majority of Arbitrators shall be final & binding upon the parties and the expenses of the arbitration shall be paid as may be determined by the Arbitrator. However, any dispute arising out of this contract will first be discussed and settled bilaterally between LAEDCL and the Contractor.

34.0 PRECAUTIONS TO BE TAKEN DURING CONSTRUCTIONS/ ERECTION:
34.1. The Contractor shall take reasonable and statutory precaution during execution of erection and construction work so as to avoid accident and damage to equipment and injury to workman and to prevent theft, pilferage etc.

35.0 LIABILITY FOR ACCIDENT AND DAMAGE:
35.1. The Contractor shall not claim for compensation arising out of any accident(s) or damages done during the course of erection & commissioning work & the Contractor will be responsible for paying compensation to the worker as per Workmen's Compensation Act, 1923 and subsequent amendments thereof. It is further clarified that in case any payment is to be made by the Contractor under the said Workmen Compensation Act, the same shall be paid forthwith and in case of failure in making such payments the Purchaser shall make payment and the amount so paid shall be deducted from the bills of the Contractor.

35.2. The Contractor shall adequately insure against liability to third party, in the joint names of the Employer, the Contractor and the Sub-contractors for any loss, damage, death or bodily injury which may occur to any physical property owned by others, the goods/ materials of the contract or to any person which may arise out of the performance of the contract.

36.0 REGULATION OF LOCAL AUTHORITIES:
36.1. The Contractor shall abide by the regulation of local Authorities unless such regulation is repugnant to any terms of the contract agreed upon.

36.2. All electrical contractors need to possess a valid ‘Electrical Contractor's License' from the concerned Licensing Board, Government of Assam. A tenderer, who has a valid ‘Electrical Contractor's License' from other states will also qualify for a bidding. However, in such cases the tenderer will have to obtain the same or an endorsement to that extent, from the Licensing Board of Government of Assam within a reasonable time from the date of award of contract.

36.3. The Contractor is required to fulfill all criteria related to Labour Laws.

36.4. The Contractor will also comply with all regulations/ directives of both State & Central Government Pollution Boards.

37.0 SUSPENSION OF BUSINESS DEALINGS WITH FIRMS/ CONTRACTORS:
37.1. The Purchaser may suspend business dealings with a Firm/ Contractor, if:
   (a) The Central Bureau of Investigation or any other investing agency recommends such a course in respect of a case under investigation; and if a prima facie case is made out that the firm is guilty of an offence involving unethical, unlawful, fraudulent means in relation to business dealings, which, if established, would result in business dealings with it being banned.
   (b) The Purchaser has past record of non-performance of the Firm in its previously awarded contracts.
   (c) The Purchaser has record of ban against the Firm by other Government / Public sector utility

37.2. However, the Purchaser shall give the Firm/ Contractor a fair chance to explain the circumstances of such previous suspensions.

38.0 BANNING OF BUSINESS DEALINGS WITH FIRMS/ CONTRACTORS:
38.1. The Purchaser may ban business dealings with a Firm/ Contractor, if:
   (a) The owner (s) of the Firm/ Contractor is convicted by a court of law following prosecution for offences involving unethical, unlawful, fraudulent means in relation to business dealings.
   (b) There is strong justification that the Firm has been guilty of malpractices “such as, bribery, corruption, fraud, substitution of tenders, interpolation, mis-representation, evasion or habitual default in payment of any Government tax” etc.
   (c) The Firm continuously refuses to return government dues without showing adequate cause and government are reasonably satisfied that this is not due to reasonable dispute which would attract proceeding in arbitration or court of law.
   (d) The Firm is found guilty of involving in unethical practices, such as:
      1. “corrupt practice” involving offering, giving, receiving or soliciting, directly or indirectly, of anything of value to influence the action of any such official/ party in procurement process or in contract execution.
      2. “fraudulent practice” involving misrepresentation or omission of facts in order to influence a procurement process or the execution of a contract to the detriment of the Employer.
      3. “collusive practice” involving a scheme among bidders (prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive the Employer of the benefits of free and open competition.
      4. “coercive practice” involving harming or threatening to harm directly or indirectly, persons or their property to influence procurement process or the execution of a contract.

38.2. The Purchaser may sanction a Firm/ Contractor or its successor, including declaring ineligible, indefinitely or for a period of not less than 3 (three) years.

39.0 LEGAL JURISDICTION:
39.1. For any litigation arising out of the contract which cannot be resolved through mutual agreement or through arbitration, the Guwahati High Court will have the sole jurisdiction.
SKETCH SHOWING DETAILS OF CIVIL WORK
Details of Civil Works for HT Under Ground Mk Track Crossing in Project SDM, Maharashtra

Construction of 3mtr height, 4 side, 230mm thick bricks wall in prop. 1:5 cement sand mortar for 2 nos of 19 76 Pole and 4 nos of 110mm outside dia of HDPE pipe grooving including earth cutting, setting, outside and top plastering with sand filling complete as directed and drawing

View

PLAN

SIGN BOARD

R.C.C (M-25) POST
SIZE(200X200)

6mm Ø STRIRUP @150 C/C

G.L

12mm Ø 4 NOS ROAD

75mm TH C (C1:3:6)

BRICK SILLING

DETAILS OF SIGN BOARD INDICATOR

SCALE: NOT TO SCALE