



BRAHMAPUTRA CRACKER AND POLYMER LIMITED

[A Government of India Enterprises]

TENDER NO.: BCPL/DIB/C&P/SER/20110138/DBK

BID DOCUMENT

FOR

**Name of work : EXTERNAL ELECTRIFICATION WORK OF BCPL TOWNSHIP FOR
M/S BRAHMAPUTRA CRACKER & POLYMER LIMITED AT LEPETKATA,
DIBRUGARH, ASSAM**

Consultant:



M/s Rajkhowas Aarchi
M. D Road, House No – 128
Chandmari, Guwahati – 03
Ph: 0361 – 2664912
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rajkhowsaarchibcplsite@gmail.com

CUT-OUT SLIP

(OUTER ENVELOPE)

DO NOT OPEN

Name of work: EXTERNAL ELECTRIFICATION WORK OF BCPL
TOWNSHIP FOR M/S BRAHMAPUTRA CRACKER &
POLYMER LIMITED AT LEPETKATA, DIBRUGARH,
ASSAM

TENDER NO. : BCPL/DIB/C&P/SER/20110138/DBK

SUBMISSION DUE DATE : 31/01/2012 AT 14.30 HRS.
& TIME

FROM:

Name:
Address:

TO:

Sr.Manager (C&P)
Main Fire Station Building
BCPL Project Site, Lepetkata
Dibrugarh-786007
Assam

(To be pasted on the outer envelope containing "Priced", "Unpriced" bids

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REQUEST FOR QUATATION (RFQ)

(Tender no. BCPL/DIB/C&P/SER/20110138/DBK)

Sealed Bid under two bid two envelop system is invited for the following works for BRAHMAPUTRA CRACKER & POLYMER LIMITED, AT LEPETKATA, DIBRUGARH, ASSAM

- A) Name of work : EXTERNAL ELECTRIFICATION WORK OF BCPL TOWNSHIP FOR M/S BRAHMAPUTRA CRACKER & POLYMER LIMITED AT LEPETKATA, DIBRUGARH, ASSAM
- B) Time of completion : 8 (Eight) Months
- C) Bidding Document on Sale : N/A
- D) Bidding Document Fee : Nil
(Non Refundable)
- C) Earnest Money Deposit : **Rs. 778000/-**
- D) Pre-Bid Conference : AT. 15.00 Hrs on 19/01/2012, in Main Fire Station Building, BCPL Project Site Office, Lepetkata at Dibrugarh.
- E) Date & Time for receipt of bid : 31/01/2012 up to 14.30 Hrs.
- F) Date & Time for Opening of bid : 31/01/2012 at 15.00 Hrs. in the presence of bidder's representatives.
- G) Place & Submission of bid : Sr. Manager (C&P),
Main Fire Station Building
BCPL Project Site, Lepetkata-786006
Dibrugarh, Assam

The Earnest Money Deposit (EMD) for the amount as mentioned above shall be submitted in the form of crossed Bank Demand Draft drawn on any Nationalized/Scheduled bank in favour of Brahmaputra Crackers & Polymers Limited, payable at State Bank of India, Dibrugarh, Assam. Alternatively, Earnest Money deposit may also be submitted through Bank Guarantee from any Indian Scheduled Bank or a branch of an International Bank situated in India and registered with Reserve Bank of India as scheduled foreign bank in the proforma attached with the Tender Document. However, other than the Nationalized Indian Banks, the banks whose BGs are furnished must be commercial banks having net worth in excess of Rs. 100 crores and a declaration to this effect should be made by such commercial bank either in the bank guarantee itself or separately on a letter head.

PURCHASE OF BIDS:

Bidding document can be purchased by interested bidders on any working day during sale period from C&P, Main Fire Station Building, BCPL Project Site Office, Lepetkata-786006, Dibrugarh, Assam, India on written request and upon payment of non-refundable document fee payable through crossed demand draft in favour of **Brahmaputra Cracker & Polymer Limited, payable at Dibrugarh (Assam)**. Request for sending bidding document by post/courier or any other mode shall not be entertained.

The complete bidding document is also available on the website of GAIL (www.gailonline.com) and bidders desirous to submit their bid on the basis of downloaded document shall pay cost of bidding document by crossed demand draft in favour of **Brahmaputra Cracker & Polymer Limited, payable at Dibrugarh (Assam)** along with the Techno-Commercial Bid, failing which their bid shall not be considered for opening/evaluation.

SUBMISSION OF BIDS:

The Bid shall be submitted in the following manner in separately sealed envelopes duly super scribed:

a) PART – I : TECHNICAL AND UNPRICED COMMERCIAL PART**b) PART – II: PRICE PART**

PART – I of the bid shall contain the following:

- a) Bid/Offer in hard copy as per the requirement of the Bidding Document duly signed and stamped on each page.
- b) Master Index enclosed with Request for Quotation duly signed and stamped by the bidders in token of having received and read all parts of bidding documents and having accepted and considered the same in preparing and submitting the bid.
- c) Earnest Money deposit as specified in Instructions to Bidders (ITB)

PART – II of the bid shall contain the following:

Bidder shall fill price in Schedule of Prices. In this part of bid, the bidder shall not stipulate any conditions. There shall not be any over writing.

Bid Evaluation Criteria for Tender towards External Electrification of BCPL Township:**Technical Criteria:-**

The bidder should have executed and completed at least one single contract involving External Electrification work & having experience of working in 33 KV voltage level of value not less than Rs. 156 Lac (Rupees One Hundred & Fifty Six Lac) in central Govt. / Public Sector Undertaking / reputed Private Sector in any of last seven years to be reckoned from the last date of submission of un-priced bids.

OR,

Two separate contracts involving external Electrification Work & having experience of working in 33 KV voltage level of value not less than 117 Lac (Rupees One Hundred Seventeen Lac) against each contract.

Bidder must submit copy of work order / agreement and work completion /execution certificate along with executed value of the work issued by client / end user in support of their experience along with technical bid (un-priced bid).

In case of **Sub-contractor**, bidder shall be required to furnish the following attested/ notarized documents in support of meeting the above "Bid Evaluation Criteria."

- a) Copy of work order along with SOR issued by main contractor.
- b) Copies of Completion Certificate from the end User / Owner and also from the main contractor. The Completion Certificates shall have details like work order no. / date, brief scope of work, ordered & executed value of the job, completion date etc.

(ii) The contractor should have a valid 33 KV license issued from concerned authority.

Bidder should submit documentary evidence (copy should be duly attested by Gazetted officer /Notary) in supporting & fulfilling the above criteria.

(iii) The bidder should have valid E.P.F. Registration no. / Certificate and copy (duly attested) of the same should be submitted along with their un-priced offer at the time of submission of bid.

Financial Criteria:-

- i) The annual turnover of the bidder should be minimum Rs. 1.95 Cr. in any of the preceding three financial year (FY 2008-09, 2009-10 & 2010-11)
- ii) The financial Net Worth of the bidder should be positive as per the last Audited Financial Statement i.e. FY 2010-2011
- iii) The bidder should have minimum working capital of Rs. 38.90 lacs as per the last audited financial year i.e. FY 2010-11. If the bidder's working capital is inadequate, the bidder shall supplement this with a letter issued by their Banker having net worth not less than 100 Crore or US \$ 22million, conforming the availability of line of credit to meet the above specified working capital requirement.

The Bidder shall furnish all necessary documents such as attested copies of work order(s), completion certificate of similar work(s) executed and audited annual reports including complete audited balance, profit & loss account etc. along with the bid in support of their eligibility to meet the above experience & financial qualification criteria.

BCPL reserves the right to complete the evaluation based on the details furnished without seeking and additional information.

SUBMISSION OF ATTESTED COPIES OF CERTIFICATES / DOCUMENTARY EVIDENCES

The bidders are required to submit the copies of all certificates/documentary evidences as mentioned above duly **attested by Gazetted Officer/ Officer of Public Sector Enterprises/ notary public** towards the proof of meeting the Bid Evaluation Criteria (BEC) as stated above:

- **Attested copies of all the relevant documents viz. Work Order(s), Execution Certificate(s), Annual Report / Balance Sheet and Profit & Loss Account and other documents as mentioned in Exhibit 'A'.**
- **Attested copy (ies) of partnership deed (in case of partnership firm) and power of attorney.**
- **Attested copy of P. F. certificate**
- **Attested copy of PAN Card**
- **Attested copy of valid Electrical License (33KV)**
- **Affidavit duly notarized, as per clause no. 38.2 of Special conditions of Contract Part-A.**
- **An undertaking (by the bidders who quotes by down loading the tender from web site) on non judicial stamp paper of appropriate value stating that "The contents of the Tender Document have not been modified or altered by M/s (Name of the bidder with complete address). In case, it is found that the tender document has been modified / altered by the bidder, the bid submitted by the M/s (Name of the bidder) shall be liable for rejection".**

Non-submission of the attested copies of the requisite certificates/documents shall render the bid non-responsive and shall be liable for rejection.

Please note that this is a zero deviation tender. Bidders are advised to strictly confirm compliance to tender conditions and not to stipulate any deviation / conditions in their offer. Subsequent to bid submission, BCPL will not seek confirmations / clarifications and any bid(s) not in line with tender conditions shall be liable for rejection. Bidders are also requested to submit the documents / confirmations strictly as per the check list enclosed in the tender document.

Bids complete in all respect must reach this office not later than 14.30 hrs on the notified date of closing of the tender.

All out-station bids, if sent by post, should be sent under registered cover. Any excuse regarding late delivery of bid due to any reason whatsoever will not be entertained.

Bidders may depute their authorized representative to attend the bid opening. Bidders selected for opening of their priced bid shall be informed about the date and time of price bid opening.

Any change in bid after due date of submission of tender will not be considered.

Bidders are advised in their own interest to ensure that their bids reach this office well before the closing date and time of the tender as the bids received after the closing date and time of the tender will not be considered.

Please confirm that you have received the tender document and will be quoting for the tender items/jobs. In case you are not quoting for the same, please return complete set of tender documents.

The Bidder is required to submit the bid along with their covering letter under letter head disclosing the name and designation of authorized person signing the bid, complete postal address of firm / company, telephone no., fax no., e-mail etc.

Brahmaputra Crackers & Polymers Ltd. reserves the right to accept or reject any or all bids received, at its absolute discretion, without assigning any reason whatsoever.

You are requested to depute your representative along with authorization letter at the time of bid opening.

Thanking You,

For, M/s Brahmaputra Cracker & Polymer Ltd.

(D.Barkakati)
Sr. Officer (C&P)

EXHIBIT 'A'**CONFIRMATION OF BIDDERS FOR MEETING BEC AND OTHER REQUIREMENTS OF TENDER**

NAME OF WORK	:	EXTERNAL ELECTRIFICATION WORK OF BCPL TOWNSHIP FOR M/S BRAHMAPUTRA CRACKER & POLYMER LIMITED AT LEPETKATA, DIBRUGARH, ASSAM
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TENDER NO: BCPL/DIB/C&P/SER/20110138/DBK

SN	TENDER REQUIREMENT	BIDDER'S REPLY / CONFIRMATION
1	Bidder should have executed and completed at least one single contract involving external electrification work & having experience of working in 33KV HT Line of values not less than 156 Lacs (Rupees One Hundred Fifty Six Lacs) OR, two separate contracts involving external electrification work & having experience of working in 33KV HT Line of values not less than 117 Lacs (Rupees One Hundred Seventeen Lacs) in the previous seven years to be reckoned from the due date of submission of bids. "Civil Works related with execution of external lighting" would be executed by an agency that has adequate experience and capability for executing such works. If the bidder does not have such experience, they shall engage suitable sub contractor for "Civil Works related with execution of external lighting" after obtaining approval from Engineer – In – Charge. In such event, the contractor shall furnish the credentials of the subcontractors who have executed the similar piling work and electrical work as given in the bidding document, immediately after award but not later than 15 days from the date of award of work, to the Engineer – In – Charge, for their review and approval. Bidder shall submit a confirmation to this effect in their bid.	Reference of attested copies of documents furnished: 1. 2.
2	The minimum annual turnover of the bidder should be 1.95 Cr (Rupees One Crore Ninety Five Lacs only) in any of the preceding 03 (three) financial year (FY 2008-09, 2009-10 & 2010-11). The financial Net Worth of the bidder should be positive as per the latest Audited Financial Statement. The bidder should have minimum working capital of Rs. 38.9 lacs as per the latest audited financial result. If the bidder's working capital is inadequate, the bidder shall supplement this with a letter issued by their Banker having net worth not less than 100 Crore or US \$ 22million, conforming the availability of line of credit to meet the above specified working capital requirement. The Return on Equity of the Bidder in the last financial year shall be positive.	Reference of attested copies of documents furnished: 1. FY 2010-11 2. FY 2009-10 3. FY 2008-09 Form-I duly filled in submitted: Yes/No
3	Bidder must have permanent EPF account. Bidder must submit attested copy of PF certificate.	Reference of attested copies of documents furnished: 1.

4	Affidavit duly notarized, as per clause no. 38.2 of Special conditions of Contract Part-A	Reference of document furnished
5	Power of Attorney in favour of person who has signed the offer in stamp paper of appropriate value.	Reference of document furnished
6	An undertaking by the bidders (who quotes by down loading the tender from web site) as instructed in the Page no.3 of RFQ.	Reference of document furnished 1.
7	Attested copy of PAN Card	
8	Attested copy of Valid Electrical License 33 KV	

Note:

Please note that the documents listed by you above only shall be considered for evaluation of your claim of meeting Bidder Evaluation Criteria & other requirements of the tender. Any other documents, not included above shall not be considered. Further please note that all the documents submitted should be **attested** by a Gazetted officer / officer of Public Sector Enterprises/ Notary public.

Date:

Bidder's signature_____

CHECK LIST FOR SUBMISSION OF DOCUMENTS

Bidder is requested to fill this check list and ensure that all detail / documents have been furnished as called for in the Bidding Document along with duly filled in, signed & stamped checklist with each copy of the "Un-priced bid (Part-I)".

Please tick the box and ensure compliance:

0.0 **EMD** of requisite amount is submitted in the form of DD/BG from any scheduled bank as mentioned in RFQ.

Submitted in the form of DD/BG

DD No. _____ Dated _____ Drawn on _____

BG No. _____ Dated _____ Valid up to (06 months from the due date of submission of bid)

2.0 Submission of documents as per Exhibit 'A' duly filled in submitted

☐

3.0 **Validity of offer** is up to four (04) months from the date of submission of Techno-commercial part.
Yes Valid up to _____

4.0 **Power of Attorney** in favour of person who has signed the offer in stamp paper of appropriate value.

Submitted

☐

5.0 **Partnership Deed** in case of partnership firm and **Articles of Association** in case of limited company.

Submitted

☐

6.0 Copy of the P. F. Registration certificate issued by the P. F. Authorities.

Submitted

☐

P. F. No: _____

7.0 **Original bidding document** along with blank (un-priced) copy(2 nos) of price bid (Schedule of Rates) and addendum, if any.

Submitted

☐☐

8.0 No deviation confirmation in the proforma enclosed submitted

9.0 **Affidavit duly notarized**, as per clause no. 38.2 of Special conditions of Contract Part - A
Submitted

☐

10.0 **All pages / documents** are stamped and signed by the authorized signatory of the bidder towards acceptance of terms and conditions of the tender:

Yes

11.0 COPY OF PAN CARD DULY ATTESTED

12.0 COPY OF VALID ELECTRICAL LICENSE 33 KV DULY ATTESTED

SIGNATURE OF BIDDER : _____

NAME OF BIDDER : _____

COMPANY SEAL : _____

FORM - 1
ANNUAL TURNOVER

Annual Turnover data for the last 3 years:

Year	Amount
Year 1: Financial Year : 2010-2011	
Year 2: Financial Year : 2009-2010	
Year 3: Financial Year : 2008-2009	

1. The information supplied should be the Annual Turnover of the bidder
2. A brief note should be appended describing thereby details of turnover as per audited results.

SEAL AND SIGNATURE OF THE BIDDER

FORM – II
FINANCIAL SITUATION
Bidder must fill this form
FINANCIAL DATA FOR LAST AUDITED FINANCIAL YEAR

Description	Financial Year- 2010-2011
	Amount
1. Current assets	
2. Current Liabilities	
3. Working Capital (Current Assets less current liabilities)	
4. Net Worth Owners funds (Paid up share capital and Free Reserves & Surplus) (NW)	
5. Profits before taxes (PBT)	
6. Return. on Equity (PBT / NW) x 100	

1. Attached are copies of the audited balance sheets, including all related notes and income statement for the **last Audited Financial year**, as indicated above, complying with the following conditions?
 - All such documents reflect the financial situation of the bidder
 - Historic financial statements must be audited by a certified accountant.
 - Historic financial statements must be complete, including all notes to the financial statements.
 - Historic financial statements must correspond to accounting periods already completed and audited (no statement for partial periods shall be requested or accepted)

SEAL AND SIGNATURE OF BIDDER

ACKNOWLEDGEMENT CUM CONSENT LETTER

(Within 7 days of receipt of Bidding document, Bidder shall acknowledge the receipt and confirm his intention to Bid against the enquiry/tender through e-mail to or per return FAX by filling up the this Format.)

To,
Sr. Manager (C&P)
Main Fire Station Building
BCPL Project Site
Lepetkata-786007
Dibrugarh, Assam

SUBJECT: BCPL/DIB/C&P/SER/20110138/DBK

Dear Sir,

We hereby acknowledge receipt of a complete set of bidding document along with enclosures for subject item/work.

We undertake that the contents of the above bidding document shall be kept confidential and further that the drawings, specifications and documents shall not be transferred and that the said documents are to be used only for the purpose for which they are intended.

A) We intend to bid as requested for the subject item/work and furnish following details with respect to our quoting office:

- (i) Postal Address with PIN Code :
- (ii) Telephone Number :
- (iii) Telefax Number :
- (iv) Contact Person :
- (v) E-mail Address :
- (v) Mobile Number :

B) Details of Contact person:

- (i) Postal Address with PIN Code :
- (ii) Telephone Number :
- (iii) Fax Number :
- (iv) Contact Person :
- (v) E-mail Address :
- (vi) Mobile Number :

C) We are unable to bid for the reasons given below and we are returning back the entire set of bidding documents.

Reasons for non-submission of bid:

Agency's Name :

Signature :

Name :

Designation :

Date :

Seal/Stamp :

INSTRUCTIONS TO BIDDERS

DESCRIPTION:

Name of Work: EXTERNAL ELECTRIFICATION WORK OF BCPL TOWNSHIP FOR M/S BRAHMAPUTRA CRACKER & POLYMER LIMITED AT LEPETKATA, DIBRUGARH, ASSAM

(Tender no. BCPL/DIB/C&P/SER/20110138/DBK)

1.0 BIDDING DOCUMENT, CLARIFICATION AND ADDENDUM

1.1 BIDDING DOCUMENT

1.1.1 One set of bidding document (Tender document) are issued. Bidder shall submit the Tender document duly signed & stamped on each page of tender in token of his acceptance along with his bid

1.1.2 Transfer of bidding document issued to one intending bidder to another is not permissible.

1.1.3 Bid shall remain valid for 120 days from the date of submission of Bid.

1.2 CLARIFICATION REQUESTS BY BIDDER

1.2.1 Although the details presented in this Bidding document consisting of conditions of contract, scope of work, technical specifications and drawings have been compiled with all reasonable care, it is the Bidder's responsibility to ensure that the information provided is adequate and clearly understood.

1.2.2 Bidder shall examine the bidding documents thoroughly in all respect.

1.2.3 Any failure by Bidder to comply with the aforesaid requirement shall not excuse the Bidder, after subsequent award of contract, from performing the work in accordance with the agreement.

1.3 AMENDMENT OF BIDDING DOCUMENT

1.3.1 BCPL may, for any reason whether at his own initiative or in response to the clarification requested by the prospective Bidder, issue amendment in the form of addendum during the Bidding period and subsequent to receiving the bids. Any addendum thus issued shall become part of Bidding document and Bidder shall submit 'original' addendum duly signed and stamped in token of his acceptance.

1.3.2 For addendum issued during the Bidding period, Bidder shall consider the impact in his Bid. For addendum issued subsequent to receiving the Bids, Bidder shall follow the instructions issued along with addendum with regard to submission of impact on quoted price / revised price, if any.

1.4 CONFIDENTIALITY OF DOCUMENT

1.4.1 Bidder shall treat the Bidding document and contents thereof as confidential.

1.5 ACKNOWLEDGEMENT & CONFIRMATION OF BID

1.5.1 Within 7 days of receipt of bidding document, Bidder shall acknowledge the receipt and confirm his intention to Bid for the Bidding work.

2. EARNEST MONEY DEPOSIT

2.1 The bid must be accompanied by earnest money (interest free) for the amount indicated in 'Request for Quotation' in the form of a Demand Draft drawn on any Nationalized/Scheduled Bank in favour of M/s. Brahmaputra Crackers & Polymers Limited payable at STATE BANK OF INDIA, DIBRUGARH, ASSAM or in the form of Bank guarantee issued by Nationalized Bank for an equal amount valid for six (06) months from the due date of submission of bid as per the format enclosed in bidding document. Bid not accompanied by earnest money will not be considered unless the same is exempted as per 'Letter Inviting Tender'. Bank guarantee shall be revalidated for extended period as required by BCPL in writing.

2.2 If the bidder, after submission, revokes his bid or modifies the terms and conditions thereof during the validity of his bid except where the BCPL has given opportunity to do so, the earnest money submitted by Bidder will, in such case, not be refunded to him.

2.3 BCPL may at any time cancel or withdraw the invitation to bid without assigning any reason and the earnest money submitted by Bidder will in such case be refunded to him.

2.4 The successful Bidder shall be required to deposit within 10 days of acceptance of his bid, security deposit / Initial Security Deposit with the BCPL in the manner indicated in General Conditions of Contract / Special Conditions of Contract. Should the successful Bidder fail or refuse to sign the agreement or

furnish the security deposit / initial security deposit within the period fixed by the BCPL as indicated above, the earnest money shall be forfeited without prejudice to his being liable to any further loss or damage incurred in consequence by the BCPL.

- 2.5 Earnest money shall be returned to the successful Bidder after the security deposit / initial security deposit has been furnished by him to the BCPL.

3.0 **SCHEDULE OF RATES**

- 3.1 The schedule of Rates shall be read in conjunction with all other sections of bidding document.

- 3.2 The rates quoted by the bidder shall be firm and fixed for the completion period of the tendered works, unless stated otherwise. The rates quoted by the Bidder shall include all taxes, duties & levies except Service Tax and any cess thereon. Service Tax and cess thereon shall be paid by BCPL extra at actual against CENVAT invoice to be submitted by the bidder.

Notwithstanding the instructions given above, in case any bidder(s) mention the terms such as "Inclusive" or "Included" in respect of Service Tax, their bids will still be evaluated considering the prices exclusive of Service Tax. However, in the event of such bidder emerging as the lowest bidder based on this evaluation, the award shall be made considering the service tax included in the quoted rates and the same will be conclusive and binding on the bidder. Further, the bidder will be required to submit Cenvat invoice to enable BCPL to avail Cenvat benefit.

- 3.3 Rates must be filled in format for 'schedule of rates' enclosed as part of bidding document. If quoted in separate typed sheets and any variation in description, unit is noticed, the bid is liable to be rejected. In any case bidder shall be presumed to have quoted against the description of work and the same shall be binding on the bidder.

- 3.4 In case any activity though specifically not covered in description of 'Schedule of Rates' but is required to complete the work as per Scope of Work, Scope of Supply, Specifications, Standards, Drawings, General Conditions of Contract, Special condition of contract or any other part of bidding document, the quoted rates will deemed to be inclusive of cost incurred for such activity.

- 3.5 The rates shall include all expenditure incurred towards mobilization and demobilization.

- 3.6 Rates quoted shall be in Indian Rupees Only.

- 3.7 Bidder shall quote rates both in figures as well as in words.

4.0 **DOCUMENTS COMPRISING THE BID**

- 4.1 Bidder is advised that BCPL intend to fully evaluate the technical and un-priced commercial submissions.

- 4.2 It is important that Bidder clearly demonstrates his experience and capability, giving to BCPL a high level of confidence that if awarded, the Bidder will be able to perform the works within the stipulated Time Schedule and quoted price and meeting all other requirements listed in the Bidding document.

- 4.3 Bidder is requested to furnish the complete and correct information required for evaluation of his Bid. If the information with regard to resources and concurrent commitments or any other information / documentation forming basis of evaluation is found in complete / incorrect the same may be considered adequate ground for rejection of the bid.

- 4.4 Bidder shall arrange his bid in the following order:

i) **PART-I TECHNICAL AND UN-PRICED COMMERCIAL PART (TECHNO-COMMERCIAL BID)**

Technical and un-priced commercial part shall comprise the attachments, specifying attachment number arranged in the order as follows:

- a) Submission of bid letter along with Bidding document (Tender document), Earnest Money Deposit and its details.
- b) Attested copies of documents as mentioned in Request for Quotation
- c) Copy of tender document duly signed and stamped towards acceptance to terms and conditions of the tender.
- d) Power of Attorney in favour of authorized signatory of the Bidding document.
- e) Organization details
 - In case of a proprietorship firm, the name and address of proprietor, and certified copy of 'Certificate of registration of firm'.
 - In case Bidder is a partnership firm, certified copy of the partnership deed.

- In case of company (whether private or public), certified copy of the 'Certificate of Incorporation' together with certified Memorandum / articles of Association.
- f) Copy of "Schedule of Rates" without any prices (which will be left blank) duly signed and stamped.
- g) Technical offer if any, required as per Bidding document.
- h) Check list (Exhibit-A)
- i) Any other relevant document, Bidder desires to submit.

ii) **PART-II PRICED COMMERCIAL PART (PRICE BID)**

- a) Priced commercial Part shall contain "Schedule of Rates" duly filled in .Two copies i.e. one ORIGINAL COPY and one DUPLICATE copy of "Schedule of Rates" shall be submitted.
- b) No stipulation, deviation, terms & conditions, presumption, basis etc. shall be stipulated in Price part of bid. BCPL shall not take cognizance of any such statement and may at their discretion reject such price bids.
- c) **Bidders are advised NOT to mention Rebate/Discount separately, either in the SOR format or anywhere else in the offer. In case bidder(s) intend to offer any Rebate/Discount, they should include the same in the item rate(s) itself under the "Schedule of Rates (SOR)" and indicate the discounted unit rate(s) only.**

In case, it is observed that any of the bidder(s) has/have mentioned Discount/Rebate separately, the same shall not be considered for evaluation. However, in the event of the bidder emerging as the lowest bidder, the Discount/Rebate offered by the bidder shall be considered for Award of Work and the same will be conclusive and binding on the bidder.

5.0 SUBMISSION OF BID

5.1 SUBMISSION IN TWO SEPARATE ENVELOPS:

5.1.1 Un-priced and priced part must be submitted in separate sealed envelopes in following 2 parts:

i) **PART-I – TECHNICAL AND UN-PRICED COMMERCIAL PART**

- a) This part shall contain technical and commercial (Un-priced) bid. This envelope shall comprise the signed copy of Bidding document (Tender document), drawings, addendum (if any), one original and 1 copy of the information listed for submission in Part –I under Para 4.4. above. Techno-commercial bid containing prices shall be summarily rejected.
- b) The envelope shall have following information clearly written on the outside of the envelope, failing which BCPL will assume no responsibility for the misplacement or premature opening of the bid.

Part-I Technical and Un-priced Commercial Part.

Name of Work: _____

Bidding document No.: _____

Due date & time of Opening: _____

From :[Name & Address of Bidder]: _____

- c) Original earnest money deposit (EMD shall also be enclosed in this part.

ii) **PART-II SEALED PRICED COMMERCIAL PART**

- a) This part of the bid shall contain the Schedule of Rates, duly filled in all respects and other information specifically requested for submission in price part under Para 4.4 ii) above. The envelope shall have the following information clearly written on outside of the envelope, failing which BCPL will assume no responsibility for the misplacement or premature opening of the bid.

PART-II – PRICE PART

Name of Work : _____

Bidding document No. : _____

From :[Name & Address of Bidder] : _____

- b) This part of Bid will be submitted in original plus one copy.

5.2 DATE, TIME & PLACE OF SUBMISSION

5.2.1 Bid must be submitted by the due date and time mentioned in the Letter Inviting Tender or any extension thereof as duly notified in writing by BCPL at the following address:
SR. MANAGER (C&P), MAIN FIRE STATION BUILDING, BCPL PROJECT SITE, LEPETKATA-786006, DIBRUGARH, ASSAM INDIA

5.2.2 Bid received after the time and date fixed for receipt of bid is liable for rejection.

5.3 CHECK LIST FOR SUBMISSION OF BID

5.3.1 To assist bidder in ensuring the completeness of bid, a checklist for submission of various documents / details in 'technical & un-priced commercial part of bid has been enclosed to "INSTRUCTIONS TO BIDDERS". Bidder, in his own interest, is requested to fill the checklist and submit along with his bid for ready reference.

5.3.2 In case of incomplete submissions, BCPL will not be under any obligation to give the bidder an opportunity to make good such deficiencies and BCPL may at its discretion treat such bids as incomplete and not consider for further evaluation.

6.0 BID OPENING AND EVALUATION

6.1 OPENING OF TECHNO-COMMERCIAL PART OF BID

6.1.1 On the date and time mentioned in 'Letter Inviting Tender' (if specified), Part-I i.e. Technical and un-priced commercial Part will be opened in the office of BCPL, Main Fire Station Building, BCPL Project Site, Lepetkata-786007, Dibrugarh, Assam.

6.1.2 In the event, the specified date of bid opening is declared a holiday for BCPL, the bid shall be opened on the next working day at the specified time and location.

6.2 CLARIFICATION & ADDITIONAL INFORMATION

During evaluation, BCPL may request Bidder for any clarification on the bid, additional or outstanding documents. Bidder shall submit all additional documents in one original and one copy. However, seeking clarification shall be on sole discretion of BCPL.

6.3 TECHNO-COMMERCIAL DISCUSSIONS

6.3.1 Bid of the bidder who submits the required EMD shall be taken up for detailed evaluation.

6.3.2 Techno-commercial discussions with bidder shall be arranged, if needed. Bidder shall depute his authorized representative(s) for attending the discussion. The representative(s) attending the discussions shall produce authorization from his organization to attend the discussions and sign the minutes of meeting on behalf of his organization. The authorized representatives must be competent and empowered to settle all technical and commercial issues.

6.4 BID EVALUATION CRITERIA

6.4.1 Bid is the responsibility of bidder and no relief or consideration can be given for errors and omissions made by the bidder inadvertently or adherently. Bid with incomplete information is liable for rejection.

6.4.2 The techno-commercial part of bid shall be evaluated as per bid evaluation criteria, wherever indicated in the bidding document.

6.4.3 Non-submission of details / documents as per Para (4.4.) above may lead to rejection of bid.

6.4.4 REJECTION CRITERIA:

I) Bidders are advised to strictly confirm compliance to tender condition and not to stipulate any deviation / condition in their offer. Bids received with deviation to tender condition especially to the following clauses shall be considered non-responsive and shall be summarily rejected:

- I. Firm Price
- II. EMD / Bid Bond
- III. Scope of Work
- IV. Specification
- V. Price Schedule / Schedule of rates
- VI. Delivery / Completion Schedule
- VII. Period of Validity of Bid
- VIII. Price Reduction Schedule

- IX. Performance Bank Guarantee / Security Deposit
- X. Guarantee
- XI. Arbitration / Resolution of Dispute
- XII. Force Majeure
- XIII. Applicable Laws
- XIV. EPF Registration in case of Domestic bidder
- XV. Clauses no.6.4.2 and 6.6 of instruction to bidders.
- XVI. Any other condition / clauses mentioned in the tender documents.

6.4.6 DETERMINATION OF RESPONSIVENESS

- i) Prior to the financial evaluation of bids, the BCPL will determine whether each bid is substantially responsible to the requirements of the Bidding document.
- ii) For the purpose of this clause, a substantially responsible bid is one, which conforms to all the terms and conditions and specifications of the bidding document without material deviation or reservation. A material deviation or reservation is one which affects in any substantial way the scope, quality, or performance of the works or which limits in any substantial way, in consistent with the bidding document, the employer's rights of contractor's obligation would affect unfairly the competitive position of bidders presenting substantially responsive bids.
- iii) If a bid is not substantially responsive to the requirements of the Bidding documents, it may be rejected by the BCPL.

6.4.7 Bidders must submit the bid in line with bid stipulations without taking any deviation. However, in case it becomes unavoidable and the Bidder seeks some clarifications / queries with respect to technical / commercial part, the bidder may stipulate the same strictly as per Annexure-I for the technical and commercial part.

6.4.8 **UNSOLICITED POST BIDDING MODIFICATIONS:**

Bidders are advised to quote strictly as per terms and conditions of the bidding document and not to stipulate any deviations / exceptions. Once quoted, the bidder shall not make any subsequent changes, whether resulting or arising out of any technical / commercial clarifications sought on any deviations or exceptions mentioned in the bid. Any proposal price change is likely to render the bid liable for rejection.

6.4.9 Bidders must ensure that complete bid along with all details as sought are submitted as per provisions of the bidding document. The checklist has been provided in the bidding document to ensure that any required details are not missed by the bidders while submitting their offer.

6.4.10 Proposed deployment of resources like manpower, equipment, tools and tackles shall be looked into to ensure performance of work within stipulated time period

6.4.11 The concurrent commitments of Bidder on various jobs under execution by the bidder will be taken into account to assess the spare capacity available with the Bidder.

6.4.12 Performance of bidder on work executed / under execution shall be taken into consideration before selecting the bidder for opening of his price bid.

6.4.13 MECHANIZED CONSTRUCTION

- i) Bidder shall furnish construction methodology based on mechanized construction techniques for execution of work along with details of plant & machinery to be deployed. The bidder shall assess the number and type of plant and machinery for the scope of work and the completion schedule.
- ii) Bidder will deploy the required numbers and types of plant & machinery applicable for different activities in consultation with the Engineer-In-Charge after award and during execution of work with respect to actual mobilization required.

6.5 **OPENING OF PRICE PART OF BID**

Priced commercial part of only those bidder, whose bids are considered techno-commercial acceptable, shall be opened.

6.6 **EVALUATION OF PRICE PART**

The "Schedule of Rates" quoted by the bidder shall be taken up for evaluation on overall basis on part wise. Price bids containing additional qualifications not mentioned in Techno-Commercial part of the bid shall be summarily rejected.

6.7 PURCHASE PREFERENCE TO PUBLIC SECTOR ENTERPRISE

Owner reserves the right to grant purchase preference to Public Sector Enterprises in terms of the latest applicable guidelines of the Government of India.

6.8 PROCESS TO BE CONFIDENTIAL

Information related to the examination, clarification, evaluation and comparison of bids recommendations for award of contract shall not be disclosed to bidder or other person not officially concerned with such process. Any effort by bidder to influence the BCPL processing of bid or award decisions may result in rejection of such Bids and the owner may initiate action against such bidders, as deemed fit, including putting them on "HOLIDAY LIST".

6.9 OWNER'S RIGHT TO ACCEPT OR REJECT A BID

6.9.1 BCPL reserves the right to accept a bid other than the lowest and to accept or reject any bid in whole or part, to annual the bidding process or to reject all bids with or without notice or reasons. Such decisions by BCPL shall bear no liability whatsoever consequent upon such decisions.

7.0 AWARD OF WORK AND CONTRACT DOCUMENT

7.1 AWARD OF WORK

7.1.1 The bidder whose bid is accepted by BCPL shall be issued Letter of Intent / fax of Intent (LOI/FOI) prior to expiry of bid validity. Bidder shall confirm acceptance by returning a signed copy of the LOI / FOI.

7.1.2 BCPL shall not be obliged to furnish any information / clarification / explanation to the unsuccessful bidders as regards non acceptance of their bids. Except for refund of EMD to unsuccessful bidder, BCPL shall correspond only with the successful bidders.

7.2 CONTRACT DOCUMENT

7.2.1 The successful bidder shall be required to execute a formal agreement in accordance with the 'Form of Contract' (Annexed to General Condition of Contract (GCC)), within 10 days of receipt of LOI/FOI/Detailed Letter of Award specified period.

7.2.2 Contract Documents to be signed between BCPL & selected bidder shall consist of the following:

- i) Agreement on stamp paper of appropriate value.
- ii) Letter of Intent / Fax of Intent
- iii) Detailed letter of award / acceptance along with agreed variation and other enclosures.
- iv) Original bidding document along with set of drawings
- v) Addendum/Corrigendum issued to bidder, if any.

7.2.3 Stamp paper of appropriate value shall be provided by the successful bidder after ascertaining its value.

7.2.4 The statement of Agreed variation prepared based on the deviation if any, finally retained by the bidder and accepted by BCPL, shall form part of detailed letter of award.

SPECIAL CONDITIONS OF THE CONTRACT

PART-A

DESCRIPTION:

Name of Work: EXTERNAL ELECTRIFICATION WORK OF BCPL TOWNSHIP FOR M/S BRAHMAPUTRA CRACKER & POLYMER LIMITED AT LEPETKATA, DIBRUGARH, ASSAM

TENDER NO: BCPL/DIB/C&P/SER/20110138/DBK

1.0 GENERAL:

- 1.1 The Special Condition of Contract shall be read in conjunction with the General Conditions of Contract, Schedule of rates, specifications, drawings and any other documents forming part of contract, wherever the context so requires. Notwithstanding the sub-division of the documents into these separate sections and volumes, every part of each shall be deemed to be supplementary to and complementary of every other part and shall be read with and into the CONTRACT so far as it may be practicable to do so.
- 1.2 Where any portion of the General Condition of Contract is repugnant to or at variance with any provisions of the Special Conditions of Contract, unless a different intention appears, the provisions of the Special Conditions of Contract shall be deemed to over-ride the provisions of the General Conditions of Contract and shall to the extent of such repugnancy, or variations, prevail.
- 1.3 Wherever it is mentioned in the specifications that the CONTRACTOR shall perform certain WORK or provide certain facilities, it is understood that the CONTRACTOR shall do so at his cost and the VALUE OF CONTRACT shall be deemed to have included cost of such performance and provisions, so mentioned.
- 1.4 The materials, design, and workmanship shall satisfy the relevant INDIAN STANDARDS, the JOB SPECIFICATIONS contained herein and CODES referred to. Where the job specification stipulate requirements in addition to those contained in the standard codes and specifications, these additional requirements shall also be satisfied.
- 1.5 The intending bidder shall be deemed to have visited the site. Non-familiarity with site condition and unawareness of General Condition of contract will not be considered a reason either for extra claim or for not carrying out work in strict conformity with drawings and specifications.

2.0 LOCATION:

BCPL TOWNSHIP, Lepetkata, Dibrugarh, Assam

3.0 SCOPE OF WORK:

The Scope of work shall be as per Special Conditions of Contract Part-B.

4.0 TIME OF COMPLETION/PERIOD OF CONTRACT:

The Time of Completion/Period of Contract shall be as per Special Conditions of Contract Part-B.

The work shall be executed strictly as per time Schedule given in Tender Document. The period of completion given includes the time required for mobilization as well as testing, rectifications, if any, re-testing and completion in all respects to the entire satisfaction of the Engineer-in-Charge.

5.0 TERMS OF PAYMENT:

Payment will normally be made within 30 days of submission of bills to Engineer-in-charge after applicable deduction of Income Tax and any other taxes and duties.

Other terms and conditions related to Payment terms are specified in SCC Part B.

6.0 EARNEST MONEY:

The bidder must deposit the earnest money as given in the letter/notice inviting tenders failing which the tender is liable to be rejected. Earnest Money can be paid by way of Demand Draft drawn on any Scheduled/Nationalized

Bank in favor of **M/s. Brahmaputra Crackers & Polymers Limited payable at STATE BANK OF INDIA, DIBRUGARH, ASSAM.**

Alternatively, Earnest Money may also be submitted in the form of Bank Guarantee from any Nationalized/Schedule Bank of India. The Bank Guarantee so furnished by the bidder shall be in the proforma prescribed by the OWNER attached with the Tender document. No interest shall be paid by the OWNER on the Earnest Money deposited by the bidder. The Bank Guarantee furnished in lieu of Earnest Money shall be kept valid for a period of **(6) SIX MONTHS** from the date of opening of tender.

BCPL will refund the Earnest Money of the unsuccessful bidders directly to the bidders within a reasonable period of time. Correspondence in this regard may be addressed to BCPL directly by the BIDDERS.

7.0 INCOME TAX/ SALES TAX/WORKS CONTRACT TAX:

Income Tax deduction shall be made from all payments to the contractors as per rules and regulation in force in accordance with the Income Tax Act prevailing from time to time. Sales Tax, Works Contract Tax and other duties/levies, as applicable shall be borne by the contractor.

The BCPL will issue the necessary certificate for income tax deduction at source, however, the contractor has to submit detail of their **Permanent Account No. (PAN)** before issue of such certificate. However, if the contractor has not been allotted PAN and has applied for the same to Income Tax department / the authorized agency nominated by Income Tax department, contractor shall submit the copy of application filed for allotment of PAN No. In absence of any of these documents, no TDS certificate shall be issued by BCPL.

Similarly, in case of Works Contract (involving both supply of material and services) Tax will be deducted at source by BCPL towards W.C.Tax at the rate applicable from time to time (presently 4%) and issue necessary certificate to this effect.

8.0 SERVICE TAX:

The Quoted rates should be inclusive of all taxes & duties applicable during the contract period except Service Tax and Education Cess thereon. Service Tax and Cess thereon shall be paid extra if applicable on submission of documentary evidence/invoice(s).

The bidder shall indicate in its bid the Service Tax registration no. and in case the Service Tax registration no. is not available, the bidder will give confirmation for obtaining registration with a copy of application for registration.

The Contractors liable to pay Service Tax for the work / services rendered to BCPL, shall specifically mention the Service Tax registration No. in their Invoice(s). Further, the amount and rate of Service Tax shall be separately and distinctly specified in the Invoice(s).

For payment of service tax, serially numbered invoice / bill shall be issued by the service provider and should also specify following as per rate 4A of service tax Rules:

- (i) The name, address and registration number of the service provider
- (ii) The name and address of the recipient of the taxable service
- (iii) Description, classification and value of taxable service provided and
- (iv) The service tax payable on such services

The above details are required to enable BCPL to avail Cenvat credit for the service tax payments.

9.0 SECURITY DEPOSIT:

9.1 Security deposit @ 10% of contract value has to be deposited within ten days of receipt of LOA/LOI by the contractor. EMD deposited with the tender shall be adjusted towards security deposit/ISD provided it is deposited by Demand Draft/Bankers Cheque/Bank Guarantee.

9.2 No interest shall be payable by the Company to the contractor for the amount of Security deposit.

9.3 Contractor can furnish the initial or total security deposit amount through bank guarantee from any nationalized /Schedule bank in prescribed proforma which shall be valid for 90 days beyond completion of the job or expiry of Defect Liability Period whichever is applicable.

9.4.1 Security Deposit shall be refunded within 90 days after the completion of work or Defect Liability Period whichever is applicable.

10.0 TECHNICAL SPECIFICATION:

As enumerated in Special Conditions of Contract/Scope of Work/attached Drawing/ Details/Schedule of Rates.

11.0 TESTS AND INSPECTION:

- 11.1 The Contractor shall carry out the various tests as enumerated in the technical specifications of this tender document and the technical documents that will be furnished to him during the performance of the work and no separate payment shall be made unless otherwise specified in schedule of rates.
- 11.2 All the tests either on the field or at outside laboratories concerning the execution of the work and supply of materials by the Contractor shall be carried out by Contractor at his own cost.
- 11.3 The Contractor shall provide for purposes of inspection access ladders, lighting and necessary instruments at his own cost for inspection work.
- 11.4 Any work not conforming to execution drawings, specifications or codes shall be rejected forthwith and the Contractor shall carryout the necessary rectification at his own cost.
- 11.5 All results of inspection and tests will be recorded in the inspection reports, Proforma of which will be approved by the Engineer-in-Charge. These reports shall form part of the completion documents.
- 11.6 For materials supplied by Owner, Contractor shall carryout the tests, if required by the Engineer-in-Charge, and the cost of such tests shall be reimbursed by the owner at actual to the Contractor on production of documentary evidence. Contractor shall inspect carefully all equipment before receiving them from Owner for installation purposes. Any damage or defect noticed shall be brought to the notice of Engineer-in-Charge.
- 11.7 Inspection and acceptance of work shall not relieve the Contractor from any of his responsibilities under this Contract.

12.0 MEASUREMENT OF WORK:

- 12.1 Measurement of works shall be made in the units mentioned in the Schedule of Rates as per details given in Technical/Standards specifications.
- 12.2 Wherever details are not available or inadequate in the execution drawings, physical measurements will be taken by the contractor in the presence of the representative of the Engineer-in-Charge. In such cases payment will be made on actual measurements.

13.0 DEFECT LIABILITY PERIOD:

The defect liability period shall be as per Special Conditions of Contract of Part-B.

14.0 CONSTRUCTION EQUIPMENT AND SITE ORGANIZATION:

- 14.1 The Contractor shall without prejudice to his overall responsibility to execute and complete the work as per specifications and time schedule, progressively deploy adequate equipment and tools and
- 14.2 Tackles and augment the same as decided by the Engineer-in-Charge depending on the exigencies of the work so as to suit the work/construction schedule without any additional cost to owner. The bidder shall submit a list of construction equipment he proposes to deploy for the subject work along with deployment schedule. No Construction Equipment shall be supplied by the Owner.
- 14.3 Subject to the provisions in the tender document and without prejudice to Contractor's liabilities and responsibilities to provide adequate qualified and skilled personnel on the work, contractor shall deploy site organization and augment the same as decided by the Engineer-in-Charge depending on the exigencies of work, without any additional cost to owner. The bidder shall submit the details of minimum site organization proposed by him.

15.0 MOBILIZATION ADVANCE (M.A.):

No mobilization advance is payable for this work.

16.0 COMPENSATION FOR EXTENDED STAY:

No compensation for extended stay is payable to contractor.

17.0 ABNORMALLY HIGH RATED ITEMS (AHR ITEMS):

In items rate contract where the quoted rates for the items exceed 150% of the owners/estimated rates, such items will be considered as Abnormally High Rates Items (AHR) and payment of AHR items beyond the SOR stipulated quantities shall be made at the least of the following rates:

- (I) Rates as per SOR, quoted by the contractor.
- (II) Rate of the item, which shall be derived as follows:
 - a) Based on rates of machine and labor as available from the contract (which includes contractor's supervision, profit, overheads and other expenses).
 - b) In case rates are not available in the contract, rates will be calculated based on prevailing market rates of machine, material and labor plus 10% to cover contractor's supervision profit, overhead & other expenses.

18.0 MISCELLANEOUS:

All obligations arising of labor deployment labor laws to meet the necessary statutory requirement would solely lie on the contractor. Contractor would be solely responsible for safety and security of manpower and materials.

19.0 SUBMISSION OF TENDER DOCUMENTS:

Over-writing should be avoided. Any overwriting or cutting should be signed by the bidder. All copies of tender documents along with drawings should be signed and submitted by the bidder.

20.0 SCHEDULE OF RATES:

20.1 The quantities indicated in Schedule of Rates are just tentative. The rates quoted by the bidder shall remain firm for any variation and will assume to be inclusive of all taxes & duties excluding Service Tax & Cess thereon.

20.2 No escalation of whatsoever nature shall be paid to the contractor for the entire Contract Period.

21.0 COMPENSATION FOR DELAY:

21.1 In case of delay in mobilization or in completion of work in all respects and to the full satisfaction of Engineer-In-Charge, the Engineer-In-Charge may at his discretion impose a penalty at the rate of 0.5% per week or part thereof limited to 5% of the contract value.

21.2 Alternatively, in case the Engineer-In-Charge feels that the progress of work is dissatisfactory and the work may be delayed beyond the scheduled or contractual completion date, he may at his discretion get the work done through other agency at the risk and cost of the contractor without prejudice to other rights available to owner under the contract. The decision of the Engineer-In-Charge shall be final and binding in this regard.

22.0 TERMINATION OF CONTRACT:

The Owner/ Engineer-in-Charge reserve the right to terminate the contract on giving one-week notice without assigning any reason.

23.0 CONTRACT AGREEMENT:

If the work is awarded the contractor shall enter into an agreement with BCPL in the prescribed Performa within 10 days of the issue of LOA/LOI whichever is earlier. The agreement shall be executed on non-judicial stamp paper of RS. 100/- .The cost of stamp paper shall be borne by the contractor. The format of agreement can be obtained from the office of the Manager (C&P), BCPL, DIBRUGARH, ASSAM.

24.0 SUPERVISION OF WORK:

Contractor or his authorized representative shall be available at site all times, during the progress of the work.

25.0 CLEARANCE OF SITE:

25.1 As a part of the contract the contractor shall completely remove all temporary/disposable materials, while execution of work at his own cost and initiative and dispose off the same as directed by Engineer-in-charge.

25.2 The works will not be considered as complete and taken over by the owner, until all the temporary works, labor and staff colonies etc. constructed are removed and the work site cleared to the satisfaction of the Engineer-in-charge, surplus materials and rubbish is cleared off the site completely and the work shall have been measured by the Engineer-in-charge whose measurement shall be binding and conclusive.

25.3 If the contractor fails to comply with the requirements of this clause on or before the date fixed for the completion of the work, the Engineer-in-charge may at the expenses of the contractor remove such, surplus materials and rubbish and disposal off the same as he thinks fit and clean off such dirt as aforesaid, and the contractor shall

forthwith pay the amount of all expenses as incurred and shall have no claim in respect of any such surplus materials as aforesaid except for any sum actually realized by the sale thereof.

26.0 ADHERENCE TO SAFETY REGULATIONS:

Contractor shall ensure that all safety precautions required one observed at all times during the execution of the job.

27.0 NUISANCE:

The contractor or his representative shall not at any time cause any nuisance on the site or do anything which shall cause unnecessary disturbance to the owners or tenants or occupants or their properties near the site and to the public generally.

28.0 OWNER NOT BOUND BY PERSONAL REPRESENTATION:

The contractor shall not be entitled to any increases on the schedule of rates or any other right or claim whatsoever by reason of any representation, explanation statement or alleged representation explanation statement or alleged representation, promise or guarantees given or called to have been given to him by any person.

29.0 CARE OF WORKS:

From the commencement to completion of the work, the contractor shall take full responsibility for the care for all works including all temporary works any in case any damages, loss or injury shall happen to the work or to a part thereof or to any temporary works from any reason.

30.0 DEFENCE OF SUITS:

If any action in court is brought against the owner or an officer or agent of the owner, for the failure, omission or neglect on the part of the contractor to perform any acts, matters, convenient or things under the contract or damage or injury caused by the alleged omission or negligence on the part of the contractor, his agents, representative or his subcontractors or in connection with any claim based on lawful demand of sub-contractor, shall in such cases indemnify and keep the owner and/or their representatives harmless from all lesson, damages, expenses or decrease arising out of such action.

31.0 RESPONSIBILITIES OF THE CONTRACTOR AND COMPLIANCE WITH LABOUR/INDUSTRIAL LAWS:

- 31.1 The contractor shall have his own PF code no. with the RPFC as required under employee PF & Miscellaneous Provisions Act, 1952.
- 31.2 The contractors shall periodically submit the chalans / receipts / proof for the depositing PF contribution with RPFC.
- 31.3 The contractor is required to obtain labor license under the provisions of Contract Labor (R&A) Act, 1970 from the office of ALC, Ministry of Labor, Govt. of India, Dibrugarh.
- 31.4 The contractor is liable to abide by all necessary licenses / permissions from the concerned authorities as provided under the various labor legislations.
- 31.4.1 The contractor shall discharge obligations as provided under various statutory enactments including the employee's provident fund and Miscellaneous Provisions Act, 1952, Contract Labor (R&A) Act, 1970, Minimum Wages Act, 1948, Payment of wages act 1936, workman compensation act and other relevant acts, rules and regulations enforced from time to time.
- 31.5 The contractor shall be solely responsible for the payment of wages and other dues to the personnel, if any, deployed by him latest by 7th day of the subsequent month.
- 31.7 The contractor shall be solely responsible and indemnify the BCPL against all charges, dues, claim etc. arising out of the disputes relating to the dues and employment of personnel, if any, deployed by him.
- 31.8 The contractor shall indemnify BCPL against all losses or damages, if any, caused to it on account of acts of the personnel, if any, deployed by him.
- 31.9 All personnel deployed by the contractor should be on the rolls of the contractor.

- 31.10 The contractor shall ensure regular and effective supervision and controls of the personnel, if any, deployed by him and give suitable direction for undertaking the contractual obligations.
- 31.11 The personnel to be deputed by the contractor shall observe all security, fire and safety rules of BCPL while at the site. His work will be supervised by the supervisors of contractor. Contractor has to be strictly adhere to guidance, instruction when required.
- 31.12 Contractor shall provide proper identification cards for his employees to be deputed by him for work, duly signed by the contractor or authorized person on behalf of contractor. Also the contractor should obtain entry passes from CISF through engineer-in-charge for his employees.
- 31.13 Contractor has to deploy the personnel with no past criminal records. Reformed people, names of such persons should be clearly indicated in case of. Also the contractor has to provide police verification for all the persons deployed by him.
- 31.14 While confirming to any of these conditions, the contractor should ensure that no law of state regarding labor, their welfare, conduct etc, is violated. The contractor shall indemnify BCPL for any action brought against him for violation, non-compliance of any act, rules & regulation of center / state / local statutory authorities.
- 31.15 All existing and amended safety / fire rules of BPC, BCPL are to be followed within the BPC plant or service center.
- 31.16 Contractor shall ensure payment of wages to the person employed and meet all statutory obligation of payment as per Minimum Wages act 1948 and payment of wages Act 1936.
- 31.17 Boarding and lodging facilities for contractor's personal for carrying out the work is to be made by the contractor at his own cost outside the plant premises.
- 31.18 Special safety equipment e.g. breathing apparatus etc. shall be arranged by the Contractor.
- 31.19 The contracts will be required to provide full body harness safety belt for all their workers working at site positively.
- 31.20 The contractor should submit a valid health check-up certificate of their workers/labourers to BCPL before starting the job from a recognized Government Hospital towards the sound health for carrying out the job/work at site by each individual deployed.
- 31.21 Before undertaking jobs, contractor shall take work permit from Engineer-in-charge and same shall be returned after completion of job.
- 31.22 All types of transport connected with the work shall be in the scope of the contractor.
- 31.23 Suitable site office space may be provided by BPC, BCPL if required and available.
- 31.24 BCPL will provide free water, steam, air and electricity at suitable points, if required, for under taking the job.
- 31.25 All personnel undertaking the job proposed to be deployed by the contractor shall be medically examined and declared fit by qualified medical practitioner. It should be insured that no personnel engaged by the contractor is suffering from communicable disease.
- 31.26 Technicians/ supervisors deployed by the contractor should be technically qualified for fulfilling the contractual obligation.
- 31.27 In case of account, injury and death caused to the employee of the contractor while executing the work under the contract, the contractor shall be solely responsible for payment of adequate compensation, insurance money etc. to the next kith & kin of injured / diseased. Contractor shall indemnify BCPL from such liabilities.
- 31.28 The contractor shall also undertake to obtain necessary insurance coverage covering all risks connected with the job to be undertaken by him under the contract from insurance company and pay the premium accordingly.

32.0 PHOTOGRAPHS/LABOUR PERMISSION/VEHICLE PERMISSION :

The contractor shall arrange to make photo gate passes/labor permissions/vehicle passes etc. for his persons/labors/vehicles for working in site plant premises at his own cost as rules of the company.

33.0 ARBITRATION CLAUSE:

- 33.1 All disputes or differences, whatsoever, arising between the parties hereto pertaining to any part of the contract including its execution or concerning the WORKS or maintenance thereof this CONTRACT or to the rights or to liabilities of the parties or arising out or in relation thereto whether during or after completion of the CONTRACT or whether before or after determination, foreclosure or breach of the CONTRACT (other than those in respect of

which the decision of any person is by the CONTRACT expressed to be final and binding) shall after written notice by either party to the CONTRACT be referred for adjudication to a sole arbitrator to be appointed by BCPL as hereinafter provided.

- 33.2 For the purpose of appointing the Sole Arbitrator referred to above, the Appointing Authority will send within thirty days of receipt of the notice, to the CONTRACTOR a panel of three names which are not connected with the work in question.
- 33.3 The CONTRACTOR shall on receipt of the names as aforesaid, select any one of the persons named to be appointed as a sole Arbitrator and communicate his names to the Appointing Authority within thirty days of receipt of names. The Appointing Authority shall thereupon without any delay appoint the said person as the sole arbitrator. If the CONTRACTOR fails to communicate his choice for appointment of an Arbitrator, the Appointing Authority shall do it on expiry of 30 days.
- 33.4 If the Arbitrator so appointed is unable to or unwilling to act or resigns or vacates his office due to any reason whatsoever, another sole Arbitrator shall be appointed as aforesaid.
- 33.5 The WORK under the CONTRACT shall however, continue during the Arbitration proceedings and no payment due or payable to the CONTRACTOR shall be withheld on account of such proceedings.
- 33.6 The venue of arbitration shall be Guwahati.
- 33.7 The award of the Arbitrator shall be final and binding on both the parties.
- 33.8 Subject to aforesaid the provisions of the Indian Arbitration and Conciliation Act, 1996 or any statutory modification or re-enactment thereof and the rules made there under, and for the time being in force, shall apply to the arbitration proceeding under this clause.

34.0 JURISDICTION:

The CONTRACT shall be governed by and constructed according to the laws in force in INDIA. The CONTRACTOR hereby submits to the jurisdiction of the Courts situated at GUWAHATI for the purpose of disputes, actions and proceedings arising out of the CONTRACT.

35.0 PRICE PREFERENCE:

Price Preference to Central/State Government/Public Sector, Enterprises (PSEs), Public Sector Construction and Services Enterprises or joint ventures with PSEs shall be applicable as per directives of Government of India.

36.0 SUMMARY TERMINATION OF CONTRACT DUE TO SUBMISSION OF FALSE DOCUMENT:

- 36.1 Bidders are required to furnish the complete and correct information/documents required for evaluation of their bids. If the information/documents forming basis of evaluation is found to be false/forged, the same shall be considered adequate ground for rejection of the Bids and forfeiture of Earnest Money Deposit.
- 36.2 In case, the information/document furnished by the contractor forming basis of evaluation of his bid is found to be false/forged after the award of the contract, BCPL shall have full right to terminate the contract and get the remaining job executed at the risk & cost of such contractor without any prejudice to other rights available to BCPL under the contract such as forfeiture of Security Deposit, withholding of payments etc.
- 36.3 In case the issue of submission of false document comes to the notice after execution of the work, BCPL shall have full right to forfeit any amount due to the contractor along with forfeiture of Security Deposit furnished by the contractor.
- 36.4 Further, such contractor/bidder shall be blacklisted for future business with BCPL.

37.0 SUBMISSION OF ATTESTED COPIES OF CERTIFICATES/DOCUMENTARY EVIDENCES

- 37.1 The bidders are required to submit the copy of PF certificates duly attested by Gazetted Officer/Officer of Public Sector Enterprises.
- 37.2 Further, the bidders are required to furnish the attested copy (ies) of Power of Attorney/Partnership Deed.
- 37.3 Bidders are required to furnish the attested copy(ies) of documentary evidence in support of meeting the Bidder's Eligibility Criteria.
- 37.4 Non-submission of the attested copies of the certificates/documents will render they bid non-responsive and liable for rejection.

38.1 SUB LETTING OF WORK:

No contractor shall sub let or assign any work in part or whole to any firm, individual, partnership firm, Pvt. Ltd., Company, Proprietorship firm etc without the prior written permission of BCPL. In case the contractor sub lets or assigns the contract in part or whole without the prior written permission of BCPL and any claim referred by any firm / individual to BCPL stating that the main contractor has not paid his or their dues/ payments, in that circumstances, BCPL shall without assigning any reasons, withhold from the payments of contractor, the amount equivalent to the claim amount of sub contractor/ individual/ vendor (s) etc. The same shall be released to the contractor after contractor and labour/ supplier/ sub contractor jointly submits a joint written settlement to BCPL.

38.2 AFFIDAVIT

The bidder shall submit an affidavit duly notarized to the effect "that the document submitted by him are true and genuine and in case of any discrepancy noticed or observed at any stage the bidder shall be personally responsible not only for the damages or loss to BCPL, but also for criminal proceedings under the relevant laws".

38.3 PF Registration:

Bidder must have their own Valid P.F. account / code no. from Regional PF commissioner and attested copy of the same are to be submitted along with the technical bid.

39.0 The deployed labour by the contractor shall be directly controlled / supervised / directed by the contractor himself or his representatives.

40.0 PENALTY AGAINST VIOLATION OF SAFETY, HEALTH AND ENVIRONMENT RELATED NORMS:

40.1 Against Violation of applicable Safety, Health and Environment related norms, a penalty of Rs.5,000.00 per occasion.

40.2 Violation as above resulting in:

40.3 Any physical injury, a penalty of 0.5% of the contract value (maximum of Rs. 2,00,000.00) per injury in addition to Rs. 5,000.00 as in para 40.1.

40.4 Fatal accident, a penalty of 1% of the contract value (maximum of Rs. 10,00,000.00) per fatality is addition to Rs. 5,000.00 as in para 40.1.

**BRAHMAPUTRA CRACKER & POLYMER LIMITED
LEPETKATA, DIBRUGARH, ASSAM**

A: CONTRACTOR'S SAFETY RECORD IN LAST ASSIGNED JOB: -

- Total nos. of employees =
- Working hours / day =
- Nos. of days worked =
- Total man hours worked =
(total nos. of employees X
working hrs / day X no. of days
worked)
- No. of fatalities =
- No. of major injuries =
- No. of three days injuries =
- Nos. of minor injuries =
- Total nos. of occupational
Diseases / illness =

B: SAFETY INFORMATION TO BE SUBMITTED BY CONTRACTOR:

Following information to be submitted at the end of the every month to the, office of In-charge (F&S) directly with copy to Engineer-In-Charge.

- A.
- Total nos. of employees =
 - Working hrs / days =
 - Duration of contract (in days) =

B. STATUS OF SAFETY – GADGETS

- Nos. of helmets =
- Nos. of safety belt =
- Nos. of goggles =

Welding Goggles =	Grinding Goggles =	General Goggles =
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- Nos. of hand gloves =
- No. of safety shoe / gum boot =
- Length of barricading tapes =
- Status of warning tags (like radiography, road blocking, no entry etc. use) =

C. INCIDENT STATUS

- Name of safety representative =
- Nos. of minor injuries =
- Nos. of three days injuries =
- Nos. of major injuries =
- Nos. of fatalities (if any) =

D. INSPECTION RECORD

- Gas cutting set & welding Machine inspected on & by =
- List of hand tools updated on =
- Hand tools inspected on & by =
- Ladders & lifting tools inspected on & by =

Signature of Site In-charge

Contractor's Signature_____

NO DEVIATION CERTIFICATE

**BRAHMAPUTRA CRACKER & POLYMER LIMITED
LEPETKATA, DIBRUGARH, ASSAM**

Dear Sir,

We understand that any deviation/exception in any form may result in rejection of bid. We, therefore, certify that we have not taken any exceptions/deviations anywhere in the bid and we agree that if any deviation/exception is mentioned or noticed, our bid may be rejected.

NAME : _____

BIDDER'S NAME : _____

COMPANY SEAL : _____

SPECIAL CONDITIONS OF CONTRACT (SCC)

PART-B

Name of Work: EXTERNAL ELECTRIFICATION WORK OF BCPL TOWNSHIP FOR M/S BRAHMAPUTRA CRACKER & POLYMER LIMITED AT LEPETKATA, DIBRUGARH, ASSAM

TENDER NO: BCPL/DIB/C&P/SER/20110138/DBK

1. General:

1.0 The special conditions of contract shall be read in conjunction with general conditions of contract where the provisions of these special conditions are at variance with the provisions of the General Conditions of the contract; the provision of these special conditions shall take precedence.

1.1 ORDER OF PRECEDENCE:

In case of ambiguity in Schedule of Rates, General Conditions of Contract, Specifications, Drawings the following order of precedence will prevail –

- a) Telex/Telegram/Fax of intent, detailed letter of intent along with statement of agreed variations and its enclosures and any corrigendum/addendum.
- b) Architectural, Structural and Services drawings
- c) Price part (with brief specifications)
- d) Specifications/Special notes regarding specifications/drawings in conjunction with each other however incase of any variations of size/thickness/dimensions of members between drawings/specifications etc. then drawings shall prevail over specifications.
- e) Special/additional conditions of contract.
- f) General conditions of contract.

2. Location and Site Condition:

2.1 The site of the proposed WORK at BCPL Township is located adjacent of NH-37 (almost 16KM from Dibrugarh Town – towards Guwahati) in the Dibrugarh district of Assam.

2.2 The contractor shall deem to have inspected the site and thoroughly acquainted him with the site condition before submitting their tender. Non-familiarity with site condition will not be considered a reason either for extra claims or for not carrying out works in strict conformity with drawings and specifications.

3. Scope of Work:

3.1 The work involves EXTERNAL ELECTRIFICATION WORK OF BCPL TOWNSHIP FOR M/S BRAHMAPUTRA CRACKER & POLYMER LIMITED AT LEPETKATA, DIBRUGARH, ASSAM as per drawings/specifications. The job scope is inclusive of necessary foundations and all associated civil works.

3.2 The basic scheme and the key requirements are spelt out in different parts of Technical specifications and the set of drawings as annexed with the document for different building works. The contractors in their own interests are advised to make themselves aware of site conditions, actual job requirement.

3.3 Quoted rate shall be inclusive of all required labour, materials, tools and tackles, consumables etc. and item rate offers shall be quoted taking into consideration that job shall be done as per specifications/drawings and with best workmanship. Quoted rate shall also include the cost for uprooting of tree trunks, clearing of jungles/bushes for smooth start of the job.

3.4 Site clearance, jungle clearance and cutting of shrubs, trees etc.

4. Scope of Supply:

4.1 All materials and labours required for completion of the work are to be supplied by the contractor unless mentioned otherwise.

5. Right of Employer to accept/reject any tender:

5.1 The right to accept the tender rests with the EMPLOYER. The EMPLOYER, however, does not bind himself to accept the lowest tender and reserves the authority to reject any or all tenders received without assigning any reason what so ever.

6. Employer's Obligations:

6.1 The owner's obligations are limited to the following:

- a) Handing over the site
- b) Supply of construction drawings
- c) Payment to the contractor for performance of the work under the contract as per terms and conditions specified therein.
- d) A piece of land for setting up temporary site office, godown etc.

7. Construction Water and Power:

7.1 CONTRACTORS have to arrange for themselves construction water and power for the completion of the job.

8. Information Required:

8.1 The following details are also required to be submitted along with of offer (supporting documents/certificates shall be required to be submitted with their request letters for short listing purpose).

The tenders as submitted will consist of the following:

- a) Complete set of Tender Documents (Original) as issued/sold duly filled in and signed by the tenderer as prescribed in different clauses of the tender document.
- b) Earnest money in the manner specified in clause 6 of GCC hereof.
- c) Power of attorney or a true copy thereof duly attested by a Gazetted Officer in case an authorized representative has signed the tender, as required by clause 14 of GCC hereof.
- d) Information regarding tenderers in the pro-forma enclosed.
- e) Details of work of similar type and magnitude carried out by the Tenderer in the pro-forma provided in the tender document.
- f) Organization chart giving details of field management at site, the tenderer for using in this work.
- g) A detail of construction plant and equipments available with the tenderer proposes to have for this job.
- h) Solvency Certificate from Schedule Bank to prove the financial ability to carry out the work tendered for.
- i) Latest Balance Sheet and Profit & Loss Account duly audited.
- j) Details of present commitment as per pro-forma enclosed to tender.
- k) Data required regarding SUB-CONTRACTOR(s) / Supplier / Manufacturers and other technical information's the tender wish to furnish.
- l) Provident Fund Registration Certificate.
- m) List showing all enclosures to tender.

9. Deviation in tender documents:

9.1 The tenderers are required to quote lump sum rates and unit rates (as per SOR) inclusive of all royalties, taxes, duties and levies as applicable from time to time without any deviations to the terms and conditions in tender document. If due to unavoidable reasons, tenderer stipulates any deviations, these shall be loaded to the quoted rates for evaluation of tenders as per procedure laid down by BCPL. However, no deviations to the following clauses shall be acceptable and any offer containing deviations/exceptions to these shall be rejected:

- a) Security Deposit
- b) Penalty/Compensation for delay
- c) Defect Liability period
- d) Schedule of rates
- e) Termination
- f) Time schedule

10. Schedule of Rates:

10.1 The Schedule of Rates shall be read in conjunction with Special Conditions of Contract, General Conditions of Contract, Technical Specifications, Drawings and any other Document forming a part of this CONTRACT.

All items of work in the schedule of rates shall be carried out as per the specifications; drawings and instructions of the ENGINEER-IN-CHARGE and the rates are inclusive of all materials, consumables, labour, supervision, tools and tackles as well as preparatory, incidental, intermediate/auxiliary/ancillary or enabling works.

The rates shall be offered on LUMPSUM basis after considering all the aspects necessary for job execution as per drawings /specifications.

Dewatering of surface as well as subsoil water, wherever required to carry out the works shall be carried out by the CONTRACTOR and slopes for effective drainage shall be provided within the quoted rates.

Surplus excavated earth, materials; muck etc. shall be disposed off by the CONTRACTOR at his own cost to the places as directed by the ENGINEER-IN-CHARGE. The site shall be cleaned of all surplus material after execution quoted rates shall be deemed to be inclusive of all these provisions.

Preparing approaches and working area for the movement and operation of CONTRACTORS men and materials, leveling the areas for assembly and erection shall be the responsibility of the contractor and the quoted rates shall be deemed to include all these.

11. Registration with PF Authorities:

- 12.1 Intending bidders must furnish the proof of having valid PF code and valid registration with regional provident fund authorities along with their tenders. Proof of challans/receipt with regional PF authorities shall be submitted from time to time for verification of ENGINEER-IN-CHARGE.

12. VAT Registration:

- 12.1 Tenderer must submit wherever necessary attested copy of registration certificate on prescribed pro-forma under the Assam VAT Act. Alternatively, tenderer must give an undertaking that they would comply with this requirement before award of work.

13. Labour License:

- 13.1 Contractor shall obtain an appropriate license from concerned authority under the contract labour (abolition and regulation) Act 1970 and furnish copy of the same to owner. Contractor shall also be responsible for its validity and for complying with provisions of all applicable Acts, rules & regulation in force at the site of work.

14. Tests and Inspection:

- 14.1 The CONTRACTOR shall carry out the various tests as enumerated in the technical requirements annexed with this document (LIST OF MANDATORY TEST) and no separate payment shall be made unless otherwise specified in schedule of rates.
- 14.2 All the tests either on the field or at outside laboratory are concerning the execution of the work and supplies of materials if any by the contractor shall be carried out by CONTRACTOR at his own cost.

15. Completion Certificate:

- 15.1 Within one month of the completion of work(s)/Part(s) in all respect, the contractor shall be furnished with a certificate by the ENGINEER-IN-CHARGE of such completion, but no certificate shall be given nor shall the work be deemed to have been executed until all surplus materials and rubbish is cleared off the site completely nor until the work shall have been measured by the ENGINEER-IN-CHARGE whose measurement shall be binding and conclusive. The works will not be considered as complete and taken over by the owner, until all the temporary works, labour and store and colonies etc. constructed are removed and the work site cleared to the satisfaction of the ENGINEER-IN-CHARGE.

If the CONTRACTOR fails to comply with the requirements of this clause on or before the date fixed for the completion of the works, the ENGINEER-IN-CHARGE may at the expenses of the CONTRACTOR remove such, surplus materials and rubbish and disposal off the same as he thinks fit and clean off.

Such dirt as aforesaid, and the CONTRACTOR shall forthwith pay the amount of all expenses incurred and shall have no claim in respect of any such surplus materials as aforesaid except for any such actually realized by the sale thereof.

16. Defects Liability Period:

16.1 The tenderer shall guarantee all the work (Including workmanship & materials, etc.) executed by him for a period of 12 months from the date of completion of work(s)/Part(s). If during this period any defect occur, the same shall be made good by the contractor at his own cost. Failure to comply with this requirement may result in the forfeiture of security deposit.

However, in case of critical items, if the guarantee period is beyond defect liability period, then guarantee shall applicable for that period also.

17. Time Schedule:

17.1 Total period of CONTRACT for this work will be for **8 (Eight) Months** to be reckoned from 7TH day from the date of issue of LOI/FOI. Time is the essence of the CONTRACT and as such as every effort should be made to complete the work within prescribed time period for the execution of the work as contemplated under this CONTRACT. BCPL reserves the right to terminate the CONTRACT without assigning any reason during the currency of the CONTRACT PERIOD by giving 30 days notice to the CONTRACTOR.

18. Architects / Consultant:

18.1 The company has appointed M/s. Rajkhowas Aarchi, M.D. Road, Guwahati - 03 as their Architects and Consultants for the planning, design and construction supervision of the project. For any clarification on this tender the tenderer shall contact the Architects/Consultants.

19. Escalation:

19.1 No Escalation shall be paid for this contract. CONTRACTORS are required to quote firm price for the work.

20. Provident Fund Act:

20.1 The CONTRACTOR, as a statutory obligation, should strictly comply with the provisions of the Employee's Provident Fund Act.

21. Extra and Substituted Item:

21.1 The rates for extra items/substituted items of work, ordered to be operated / executed shall be derived as under:

- a) If the item of work is similar to the item for which, the bidder has quoted rates in SOR, the quoted rate shall be applicable.
- b) If the rate for the item does not appear in the SOR, the rate shall be derived from similar items of work indicated in SOR.
- c) The rates for those items of work which cannot be derived from quoted rates in the SOR shall be derived from the prevailing market rates of material and labour plus 10% towards contractor's overheads and profits. The opinion of the Engineer in charge as to the current market rates for materials and the quantum of labour and material involved per unit shall be final and binding on the contractor.

For this purpose and for the purpose of sub-clause (c) above, the coefficient of labour, material and wastage shall be adopted from the CPWD analysis of rates/standard schedule of rates as decided by the ENGINEER-IN-CHARGE. The CONTRACTOR shall submit vouchers /quotations in proof of rates paid /likely to be paid for material and labour.

Above provisions for derivation of rates of extra items/substituted items shall supersede the provisions indicated in GCC.

22. Guarantees and Warranties:

22.1 All manufacturer's warranties and guaranties for equipment supplied by the CONTRACTORS shall be passed on the EMPLOYER. Further, guarantees/warranties for any work carried out to specialized agencies shall also be passed on the EMPLOYER.

23. Extension for Time of Completion for addition, alteration and substituted work:

- a) In case of any addition alteration or substitution work, the time of completion of work shall be extended in the proportion to the value of altered, additional or substituted work that it bears to the original contract value of work and time. Over and above this, a further period to the extent of 20% of such extension shall be allowed to the contractor.
- b) The contractor shall not be entitled to increase in prices or for any compensation whatsoever on account of the extension of time allowed.

- c) Any extension of time granted under the provision of this clause shall be without prejudice to other conditions of contract and will not absolve the contractor from the obligations of other clauses under the contract.

The decision of the EMPLOYER in this regard will be final and binding on the CONTRACTOR.

24. Alterations, Additions and Omission:

24.1 The Architect make any variation of the form, quality or quantity of the works or any part thereof that may, in his opinion, be necessary and for that purpose or if for any other reason it shall, in his opinion be desirable he shall have power to order in writing to the contractor to do and the contractor shall do any of the following:

- a) Increase or decrease in the quantity of any work included in the contract.
- b) Omit any such work.
- c) Change the character or quality or kind of any such work.
- d) Change the levels, lines, position and dimension of any part of the works and
- e) Execute additional work of any kind necessary for the completion of the works and no such variation shall in any way vitiate or invalidate the contract. But the value, if any of all such variations, shall be taken into account in ascertaining the amount of the contract price.

25. Responsibility for Procurement:

25.1 Sole responsibility rests with CONTRACTOR for procurement of all materials required for completion work within the stipulated time.

26. Sales tax / turn over tax:

26.1 Tenderer should quote all inclusive prices including the liability of all types of taxes, duties and sales tax on works contract tax (if any) imposed by State/Central/Local Government bodies from time to time. Sales tax on works contract if applicable will be deducted at source as per the rules.

27. Income Tax:

27.1 Income tax deductions as per Income Tax rules shall be made from CONTRACTOR's running account bills unless specific exemption has been obtained by the CONTRACTOR from the Income Tax Dept. and documentary evidence to this effect has been submitted to the EMPLOYER.

28. Approvals:

28.1 The CONTRACTOR shall furnish to the ENGINEER-IN-CHARGE for approval samples of all material to be used in the item/work. Such samples shall be submitted before item/work is commenced in advance. It is the responsibility of the CONTRACTOR to arrange for tests as required by ENGINEER-IN-CHARGE at his own cost. The material representing approved samples shall only be used for the construction and installation. CONTRACTOR shall procure materials as indicated in list of approved makes (if given) / or materials with ISI certification may also be used after approval of ENGINEER-IN-CHARGE.

29. Sealed Tender:

29.1 The tenders shall be submitted in sealed envelopes as mentioned in clause no. 3.0 of General Conditions of Contract. All the tender papers issued (Vol. I & II) and all supporting documents/credentials authenticating the capability/resources of the CONTRACTORS and EMD shall be submitted along with the tendered offer.

30. Secured Advance against delivery of materials:

i) Secured advance on materials: 75% of the cost of the following materials to be paid :-

- i) Street Light Poles
- ii) Armoured XLPE cables (LT/HT)
- i) High Mast
- ii) LT Panels

The above items which are in the opinion of the Engineer-in-charge reasonably required in accordance with the contract and have been brought to site for incorporation in the works and are safe-guarded against loss, due to any cause whatsoever, to the satisfaction of the Engineer-in-charge to the storage or misuse of the materials and against the expenses entitled for their proper watch and safe custody. The contractor shall execute necessary indemnity/hypothecation bonds and complete other formalities as stipulated by owner/Engineer-in-charge.

- ii) Recoveries of advance so made would not be postponed until the whole of the work entrusted to the contractor is completed. They should be adjusted from his bills for work done as the materials are used, the necessary deduction being made whenever the item of work in which they are used are billed for.
- iii) The cost of materials for the purpose of payment as secured advance shall be as per the voucher / cash memo produced by the contractor against the materials and accepted by EMPLOYER/CONSULTANT.
- iv) Secured advance payment against materials at site shall be payable only through R.A. bills and not separately as and when the contractor brings the materials to the site. All secured advance bills shall be treated as running account bills of the contractor.

31. Variations in quantities of items during execution:

- 31.1** During execution of item/work variation in individual quantities may be up to any limit (plus and minus) as per the site requirement. The CONTRACTOR shall be bound to execute them at the rates quoted by him. BCPL also reserves the right to split the item/work in full or in part during its execution (depending upon exigencies of work) without assigning any reason thereof. The decision of ENGINEER-IN-CHARGE shall be final and binding on the contractor in this regard.

32. Special Note to Tenderer:

- a) The Special Conditions of Contract supersede the relevant clauses of General Conditions of contract.
- b) Supervision and conduct of all the personal deployed by the contractors shall be the sole responsibility of the CONTRACTOR.
- c) The CONTRACTOR should issue his own identity card to his personal after verifying their character and antecedents through appropriate authorities and BCPL shall have no role on it whatsoever.
- d) The payments of wages to the employees employed by the CONTRACTOR are to be disbursed by CONTRACTOR or his representatives in the presence of BCPL representative and payment register shall be signed by BCPL representatives.

33. Electrical Works:

- 33.1** Subject to provisions of the General Conditions of Contract, the inspection and tests as required under Indian Electricity Rules – 1956 and prescribed in I.S 732 (Part-III) – 1982 shall be conducted.

- 33.2** All tests clearances and certificates required by the State Government authorities for energizing / commissioning the electrical system laid by the contractor shall be obtained by the contractor shall perform such tests and undertake such rectification and or charges as may be required.

- 33.3** The Contractor shall have a valid electrical contractor's license for working in Assam State. The Contractor shall furnish a copy of the same to Engineer – In – Charge before commencement of any electrical work or work pertaining to electrical system. No electrical work or work pertaining to electrical system(s) shall be permitted to be executed without valid Electrical Contractors License being produced by the Contractor.

If the bidder does not have valid electrical license, they shall engage suitable sub contractor for electrical works after obtaining approval from Engineer – In – Charge. In such event, the contractor shall furnish the credentials of the sub contractors who have executed the similar electrical works as given in the bidding documents, immediately after award but not less than 15 days from the date of award of work to Engineer – In – Charge, for their review and approval. Bidder shall submit a confirmation to this effect in their bid.

34. Specialized Jobs:

- 34.1** The Contractor is bound to carry out the specialized jobs by the specialized agencies (for anti termite, water proofing, external painting etc.) as per the desire of the ENGINEER-IN-CHARGE. Contractor should arrange for the guarantees / warrantees as issued by the Company for the job carried out by them.

35. Terms of Payment:

35.1 PAYMENT OF RUNNING BILLS:

100% payment shall be released on completion of item / work as certified in the R.A bills after affecting the necessary deductions as stipulated elsewhere in the Contract Document for Security Deposit, Taxes etc.

35.2 PAYMENT OF FINAL BILL:

CONTRACTOR must submit his final bill within sixty days of completion of the work and payment of the final bill shall be made to the CONTRACTOR within 120 days of the submission of the bill and after completion of all obligations under the CONTRACT.

- 35.3** The bills shall be submitted in a printed form in quadruplicate along with soft copy of bill. Security deposit and other taxes as applicable shall be deducted from the bills. Payment of running bills shall be made to the contractor within 30 days of the submission of the bill to ENGINEER-IN-CHARGE.
All payments shall be made in Indian Currency.

35.4 MODE OF PAYMENT:

Name of Work:

EXTERNAL ELECTRIFICATION WORK OF BCPL TOWNSHIP FOR M/S BRAHMAPUTRA CRACKER & POLYMER LIMITED AT LEPETKATA, DIBRUGARH, ASSAM

No adhoc payment will be made.

GENERAL CONDITIONS OF CONTRACT (GCC)

Wherever written as "GAIL" in GCC should be read as "BCPL"

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ANNEXURES

1. Proforma for Indemnity Bond for Advance against material
2. Proforma for Contract Agreement
3. Proforma for Bank Guarantee for Earnest Money Deposit
4. Proforma for Bank Guarantee for Security Deposit

SUBMISSION OF TENDER

From :

M/s

To :

Brahmaputra Cracker & Polymer Ltd.

Main Fire Station Building,

BCPL Project Site, Lepetkata-786007

Dibrugarh, Assam

1. I/We hereby tender for execution of the WORKS of -----
-----as per TENDER DOCUMENT within the Time Schedule of completion of work for jobs, as separately signed and accepted by me/us, at the schedule of Rates quoted by me/us for the whole work in accordance with Notice/Letter Inviting Tender, General Conditions of Contract, Special Conditions of Contract, Schedule of Rates Specifications for materials and workmanship, Drawings, Time Schedule of Completion of job, and other documents and papers, all as detailed in the tender documents.
2. It has been explained to me/us that the time stipulated for jobs and completion of WORKS in all respects and in different stages mentioned in the "Time Schedule" of completion of jobs and signed and accepted by me/us is the essence of the CONTRACT. I/We agree that in the case of failure on my our part to strictly observe the Time of Completion mentioned for jobs or any of them and to the final Completion of WORK in all respects according to the schedule set out in the said "Time Schedule" of completion of jobs, I/We shall pay compensation to the OWNER as per provisions and stipulations contained in General Conditions of Contract and I/We agree to recovery being made as specified therein. In exceptional circumstances, extension of time which shall always be in writing may, however, be granted by ENGINEER-IN-CHARGE at his entire discretion for some items of work, and I/We agree that such extension of time will not be counted for the extension of completion dates stipulated for job and for the Final Completion of WORK as stipulated in the said "Time Schedule" of completion of jobs.
3. I/We agree to pay the Earnest Money and Security Deposit and accept the terms and conditions laid down in the memorandum below in this respect.

MEMORANDUM

- | | | |
|-----|--------------------------------|---|
| (a) | General Description of Work | |
| (b) | Earnest Money | (Rupees)

<div style="border-top: 1px solid black; padding-top: 10px;">The Earnest Money is payable in the manner set out in para 5 below.

The Earnest Money, if the tender is accepted, will be adjusted against the Security Deposit, when Earnest Money is paid by demand draft only.</div> |
| (c) | Security deposit | 10% of the CONTRACT amount, which will be paid in the manner set out in the General Conditions of Contract / Special Conditions of Contract. |
| (d) | Time allowed for starting work | From the date of issue of LOI / FOI/ LOA |

4. Should this tender be accepted, I/We hereby agree to abide by and fulfill all terms and conditions referred to above and in default thereof, to forfeit and pay to the OWNER or its successors or its authorized nominees such sums of money as are stipulated in conditions contained in General Tender Notice and other Tender Documents.
5. I/We hereby pay the Earnest Money of Rs.-----
(Rupees-----in Bank Demand Draft/Banker's
Cheque No.-----issued by -----(name and office of the
State Bank of India or any nationalized Bank) in favour of Brahmaputra Cracker & Polymer Ltd.
6. If I/We fail to commence the work specified in the Memorandum in Para (3) above, or I/We agree that the said OWNER or its successors without prejudice to any other right or remedy be at liberty to forfeit the said Earnest Money in full, otherwise the said earnest Money shall be retained by OWNER towards the security Deposit specified in (3) above. The said OWNER shall also be at liberty to cancel the Notice of Acceptance of Tender if I/We fail to deposit the Security Deposit as aforesaid or to execute and Agreement or to start WORK as stipulated in the Tender Documents.

I/we enclosed herewith evidence of my/ our experience of execution of works of similar nature and magnitude carried out by me/us in the prescribed proforma and also the income-Tax and sales Tax Clearance/Certificates.

Dated the _____ day of _____ 2011

Witness :

Name in Block Letters :

Address :

Yours faithfully,

Signature of Bidder (s) with the seal of the Firm

Name and Designation of authorized person signing the
tender on behalf of the Bidder (s)

General Conditions of Contract

SECTION- I DEFINITIONS

1. Definition of Terms:

- 1.1 In this CONTRACT (as here-in-after defined) the following words and expressions shall have the meanings hereby assigned to them except where the context otherwise required.
- 1.1.1. The EMPLOYER/COMPANY/BCPL means Brahmaputra Cracker & Polymer Ltd., a public limited company, incorporated under the Company's act 1956 and having its Registered office at Hotel Brahmaputra Ashok, M. G. Road, Guwahati – 781 001 and includes its successors and assigns.
 - 1.1.2. The "CONTRACTOR" means the person or the persons, firm or Company or corporation whose tender has been accepted by the EMPLOYER and includes the CONTRACTOR's legal Representatives his successors and permitted assigns.
 - 1.1.3. The ENGINEER/ENGINEER-IN-CHARGE" shall mean the person designated from time to time by the GAIL and shall include those who are expressly authorized by him to act for and on his behalf for operation of this CONTRACT.
 - 1.1.4. The "WORK" shall mean and include all items and things to be supplied/ done and services and activities to be performed by the CONTRACTOR in pursuant to and in accordance with CONTRACT or part thereof as the case may be and shall include all extra, additional, altered or substituted works as required for purpose of the CONTRACT.
 - 1.1.5. The "PERMANENT WORK" means and includes works which will be incorporated in and form a part of the work to be handed over to the EMPLOYER by the CONTRACTOR on completion of the CONTRACT.
 - 1.1.6. "CONSTRUCTION EQUIPMENT" means all appliances/equipment and things whatsoever nature for the use in or for the execution, completion, operation, or maintenance of the work or temporary works (as hereinafter defined) but does not include materials or other things intended to form or to be incorporated into the WORK, or camping facilities.
 - 1.1.7. "CONTRACT DOCUMENTS" means collectively the Tender Documents, Designs, Drawings, Specification, Schedule of Quantities and Rates, Letter of Acceptance and agreed variations if any, and such other documents constituting the tender and acceptance thereof.
 - 1.1.8. CONSULTANT: means M/s Rajkhowas Archi who are the consulting engineer to the Employer for this project and having registered office at M.D. Road, Chandmari, Guwahati - 03
 - 1.1.9. The "SUB-CONTRACTOR" means any person or firm or Company (other than the CONTRACTOR) to whom any part of the work has been entrusted by the CONTRACTOR, with the written consent of the ENGINEER-IN-CHARGE, and the legal representatives, successors and permitted assigns of such person, firm or company.
 - 1.1.10. The "CONTRACT" shall mean the Agreement between the EMPLOYER and the CONTRACTOR for the execution of the works including therein all contract documents.
 - 1.1.11. The "SPECIFICATION" shall mean all directions the various technical specifications, provisions attached and referred to the Tender Documents which pertain to the method and manner of performing the work or works to the quantities and qualities of the work or works and the materials to be furnished under the CONTRACT for the work or works, as may be amplified or modified by the GAIL or ENGINEER-IN-CHARGE during the performance of CONTRACT in order to provide the unforeseen conditions or in the best interests of the work or works. It shall also include the latest edition of relevant Standard Specifications including all addenda/corrigenda published before entering into CONTRACT.
 - 1.1.12. The "DRAWINGS" shall include maps, plans and tracings or prints or sketches thereof with any modifications approved in writing by the ENGINEER- IN-CHARGE and such other drawing as may, from time to time, be furnished or approved in writing by the ENGINEER-IN-CHARGE.
 - 1.1.13. The "TENDER" means the proposal along with supporting documents submitted by the CONTRACTOR for consideration by the EMPLOYER.
 - 1.1.14. The "CHANGE ORDER" means an order given in writing by the ENGINEER-IN-CHARGE to effect additions to or deletion from and alteration in the works.
 - 1.1.15. The "COMPLETION CERTIFICATE" shall mean the certificate to be issued by the ENGINEER-IN-CHARGE when the works have been completed entirely in accordance with CONTRACT DOCUMENT to his satisfaction.
 - 1.1.16. The "FINAL CERTIFICATE" in relation to a work means the certificate regarding the satisfactory compliance of various provision of the CONTRACT by the CONTRACTOR issued by the ENGINEER-IN-CHARGE/EMPLOYER after the period of liability is over.

- 1.1.17. "DEFECT LIABILITY PERIOD" in relation to a work means the specified period from the date of COMPLETION CERTIFICATE upto the date of issue of FINAL CERTIFICATE during which the CONTRACTOR stands responsible for rectifying all defects that may appear in the works executed by the CONTRACTOR in pursuance of the CONTRACT and includes warranties against Manufacturing/Fabrication/ Erection/Construction defects covering all materials plants, equipment, components, and the like supplied by the CONTRACTOR, works executed against workmanship defects.
- 1.1.18. The "APPOINTING AUTHORITY" for the purpose of arbitration shall be the CHAIRMAN and MANAGING DIRECTOR or any other person so designated by the EMPLOYER.
- 1.1.19. "TEMPORARY WORKS" shall mean all temporary works of every kind required in or about the execution, completion or maintenance of works.
- 1.1.20. "PLANS" shall mean all maps, sketches and layouts as are incorporated in the CONTRACT in order to define broadly the scope and specifications of the work or works, and all reproductions thereof.
- 1.1.21. "SITE" shall mean the lands and other places on, under, in or through which the permanent works are to be carried out and any other lands or places provided by the EMPLOYER for the purpose of the CONTRACT.
- 1.1.22. "NOTICE IN WRITING OR WRITTEN NOTICE" shall mean a notice in written, typed or printed characters sent (unless delivered personally or otherwise proved to have been received by the addressee) by registered post to the latest known private or business address or registered office of the addressee and shall be deemed to have been received in the ordinary course of post it would have been delivered.
- 1.1.23. "APPROVED" shall mean approved in writing including subsequent written confirmation of previous verbal approval and "APPROVAL" means approval in writing including as aforesaid.
- 1.1.24. "LETTER OF INTENT/FAX OF INTENT" shall mean intimation by a Fax/Letter to Tenderer(s) that the tender has been accepted in accordance with the provisions contained in the letter.
- 1.1.25. "DAY" means a day of 24 hours from midnight to midnight irrespective of the number of hours worked in that day.
- 1.1.26. "WORKING DAY" means any day which is not declared to be holiday or rest day by the EMPLOYER.
- 1.1.27. "WEEK" means a period of any consecutive seven days.
- 1.1.28. "METRIC SYSTEM" - All technical documents regarding the construction of works are given in the metric system and all work in the project should be carried out according to the metric system. All documents concerning the work shall also be maintained in the metric system.
- 1.1.29. "VALUE OF CONTRACT" or "TOTAL CONTRACT PRICE" shall mean the sum accepted or the sum calculated in accordance with the prices accepted in tender and/or the CONTRACT rates as payable to the CONTRACTOR for the entire execution and full completion of the work, including change order.
- 1.1.30. "LANGUAGE FOR DRAWINGS AND INSTRUCTION" All the drawings, titles, notes, instruction, dimensions, etc. shall be in English Language.
- 1.1.31. "MOBILIZATION" shall mean establishment of sufficiently adequate infrastructure by the CONTRACTOR at "SITE" comprising of construction equipments, aids, tools tackles including setting of site offices with facilities such as power, water, communication etc. establishing manpower organization comprising of Resident Engineers, Supervising personnel and an adequate strength of skilled, semi-skilled and un-skilled workers, who with the so established infrastructure shall be in a position to commence execution of work at site(s), in accordance with the agreed Time Schedule of Completion of Work. "MOBILISATION" shall be considered to have been achieved, if the CONTRACTOR is able to establish infrastructure as per Time Schedule, where so warranted in accordance with agreed schedule of work implementation to the satisfaction of ENGINEER-IN-CHARGE/ EMPLOYER.
- 1.1.32. "COMMISSIONING" shall mean pressing into service of the system including the plant(s), equipment(s), vessel(s), pipeline, machinery(ies), or any other section or sub-section of installation(s) pertaining to the work of the CONTRACTOR after successful testing and trial runs of the same. "COMMISSIONING" can be either for a completed system or a part of system or a combination of systems or sub-systems and can be performed in any sequence as desired by EMPLOYER and in a manner established to be made suited according to availability of pre-requisites. Any such readjustments made by EMPLOYER in performance of "COMMISSIONING" activity will not be construed to be violating CONTRACT provisions and CONTRACTOR shall be deemed to have provided for the same.

SECTION-II GENERAL INFORMATION

2. General Information

- 2.1 a) Location of Site: The proposed location of Project site is defined in the Special Conditions of Contract.

- b) Access by Road: CONTRACTOR, if necessary, shall build other temporary access roads to the actual site of construction for his own work at his own cost. The CONTRACTOR shall be required to permit the use of the roads so constructed by him for vehicles of any other parties who may be engaged on the project site. The CONTRACTOR shall also facilitate the construction of the permanent roads should the construction there of start while he is engaged on this work. He shall make allowance in his tender for any inconvenience he anticipates on such account. Non-availability of access roads, railway siding and railway wagons for the use of the CONTRACTOR shall in no case condone any delay in the execution of WORK nor be the cause for any claim for compensation against the EMPLOYER.
- 2.2 Scope of Work: The scope of WORK is defined in the Technical Part of the tender document. The CONTRACTOR shall provide all necessary materials, equipment, labour etc. for the execution and maintenance of the WORK till completion unless otherwise mentioned in the Tender Document.
- 2.3 Water Supply: Contractor will have to make his own arrangements for supply of water to his labour camps and for works. All pumping installations, pipe net work and distribution system will have to be carried out by the Contractor at his own risk and cost. Alternatively the Employer at his discretion may endeavour to provide water to the Contractor at the Employer's source of supply provided the Contractor makes his own arrangement for the water meter which shall be in custody of the Employer and other pipe net works from source of supply and such distribution pipe network shall have prior approval of the Engineer-in-Charge so as not to interfere with the layout and progress of the other construction works. In such case, the rate for water shall be deducted from the running account bills. However, the Employer does not guarantee the supply of water and this does not relieve the Contractor of his responsibility in making his own arrangement and for the timely completion of the various works as stipulated.
- 2.4 Power Supply:
- 2.4.1 Subject to availability, EMPLOYER will supply power at 400/440 V at only one point at the nearest sub-station, from where the CONTRACTOR will make his own arrangement for temporary distribution. The point of supply will not be more than 500 m away from the CONTRACTOR'S premises. All the works will be done as per the applicable regulations and passed by the ENGINEER-IN-CHARGE. The temporary line will be removed forthwith after the completion of work or if there is any hindrance caused to the other works due to the alignment of these lines, the CONTRACTOR will re-route or remove the temporary lines at his own cost. The CONTRACTOR at his cost will also provide suitable electric meters, fuses, switches, etc. for purposes of payment to the EMPLOYER which should be in the custody and control of the EMPLOYER. The cost of power supply shall be payable to the EMPLOYER every month for Construction Works power which would be deducted from the running account bills. The EMPLOYER shall not, however, guarantee the supply of electricity nor have any liability in respect thereof. No claim for compensation for any failure or short supply of electricity will be admissible.
- 2.4.2 It shall be the responsibility of the CONTRACTOR to provide and maintain the complete installation on the load side of the supply with due regard to safety requirement at site. All cabling, equipment, installations etc. shall comply in all respects with the latest statutory requirements and safety provisions i.e., as per the Central/State Electricity Acts and Rules etc. The CONTRACTOR will ensure that his equipment and Electrical Wiring etc., are installed, modified, maintained by a licensed Electrician/Supervisor. A test certificate is to be produced to the ENGINEER-IN-CHARGE for his approval, before power is made available.
- 2.4.3 At all times, IEA regulations shall be followed failing which the EMPLOYER has a right to disconnect the power supply without any reference to the CONTRACTOR. No claim shall be entertained for such disconnection by the ENGINEER-IN-CHARGE. Power supply will be reconnected only after production of fresh certificate from authorized electrical supervisors.
- 2.4.4 The EMPLOYER is not liable for any loss or damage to the CONTRACTOR's equipment as a result of variation in voltage or frequency or interruption in power supply or other loss to the CONTRACTOR arising therefrom.
- 2.4.5 The CONTRACTOR shall ensure that the Electrical equipment installed by him are such that average power factors does not fall below 0.90 at his premises. In case power factor falls below 0.90 in any month, he will reimburse to the EMPLOYER at the penal rate determined by the EMPLOYER for all units consumed during the month.
- 2.4.6 The power supply required for CONTRACTOR's colony near the plant site will be determined by the EMPLOYER and shall be as per State Electricity Board's Rules and other statutory provisions applicable for such installations from time to time. In case of power supply to CONTRACTOR's colony, the power will be made available at a single point and the CONTRACTOR shall make his own arrangement at his own

- cost for distribution to the occupants of the colony as per Electricity Rules and Acts. The site and colony shall be sufficiently illuminated to avoid accidents.
- 2.4.7 The CONTRACTOR will have to provide and install his own lights and power meters which will be governed as per Central/State Government Electricity Rules. The metres shall be sealed by the EMPLOYER.
- 2.4.8 In case of damage of any of the EMPLOYER's equipment on account of fault, intentional or unintentional on the part of the CONTRACTOR, the EMPLOYER reserves the right to recover the cost of such damage from the CONTRACTOR's bill. Cost of HRC Fuses replaced at the EMPLOYER's terminals due to any fault in the CONTRACTOR's installation shall be to CONTRACTOR's account at the rates decided by the ENGINEER-IN-CHARGE.
- 2.4.9 Only motors upto 3 HP will be allowed to be started direct on line. For motors above 3 HP and upto 100 HP a suitable Starting device approved by the ENGINEER- IN-CHARGE shall be provided by the CONTRACTOR. For motors above 100 HP slipring induction motors with suitable starting devices as approved by the ENGINEER- IN-CHARGE shall be provided by the CONTRACTOR.
- 2.4.10 The CONTRACTOR shall ensure at his cost that all electrical lines and equipment and all installations are approved by the State Electricity Inspector before power can be supplied to the EMPLOYER.
- 2.4.11 The total requirement of power shall be indicated by the tenderer alongwith his tender.
- 2.5 Land for Contractor's Field Office, Godown and Workshop: The EMPLOYER will, at his own discretion and convenience and for the duration of the execution of the work make available near the site, land for construction of CONTRACTOR's Temporary Field Office, godowns workshops and assembly yard required for the execution of the CONTRACT. The CONTRACTOR shall at his own cost construct all these temporary buildings and provide suitable water supply and sanitary arrangement and get the same approved by the ENGINEER-IN-CHARGE. On completion of the works undertaken by the CONTRACTOR, he shall remove all temporary works erected by him and have the SITE cleaned as directed by ENGINEER-IN-CHARGE. If the CONTRACTOR shall fail to comply with these requirements, the ENGINEER-IN-CHARGE may at he expenses of the CONTRACTOR remove such surplus, and rubbish materials and dispose off the same as he deems fit and get the site cleared as aforesaid; and CONTRACTOR shall forthwith pay the amount of all expenses so incurred and shall have no claim in respect of any such surplus materials disposed off as aforesaid. But the EMPLOYER reserves the right to ask the CONTRACTOR any time during the pendency of the CONTRACT to vacate the land by giving 7 days notice on security reasons or on national interest or otherwise. Rent may be charged for the land so occupied from contractor by the Employer. The CONTRACTOR shall put up temporary structures as required by them for their office, fabrication shop and construction stores only in the area allocated to them on the project site by the EMPLOYER or his authorised representative. No tea stalls/canteens should be put up or allowed to be put up by any CONTRACTOR in the allotted land or complex area without written permission of the EMPLOYER. No unauthorised buildings, constructions or structures should be put up by the CONTRACTOR anywhere on the project site. For uninterrupted fabrication work, the CONTRACTOR shall put up temporary covered structures at his cost within Area in the location allocated to them in the project site by the EMPLOYER or his authorised representative. No person except for authorised watchman shall be allowed to stay in the plant area/CONTRACTOR's area after completion of the day's job without prior written permission from ENGINEER-IN-CHARGE.
- 2.6 Land for Residential Accommodation:-No Land shall be made available for residential accommodation for staff and labour of CONTRACTOR.

SECTION-III GENERAL INSTRUCTIONS TO TENDERERS

3. Submission of Tender:

- 3.1 TENDER must be submitted without making any additions, alterations, and as per details given in other clauses hereunder. The requisite details shall be filled in by the TENDERER at space provided under "Submission of Tender at the beginning of GCC of Tender Document. The rate shall be filled only in the schedule given in this Tender Document.
- 3.2 Addenda/Corrigenda to this Tender Document, if issued, must be signed, submitted along with the Tender Document. The tenderer should write clearly the revised quantities in Schedule of Rates of Tender Document and should price the WORK based on revised quantities when amendments of quantities are issued in addenda.
- 3.3 Covering letter along with its enclosures accompanying the Tender Document and all further correspondence shall be submitted in duplicate.
- 3.4 Tenderers are advised to submit quotations based strictly on the terms and conditions and specifications contained in the Tender Documents and not to stipulate any deviations.

3.5 Tenders should always be placed in double sealed covers, superscribing ["QUOTATION DO NOT OPEN" Tender for _____ Project of BCPL due for opening on _____]. The *Full Name, Address and Telegraphic Address, Fax No. of the Tenderers* shall be written on the bottom left hand corner of the sealed cover.

4. Documents:

4.1 General: The tenders as submitted, will consist of the following:

- (i) Complete set of Tender Documents (Original) as sold duly filled in and signed by the tenderer as prescribed in different clauses of the Tender Documents.
- (ii) Earnest money in the manner specified in Clause 6 hereof.
- (iii) Power of Attorney or a true copy thereof duly attested by a Gazetted Officer in case an authorised representative has signed the tender, as required by Clause 14 hereof.
- (iv) Information regarding tenderers in the proforma enclosed.
- (v) Details of work of similar type and magnitude carried out by the Tenderer in the proforma provided in the tender document.
- (vi) Organisation chart giving details of field management at site, the tenderer proposes to have for this job.
- (vii) Details of construction plant and equipments available with the tenderer for using in this work.
- (viii) Solvency Certificate from Scheduled Bank to prove the financial ability to carry out the work tendered for.
- (ix) Latest Balance Sheet and Profit & Loss Account duly audited.
- (x) Details of present commitment as per proforma enclosed to tender.
- (xi) Data required regarding SUB-CONTRACTOR(s)/ Supplier/ Manufacturers and other technical informations the tenderer wish to furnish.
- (xii) Provident fund registration certificate
- (xiii) List showing all enclosures to tender.

4.2 All pages are to be Initialed: All signatures in Tender Documents shall be dated, as well as, all the pages of all sections of Tender Documents shall be initialed at the lower right hand corner and signed wherever required in the tender papers by the TENDERER or by a person holding power of attorney authorising him to sign on behalf of the tenderer before submission of tender.

4.3 Rates to be in Figures and Words: The tender should quote in English both in figures as well as in words the rates and amounts tendered by him in the Schedule of Rates of Tender submitted by the CONTRACTOR for each item and in such a way that interpolation is not possible. The amount for each item should be worked out and entered and requisite total given of all items, both in figures and in words. The tendered amount for the work shall be entered in the tender and duly signed by the Tenderer. If some discrepancies are found between the RATES in FIGURES and WORDS or the AMOUNT shown in the tender, the following procedure shall be followed:

- a) When there is difference between the rates in figures and words, the rate which corresponds to the amount worked out by the tenderer shall be taken as correct.
- b) When the rate quoted by the tenderer in figures and words tally but the amount is incorrect the rate quoted by the tenderer shall be taken as correct.
- c) When it is not possible to ascertain the correct rate by either of above methods, the rate quoted in words shall be taken as correct.

4.4 Corrections and Erasures: All correction(s) and alteration(s) in the entries of tender paper shall be signed in full by the TENDERER with date. No erasure or over writing is permissible.

4.5 Signature of Tenderer:

4.5.1 The TENDERER shall contain the name, residence and place of business of person or persons making the tender and shall be signed by the TENDERER with his usual signature. Partnership firms shall furnish the full names of all partners in the tender. It should be signed in the partnership's name by all the partners or by duly authorised representatives followed by the name and designation of the person signing. Tender by a corporation shall be signed by an authorised representative, and a Power of Attorney in that behalf shall accompany the tender. A copy of the constitution of the firm with names of all partners shall be furnished.

4.5.2 When a tenderer signs a tender in a language other than English, the total amount tendered should, in addition, be written in the same language. The signature should be attested by at least one witness.

4.6 Witness: Witness and sureties shall be persons of status and property and their names, occupation and address shall be stated below their signature.

4.7 Details of Experience: The tenderer should furnish, along with his tender, details of previous experience in having successfully completed in the recent past works of this nature, together with the names of Employers, location of sites

and value of contract, date of commencement and completion of work, delays if any, reasons of delay and other details along with documentary evidence(s).

- 4.8 Liability of Government of India: It is expressly understood and agreed by and between Bidder or/Contractor and M/s BCPL, and that M/s BCPL, is entering into this agreement solely on its own behalf and not on behalf of any other person or entity. In particular, it is expressly understood and agreed that the Government of India is not a party to this agreement and has no liabilities, obligations or rights hereunder. It is expressly understood and agreed that M/s BCPL is an independent legal entity with power and authority to enter into contracts solely on its own behalf under the applicable Laws of India and general principles of Contract Law. The Bidder/Contractor expressly agrees, acknowledges and understands that M/s BCPL is not an agent, representative or delegate of the Government of India. It is further understood and agreed that the Government of India is not and shall not be liable for any acts, omissions, commissions, breaches or other wrongs arising out of the contract. Accordingly, Bidder/Contractor hereby expressly waives, releases and foregoes any and all actions or claims, including cross claims, impleader claims or counter claims against the Government of India arising out of this contract and covenants not to sue to Government of India as to any manner, claim, cause of action or thing whatsoever arising of or under this agreement.

5. Transfer of Tender Documents:

- 5.1 Transfer of Tender Documents purchased by one intending tenderer to another is not permissible.

6. Earnest Money:

- 6.1 The bidder must pay Earnest Money as given in the letter /notice inviting tenders and attach the official receipt with the tender failing which the tender is liable to be rejected and representatives of such tenderers will not be allowed to attend the tender opening. Earnest Money can be paid in Demand Drafts or Bank Guarantee or Banker's Cheque or Letter of Credit from any Indian scheduled bank or a branch of an International bank situated in India and registered with Reserve Bank of India as scheduled foreign bank. However, other than the Nationalised Indian Banks, the banks whose BGs are furnished, must be commercial banks having net worth in excess of Rs. 100 crores and a declaration to this effect should be made by such commercial bank either in the bank guarantee itself or separately on a letter head. The bid guarantee shall be submitted in the prescribed format.

Note: The Bank Guarantee so furnished by the tenderer shall be in the proforma prescribed by the EMPLOYER. No interest shall be paid by the EMPLOYER on the Earnest Money deposited by the tenderer. The Bank Guarantee furnished in lieu of Earnest Money shall be kept valid for a period of "SIX MONTHS" from the date of opening of tender.(TWO MONTHS beyond the bid validity). The Earnest Money deposited by successful tenderer shall be forfeited if the Contractor fails to furnish the requisite Contract Performance Security as per clause 24 hereof and /or fails to start work within a period of 15 days or fails to execute the AGREEMENT within 15 days of the receipt by him of the Notification of Acceptance of Tender.

Note: The Earnest Money of the unsuccessful bidder will be returned by EMPLOYER/CONSULTANT, directly to the tenderer (s), within a reasonable period of time but not later than 30 days after the expiration of the period of bid validity prescribed by EMPLOYER.

7 Validity:

- 7.1 Tender submitted by tenderers shall remain valid for acceptance for a period of "4 MONTHS" from the date of opening of the tender. The tenderers shall not be entitled during the said period of 4 months, without the consent in writing of the EMPLOYER, to revoke or cancel his tender or to vary the tender given or any term thereof. In case of tender revoking or canceling his tender or varying any term in regard thereof without the consent of EMPLOYER in writing, the EMPLOYER shall forfeit Earnest Money paid by him alongwith tender.

8 Addenda/Corrigenda

- 8.1 Addenda/ Corrigenda to the Tender Documents will be issued in duplicate prior to the date of opening of the tenders to clarify documents or to reflect modification in design or CONTRACT terms.
- 8.2 Each addenda/ corrigendum issued will be issued in duplicate to each person or organisation to whom set of Tender Documents has been issued. Recipient will retain tenderer's copy of each Addendum/Corrigendum and attach original copy duly signed along with his offer. All Addenda/Corrigenda issued shall become part of Tender Documents.

9 Right of Employer to Accept or Reject Tender:

- 9.1 The right to accept the tender will rest with the EMPLOYER. The EMPLOYER, however, does not bind himself to accept the lowest tender, and reserves to itself the authority to reject any or all the tenders received without assigning any reason whatsoever. At the option of the Employer, the work for which the tender had been invited, may be awarded to one Contractor or split between more than one bidders, in which case the award will be made for only that part of the work, in respect of which the bid has been accepted. The quoted rates should hold good for such eventualities. Tenders in which any of the particulars and prescribed information are missing or are incomplete in any respect and/or the prescribed conditions are not fulfilled are liable to be rejected. The Tender containing uncalled for remarks or any additional conditions are liable to be rejected. Canvassing in connection with tenders is strictly prohibited and tenders submitted by the Tenderers who resort to canvassing will be liable to rejection.

10 Time Schedule

- 10.1 The WORK shall be executed strictly as per the TIME SCHEDULE specified in TENDER/CONTRACT Document. The period of construction given in Time Schedule includes the time required for mobilisation as well as testing, rectifications if any, retesting and completion in all respects to the entire satisfaction of the ENGINEER-IN- CHARGE.
- 10.2 A joint programme of execution of the WORK will be prepared by the ENGINEER-IN-CHARGE and CONTRACTOR based on priority requirement of this project. This programme will take into account the time of completion mentioned in 10.1 above and the time allowed for the priority works by the ENGINEER-IN-CHARGE.
- 10.3 Monthly/Weekly construction programme will; be drawn up by the ENGINEER-IN-CHARGE jointly with the CONTRACTOR, based on availability of work fronts and the joint construction programme as per 10.2 above. The CONTRACTOR shall scrupulously adhere to these targets /programmes by deploying adequate personnel, construction tools and tackles and he shall also supply himself all materials of his scope of supply in good time to achieve the targets/programmes. In all matters concerning the extent of targets set out in the weekly and monthly programmes and the degree of achievements the decision of the ENGINEER-IN-CHARGE will be final and binding on the CONTRACTOR.

11 Tenderer's Responsibility

- 11.1 The intending tenderers shall be deemed to have visited the SITE and familiarized submitting the tender. Non-familiarity with the site conditions will not be considered a reason either for extra claims or for not carrying out the works in strict conformity with the DRAWINGS and SPECIFICATIONS or for any delay in performance.

12 Retired Government or Company Officers

- 12.1 No Engineer of Gazetted rank or other Gazetted Officer employed in Engineering or Administrative duties in an Engineering Department of the States/ Central Government or of the EMPLOYER is allowed to work as a CONTRACTOR for a period of two years after his retirement from Government Service, or from the employment of the EMPLOYER without the previous permission of the EMPLOYER. The CONTRACT, if awarded, is liable to be cancelled if either the CONTRACTOR or any of his employees is found at any time to be such a person, who has not obtained the permission of the State/Central Government or of the EMPLOYER as aforesaid before submission of tender, or engagement in the CONTRACTOR'S service as the case may be.

13 Signing of the Contract:

- 13.1 The successful tenderer shall be required to execute an AGREEMENT in the proforma attached with TENDER DOCUMENT within 15 days of the receipt by him of the Notification of Acceptance of Tender. In the event of failure on the part of the successful tenderer to sign the AGREEMENT within the above stipulated period, the Earnest Money or his initial deposit will be forfeited and the acceptance of the tender shall be considered as cancelled.

14 Field Management & Controlling/Coordinating Authority:

- 14.1 The field management will be the responsibility of the ENGINEER-IN-CHARGE, who will be nominated by the EMPLOYER. The ENGINEER-IN-CHARGE may also authorize his representatives to assist in performing his duties and functions.
- 14.2 The ENGINEER-IN-CHARGE shall coordinate the works of various agencies engaged at site to ensure minimum disruption of work carried out by different agencies. It shall be the responsibility of the CONTRACTOR to plan and execute the work strictly in accordance with site instructions to avoid hindrance to the work being executed by other agencies.

15 Note to Schedule of Rates:

- 15.1 The Schedule of Rates should be read in conjunction with all the other sections of the tender.
- 15.2 The tenderer shall be deemed to have studied the DRAWINGS, SPECIFICATIONS and details of work to be done within TIME SCHEDULE and to have acquainted him of the condition prevailing at site.
- 15.3 Rates must be filled in the Schedule of Rates of original Tender Documents. If quoted in separate typed sheets no variation in item description or specification shall be accepted. Any exceptions taken by the tenderer to the Schedule of Rates shall be brought out in the terms and conditions of the offer.
- 15.4 The quantities shown against the various items are only approximate. Any increase or decrease in the quantities shall not form the basis of alteration of the rates quoted and accepted.
- 15.5 The EMPLOYER reserves the right to interpolate the rates for such items of work falling between similar items of lower and higher magnitude.

16 Policy for Tenders Under Consideration:

- 16.1 Only Those Tenders which are complete in all respects and are strictly in accordance with the Terms and Conditions and Technical Specifications of Tender Document, shall be considered for evaluation. Such Tenders shall be deemed to be under consideration immediately after opening of Tender and until such time an official intimation of acceptance /rejection of Tender is made by BCPL to the Bidder.
- 16.2 Zero Deviation: Bidders to note that this is a ZERO DEVIATION TENDER. BCPL will appreciate submission of offer based on the terms and conditions in the enclosed General Conditions of Contract (GCC), Special Conditions of Contract (SCC), Instructions to Bidders (ITB), Scope of Work, technical specifications etc. to avoid wastage of time and money in seeking clarifications on technical/ commercial aspects of the offer. Bidder may note that no technical and commercial clarifications will be sought for after the receipt of the bids. In case of any deviation/nonconformity observed in the bid, it will be liable for rejection.

17 Award of Contract:

- 17.1 The Acceptance of Tender will be intimated to the successful Tenderer by BCPL either by Telex/ Telegram/ Fax or by Letter or like means-defined as LETTER OF ACCEPTANCE OF TENDER.
- 17.2 BCPL will be the sole judge in the matter of award of CONTRACT and the decision of BCPL shall be final and binding.

18 Clarification of Tender Document:

- 18.1 The Tender is required to carefully examine the Technical Specifications, Conditions of Contract, Drawings and other details relating to WORK and given in Tender Document and fully inform himself as to all conditions and matters which may in any way affect the WORK or the cost thereof. In case the Tenderer is in doubt about the completeness or correctness of any of the contents of the Tender Documents he should request in writing for an interpretation/clarification to BCPL in triplicate. GAIL will then issue interpretation/clarification to Tenderer in writing. Such clarifications and or interpretations shall form part of the Specifications and Documents and shall accompany the tender which shall be submitted by tenderer within time and date as specified in invitations to tender.
- 18.2 Verbal clarification and information given by BCPL or its employee(s) or its representatives shall not in any way be binding on BCPL.

19 Local Conditions:

- 19.1 It will be imperative on each tenderer to inform himself of all local conditions and factors which may have any effect on the execution of WORK covered under the Tender Document. In their own interest, the tenderer are requested to familiarise themselves with the Indian Income Tax Act 1961, Indian Companies Act 1956, Indian Customs Act 1962 and other related Acts and Laws and Regulations of India with their latest amendments, as applicable GAIL shall not entertain any requests for clarifications from the tenderer regarding such local conditions.
- 19.2 It must be understood and agreed that such factors have properly been investigated and considered while submitting the tender. No claim for financial or any other adjustments to VALUE OF CONTRACT, on lack of clarity of such factors shall be entertained.

20 Abnormal Rates:

- 20.1 The tenderer is expected to quote rate for each item after careful analysis of cost involved for the performance of the completed item considering all specifications and Conditions of Contract. This will avoid loss of profit or gain in case of

curtailment or change of specification for any item. In case it is noticed that the rates quoted by the tenderer for any item are unusually high or unusually low, it will be sufficient cause for the rejection of the tender unless the EMPLOYER is convinced about the reasonableness after scrutiny of the analysis for such rate(s) to be furnished by the tenderer (on demand).

SECTION-IV GENERAL OBLIGATIONS

21 Priority of Contract Documents

21.1 Except if and the extent otherwise provided by the Contract, the provisions of the General Conditions of Contract and Special Conditions shall prevail over those of any other documents forming part of the CONTRACT. Several documents forming the CONTRACT are to be taken as mutually explanatory of one another, but in case of ambiguities or discrepancies the same shall be explained and adjusted by the ENGINEER-IN-CHARGE who shall thereupon issue to the Contractor instructions thereon and in such event, unless otherwise provided in the Contract, the priority of the documents forming the Contract shall be as follows :

- (i) The Contract Agreement ;
- (ii) The Letter of Acceptance;
- (iii) The (Instructions to Bidders)ITB;
- (iv) Special Conditions of Contract (SCC);
- (v) General Conditions of Contract (GCC)
- (vi) Any other document forming part of the Contract. Works shown in the DRAWING but not mentioned in the SPECIFICATIONS OR described in the SPECIFICATIONS without being shown in the DRAWINGS shall nevertheless be deemed to be included in the same manner as if they had been specifically shown upon the DRAWINGS and described in the SPECIFICATIONS.

21.2 Headings and Marginal Notes: All headings and marginal notes to the clauses of these General Conditions of Contract or to the SPECIFICATIONS or to any other Tender Document are solely for the purpose of giving a concise indication and not a summary of the contents thereof, and they shall never be deemed to be part thereof or be used in the interpretation or construction thereof the CONTRACT.

21.3 Singular and Plural: In CONTRACT DOCUMENTS unless otherwise stated specifically, the singular shall include the plural and vice versa wherever the context so requires.

21.4 Interpretation: Words implying 'Persons' shall include relevant 'Corporate Companies / Registered Associations/ Body of Individuals/ Firm of Partnership' as the case may be.

22 Special Conditions of Contract:

22.1 Special Conditions of Contract shall be read in conjunction with the General Conditions of Contract, specification of Work, Drawings and any other documents forming part of this CONTRACT wherever the context so requires.

22.2 Notwithstanding the sub-division of the documents into these separate sections and volumes every part of each shall be deemed to be supplementary to and complementary of every other part and shall be read with and into the CONTRACT so far as it may be practicable to do so.

22.3 Where any portion of the General Condition of Contract is repugnant to or at variance with any provisions of the Special Conditions of Contract, unless a different intention appears the provisions of the Special Conditions of Contract shall be deemed to over-ride the provisions of the General Conditions of Contract and shall to the extent of such repugnancy, or variations, prevail.

22.4 Wherever it is mentioned in the specifications that the CONTRACTOR shall perform certain WORK or provide certain facilities, it is understood that the CONTRACTOR shall do so at his cost and the VALUE OF CONTRACT shall be deemed to have included cost of such performance and provisions, so mentioned.

22.5 The materials, design and workmanship shall satisfy the relevant INDIAN STANDARDS, the JOB SPECIFICATIONS contained herein and CODES referred to. Where the job specification stipulate requirements in addition to those contained in the standard codes and specifications, these additional requirements shall also be satisfied.

23 Contractor to obtain his own Information:

23.1 The CONTRACTOR in fixing his rate shall for all purpose whatsoever reason may be, deemed to have himself independently obtained all necessary information for the purpose of preparing his tender and his tender as accepted shall be deemed to have taken into account all contingencies as may arise due to such information or lack of same. The correctness of the details, given in the Tender Document to help the CONTRACTOR to make up the tender is not guaranteed. The CONTRACTOR shall be deemed to have examined the CONTRACT DOCUMENTS, to have

generally obtained his own information in all matters whatsoever that might affect the carrying out of the works at the scheduled rates and to have satisfied himself to the sufficiency of his tender. Any error in description of quantity or omission therefrom shall not vitiate the CONTRACT or release the CONTRACTOR from executing the work comprised in the CONTRACT according to DRAWINGS and SPECIFICATIONS at the scheduled rates. He is deemed to have known the scope, nature and magnitude of the WORKS and the requirements of materials and labour involved etc., and as to what all works he has to complete in accordance with the CONTRACT documents whatever be the defects, omissions or errors that may be found in the DOCUMENTS. The CONTRACTOR shall be deemed to have visited surroundings, to have satisfied himself to the nature of all existing structures, if any, and also as to the nature and the conditions of the Railways, Roads, Bridges and Culverts, means of transport and communication, whether by land, water or air, and as to possible interruptions thereto and the access and egress from the site, to have made enquiries, examined and satisfied himself as to the sites for obtaining sand, stones, bricks and other materials, the sites for disposal of surplus materials, the available accommodation as to whatever required, depots and such other buildings as may be necessary for executing and completing the works, to have made local independent enquiries as to the sub-soil, subsoil water and variations thereof, storms, prevailing winds, climatic conditions and all other similar matters effecting these works. He is deemed to have acquainted himself as to his liability of payment of Government Taxes, Customs duty and other charges, levies etc. Any neglect or omission or failure on the part of the CONTRACTOR in obtaining necessary and reliable information upon the foregoing or any other matters affecting the CONTRACT shall not relieve him from any risks or liabilities or the entire responsibility from completion of the works at the scheduled rates and times in strict accordance with the CONTRACT. It is, therefore, expected that should the CONTRACTOR have any doubt as to the meaning of any portion of the CONTRACT DOCUMENT he shall set forth the particulars thereof in writing to EMPLOYER in duplicate, before submission of tender. The EMPLOYER may provide such clarification as may be necessary in writing to CONTRACT, such clarifications as provided by EMPLOYER shall form part of CONTRACT DOCUMENTS. No verbal agreement or inference from conversation with any effect or employee of the EMPLOYER either before, during or after the execution of the CONTRACT agreement shall in any way affect or modify and of the terms or obligations herein contained. Any change in layout due to site conditions or technological requirement shall be binding on the CONTRACTOR and no extra claim on this account shall be entertained.

24 Contract Performance Security:

- 24.1 The CONTRACTOR shall furnish to the EMPLOYER, within 15 days from the date of notification of award, a security in the sum of 10% of the accepted value of the tender or the actual value of work to be done whichever is applicable due to any additional work or any other reasons, in the form of a Bank draft/Banker's cheque or Bank Guarantee or irrevocable Letter of credit (as per proforma enclosed) as Contract Performance Security with the EMPLOYER which will be refunded after the expiry of DEFECTS LIABILITY PERIOD.
- 24.2 CONTRACTOR can furnish the Contract Performance Security in the form of Demand Draft or through a Bank Guarantee or through an irrevocable Letter of Credit from any Indian scheduled bank or a branch of an International bank situated in India and registered with Reserve Bank of India as scheduled foreign bank. However, other than the Nationalised Indian Banks, the banks whose BGs are furnished, must be commercial banks having net worth in excess of Rs. 100 crores and a declaration to this effect should be made by such commercial bank either in the bank guarantee itself or separately on a letter head. The bank guarantee or the Letter of Credit shall be submitted in the prescribed format.
- 24.3 If the CONTRACTOR/SUB-CONTRACTOR or their employees or the CONTRACTOR's agents and representatives shall damage, break, deface or destroy any property belonging to the EMPLOYER or others during the execution of the CONTRACT, the same shall be made good by the CONTRACTOR at his own expenses and in default thereof, the ENGINEER-IN-CHARGE may cause the same to be made good by other agencies and recover expenses from the CONTRACTOR (for which the certificate of the ENGINEER- IN-CHARGE shall be final).
- 24.4 All compensation or other sums of money payable by the CONTRACTOR to the EMPLOYER under terms of this CONTRACT may be deducted from or paid by the encashment or sale of a sufficient part of his Contract Performance Security or from any sums which may be due or may become due to the CONTRACTOR by the EMPLOYER of any account whatsoever and in the event of his Contract Performance Security being reduced by reasons of any such deductions or sale of aforesaid, the CONTRACTOR shall within ten days thereafter make good in cash, bank drafts as aforesaid any sum or sums which may have been deducted from or realised by sale of his Contract Performance Security, or any part thereof. No interest shall be payable by the EMPLOYER for sum deposited as Contract Performance Security.
- 24.5 Failure of the successful bidder to comply with the requirements of this Clause shall constitute sufficient grounds for the annulment of the award and the forfeiture of bid security.

25 Time of Performance:

25.1 Time for Mobilisation: The work covered by this CONTRACT shall be commenced within fifteen (15) days, the date of letter/Fax of Intent and be completed in stages on or before the dates as mentioned in the TIME SCHEDULE OF COMPLETION OF WORK. The CONTRACTOR should bear in mind that time is the essence of this agreement. Request for revision of construction time after tenders are opened will not receive consideration. The above period of fifteen (15) days is included within the overall COMPLETION SCHEDULE, not over and above the completion time to any additional work or any other reasons.

25.2 Time Schedule of Construction:

25.2.1 The general Time Schedule of construction is given in the TENDER DOCUMENT. CONTRACTOR should prepare a detailed monthly or weekly construction program jointly with the ENGINEER-IN-CHARGE within 15 days of receipt of LETTER/FAX OF INTENT or ACCEPTANCE OF TENDER. The WORK shall be executed strictly as per the Time Schedule given in the CONTRACT DOCUMENT. The period of construction given includes the time required for mobilisation testing, rectifications, if any, retesting and completion in all respects in accordance with CONTRACT DOCUMENT to the entire satisfaction of the ENGINEER-IN-CHARGE.

25.2.2 The CONTRACTOR shall submit a detailed PERT network within the time frame agreed above consisting of adequate number of activities covering various key phases of the WORK such as design, procurement, manufacturing, shipment and field erection activities within fifteen (15) days from the date of LETTER/FAX OF INTENT. This network shall also indicate the interface facilities to be provided by the EMPLOYER and the dates by which such facilities are needed.

25.2.3 CONTRACTOR shall discuss the network so submitted with the EMPLOYER and the agreed network which may be in the form as submitted with the EMPLOYER or in revised form in line with the outcome of discussions shall form part of the CONTRACT, to be signed within fifteen (15) days from the date of LETTER OF ACCEPTANCE OF TENDER. During the performance of the CONTRACT, if in the opinion of the EMPLOYER proper progress is not maintained suitable changes shall be made in the CONTRACTOR's operation to ensure proper progress. The above PERT network shall be reviewed periodically and reports shall be submitted by the CONTRACTOR as directed by EMPLOYER.

26 Force Majeure:

26.1 CONDITIONS FOR FORCE MAJEURE: In the event of either party being rendered unable by Force Majeure to perform any obligations required to be performed by them under the CONTRACT the relative obligation of the party affected by such Force Majeures shall upon notification to the other party be suspended for the period during which Force Majeures event lasts. The cost and loss sustained by the either party shall be borne by the respective parties. The term "Force Majeures" as employed herein shall mean acts of God, earthquake, war (declared or undeclared), revolts, riots, fires, floods, rebellions, explosions, hurricane, sabotage, civil commotions and acts and regulations of respective Government of the two parties, namely the EMPLOYER and the CONTRACTOR. Upon the occurrence of such cause(s) and upon its termination, the party alleging that it has been rendered unable as aforesaid thereby, shall notify the other party in writing immediately but not later than 72 (Seventy-two) hours of the alleged beginning and ending thereof giving full particulars and satisfactory evidence in support of its claim. Time for performance of the relative obligation suspended by the Force Majeures shall then stand extended by the period for which such cause lasts. If deliveries of bought out items and/or works to be executed by the CONTRACTOR are suspended by Force Majeure conditions lasting for more than 2 (two) months the EMPLOYER shall have the option to terminate the CONTRACT or re-negotiate the contract provisions.

26.2 OUTBREAK OF WAR

26.2.1 If during the currency of the CONTRACT there shall be an out-break of war whether declared or not, in that part of the World which whether financially or otherwise materially affect the execution of the WORK the CONTRACTOR shall unless and until the CONTRACT is terminated under the provisions in this clause continue to use his best endeavour to complete the execution of the WORK, provided always that the EMPLOYER shall be entitled, at any time after such out-break of war to terminate or re-negotiate the CONTRACT by giving notice in writing to the CONTRACTOR and upon such notice being given the CONTRACT shall, save as to the rights of the parties under this clause and to the operation of the clauses entitled settlement of Disputes and Arbitration hereof, be terminated but without prejudice to the right of either party in respect of any antecedent breach thereof.

26.2.2 If the CONTRACT shall be terminated under the provisions of the above clause, the CONTRACTOR shall with all reasonable diligence remove from the SITE all the CONTRACTOR's equipment and shall give similar facilities to his SUB-CONTRACTORS to do so.

27 Price reduction schedule:

27.1 Time is the essence of the CONTRACT. In case the CONTRACTOR fails to complete the WORK within the stipulated period, then, unless such failure is due to Force Majeure as defined in Clause 26 here above or due to EMPLOYER's defaults, the Total Contract price shall be reduced by ½ % of the total Contract Price per complete week of delay or part thereof subject to a maximum of 5 % of the Total Contract Price, by way of reduction in price for delay and not as penalty. The said amount will be recovered from amount due to the Contractor/ Contractor's Contract Performance Security payable on demand. The decision of the ENGINEER-IN-CHARGE in regard to applicability of Price Reduction Schedule shall be final and binding on the CONTRACTOR.

27.2 All sums payable under this clause is the reduction in price due to delay in completion period at the above agreed rate.

27.3 Bonus For Early Completion (*)

BONUS FOR EARLY COMPLETION If the Contractor achieves completion of Works in all respect prior to the time schedule stipulated in the SCC, the Employer shall pay to the Contractor the relevant sum, if mentioned specifically in SCC, as bonus for early completion. The bonus for early completion, if provided specifically in SCC, shall be payable to the maximum ceiling of 2 ½ % of the total contract price.

(*) Partial earlier completion may not always produce net benefits to the Employer, for example where utilization of the completed Works requires (a) the fulfillment of all parts of the Contract (e.g. the training of personnel); or (b) the completion of all Sections (e.g. in pipeline laying, where early completion of the laying of pipeline would not be useful if the compressor is still under installation); or (c) certain seasonal effects to take place (e.g. onset of the rainy season, for impounding a reservoir); or (d) other circumstances. Also a more rapid drawdown of budgeted funds may be required. All such factors should be considered prior to the inclusion of a bonus clause in the Contract.

28 Rights of the employer to forfeit contract performance security:

28.1 Whenever any claim against the CONTRACTOR for the payment of a sum of money arises out or under the CONTRACT, the EMPLOYER shall be entitled to recover such sum by appropriating in part or whole the Contract Performance Security of the CONTRACTOR. In the event of the security being insufficient or if no security has been taken from the CONTRACTOR, then the balance or the total sum recoverable, as the case may be shall be deducted from any sum then due or which at any time thereafter may become due to the CONTRACTOR. The CONTRACTOR shall pay to the EMPLOYER on demand any balance remaining due.

29 Failure by the contractor to comply with the provisions of the contract:

29.1 If the CONTRACTOR refuses or fails to execute the WORK or any separate part thereof with such diligence as will ensure its completion within the time specified in the CONTRACT or extension thereof or fails to perform any of his obligation under the CONTRACT or in any manner commits a breach of any of the provisions of the CONTRACT it shall be open to the EMPLOYER at its option by written notice to the CONTRACTOR:

- a) TO DETERMINE THE CONTRACT in which event the CONTRACT shall stand terminated and shall cease to be in force and effect on and from the date appointed by the EMPLOYER on that behalf, whereupon the CONTRACTOR shall stop forthwith any of the CONTRACTOR's work then in progress, except such WORK as the EMPLOYER may, in writing, require to be done to safeguard any property or WORK, or installations from damage, and the EMPLOYER, for its part, may take over the work remaining unfinished by the CONTRACTOR and complete the same through a fresh contractor or by other means, at the risk and cost of the CONTRACTOR, and any of his sureties if any, shall be liable to the EMPLOYER for any excess cost occasioned by such work having to be so taken over and completed by the EMPLOYER over and above the cost at the rates specified in the schedule of quantities and rate/prices.
- b) WITHOUT DETERMINING THE CONTRACT to take over the work of the CONTRACTOR or any part thereof and complete the same through a fresh contractor or by other means at the risk and cost of the CONTRACTOR. The CONTRACTOR and any of his sureties are liable to the EMPLOYER for any excess cost over and above the cost at the rates specified in the Schedule of Quantities/ rates, occasioned by such works having been taken over and completed by the EMPLOYER.

29.2 In such events of Clause 29.1(a) or (b) above.

- a) The whole or part of the Contract Performance Security furnished by the CONTRACTOR is liable to be forfeited without prejudice to the right of the EMPLOYER to recover from the CONTRACTOR the excess cost referred to in the sub-clause aforesaid, the EMPLOYER shall also have the right of taking possession and utilising in completing the works or any part thereof, such as materials equipment and plants available at work

site belonging to the CONTRACTOR as may be necessary and the CONTRACTOR shall not be entitled for any compensation for use or damage to such materials, equipment and plant.

- b)** The amount that may have become due to the CONTRACTOR on account of work already executed by him shall not be payable to him until after the expiry of Six (6) calendar months reckoned from the date of termination of CONTRACT or from the taking over of the WORK or part thereof by the EMPLOYER as the case may be, during which period the responsibility for faulty materials or workmanship in respect of such work shall, under the CONTRACT, rest exclusively with the CONTRACTOR. This amount shall be subject to deduction of any amounts due from the CONTRACT to the EMPLOYER under the terms of the CONTRACT authorised or required to be reserved or retained by the EMPLOYER.

29.3 Before determining the CONTRACT as per Clause 29.1(a) or (b) provided in the judgement of the EMPLOYER, the default or defaults committed by the CONTRACTOR is/are curable and can be cured by the CONTRACTOR if an opportunity given to him, then the EMPLOYER may issue Notice in writing calling the CONTRACTOR to cure the default within such time specified in the Notice.

29.4 The EMPLOYER shall also have the right to proceed or take action as per 29.1(a) or (b) above, in the event that the CONTRACTOR becomes bankrupt, insolvent, compounds with his creditors, assigns the CONTRACT in favour of his creditors or any other person or persons, or being a company or a corporation goes into voluntary liquidation, provided that in the said events it shall not be necessary for the EMPLOYER to give any prior notice to the CONTRACTOR.

29.5 Termination of the CONTRACT as provided for in sub- clause 29.1(a) above shall not prejudice or affect their rights of the EMPLOYER which may have accrued upto the date of such termination.

30 Contractor remains liable to pay compensation if

30.1 In any case in which any of the powers conferred upon the EMPLOYER BY CLAUSE 29.0 thereof shall have become **action not taken under clause 29:** exercisable and the same had not been exercised, the non-exercise thereof shall not constitute a waiver of any of the conditions hereof and such powers shall notwithstanding be exercisable in the event of any further case of default by the CONTRACTOR for which by any clause or clauses hereof he is declared liable to pay compensation amounting to the whole of his Contract Performance Security, and the liability of the CONTRACTOR for past and future compensation shall remain unaffected. In the event of the EMPLOYER putting in force the power under above sub-clause (a), (b) or (c) vested in him under the preceding clause he may, if he so desired, take possession of all or any tools, and plants, materials and stores in or upon the works or the site thereof belonging to the CONTRACTOR or procured by him and intended to be used for the execution of the WORK or any part thereof paying or allowing for the same in account at the CONTRACT rates or in case of these not being applicable at current market rates to be certified by the ENGINEER-IN-CHARGE whose certificate thereof shall be final, otherwise the ENGINEER-IN- CHARGE may give notice in writing to the CONTRACTOR or his clerk of the works, foreman or other authorised agent, requiring him to remove such tools, plant, materials or stores from the premises (within a time to be specified in such notice), and in the event of the CONTRACTOR failing to comply with any such requisition, the ENGINEER-IN-CHARGE may remove them at the CONTRACTOR's expense or sell them by auction or private sale on account of the CONTRACTOR and at his risk in all respects without any further notice as to the date, time or place of sale and the certificate of the ENGINEER-IN-CHARGE as to the expenses of any such removal and the amount of the proceeds and expenses of any such sale shall be final and conclusive against the CONTRACTOR.

31 Change in constitution:

31.1 Where the CONTRACTOR is a partnership firm, the prior approval of the EMPLOYER shall be obtained in writing, before any change is made in the constitution of the firm. Where the CONTRACTOR is an individual or a Hindu undivided family business concern, such approval as aforesaid shall, likewise be obtained before such CONTRACTOR enters into any agreement with other parties, where under, the reconstituted firm would have the right to carry out the work hereby undertaken by the CONTRACTOR. In either case if prior approval as aforesaid is not obtained, the CONTRACT shall be deemed to have been allotted in contravention of clause 37 hereof and the same action may be taken and the same consequence shall ensure as provided in the said clause.

32 Termination of contract

32.1 **TERMINATION OF CONTRACT FOR DEATH:** If the CONTRACTOR is an individual or a proprietary concern and the individual or the proprietor dies or if the CONTRACTOR is a partnership concern and one of the partner dies then unless, the EMPLOYER is satisfied that the legal representative of the individual or the proprietary concern or the surviving partners are capable of carrying out and completing CONTRACT, he (the EMPLOYER) is entitled to cancel the CONTRACT for the uncompleted part without being in any way liable for any compensation payment to the estate

of the diseased CONTRACTOR and/or to the surviving partners of the CONTRACTOR'S firm on account of the cancellation of CONTRACT. The decision of the EMPLOYER in such assessment shall be final and binding on the parties. In the event of such cancellation, the EMPLOYER shall not hold the estate of the diseased CONTRACTOR and/or the surviving partners of the CONTRACTOR'S firm liable for any damages for non-completion of CONTRACT.

32.2 TERMINATION OF CONTRACT IN CASE OF LIQUIDATION / BANKRUPTCY ETC. If the Contractor shall dissolve or become bankrupt or insolvent or cause or suffer any receiver to be appointed of his business or any assets thereof compound with his Creditors, or being a corporation commence to be wound up, not being a member's voluntary winding up for the purpose of amalgamation or reconstruction, or carry on its business under a Receiver for the benefits of its Creditors any of them, EMPLOYER shall be at liberty :- To terminate the contract forthwith upon coming to know of the happening of any such event as aforesaid by notice in writing to the Contractor or to give the Receiver or liquidator or other person, the option of carrying out the contract subject to his providing a guarantee upto an amount to be agreed upon by EMPLOYER for due and faithful performance of the contract.

32.3 TERMINATION OF CONTRACT FOR NON-PERFORMANCE AND SUBSEQUENTLY PUTTING THE CONTRACTOR ON HOLIDAY: In

case of termination of CONTRACT herein set forth (under clause 29.0) except under conditions of Force Majeure and termination after expiry of contract, the CONTRACTOR shall be put under holiday [i.e. neither any enquiry will be issued to the party by BCPL. against any type of tender nor their offer will be considered by BCPL against any ongoing tender (s) where contract between GAIL and that particular CONTRACTOR (as a bidder) has not been finalized] for three years from the date of termination by BCPL to such CONTRACTOR.

33 Members of the employer not individually liable :

33.1 No Director, or official or employee of the EMPLOYER/ CONSULTANT shall in any way be personally bound or liable for the acts or obligations of the EMPLOYER under the CONTRACT or answerable for any default or omission in the observance or performance of any of the acts, matters or things which are herein contained.

34 Employer not bound by personal representations:

34.1 The CONTRACTOR shall not be entitled to any increase on the scheduled rates or any other right or claim whatsoever by reason of any representation, explanation statement or alleged representation, promise or guarantees given or alleged to have been given to him by any person.

35 Contractor's office at site:

35.1 The CONTRACTOR shall provide and maintain an office at the site for the accommodation of his agent and staff and such office shall be open at all reasonable hours to receive instructions, notice or other communications. The CONTRACTOR at all time shall maintain a site instruction book and compliance of these shall be communicated to the ENGINEER-IN CHARGE from time to time and the whole document to be preserved and handed over after completion of works.

36 Contractor's subordinate staff and their conduct

36.1 The CONTRACTOR, on or after award of the WORK shall name and depute a qualified engineer having sufficient experience in carrying out work of similar nature, to whom the equipments, materials, if any, shall be issued and instructions for works given. The CONTRACTOR shall also provide to the satisfaction of the ENGINEER-IN- CHARGE sufficient and qualified staff to superintend the execution of the WORK, competent sub-agents, foremen and leading hands including those specially qualified by previous experience to supervise the types of works comprised in the CONTRACT in such manner as will ensure work of the best quality, expeditious working. Whenever in the opinion of the ENGINEER-IN- CHARGE additional properly qualified supervisory staff is considered necessary, they shall be employed by the CONTRACTOR without additional charge on accounts thereof. The CONTRACTOR shall ensure to the satisfaction of the ENGINEER-IN-CHARGE that SUB- CONTRACTORS, if any, shall provide competent and efficient supervision, over the work entrusted to them.

36.2 If and whenever any of the CONTRACTOR's or SUB- CONTRACTOR'S agents, sub-agents, assistants, foremen, or other employees shall in the opinion of ENGINEER-IN- CHARGE be guilty of any misconduct or be incompetent or insufficiently qualified or negligent in the performance of their duties or that in the opinion of the EMPLOYER or the ENGINEER-IN-CHARGE, it is undesirable for administrative or any other reason for such person or persons to be employed in the works, the CONTRACTOR, is so directed by the ENGINEER-IN-CHARGE, shall at once remove such person or persons from employment thereon. Any person or persons so removed from the works shall not again be employed in connection with the WORKS without the written permission of the ENGINEER-IN- CHARGE. Any person

so removed from the WORK shall be immediately re-placed at the expense of the CONTRACTOR by a qualified and competent substitute. Should the CONTRACTOR be requested to repatriate any person removed from the works he shall do so and shall bear all costs in connection herewith.

36.3 The CONTRACTOR shall be responsible for the proper behaviour of all the staff, foremen, workmen, and others, and shall exercise a proper degree of control over them and in particular and without prejudice to the said generality, the CONTRACTOR shall be bound to prohibit and prevent any employees from trespassing or acting in any way detrimental or prejudicial to the interest of the community or of the properties or occupiers of land and properties in the neighborhood and in the event of such employee so trespassing, the CONTRACTOR shall be responsible therefore and relieve the EMPLOYER of all consequent claims or actions for damages or injury or any other grounds whatsoever. The decision of the ENGINEER-IN-CHARGE upon any matter arising under this clause shall be final. The CONTRACTOR shall be liable for any liability to EMPLOYER on account of deployment of CONTRACTOR's staff etc. or incidental or arising out of the execution of CONTRACT. The CONTRACTOR shall be liable for all acts or omissions on the part of his staff, Foremen and Workmen and others in his employment, including misfeasance or negligence of whatever kind in the course of their work or during their employment, which are connected directly or indirectly with the CONTRACT.

36.4 If and when required by the EMPLOYER and CONTRACTOR's personnel entering upon the EMPLOYER's premises shall be properly identified by badges of a type acceptable to the EMPLOYER which must be worn at all times on EMPLOYER's premises. CONTRACTOR may be required to obtain daily entry passes for his staff/employees from EMPLOYER to work within operating areas. These being safety requirements, no relaxations on this account shall be given to CONTRACTOR.

37 Sub-letting of works:

37.1 No part of the CONTRACT nor any share or interest therein shall in any manner or degree be transferred, assigned or sublet by the CONTRACTOR directly or indirectly to any person, firm or corporation whatsoever without the consent in writing, of the ENGINEER/EMPLOYER except as provided for in the succeeding sub-clause.

- i) SUB-CONTRACTS FOR TEMPORARY WORKS ETC.: The EMPLOYER may give written consent to Sub- contract for the execution of any part of the WORK at the site, being entered in to by CONTRACTOR provided each individual Sub-contract is submitted to the ENGINEER-IN-CHARGE before being entered into and is approved by him.
- ii) LIST OF SUB-CONTRACTORS TO BE SUPPLIED: At the commencement of every month the CONTRACTOR shall furnish to the ENGINEER-IN- CHARGE list of all SUB-CONTRACTORS or other persons or firms engaged by the CONTRACTOR and working at the SITE during the previous month with particulars of the general nature of the Subcontract or works done by them.
- iii) CONTRACTOR'S LIABILITY NOT LIMITED BY SUB- CONTRACTORS: Notwithstanding any sub-letting with such approval as aforesaid and notwithstanding that the ENGINEER-I N-CHARGE shall have received copies of any Subcontracts, the contractor shall be and shall remain solely responsible for the quality, proper and expeditious execution of the Contract in all respects as if such sub-letting or Subcontracting had not taken place, and as if such work had been done directly by the CONTRACTOR. The CONTRACTOR shall bear all responsibility for any act or omission on the part of sub-contractors in regard to work to be performed under the CONTRACT.
- iv) EMPLOYER MAY TERMINATE SUB-CONTRACTS: If any SUB-CONTRACTOR engaged upon the works at the site executes any works which in the opinion of the ENGINEER-IN-CHARGE is not in accordance with the CONTRACT documents, the EMPLOYER may by written notice to the CONTRACTOR request him to terminate such subcontract and the CONTRACTOR upon the receipt of such notice shall terminate such Subcontract and dismiss the SUB-CONTRACTOR(S) and the later shall forthwith leave the works, failing which the EMPLOYER shall have the right to remove such SUB- CONTRACTOR(S) from the site.
- v) NO REMEDY FOR ACTION TAKEN UNDER THIS CLAUSE: No action taken by the EMPLOYER under the clause shall relieve the CONTRACTOR of any of his liabilities under the CONTRACT or give rise to any right or compensation, extension of time or otherwise failing which the EMPLOYER shall have the right to remove such SUB-CONTRACTOR(S) from the site.

38 Power of entry:

38.1 If the CONTRACTOR shall not commence the WORK in the manner previously described in the CONTRACT documents or if he shall at any time in the opinion of the ENGINEER-I N-CHARGE.

- i) fail to carry out the WORK in conformity with the CONTRACT documents, or
- ii) fail to carry out the WORK in accordance with the Time Schedule, or
- iii) substantially suspend work or the WORK for a period of fourteen days without authority from the ENGINEER IN-CHARGE, or

- iv) fail to carry out and execute the WORK to the satisfaction of the ENGINEER-IN-CHARGE, or
- v) fail to supply sufficient or suitable construction plant, temporary works, labour, materials or things, or vi) Commit, suffer, or permit any other breach of any of the provisions of the CONTRACT on his part to be performed or observed or persist in any of the above mentioned breaches of the CONTRACT for fourteen days, after notice in writing shall have been given to the CONTRACTOR by the ENGINEER-IN-CHARGE requiring such breach to be remedied, or
- vi) if the CONTRACTOR shall abandon the WORK , or
- vii) If the CONTRACTOR during the continuance of the CONTRACT shall become bankrupt, make any arrangement or composition with his creditors, or permit any execution to be levied or go into liquidation whether compulsory or voluntary not being merely a voluntary liquidation for the purpose of amalgamation or reconstruction **then** in any such case, the EMPLOYER shall have the power to enter upon the WORK and take possession thereof and of the materials, temporary WORK, construction plant, and stock thereon, and to revoke the CONTRACTOR's licence to use the same, and to complete the WORK by his agents, other CONTRACTORS or workmen or to relate the same upon any terms and to such other person, firm or corporation as the EMPLOYER in his absolute discretion may think proper to employ and for the purpose aforesaid to use or authorise the use of any materials, temporary work, CONSTRUCTION PLANT, and stock as aforesaid, without making payment or allowance to the CONTRACTOR for the said materials other than such as may be certified in writing by the ENGINEER-IN-CHARGE to be reasonable, and without making any payment or allowance to the CONTRACTOR for the use of the temporary said works, construction plant and stock or being liable for any loss or damage thereto, and if the EMPLOYER shall by reason of his taking possession of the WORK or of the WORK being completed by other CONTRACTOR (due account being taken of any such extra work or works which may or be omitted) then the amount of such excess as certified by the ENGINEER-IN- CHARGE shall be deducted from any money which may be due for work done by the CONTRACTOR under the CONTRACT and not paid for. Any deficiency shall forthwith be made good and paid to the EMPLOYER by the CONTRACTOR and the EMPLOYER shall have power to sell in such manner and for such price as he may think fit all or any of the construction plant, materials etc. constructed by or belonging to and to recoup and retain the said deficiency or any part thereof out of proceeds of the sale.

39 Contractor's responsibility with the mechanical, electrical, intercommunication system, air conditioning contractors and other agencies:

- 39.1 Without repugnance of any other condition, it shall be the responsibility of the CONTRACTOR executing the work of civil construction, to work in close cooperation and coordinate the WORK with the Mechanical, Electrical, Air-conditioning and Intercommunication Contractor's and other agencies or their authorised representatives, in providing the necessary grooves, recesses, cuts and opening etc., in wall, slabs beams and columns etc. and making good the same to the desired finish as per specification, for the placement of electrical, intercommunication cables, conduits, air-conditioning inlets and outlets grills and other equipments etc. where required. For the above said requirements in the false ceiling and other partitions, the CONTRACTOR before starting-up the work shall in consultation with the Electrical, Mechanical, Intercommunication, Air-conditioning contractor and other agencies prepare and put-up a joint scheme, showing the necessary openings, grooves, recesses, cuts, the methods of fixing required for the WORK of the aforesaid, and the finishes therein, to the ENGINEER-IN-CHARGE and get the approval. The CONTRACTOR before finally submitting the scheme to the ENGINEER-IN-CHARGE, shall have the written agreement of the other agencies. The ENGINEER- IN-CHARGE, before communicating his approval to the scheme, with any required modification, shall get the final agreement of all the agencies, which shall be binding. No claim shall be entertained on account of the above. The CONTRACTOR shall confirm in all respects with provision of any statutory regulations, ordinances or byelaws of any local or duly constituted authorities or public bodies which may be applicable from time to time to the WORK or any temporary works. The CONTRACTOR shall keep the EMPLOYER indemnified against all penalties and liabilities of every kind, arising out of non- adherence to such stains, ordinances, laws, rules, regulations, etc.

40 Other agencies at site:

- 40.1 The CONTRACTOR shall have to execute the WORK in such place and conditions where other agencies will also be engaged for other works such as site grading, filling, and levelling, electrical and mechanical engineering works, etc. No claim shall be entertained due to WORK being executed in the above circumstances.

41 Notice:

- 41.1 TO THE CONTRACTOR: Any notice hereunder may be served on the CONTRACTOR or his duly authorised representative at the job site or may be served by registered mail direct to the address furnished by the

CONTRACTOR. Proof of issue of any such notice could be conclusive of the CONTRACTOR having been duly informed of all contents therein.

- 41.2 TO THE EMPLOYER: Any notice to be given to the EMPLOYER under the terms of the CONTRACTOR shall be served by sending the same by Registered mail to or delivering the same at the respective site offices of M/S. BRAHMAPUTRA CRACKERS & POLYMERS LTD. addressed to the HEAD/SITE-IN-CHARGE.

42 Right of various interests:

- 42.1 The EMPLOYER reserves the right to distribute the work between more than one agency(ies). The CONTRACTOR shall cooperate and afford other agency(ies) reasonable opportunity for access to the WORK for the carriage and storage of materials and execution of their works.
- 42.2 Wherever the work being done by any department of the EMPLOYER or by other agency(ies) employed by the EMPLOYER is contingent upon WORK covered by this CONTRACT, the respective rights of the various interests involved shall be determined by the ENGINEER-IN-CHARGE to secure the completion of the various portions of the work in general harmony.

43 Patents and royalties:

- 43.1 The CONTRACTOR, if licensed under any patent covering equipment, machinery, materials or compositions of matter to be used or supplied or methods and process to be practised or employed in the performance of this CONTRACT, agrees to pay all royalties and licence fees which may be due with respect thereto. If any equipment, machinery, materials, composition of matters, be used or supplied or methods and processes to be practised or employed in the performance of this CONTRACT, is covered by a patent under which the CONTRACTOR is not licensed then the CONTRACTOR before supplying or using the equipment, machinery materials, composition method or processes shall obtain such licences and pay such royalties and licence fees as may be necessary for performance of this CONTRACT. In the event the CONTRACTOR fails to pay any such royalty or obtain any such licence, any suit for infringement of such patents which is brought against the CONTRACTOR or the EMPLOYER as a result such failure will be defended by the CONTRACTOR at his own expense and the CONTRACTOR will pay any damages and costs awarded in such suit. The CONTRACTOR shall promptly notify the EMPLOYER if the CONTRACTOR has acquired the knowledge of any plant under which a suit for infringement could be reasonably brought because of the use by the EMPLOYER of any equipment, machinery, materials, process, methods to be supplied hereunder. The CONTRACTOR agrees to and does hereby grant to EMPLOYER, together with the right to extend the same to any of the subsidiaries of the EMPLOYER as irrevocable, royalty free licence to use in any country, any invention made by the CONTRACTOR or his employee in or as result of the performance of the WORK under the CONTRACT.
- 43.2 All charges on account of royalty. tollage, rent, octroi terminal or sales tax and/or other duties or any other levy on materials obtained for the work or temporary work or part thereof (excluding materials provided by the EMPLOYER) shall be borne by the CONTRACTOR.
- 43.3 The CONTRACTOR shall not sell or otherwise dispose of or remove except for the purpose of this CONTRACT, the sand, stone, clay, ballast, earth, rock or other substances, or materials obtained from any excavation made for the purpose of the WORK or any building or produce upon the site at the time of delivery of the possession thereof, but all such substances, materials, buildings and produce shall be the property of the EMPLOYER provided that the CONTRACTOR may with the permission of the ENGINEER-IN-CHARGE, use the same for the purpose of the work by payment of cost of the same at such a rate as may be determined by the ENGINEER-IN- CHARGE.
- 43.4 The EMPLOYER shall indemnify and save harmless the CONTRACTOR from any loss on account of claims against CONTRACTOR for the contributory infringement of patent rights arising out and based upon the claim that the use of the EMPLOYER of the process included in the design prepared by the EMPLOYER and used in the operation of the plant infringes on any patent right. With respect to any subcontract entered into by CONTRACTOR pursuant to the provisions of the relevant clause hereof, the CONTRACTOR shall obtain from the SUB-CONTRACTOR an undertaking to provide the EMPLOYER with the same patent protection that CONTRACTOR is required to provide under the provisions of this clause.

44 Liens:

- 44.1 If, at any time there should be evidence or any lien or claim for which the EMPLOYER might have become liable and which is chargeable to the CONTRACTOR, the EMPLOYER shall have the right to retain out of any payment then due or thereafter to become due an amount sufficient to completely indemnify the EMPLOYER against such lien or claim and if such lien or claim be valid, the EMPLOYER may pay and discharge the same and deduct the amount so paid from any money which may be or may become due and payable to the CONTRACTOR. If any lien or claim remain

unsettled after all payments are made, the CONTRACTOR shall refund or pay to the EMPLOYER all money that the latter may be compelled to pay in discharging such lien or claim including all costs and reasonable expenses. EMPLOYER reserves the right to do the same.

44.2 The EMPLOYER shall have lien on all materials, equipments including those brought by the CONTRACTOR for the purpose of erection, testing and commissioning of the WORK.

44.3 The final payment shall not become due until the CONTRACTOR delivers to the ENGINEER-IN-CHARGE a complete release or waiver of all liens arising or which may arise out of his agreement or receipt in full or certification by the CONTRACTOR in a form approved by ENGINEER-IN-CHARGE that all invoices for labour, materials, services have been paid in lien thereof and if required by the ENGINEER-IN-CHARGE in any case an affidavit that so far as the CONTRACTOR has knowledge or information the releases and receipts include all the labour and material for which a lien could be filled.

44.4 CONTRACTOR will indemnify and hold the EMPLOYER harmless, for a period of two years after the issue of FINAL CERTIFICATE, from all liens and other encumbrances against the EMPLOYER on account of debts or claims alleged to be due from the CONTRACTOR or his SUB-CONTRACTOR to any person including SUB- CONTRACTOR and on behalf of EMPLOYER will defend at his own expense, any claim or litigation brought against the EMPLOYER or the CONTRACTOR in connection therewith. CONTRACTOR shall defend or contest at his own expense any fresh claim or litigation by any person including his SUB-CONTRACTOR, till its satisfactory settlement even after the expiry of two years from the date of issue of FINAL CERTIFICATE.

45 Delays by employer or his authorised agents:

45.1 In case the CONTRACTOR's performance is delayed due to any act or omission on the part of the EMPLOYER or his authorized agents, then the CONTRACTOR shall be given due extension of time for the completion of the WORK, to the extent such omission on the part of the EMPLOYER has caused delay in the CONTRACTOR's performance of his WORK.

45.2 No adjustment in CONTRACT PRICE shall be allowed for reasons of such delays and extensions granted except as provided in TENDER DOCUMENT, where the EMPLOYER reserves the right to seek indulgence of CONTRACTOR to maintain the agreed Time Schedule of Completion. In such an event the CONTRACTOR shall be obliged for working by CONTRACTOR's personnel for additional time beyond stipulated working hours as also Sundays and Holidays and achieve the completion date/interim targets.

46 Payment if the contract is terminated:

46.1 If the CONTRACT shall be terminated as per Tender pursuant to Clause no. 29 of GCC, the CONTRACTOR shall be paid by the EMPLOYER in so far as such amounts or items shall not have already been covered by payments of amounts made to the CONTRACTOR for the WORK executed and accepted by ENGINEER-IN-CHARGE prior to the date of termination at the rates and prices provided for in the CONTRACT and in addition to the following:

- i) The amount payable in respect of any preliminary items, so far as the Work or service comprised therein has been carried out or performed and an appropriate portion as certified by ENGINEER-IN- CHARGE of any such items or service comprised in which has been partially carried out or performed.
- ii) Any other expenses which the CONTRACTOR has expended for performing the WORK under the CONTRACT subject to being duly recommended by ENGINEER-IN-CHARGE and approved by EMPLOYER for payment, based on documentary evidence of his having incurred such expenses.

46.2 The CONTRACTOR will be further required to transfer the title and provide the following in the manner and as directed by the EMPLOYER.

- a) Any and all completed works.
- b) Such partially completed WORK including drawings, informations and CONTRACT rights as the CONTRACTOR has specially performed, produced or acquired for the performance of the CONTRACTOR.

47 No waiver of rights:

47.1 Neither the inspection by the EMPLOYER or any of their officials, employees, or agents nor any order by the EMPLOYER for payment of money or any payment for or acceptance of the whole or any part of the Work by the EMPLOYER nor any extension of time, nor any possession taken by EMPLOYER shall operate as a waiver of any provision of the CONTRACT, or of any power herein reserved to the EMPLOYER, or any right to damages herein provided, nor shall any waiver of any breach in the CONTRACT be held to be a waiver of any other subsequent breach.

48 Certificate not to affect right of employer and liability of contractor:

48.1 No interim payment certificate(s) issued by the Engineer-in- Charge of the EMPLOYER, nor any sum paid on account by the EMPLOYER, nor any extension of time for execution of the work granted by EMPLOYER shall affect or prejudice the rights of the Employer against the CONTRACTOR or relieve the CONTRACTOR of his obligations for the due performance of the CONTRACT, or be interpreted as approval of the WORK done or of the equipment supplied and no certificate shall create liability for the EMPLOYER to pay for alterations, amendments, variations or additional works not ordered, in writing, by EMPLOYER or discharge the liability of the CONTRACTOR for the payment of damages whether due, ascertained, or certified or not or any sum against the payment of which he is bound to indemnify the EMPLOYER.

49 Language and measures:

49.1 All documents pertaining to the CONTRACT including Specifications, Schedules, Notices, Correspondence, operating and maintenance Instructions, DRAWINGS, or any other writing shall be written in English language. The Metric System of measurement shall be used in the CONTRACT unless otherwise specified.

50 Transfer of title:

50.1 The title of Ownership of supplies furnished by the CONTRACTOR shall not pass on to the EMPLOYER for all Supplies till the same are finally accepted by the EMPLOYER after the successful completion of PERFORMANCE TEST and GUARANTEE TEST and issue of FINAL CERTIFICATE.

50.2 However, the EMPLOYER shall have the lien on all such works performed as soon as any advance or progressive payment is made by the EMPLOYER to the CONTRACTOR and the CONTRACTOR shall not subject these works for use other than those intended under this CONTRACT.

51 Release of information:

51.1 The CONTRACTOR shall not communicate or use in advertising, publicity, sales releases or in any other medium, photographs, or other reproduction of the Work under this CONTRACT or description of the site dimensions, quantity , quality or other information, concerning the Work unless prior written permission has been obtained from the EMPLOYER.

52 Brand names:

52.1 The specific reference in the SPECIFICATIONS and documents to any material by trade name, make or catalogue number shall be construed as establishing standard or quality and performance and not as limited competition. However, TENDERER may offer other similar equipments provided it meets the specified standard design and performance requirements.

53 Completion of contract:

53.1 Unless otherwise terminated under the provisions of any other relevant clause, this CONTRACT shall be deemed to have been completed at the expiration of the PERIOD OF LIABILITY as provided for under the CONTRACT.

54 Spares:

54.1 The CONTRACTOR shall furnish to the EMPLOYER all spares required for COMMISSIONING of the plants, recommendatory and/or mandatory spares, which are required essential by the manufacturer/supplier. The same shall be delivered at SITE, 3(Three) months before COMMISSIONING. Also the CONTRACTOR should furnish the manufacturing drawings for fast wearing spares.

54.2 The CONTRACTOR guarantees the EMPLOYER that before the manufacturers of the equipments, plants and machineries go out of production of spare parts for the equipment furnished and erected by him, he shall give at least twelve (12) months' advance notice to the EMPLOYER, so that the latter may order his requirement of spares in one lot, if he so desires.

SECTION-V PERFORMANCE OF WORK

55 Execution of work:

55.1 All the Works shall be executed in strict conformity with the provisions of the CONTRACT Documents and with such explanatory detailed drawings, specification and instructions as may be furnished from time to time to the CONTRACTOR by the ENGINEER-IN-CHARGE whether mentioned in the CONTRACT or not. The CONTRACTOR shall be responsible for ensuring that works throughout are executed in the most substantial, proper and workmanlike manner with the quality of material and workmanship in strict accordance with the SPECIFICATIONS and to the entire satisfaction of the ENGINEER-IN-CHARGE. The CONTRACTOR shall provide all necessary materials equipment labour etc. for execution and maintenance of WORK till completion unless otherwise mentioned in the CONTRACT.

56 Co-ordination and inspection of work:

56.1 The coordination and inspection of the day-to-day work under the CONTRACT shall be the responsibility of the ENGINEER-IN-CHARGE. The written instruction regarding any particular job will normally be passed by the ENGINEER-IN-CHARGE or his authorised representative. A work order book will be maintained by the CONTRACTOR for each sector in which the aforesaid written instructions will be entered. These will be signed by the CONTRACTOR or his authorised representative by way of acknowledgement within 12 hours.

57 Work in monsoon and dewatering:

57.1 Unless otherwise specified elsewhere in the tender, the execution of the WORK may entail working in the monsoon also. The CONTRACTOR must maintain a minimum labour force as may be required for the job and plan and execute the construction and erection according to the prescribed schedule. No extra rate will be considered for such work in monsoon.

57.2 During monsoon and other period, it shall be the responsibility of the CONTRACTOR to keep the construction work site free from water at his own cost.

58 Work on Sundays and Holidays:

58.1 For carrying out Work on Sundays, and Holidays, the CONTRACTOR will approach the ENGINEER-IN-CHARGE or his representative at least two days in advance and obtain permission in writing. The CONTRACTOR shall observe all labour laws and other statutory rules and regulations in force. In case of any violations of such laws, rules and regulations, consequence if any, including the cost thereto shall be exclusively borne by the CONTRACTOR and the EMPLOYER shall have no liability whatsoever on this account.

59 General conditions for construction and erection work:

59.1 The working time at the site of work is 48 hours per week. Overtime work is permitted in cases of need and the EMPLOYER will not compensate the same. Shift working at 2 or 3 shifts per day will become necessary and the CONTRACTOR should take this aspect into consideration for formulating his rates for quotation. No extra claims will be entertained by the EMPLOYER on this account. For carrying out work beyond working hours the CONTRACTOR will approach the ENGINEER-IN-CHARGE or his authorized representative and obtain his prior written permission.

59.2 The CONTRACTOR must arrange for the placement of workers in such a way that the delayed completion of the WORK or any part thereof for any reason whatsoever will not affect their proper employment. The EMPLOYER will not entertain any claim for idle time payment whatsoever.

59.3 The CONTRACTOR shall submit to the EMPLOYER/ENGINEER-IN- CHARGE reports at regular intervals regarding the state and progress of WORK. The details and proforma of the report will mutually be agreed after the award of CONTRACT. The CONTRACTOR shall provide display boards showing progress and labour strengths at worksite, as directed by the ENGINEER-IN-CHARGE.

60 Alterations in specifications, design and extra works:

60.1 The WORK covered under this CONTRACT having to be executed by the CONTRACTOR on a lumpsum firm price/item rate quoted by him, the EMPLOYER will not accept any proposals for changes in VALUE OF CONTRACT or extension in time on account of any such changes which may arise to the CONTRACTOR's scope of WORK as a result of detailed Engineering and thereafter during the execution of WORK. The only exception to this will be a case where the EMPLOYER requests in writing to the CONTRACTOR to upgrade the SPECIFICATIONS or the size of any major

pieces of equipments, plant or machinery beyond what is normally required to meet the scope of WORK as defined in the CONTRACT DOCUMENT. In such cases, a change order will be initialled by the CONTRACTOR at the appropriate time for the EMPLOYER's prior approval giving the full back-up data for their review and for final settlement of any impact on price within 30 (thirty) days thereafter.

60.2 The ENGINEER-IN-CHARGE shall have to make any alterations in, omission from, additions to or substitutions for, the Schedule of Rates, the original specifications, drawings, designs and instructions that may appear to him to be necessary or advisable during the progress of the WORK and the CONTRACTOR shall be bound to carry out the such altered/ extra/ new items of WORK in accordance with any instructions which may be given to him in writing signed by the ENGINEER-IN- CHARGE, and such alterations, omissions, additions or substitutions shall not invalidate the CONTRACT and any altered, additional or substituted work which the CONTRACTOR may be directed to do in the manner above specified as part of the WORK shall be carried out by the CONTRACTOR on the same conditions in all respects on which he agreed to do the main WORK. The time of completion of WORK may be extended for the part of the particular job at the discretion of the ENGINEER-IN- CHARGE, for only such alterations, additions or substitutions of the WORK, as he may consider as just and reasonable. The rates for such additional, altered or substituted WORK under this clause shall be worked out in accordance with the following provisions:-

I. For Item Rate Contract

- a) If the rates for the additional, altered or substituted WORK are specified in the CONTRACT for the WORK, the CONTRACTOR is bound to carry on the additional, altered or substituted WORK at the same rates as are specified in the CONTRACT.
- b) If the rates for the additional, altered or substituted WORK are not specifically provided in the CONTRACT for the WORK, the rates will be derived from the rates for similar class of WORK as are specified in the CONTRACT for the WORK. The opinion of the ENGINEER-IN- CHARGE, as to whether or not the rates can be reasonably so derived from the items in this CONTRACT will be final and binding on the CONTRACTOR.
- c) If the rates for the altered, additional or substituted WORK cannot be determined in the manner specified in sub-clause(s) and (b) above, then the CONTRACTOR shall, within 7 days of the date of receipt of order to carry out the WORK, inform the ENGINEER-IN-CHARGE of the rates which it is his intention to charge for such class of WORK, supported by analysis of the rate or rates claimed, and the ENGINEER-IN-CHARGE shall determine the rate or rates on the basis of the prevailing market rates, labour cost at schedule of labour rates plus 10% to cover contractor's supervision, overheads and profit and pay the CONTRACTOR accordingly. The opinion of the ENGINEER- IN-CHARGE as to current market rates of materials and the quantum of labour involved per unit of measurement will be final and binding on the CONTRACTOR.
- d) Where the item of work will be executed through nominated specialist agency as approved by the ENGINEER-IN-CHARGE, then the actual amount paid to such nominated agency supported by documentary evidence and as certified by ENGINEER-IN-CHARGE shall be considered plus 10% (ten percent) to cover all contingencies, overhead, profits to arrive at the rates.
- e) Provisions contained in the Sub-clause (a) & (d) above shall, however, not apply for the following:- Where the value of additions of new items together with the value of alterations, additions/deletions or substitutions does not exceed by or is not less than plus/minus (+/-)25% of the VALUE OF CONTRACT. The item rates in the Schedule of Rates shall hold good for all such variations between the above mentioned limits, irrespective of any increase/decrease of quantities in the individual items of Schedule of Rates. Where the value of addition of new items together with the value of alterations, additions/deletions or substitutions reduces more than 25% of the contract value but is within the following limits the tenderer shall be paid compensation for decrease in the value of work, as follows: S.No. Range of Variation Percentage compensation for decrease in the value of work in the respective range. a) Beyond (+) 25% No increase and/or upto & inclusive of decrease shall be (+) 50% applicable for the Schedule of Rates (The rates quoted for this increase shall be valid). b) Beyond (-) 25% upto & For reduction beyond inclusive of (-) 50% 25%contractor shall be compensated by an amount equivalent to 10% of the reduction in value of the contract as awarded. For example if the actual contract value is 70% of awarded value then compensation shall be 10% of (75-70) i.e. 0.5% of awarded contract value.

II. For Lumpsum Contracts: CONTRACTOR shall, within 7 days of the date of receipt of order to carry out the WORK, inform the ENGINEER-IN- CHARGE of the rates which it is his intention to charge for such class of WORK, supported by analysis of the rate or rates claimed, and the ENGINEER-IN-CHARGE shall determine the rate or rates on the basis of the prevailing market rates, labour cost at schedule of labour rates plus 10% to cover contractor's supervision, overheads and profit and pay the CONTRACTOR accordingly. The opinion of the ENGINEER- IN-CHARGE as to current market rates of materials and the quantum of labour involved per unit of measurement will be final and binding on the CONTRACTOR.

61 Drawings to be supplied by the employer

- 61.1 The drawings attached with tender are only for the general guidance to the CONTRACTOR to enable him to visualize the type of work contemplated and scope of work involved. The CONTRACTOR will be deemed to have studied the DRAWINGS and formed an idea about the WORK involved.
- 61.2 Detailed working drawings on the basis of which actual execution of the WORK is to proceed, will be furnished from time to time during the progress of the work. The CONTRACTOR shall be deemed to have gone through the DRAWINGS supplied to him thoroughly and carefully and in conjunction with all other connected drawings and bring to the notice of the ENGINEER-IN-CHARGE discrepancies, if any, therein before actually carrying out the Work.
- 61.3 Copies of all detailed working drawings relating to the WORK shall be kept at the CONTRACTOR's office on the site and shall be made available to the ENGINEER-IN-CHARGE at any time during the CONTRACT. The drawings and other documents issued by the EMPLOYER shall be returned to the EMPLOYER on completion of the WORK.

62 Drawings to be supplied by the contractor:

- 62.1 The drawings/date which are to be furnished by the CONTRACTOR are enumerated in the special conditions of contract, and shall be furnished within the specified time.
- 62.2 Where approval/review of drawings before manufacture/ construction/fabrication has been specified, it shall be CONTRACTOR's responsibility to have these drawings prepared as per the directions of ENGINEER-IN-CHARGE and got approved before proceeding with manufacture/construction/fabrication as the case may be. Any change that may have become necessary in these drawings during the execution of the work shall have to be carried out by the CONTRACTOR to the satisfaction of ENGINEER-IN-CHARGE at no extra cost. All final drawings shall bear the certification stamp as indicated below duly signed by both the CONTRACTOR and ENGINEER-IN-CHARGE. "Certified true for _____ (Name of Work) Agreement No. _____ Signed: _____ (CONTRACTOR) (ENGINEER-IN-CHARGE)
- 62.3 The DRAWINGS submitted by the CONTRACTOR shall be reviewed by the ENGINEER-IN-CHARGE as far as practicable within 3 (Three) weeks and shall be modified by the CONTRACTOR, if any modifications and/or corrections are required by the ENGINEER-IN-CHARGE. The CONTRACTOR shall incorporate such modifications and/or corrections and submit the final drawings for approval. Any delays arising out of failure by the CONTRACTOR to rectify the drawing in good time shall not alter the Contract Completion Time.
- 62.4 As built drawings showing all corrections, adjustments etc. shall be furnished by the CONTRACTOR in six copies and one transparent for record purposed to the EMPLOYER.

63 Setting out works:

- 63.1 The ENGINEER-IN-CHARGE shall furnish the CONTRACTOR with only the four corners of the Works site and a level bench mark and the CONTRACTOR shall set out the Works and shall provide an efficient staff for the purpose and shall be solely responsible for the accuracy of such setting out.
- 63.2 The CONTRACTOR shall provide, fix and be responsible for the maintenance of all stakes, templates, level marks, profiles and other similar things and shall take all necessary precautions to prevent their removal or disturbance and shall be responsible for the consequence of such removal or disturbance should the same take place and for their efficient and timely reinstatement. The CONTRACTOR shall also be responsible for the maintenance of all existing survey marks, boundary marks, distance marks and center line marks, either existing or supplied and fixed by the CONTRACTOR. The work shall be set out to the satisfaction of the ENGINEER-IN-CHARGE. The approval there of joining with the CONTRACTOR by the ENGINEER-IN-CHARGE in setting out the work, shall not relieve the CONTRACTOR of any of his responsibility.
- 63.3 Before beginning the Works, the CONTRACTOR shall at his own cost, provide all necessary reference and level posts, pegs, bamboos, flags, ranging rods, strings and other materials for proper layout of the works in accordance with the schemes for bearing marks acceptable to the ENGINEER-IN-CHARGE. The center, longitudinal or face lines and cross lines shall be marked by means of small masonry pillars. Each pillar shall have distinct mark at the centre to enable theodolite to be set over it. No work shall be started until all these points are checked and approved by the ENGINEER-IN-CHARGE in writing but such approval shall not relieve the CONTRACTOR of any of his responsibilities. The CONTRACTOR shall also provide all labour, material and other facilities, as necessary, for the proper checking of layout and inspection of the points during construction.
- 63.4 Pillars bearing geodetic marks located at the sites of units of WORKS under construction should be protected and fenced by the CONTRACTOR.

63.5 On completion of WORK, the CONTRACTOR must submit the geodetic documents according to which the WORK was carried out.

64 Responsibility for level and alignment:

64.1 The CONTRACTOR shall be entirely and exclusively responsible for the horizontal and vertical alignment, the levels and correctness of every part of the WORK and shall rectify effectively any errors or imperfections therein, such rectifications shall be carried out by the CONTRACTOR, at his own cost, when instructions are issued to that effect by the ENGINEER- IN-CHARGE.

65 Materials to be supplied by contractor:

65.1 The CONTRACTOR shall procure and provide within the VALUE OF CONTRACT the whole of the materials required for the construction including steels, cement and other building materials, tools, tackles, construction plant and equipment for the completion and maintenance of the WORK except the materials which will be issued by the EMPLOYER and shall make his own arrangement for procuring such materials and for the transport thereof. The EMPLOYER may give necessary recommendation to the respective authority if so desired by the CONTRACTOR but assumes no further responsibility of any nature. The EMPLOYER will insist on the procurement of materials which bear ISI stamp and/or which are supplied by reputed suppliers.

65.2 The CONTRACTOR shall properly store all materials either issued to him or brought by him to the SITE to prevent damages due to rain, wind, direct exposure to sun, etc. as also from theft, pilferage, etc. for proper and speedy execution of his works. The CONTRACTOR shall maintain sufficient stocks of all materials required by him.

65.3 No material shall be despatched from the CONTRACTOR's stores before obtaining the approval in writing of the ENGINEER-IN-CHARGE.

66 Stores supplied by the employer:

66.1 If the SPECIFICATION of the WORK provides for the use of any material of special description to be supplied from the EMPLOYER's stores or it is required that the CONTRACTOR shall use certain stores to be provided by the ENGINEER-IN-CHARGE, such materials and stores, and price to be charged there for as hereinafter mentioned being so far as practicable for the convenience of the CONTRACTOR, but not so as in any way to control the meaning or effect of the CONTRACT, the CONTRACTOR shall be bound to purchase and shall be supplied such materials and stores as are from time to time required to be used by him for the purpose of the CONTRACT only. The sums due from the CONTRACTOR for the value of materials supplied by the EMPLOYER will be recovered from the running account bill on the basis of the actual consumption of materials in the works covered and for which the running account bill has been prepared. After the completion of the WORK, however, the CONTRACTOR has to account for the full quantity of materials supplied to him as per relevant clauses in this document.

66.2 The value of the stores/materials as may be supplied to the CONTRACTOR by the EMPLOYER will be debited to the CONTRACTOR's account at the rates shown in the schedule of materials and if they are not entered in the schedule, they will be debited at cost price, which for the purpose of the CONTRACT shall include the cost of carriage and all other expenses whatsoever such as normal storage supervision charges which shall have been incurred in obtaining the same at the EMPLOYER's stores. All materials so supplied to the CONTRACTOR shall remain the absolute property of the EMPLOYER and shall not be removed on any account from the SITE of the WORK, and shall be at all times open for inspection to the ENGINEER-IN-CHARGE. Any such materials remaining unused at the time of the completion or termination of the CONTRACT shall be returned to the EMPLOYER's stores or at a place as directed by the ENGINEER-IN-CHARGE in perfectly good condition at CONTRACTOR's cost.

67 Conditions for issue of materials:

67.1 Materials specified as to be issued by the EMPLOYER will be supplied to the CONTRACTOR by the EMPLOYER from his stores. It shall be responsibility of the CONTRACTOR to take delivery of the materials and arrange for its loading, transport and unloading at the SITE of WORK at his own cost. The materials shall be issued between the working hours and as per the rules of the EMPLOYER as framed from time to time.

67.2 The CONTRACTOR shall bear all incidental charges for the storage and safe custody of materials at site after these have been issued to him.

67.3 Materials specified as to be issued by the EMPLOYER shall be issued in standard sizes as obtained from the manufacturers.

- 67.4 The CONTRACTOR shall construct suitable Godowns at the SITE of WORK for storing the materials safe against damage by rain, dampness, fire, theft etc. He shall also employ necessary watch and ward establishment for the purpose.
- 67.5 It shall be duty of the CONTRACTOR to inspect the materials supplied to him at the time of taking delivery and satisfy himself that they are in good condition. After the materials have been delivered by the EMPLOYER, it shall be the responsibility of the CONTRACTOR to keep them in good condition and if the materials are damaged or lost, at any time, they shall be repaired and/or replaced by him at his own cost according to the instructions of the ENGINEER-IN-CHARGE.
- 67.6 The EMPLOYER shall not be liable for delay in supply or non-supply of any materials which the EMPLOYER has undertaken to supply where such failure or delay is due to natural calamities, act of enemies, transport and procurement difficulties and any circumstances beyond the control of the EMPLOYER. In no case, the CONTRACTOR shall be entitled to claim any compensation or loss suffered by him on this account.
- 67.7 It shall be responsibility of the CONTRACTOR to arrange in time all materials required for the WORK other than those to be supplied by the EMPLOYER. If, however, in the opinion of the ENGINEER-IN-CHARGE the execution of the WORK is likely to be delayed due to the CONTRACTOR's inability to make arrangements for supply of materials which normally he has to arrange for, the ENGINEER-IN-CHARGE shall have the right at his own discretion to issue such materials, if available with the EMPLOYER or procure the materials from the market or as elsewhere and the CONTRACTOR will be bound to take such materials at the rates decided by the ENGINEER-IN-CHARGE. This, however, does not in any way absolve the CONTRACTOR from responsibility of making arrangements for the supply of such materials in part or in full, should such a situation occur nor shall this constitute a reason for the delay in the execution of the WORK.
- 67.8 None of the materials supplied to the CONTRACTOR will be utilised by the CONTRACTOR for manufacturing item which can be obtained as supplied from standard manufacturer in finished form.
- 67.9 The CONTRACTOR shall, if desired by the ENGINEER- IN-CHARGE, be required to execute an Indemnity Bond in the prescribed form for safe custody and accounting of all materials issued by the EMPLOYER.
- 67.10 The CONTRACTOR shall furnish to the ENGINEER-IN- CHARGE sufficiently in advance a statement showing his requirement of the quantities of the materials to be supplied by the EMPLOYER and the time when the same will be required by him for the works, so as to enable the ENGINEER-IN-CHARGE to make necessary arrangements for procurement and supply of the material.
- 67.11 Account of the materials issued by the EMPLOYER shall be maintained by CONTRACTOR indicating the daily receipt, consumption and balance in hand. This account shall be maintained in a manner prescribed by the ENGINEER-IN-CHARGE along with all connected papers viz. requisitions, issues, etc., and shall be always available for inspection in the CONTRACTOR's office at SITE.
- 67.12 The CONTRACTOR should see that only the required quantities of materials are got issued. The CONTRACTOR shall not be entitled to cartage and incidental charges for returning the surplus materials, if any, to the stores wherefrom they were issued or to the place as directed by the ENGINEER-IN-CHARGE.
- 67.13 Materials/Equipment(s) supplied by EMPLOYER shall not be utilised for any purpose(s) than issued for.

68 Material procured with assistance of employer/return of surplus:

- 68.1 Notwithstanding anything contained to the contrary in any or all the clauses of this CONTRACT where any materials for the execution of the CONTRACT are procured with the assistance of the EMPLOYER either by issue from EMPLOYER's stock or purchases made under order or permits or licences issued by Government, the CONTRACTOR shall hold the said materials as trustee for the EMPLOYER and use such materials economically and solely for the purpose of the CONTRACT and not dispose them off without the permission of the EMPLOYER and return, if required by the ENGINEER-IN-CHARGE, shall determine having due regard to the condition of the materials. The price allowed to the CONTRACTOR, however, shall not exceed the amount charged to him excluding the storage charges, if any. The decision of the ENGINEER-IN-CHARGE shall be final and conclusive in such matters. In the event of breach of the aforesaid condition, the CONTRACTOR shall, in terms of the licences or permits and/or criminal breach of trust, be liable to compensate the EMPLOYER at double rate or any higher rate, in the event of those materials at that time having higher rate or not being available in the market, then any other rate to be determined by the ENGINEER-IN-CHARGE and his decision shall be final and conclusive.

69 Materials obtained from dismantling:

- 69.1 If the CONTRACTOR in the course of execution of the WORK is called upon to dismantle any part for reasons other than those stipulated in Clauses 74 and 77 hereunder, the materials obtained in the WORK of dismantling etc., will be considered as the EMPLOYER's property and will be disposed off to the best advantage of the EMPLOYER.

70 Articles of value found:

70.1 All gold, silver and other minerals of any description and all precious stones, coins, treasure relics, antiquities and other similar things which shall be found in, under or upon the SITE, shall be the property of the EMPLOYER and the CONTRACTOR shall duly preserve the same to the satisfaction of the ENGINEER-IN-CHARGE and shall from time to time deliver the same to such person or persons indicated by the EMPLOYER.

71 Discrepancies between instructions:

71.1 Should any discrepancy occur between the various instructions furnished to the CONTRACTOR, his agent or staff or any doubt arises as to the meaning of any such instructions or should there be any misunderstanding between the CONTRACTOR's staff and the ENGINEER-IN-CHARGE's staff, the CONTRACTOR shall refer the matter immediately in writing to the ENGINEER-IN-CHARGE whose decision thereon shall be final and conclusive and no claim for losses alleged to have been caused by such discrepancies between instructions, doubts, or misunderstanding shall in any event be admissible.

72 Action where no specification is issued:

72.1 In case of any class of WORK for which there is no SPECIFICATION supplied by the EMPLOYER as mentioned in the Tender Documents such WORK shall be carried out in accordance with Indian Standard Specifications and if the Indian Standard Specifications do not cover the same, the WORK should be carried out as per standard Engineering Practice subject to the approval of the ENGINEER-IN-CHARGE.

73 Inspection of works:

73.1 The ENGINEER-IN-CHARGE will have full power and authority to inspect the WORK at any time wherever in progress either on the SITE or at the CONTRACTOR's premises/workshops wherever situated, premises/ workshops of any person, firm or corporation where WORK in connection with the CONTRACT may be in hand or where materials are being or are to be supplied, and the CONTRACTOR shall afford or procure for the ENGINEER-IN-CHARGE every facility and assistance to carry out such inspection. The CONTRACTOR shall, at all time during the usual working hours and at all other time at which reasonable notice of the intention of the ENGINEER-IN-CHARGE or his representative to visit the WORK shall have been given to the CONTRACTOR, either himself be present or receive orders and instructions, or have a responsible agent duly accredited in writing, present for the purpose. Orders given to the CONTRACTOR's agent shall be considered to have the same force as if they had been given to the CONTRACTOR himself. The CONTRACTOR shall give not less than seven days notice in writing to the ENGINEER-IN-CHARGE before covering up or otherwise placing beyond reach of inspection and measurement of any work in order that the same may be inspected and measured. In the event of breach of above the same shall be uncovered at CONTRACTOR's expense for carrying out such measurement or inspection.

73.2 No material shall be dispatched from the CONTRACTOR's stores before obtaining the approval in writing of the Engineer-in-Charge. The CONTRACTOR is to provide at all time during the progress of the WORK and the maintenance period, proper means of access with ladders, gangways etc. and the necessary attendance to move and adopt as directed for inspection or measurements of the WORK by the ENGINEER-IN-CHARGE.

73.3 The CONTRACTOR shall make available to the ENGINEER-IN-CHARGE free of cost all necessary instruments and assistance in checking or setting out of WORK and in the checking of any WORK made by the CONTRACTOR for the purpose of setting out and taking measurements of WORK.

74 Tests for quality of work:

74.1 All workmanship shall be of the respective kinds described in the CONTRACT DOCUMENTS and in accordance with the instructions of the ENGINEER-IN-CHARGE and shall be subjected from time to time to such test at CONTRACTOR's cost as the ENGINEER-IN-CHARGE may direct at the place of manufacture or fabrication or on the site or at all or any such places. The CONTRACTOR shall provide assistance, instruments, labour and materials as are normally required for examining, measuring and testing any workmanship as may be selected and required by the ENGINEER-IN-CHARGE.

74.2 All the tests that will be necessary in connection with the execution of the WORK as decided by the ENGINEER-IN-CHARGE shall be carried out at the field testing laboratory of the EMPLOYER by paying the charges as decided by the EMPLOYER from time to time. In case of non-availability of testing facility with the EMPLOYER, the required test shall

be carried out at the cost of CONTRACTOR at Government or any other testing laboratory as directed by ENGINEER-IN-CHARGE.

- 74.3 If any tests are required to be carried out in conjunction with the WORK or materials or workmanship not supplied by the CONTRACTOR, such tests shall be carried out by the CONTRACTOR as per instructions of ENGINEER-IN-CHARGE and cost of such tests shall be reimbursed by the EMPLOYER.

75 Samples for approval:

- 75.1 The CONTRACTOR shall furnish to the ENGINEER-IN-CHARGE for approval, when requested or if required by the specifications, adequate samples of all materials and finished to be used in the WORK. Such samples shall be submitted before the WORK is commenced and in ample time to permit tests and examinations thereof. All materials furnished and finishes applied in actual WORK shall be fully equal to the approved samples.

76 Action and compensation in case of bad work:

- 76.1 If it shall appear to the ENGINEER-IN-CHARGE that any work has been executed with unsound, imperfect or unskilled workmanship, or with materials of any inferior description, or that any materials or articles provided by the CONTRACTOR for the execution of the WORK are unsound, or of a quality inferior to that contracted for, or otherwise not in accordance with the CONTRACT, the CONTRACTOR shall on demand in writing from the ENGINEER-IN-CHARGE or his authorized representative specifying the WORK, materials or articles complained of notwithstanding that the same may have been inadvertently passed, certified and paid for, forthwith rectify or remove and reconstruct the WORK so specified and provide other proper and suitable materials or articles at his own cost and in the event of failure to do so within the period specified by the ENGINEER-IN-CHARGE in his demand aforesaid, the CONTRACTOR shall be liable to pay compensation at the rate of 1 % (One percent) of the estimated cost of the whole WORK, for every week limited to a maximum of 10% (ten percent) of the value of the whole WORK, while his failure to do so shall continue and in the case of any such failure the ENGINEER-IN-CHARGE may on expiry of notice period rectify or remove and re-execute the WORK or remove and replaced with others, the materials or articles complained of to as the case may be at the risk and expense in all respects of the CONTRACTOR. The decision of the Engineering-in-charge as to any question arising under this clause shall be final and conclusive.

77 Suspension of works:

- 77.1 Subject to the provisions of sub-para (ii) of this clause, the CONTRACTOR shall, if ordered in writing by the ENGINEER-IN-CHARGE, or his representative, temporarily suspend the WORKS or any part thereof for such written order, proceed with the WORK therein ordered to be suspended until, he shall have received a written order to proceed therewith. The CONTRACTOR shall not be entitled to claim compensation for any loss or damage sustained by him by reason of temporary suspension of the WORKS aforesaid. An extension of time for completion, corresponding with the delay caused by any such suspension of the WORKS as aforesaid will be granted to the CONTRACTOR should he apply for the same provided that the suspension was not consequent to any default or failure on the part of the CONTRACTOR.
- 77.2 In case of suspensions of entire WORK, ordered in writing by ENGINEER-IN-CHARGE, for a period of more than two months, the CONTRACTOR shall have the option to terminate the CONTRACT.

78 Employer may do part of work:

- 78.1 Upon failure of the CONTRACTOR to comply with any instructions given in accordance with the provisions of this CONTRACT the EMPLOYER has the alternative right, instead of assuming charge of entire WORK, to place additional labour force, tools, equipments and materials on such parts of the WORK, as the EMPLOYER may designate or also engage another CONTRACTOR to carry out the WORK. In such cases, the EMPLOYER shall deduct from the amount which otherwise might become due to the CONTRACTOR, the cost of such work and material with ten percent (10%) added to cover all departmental charges and should the total amount thereof exceed the amount due to the CONTRACTOR, the CONTRACTOR shall pay the difference to the EMPLOYER.

79 Possession prior to completion:

- 79.1 The ENGINEER-IN-CHARGE shall have the right to take possession of or use any completed or partially completed WORK or part of the WORK. Such possession or use shall not be deemed to be an acceptance of any work completed in accordance with the CONTRACT agreement. If such prior possession or use by the ENGINEER-IN-CHARGE delays the progress of WORK, equitable adjustment in the time of completion will be made and the CONTRACT agreement shall be deemed to be modified accordingly.

80 Defects Liability Period (Twelve months period of liability from the date of issue of completion certificate):

- 80.1 The CONTRACTOR shall guarantee the installation/WORK for a period of 12 months from the date of completion of WORK as certified by the ENGINEER-IN-CHARGE which is indicated in the Completion Certificate. Any damage or defect that may arise or lie undiscovered at the time of issue of Completion Certificate, connected in any way with the equipment or materials supplied by him or in the workmanship, shall be rectified or replaced by the CONTRACTOR at his own expense as deemed necessary by the ENGINEER-IN-CHARGE or in default, the ENGINEER-IN-CHARGE may carry out such works by other work and deduct actual cost incurred towards labour, supervision and materials consumables or otherwise plus 100% towards overheads (of which the certificate of ENGINEER-IN-CHARGE shall be final) from any sums that may then be or at any time thereafter, become due to the CONTRACTOR or from his Contract Performance Security, or the proceeds of sale thereof or a sufficient part on thereof.
- 80.2 If the CONTRACTOR feels that any variation in WORK or in quality of materials or proportions would be beneficial or necessary to fulfil the guarantees called for, he shall bring this to the notice of the ENGINEER-IN-CHARGE in writing. If during the period of liability any portion of the WORK/equipment, is found defective and is rectified/ replaced, the period of liability for such equipment/ portion of WORK shall be operative from the date such rectification/ replacement are carried out and Contract Performance Guarantee shall be furnished separately for the extended period of liability for that portion of WORK/ equipment only. Notwithstanding the above provisions the supplier's, guarantees/warranties for the replaced equipment shall also be passed on to the EMPLOYER.
- 80.3 LIMITATION OF LIABILITY Notwithstanding anything contrary contained herein, the aggregate total liability of CONTRACTOR under the Agreement or otherwise shall be limited to 100% of Agreement / Contract Value. However, neither party shall be liable to the other party for any indirect and consequential damages, loss of profits or loss of production.

81 Care of works:

- 81.1 From the commencement to completion of the WORK, the CONTRACTOR shall take full responsibility for the care for all works including all temporary works and in case any damages, loss or injury shall happen to the WORK or to any part thereof or to any temporary works from any cause whatsoever, shall at his own cost repair and make good the same so that at completion the WORK shall be in good order and in conformity in every respects with the requirement of the CONTRACT and the ENGINEER-IN-CHARGE's instructions.
- 81.2 DEFECTS PRIOR TO TAKING OVER: If at any time, before the WORK is taken over, the ENGINEER-IN-CHARGE shall: a) Decide that any works done or materials used by the CONTRACTOR or by any SUB-CONTRACTOR is defective or not in accordance with the CONTRACT, or that the works or any portion thereof are defective, or do not fulfill the requirements of CONTRACT (all such matters being hereinafter, called 'Defects' in this clause), and b) As soon as reasonably practicable, gives to the CONTRACTOR notice in writing of the said decision, specifying particulars of the defects alleged to exist or to have occurred, then the CONTRACTOR shall at his own expenses and with all speed make good the defects so specified. In case CONTRACTOR shall fail to do so, the EMPLOYER may take, at the cost of the CONTRACTOR, such steps as may in all circumstances, be reasonable to make good such defects. The expenditure so incurred by the EMPLOYER will be recovered from the amount due to the CONTRACTOR. The decision of the ENGINEER-IN-CHARGE with regard to the amount to be recovered from the CONTRACTOR will be final and binding on the CONTRACTOR. As soon as the WORK has been completed in accordance with the CONTRACT (except in minor respects that do not affect their use for the purpose for which they are intended and except for maintenance there of provided in clause 80.1 of General Conditions of Contract) and have passed the tests on completion, the ENGINEER-IN-CHARGE shall issue a certificate (hereinafter called Completion Certificate) in which he shall certify the date on which the WORK have been so completed and have passed the said tests and the EMPLOYER shall be deemed to have taken over the WORK on the date so certified. If the WORK has been divided into various groups in the CONTRACT, the EMPLOYER shall be entitled to take over any group or groups before the other or others and there upon the ENGINEER-IN-CHARGE shall issue a Completion Certificate which will, however, be for such group or groups so taken over only. In such an event if the group /section/ part so taken over is related, to the integrated system of the work, not withstanding date of grant of Completion Certificate for group/ section/ part. The period of liability in respect of such group/ section/ part shall extend 12 (twelve) months from the date of completion of WORK.
- 81.3 DEFECTS AFTER TAKING OVER: In order that the CONTRACTOR could obtain a COMPLETION CERTIFICATE he shall make good, with all possible speed, any defect arising from the defective materials supplied by the CONTRACTOR or workmanship or any act or omission of the CONTRACT or that may have been noticed or developed, after the works or groups of the works has been taken over, the period allowed for carrying out such WORK

will be normally one month. If any defect be not remedied within a reasonable time, the EMPLOYER may proceed to do the WORK at CONTRACTOR's risk and expense and deduct from the final bill such amount as may be decided by the EMPLOYER. If by reason of any default on the part of the CONTRACTOR a COMPLETION CERTIFICATE has not been issued in respect of any portion of the WORK within one month after the date fixed by the CONTRACT for the completion of the WORK, the EMPLOYER shall be at liberty to use the WORK or any portion thereof in respect of which a completion certificate has not been issued, provided that the WORK or the portion thereof so used as aforesaid shall be afforded reasonable opportunity for completing these works for the issue of Completion Certificate.

82 Guarantee/transfer of guarantee:

82.1 For works like water-proofing, acid and alkali resisting materials, pre-construction soil treatment against termite or any other specialized works etc. the CONTRACTOR shall invariably engage SUB-CONTRACTORS who are specialists in the field and firms of repute and such a SUB-CONTRACTOR shall furnish guarantees for their workmanship to the EMPLOYER, through the CONTRACTOR. In case such a SUB-CONTRACTOR/ firm is not prepared to furnish a guarantee to the EMPLOYER, the CONTRACTOR shall give that guarantee to the EMPLOYER directly.

83 Training of employer's personnel:

83.1 The CONTRACTOR undertakes to provide training to Engineering personnel selected and sent by the EMPLOYER at the works of the CONTRACTOR without any cost to the EMPLOYER. The period and the nature of training for the individual personnel shall be agreed upon mutually between the CONTRACTOR and the EMPLOYER. These engineering personnel shall be given special training at the shops, where the equipment will be manufactured and/ or in their collaborator's works and where possible, in any other plant where equipment manufactured by the CONTRACTOR or his collaborators is under installation or test to enable those personnel to become familiar with the equipment being furnished by the CONTRACTOR. EMPLOYER shall bear only the to and fro fare of the said engineering personnel.

84 Replacement of defective parts and materials:

84.1 If during the progress of the WORK, EMPLOYER shall decide and inform in writing to the CONTRACTOR, that the CONTRACTOR has manufactured any plant or part of the plant unsound or imperfect or has furnished plant inferior to the quality specified, the CONTRACTOR on receiving details of such defects or deficiencies shall at his own expenses within 7 (seven) days of his receiving the notice, or otherwise within such time as may be reasonably necessary for making it good, proceed to alter, re-construct or remove such work and furnish fresh equipments upto the standards of the specifications. In case the CONTRACTOR fails to do so, EMPLOYER may on giving the CONTRACTOR 7 (seven) day's notice in writing of his intentions to do so, proceed to remove the portion of the WORK so complained of and at the cost of CONTRACTOR's, perform all such works or furnish all such equipments provided that nothing in the clause shall be deemed to deprive the EMPLOYER of or affect any rights under the CONTRACT, the EMPLOYER may otherwise have in respect of such defects and deficiencies.

84.2 The CONTRACTOR's full and extreme liability under this clause shall be satisfied by the payments to the EMPLOYER of the extra cost, of such replacements procured including erection/installation as provided for in the CONTRACT; such extra cost being the ascertained difference between the price paid by the EMPLOYER for such replacements and the CONTRACT price portion for such defective plants and repayments of any sum paid by the EMPLOYER to the CONTRACTOR in respect of such defective plant. Should the EMPLOYER not so replace the defective plant the CONTRACTOR's extreme liability under this clause shall be limited to the repayment of all such sums paid by the EMPLOYER under the CONTRACT for such defective plant.

85 Indemnity

85.1 If any action is brought before a Court, Tribunal or any other Authority against the Employer or an officer or agent of the EMPLOYER, for the failure, omission or neglect on the part of the CONTRACTOR to perform any acts, matters, covenants or things under the CONTRACT, or damage or injury caused by the alleged omission or negligence on the part of the CONTRACTOR, his agents, representatives or his SUB- CONTRACTOR's, or in connection with any claim based on lawful demands of SUB-CONTRACTOR's workmen suppliers or employees, the CONTRACTOR, shall in such cases indemnify and keep the EMPLOYER and/or their representatives harmless from all losses, damages, expenses or decrees arising out of such action.

86 Construction aids, equipments, tools & tackles:

86.1 CONTRACTOR shall be solely responsible for making available for executing the WORK, all requisite CONSTRUCTION EQUIPMENTS, Special Aids, Barges, Cranes and the like, all Tools, Tackles and Testing Equipment and Appliances, including imports of such equipment etc. as required. In case of import of the same the rates applicable for levying of Custom Duty on such Equipment, Tools, & Tackles and the duty drawback applicable thereon shall be ascertained by the CONTRACTOR from the concerned authorities of Government of India. It shall be clearly understood that EMPLOYER shall not in any way be responsible for arranging to obtain Custom Clearance and/or payment of any duties and/or duty draw backs etc. for such equipments so imported by the CONTRACTOR and the CONTRACTOR shall be fully responsible for all taxes, duties and documentation with regard to the same. Tenderer in his own interest may contact, for any clarifications in the matter, concerned agencies/Dept./Ministries of Govt. of India. All clarifications so obtained and interpretations thereof shall be solely the responsibility of the CONTRACTOR.

SECTION-VI CERTIFICATES AND PAYMENTS

87 Schedule of rates and payments:

87.1 CONTRACTOR'S REMUNERATION: The price to be paid by the EMPLOYER to CONTRACTOR for the whole of the WORK to be done and for the performance of all the obligations undertaken by the CONTRACTOR under the CONTRACT DOCUMENTS shall be ascertained by the application of the respective Schedule of Rates (the inclusive nature of which is more particularly defined by way of application but not of limitation, with the succeeding sub-clause of this clause) and payment to be made accordingly for the WORK actually executed and approved by the ENGINEER-IN-CHARGE. The sum so ascertained shall (excepting only as and to the extent expressly provided herein) constitute the sole and inclusive remuneration of the CONTRACTOR under the CONTRACT and no further or other payment whatsoever shall be or become due or payable to the CONTRACTOR under the CONTRACT.

87.2 SCHEDULE OF RATES TO BE INCLUSIVE: The prices/rates quoted by the CONTRACTOR shall remain firm till the issue of FINAL CERTIFICATE and shall not be subject to escalation. Schedule of Rates shall be deemed to include and cover all costs, expenses and liabilities of every description and all risks of every kind to be taken in executing, completing and handing over the WORK to the EMPLOYER by the CONTRACTOR. The CONTRACTOR shall be deemed to have known the nature, scope, magnitude and the extent of the WORK and materials required though the CONTRACT DOCUMENT may not fully and precisely furnish them. Tenderer's shall make such provision in the Schedule of Rates as he may consider necessary to cover the cost of such items of WORK and materials as may be reasonable and necessary to complete the WORK. The opinion of the ENGINEER-IN-CHARGE as to the items of WORK which are necessary and reasonable for COMPLETION OF WORK shall be final and binding on the CONTRACTOR, although the same may not be shown on or described specifically in CONTRACT DOCUMENTS. Generality of this present provision shall not be deemed to cut down or limit in any way because in certain cases it may and in other cases it may not be expressly stated that the CONTRACTOR shall do or perform a work or supply articles or perform services at his own cost or without addition of payment or without extra charge or words to the same effect or that it may be stated or not stated that the same are included in and covered by the Schedule of Rates.

87.3 SCHEDULE OF RATES TO COVER CONSTRUCTION EQUIPMENTS, MATERIALS, LABOUR ETC.: Without in any way limiting the provisions of the preceding sub-clause the Schedule of Rates shall be deemed to include and cover the cost of all construction equipment, temporary WORK (except as provided for herein), pumps, materials, labour, insurance, fuel, consumables, stores and appliances to be supplied by the CONTRACTOR and all other matters in connection with each item in the Schedule of Rates and the execution of the WORK or any portion thereof finished, complete in every respect and maintained as shown or described in the CONTRACT DOCUMENTS or as may be ordered in writing during the continuance of the CONTRACT.

87.4 SCHEDULE OF RATES TO COVER ROYALTIES, RENTS AND CLAIMS: The Schedule of Rates (i.e., VALUE OF CONTRACT) shall be deemed to include and cover the cost of all royalties and fees for the articles and processes, protected by letters, patent or otherwise incorporated in or used in connection with the WORK, also all royalties, rents and other payments in connection with obtaining materials of whatsoever kind for the WORK and shall include an indemnity to the EMPLOYER which the CONTRACTOR hereby gives against all actions, proceedings, claims, damages, costs and expenses arising from the incorporation in or use on the WORK of any such articles, processes or materials, octroi or other municipal or local Board Charges, if levied on materials, equipment or machineries to be brought to site for use on WORK shall be borne by the CONTRACTOR.

87.5 SCHEDULE OF RATES TO COVER TAXES AND DUTIES: No exemption or reduction of Customs Duties, Excise Duties, Sales Tax, Sales Tax on works Contract quay or any port dues, transport charges, stamp duties or Central or State Government or local Body or Municipal Taxes or duties, taxes or charges (from or of any other body), whatsoever, will be granted or obtained, all of which expenses shall be deemed to be included in and covered by the

Schedule or Rates. The CONTRACTOR shall also obtain and pay for all permits or other privileges necessary to complete the WORK.

87.6 SCHEDULE OF RATES TO COVER RISKS OF DELAY: The Schedule of Rates shall be deemed to include and cover the risk of all possibilities of delay and interference with the CONTRACTOR's conduct of WORK which occur from any causes including orders of the EMPLOYER in the exercise of his power and on account of extension of time granted due to various reasons and for all other possible or probable causes of delay.

87.7 SCHEDULE OF RATES CANNOT BE ALTERED: For WORK under unit rate basis, no alteration will be allowed in the Schedule of Rates by reason of works or any part of them being modified, altered, extended, diminished or committed. The Schedule of Rates are fully inclusive of rates which have been fixed by the CONTRACTOR and agreed to by the EMPLOYER and cannot be altered. For lumpsum CONTRACTS, the payment will be made according to the WORK actually carried out, for which purpose an item wise, or work wise Schedule of Rates shall be furnished, suitable for evaluating the value of WORK done and preparing running account bill. Payment for any additional work which is not covered in the Schedule of Rates, shall only be released on issuance of change order.

88 Procedure for measurement and billing of work in progress:

88.1 BILLING PROCEDURE: Following procedures shall be adopted for billing of works executed by the CONTRACTOR.

88.1.1 All measurements shall be recorded in sextuplicate on standard measurement sheets supplied by EMPLOYER and submitted to EMPLOYER/CONSULTANT for scrutiny and passing.

88.1.2 EMPLOYER/CONSULTANT shall scrutinise and check the measurements recorded on the sheets and shall certify correctness of the same on the measurement sheets.

88.1.3 ENGINEER-IN-CHARGE shall pass the bills after carrying out the comprehensive checks in accordance with the terms and conditions of the CONTRACTS, within 7 days of submission of the bills, complete in all respects and send the same to the Employer to effect payment to the CONTRACTOR.

88.1.4 GAIL shall make all endeavour to make payments of undisputed amount of the bills submitted based on the joint measurements within 15 (Fifteen) days from the date of certification by the Engineer-in-Charge.

88.1.5 Measurements shall be recorded as per the methods of measurement spelt out in EMPLOYER/CONSULTANT SPECIFICATIONS / CONTRACT DOCUMENT. EMPLOYER/CONSULTANT shall be fully responsible for checking the measurements quantitatively and qualitatively as recorded in the Measurement Books/ Bills.

88.1.6 While preparing the final bills overall measurements will not be taken again. Only volume of work executed since the last measured bill alongwith summary of final measurements will be considered for the final bill. However, a detailed check shall be made as to missing measurements and in case there are any missing items or measurements the same shall be recorded.

88.1.7 COMPUTERISED BILLING SYSTEM : GAIL (India) Limited has introduced Computerised Billing System whereby when the Bills are submitted in GAIL by a Contractor, a receipt number is generated. The Contractor can know the status of the Bill through GAIL's website. **(Not applicable in case of BCPL)**

88.2 SECURED ADVANCE ON MATERIAL: Unless otherwise provided elsewhere in the tender, no 'Secured Advance' on security of materials brought to site for execution of contracted items(s) shall be paid to the Contractor whatsoever.

88.3 DISPUTE IN MODE OF MEASUREMENT: In case of any dispute as to the mode of measurement not covered by the CONTRACT to be adopted for any item of WORK, mode of measurement as per latest Indian Standard Specifications shall be followed.

88.4 ROUNDING-OFF OF AMOUNTS: In calculating the amount of each item due to the CONTRACTOR in every certificate prepared for payment, sum of less than 50 paise shall be omitted and the total amount on each certificate shall be rounded off to the nearest rupees, i.e., sum of less than 50 paise shall be omitted and sums of 50 paise and more upto one rupee shall be reckoned as one rupee.

89 Lumpsum in tender:

89.1 The payment against any Lumpsum item shall be made only on completion of that item as per the provision of the CONTRACT after certification by ENGINEER-IN-CHARGE.

90 Running account payments to be regarded as advance:

90.1 All running account payments shall be regarded as payment by way of advance against the final payment only and not as payments for WORK actually done and completed and shall not preclude the requiring of bad, unsound and imperfect or unskilled work to be removed and taken away and reconstructed or re-erected or be considered as an admission of the due performance of the CONTRACT, or any part thereof, in this respect, or of the accruing of any claim by the CONTRACTOR, nor shall it conclude, determine or affect in any way the powers of the EMPLOYER under these conditions or any of them as to the final settlement and adjustment of the accounts or otherwise, or in any other

way vary or affect the CONTRACT. The final bill shall be submitted by the CONTRACTOR within one month of the date of physical completion of the WORK, otherwise, the ENGINEER-IN-CHARGE's certificate of the measurement and of total amount payable for the WORK accordingly shall be final and binding on all parties

91 Notice of claims for additional payments:

- 91.1 Should the CONTRACTOR consider that he is entitled to any extra payment for any extra/additional WORKS or MATERIAL change in original SPECIFICATIONS carried out by him in respect of WORK he shall forthwith give notice in writing to the ENGINEER-IN-CHARGE that he claims extra payment. Such notice shall be given to the ENGINEER-IN-CHARGE upon which CONTRACTOR bases such claims and such notice shall contain full particulars of the nature of such claim with full details of amount claimed. Irrespective of any provision in the CONTRACT to the contrary, the CONTRACTOR must intimate his intention to lodge claim on the EMPLOYER within 10 (ten) days of the commencement of happening of the event and quantify the claim within 30 (thirty) days, failing which the CONTRACTOR will lose his right to claim any compensation/reimbursement/damages etc. or refer the matter to arbitration. Failure on the part of CONTRACTOR to put forward any claim without the necessary particulars as above within the time above specified shall be an absolute waiver thereof. No omission by EMPLOYER to reject any such claim and no delay in dealing therewith shall be waiver by EMPLOYER of any of this rights in respect thereof.
- 91.2 ENGINEER-IN-CHARGE shall review such claims within a reasonable period of time and cause to discharge these in a manner considered appropriate after due deliberations thereon. However, CONTRACTOR shall be obliged to carry on with the WORK during the period in which his claims are under consideration by the EMPLOYER, irrespective of the outcome of such claims, where additional payments for WORKS considered extra are justifiable in accordance with the CONTRACT provisions, EMPLOYER shall arrange to release the same in the same manner as for normal WORK payments. Such of the extra works so admitted by EMPLOYER shall be governed by all the terms, conditions, stipulations and specifications as are applicable for the CONTRACT. The rates for extra works shall generally be the unit rates provided for in the CONTRACT. In the event unit rates for extra works so executed are not available as per CONTRACT, payments may either be released on day work basis for which daily/hourly rates for workmen and hourly rates for equipment rental shall apply, or on the unit rate for WORK executed shall be derived by interpolation/extrapolation of unit rates already existing in the CONTRACT. In all the matters pertaining to applicability of rate and admittance of otherwise of an extra work claim of CONTRACTOR the decision of ENGINEER-IN-CHARGE shall be final and binding.

92 Payment of contractor's bill:

- 92.1 No payment shall be made for works estimated to cost less than Rs.10,000/- till the whole of the work shall have been completed and a certificate of completion given. But in case of works estimated to cost more than Rs.10,000/-, that CONTRACTOR on submitting the bill thereof be entitled to receive a monthly payment proportionate to the part thereof approved and passed by the ENGINEER-IN-CHARGE, whose certificate of such approval and passing of the sum so payable shall be final and conclusive against the CONTRACTOR. This payment will be made after making necessary corrections/deductions as stipulated elsewhere in the CONTRACT DOCUMENT for materials, Contract Performance Security, taxes etc.
- 92.2 Payment due to the CONTRACTOR shall be made by the EMPLOYER by Account Payee cheque forwarding the same to registered office or the notified office of the CONTRACTOR. In no case will EMPLOYER be responsible if the cheque is mislaid or misappropriated by unauthorised person/persons. In all cases, the CONTRACTOR shall present his bill duly pre-receipted on proper revenue stamp payment shall be made in Indian Currency.
- 92.3 In general payment of final bill shall be made to CONTRACTOR within 60 days of the submission of bill on joint measurements, after completion of all the obligations under the CONTRACT.

93 Receipt for payment:

- 93.1 Receipt for payment made on account of work when executed by a firm, must be signed by a person holding due power of attorney in this respect on behalf of the CONTRACTOR, except when the CONTRACTOR's are described in their tender as a limited company in which case the receipts must be signed in the name of the company by one of its principal officers or by some other person having authority to give effectual receipt for the company.

94 Completion certificate:

- 94.1 APPLICATION FOR COMPLETION CERTIFICATE: When the CONTRACTOR fulfils his obligation under Clause 81.1 he shall be eligible to apply for COMPLETION CERTIFICATE. The ENGINEER-IN-CHARGE shall normally issue to the CONTRACTOR the COMPLETION CERTIFICATE within one month after receiving any application therefore from the

CONTRACTOR after verifying from the completion documents and satisfying himself that the WORK has been completed in accordance with and as set out in the construction and erection drawings, and the CONTRACT DOCUMENTS. The CONTRACTOR, after obtaining the COMPLETION CERTIFICATE, is eligible to present the final bill for the WORK executed by him under the terms of CONTRACT.

94.2 COMPLETION CERTIFICATE: Within one month of the completion of the WORK in all respects, the CONTRACTOR shall be furnished with a certificate by the ENGINEER-IN-CHARGE of such completion, but no certificate shall be given nor shall the WORK be deemed to have been executed until all scaffolding, surplus materials and rubbish is cleared off the SITE completely nor until the WORK shall have been measured by the ENGINEER-IN-CHARGE whose measurement shall be binding and conclusive. The WORKS will not be considered as complete and taken over by the EMPLOYER, until all the temporary works, labour and staff colonies are cleared to the satisfaction of the ENGINEER-IN-CHARGE. If the CONTRACTOR fails to comply with the requirements of this clause on or before the date fixed for the completion of the WORK, the ENGINEER-IN-CHARGE may at the expense of the CONTRACTOR remove such scaffolding, surplus materials and rubbish and dispose off the same as he thinks fit and clean off such dirt as aforesaid, and the CONTRACTOR shall forthwith pay the amount of all expenses so incurred and shall have no claim in respect of any such scaffolding or surplus materials as aforesaid except for any sum actually realised by the sale thereof.

94.3 COMPLETION CERTIFICATE DOCUMENTS: For the purpose of Clause 94.0 the following documents will be deemed to form the completion documents:

- (i) The technical documents according to which the WORK was carried out. Six (6) sets of construction drawings showing therein the modification and correction made during the course of execution and signed by the ENGINEER-IN-CHARGE.
- (ii) COMPLETION CERTIFICATE for 'embedded' and 'covered' up work.
- (iii) Certificates of final levels as set out for various works.
- (iv) Certificates of tests performed for various WORKS.
- (v) Material appropriation, Statement for the materials issued by the EMPLOYER for the WORK and list of surplus materials returned to the EMPLOYER's store duly supported by necessary documents.

95 Final decision and final certificate:

95.1 Upon expiry of the period of liability and subject to the ENGINEER-IN-CHARGE being satisfied that the WORKS have been duly maintained by the CONTRACTOR during monsoon or such period as hereinbefore provided in Clause 80 & 81 and that the CONTRACTOR has in all respect duly made-up any subsidence and performed all his obligations under the CONTRACT, the ENGINEER-IN-CHARGE shall (without prejudice to the rights of the EMPLOYER to retain the provisions of relevant Clause hereof) otherwise give a certificate herein referred to as the FINAL CERTIFICATE to that effect and the CONTRACTOR shall not be considered to have fulfilled the whole of his obligations under CONTRACT until FINAL CERTIFICATE shall have been given by the ENGINEER-IN-CHARGE notwithstanding any previous entry upon the WORK and taking possession, working or using of the same or any part thereof by the EMPLOYER.

96 Certificate and payments on evidence of completion:

96.1 Except the FINAL CERTIFICATE, no other certificates or payments against a certificate or on general account shall be taken to be an admission by the EMPLOYER of the due performance of the CONTRACT or any part thereof or of occupancy or validity of any claim by the CONTRACTOR.

97 Deductions from the contract price:

97.1 All costs, damages or expenses which EMPLOYER may have paid or incurred, which under the provisions of the CONTRACT, the CONTRACTOR is liable/will be liable, will be claimed by the EMPLOYER. All such claims shall be billed by the EMPLOYER to the CONTRACTOR regularly as and when they fall due. Such claims shall be paid by the CONTRACTOR within 15 (fifteen) days of the receipt of the corresponding bills and if not paid by the CONTRACTOR within the said period, the EMPLOYER may, then, deduct the amount from any moneys due i.e., Contract Performance Security or becoming due to the CONTRACTOR under the CONTRACT or may be recovered by actions of law or otherwise, if the CONTRACTOR fails to satisfy the EMPLOYER of such claims.

SECTION-VII TAXES AND INSURANCE

98 Taxes, Duties, Octroi etc:

98.1 The CONTRACTOR agrees to and does hereby accept full and exclusive liability for the payment of any and all Taxes, Duties, including Excise duty, octroi etc. now or hereafter imposed, increased, modified, all the sales taxes, duties,

octrois etc. now in force and hereafter increased, imposed or modified, from time to time in respect of WORKS and materials and all contributions and taxes for unemployment compensation, insurance and old age pensions or annuities now or hereafter imposed by any Central or State Government authorities which are imposed with respect to or covered by the wages, salaries, or other compensations paid to the persons employed by the CONTRACTOR and the CONTRACTOR shall be responsible for the compliance of all SUB-CONTRACTORS, with all applicable Central, State, Municipal and local law and regulation and requirement of any Central, State or local Government agency or authority. CONTRACTOR further agrees to defend, indemnify and hold EMPLOYER harmless from any liability or penalty which may be imposed by the Central, State or Local authorities by reason or any violation by CONTRACTOR or SUB-CONTRACTOR of such laws, suits or proceedings that may be brought against the EMPLOYER arising under, growing out of, or by reason of the work provided for by this CONTRACT, by third parties, or by Central or State Government authority or any administrative sub-division thereof. Tax deductions will be made as per the rules and regulations in force in accordance with acts prevailing from time to time.

99 Sales tax/Turnover tax:

99.1 Tenderer should quote all inclusive prices including the liability of Sales Tax/Turnover Tax whether on the works contract as a whole or in respect of bought out components used by the CONTRACTOR in execution of the CONTRACT. EMPLOYER shall not be responsible for any such liability of the CONTRACTOR in respect of this CONTRACT.

100 Statutory variations

100.1 Tenderer should quote prices inclusive of excise-duty and sales tax applicable on finished product. Any statutory variations in Excise Duty and sales tax on finished product during the contractual completion period, shall be to the Employer's account for which the Contractor will furnish documentary evidence(s) in support of their claims to GAIL. However, any increase in the rate of these taxes and duties (E.D. and S.T.) beyond the contractual completion period shall be to Contractor's account and any decrease shall be passed on to GAIL.

101 Insurance:

101.1 GENERAL CONTRACTOR shall at his own expense arrange secure and maintain insurance with reputable insurance companies to the satisfaction of the EMPLOYER as follows: CONTRACTOR at his cost shall arrange, secure and maintain insurance as may be necessary and to its full value for all such amounts to protect the WORKS in progress from time to time and the interest of EMPLOYER against all risks as detailed herein. The form and the limit of such insurance, as defined here in together with the under works thereof in each case should be as acceptable to the EMPLOYER. However, irrespective of work acceptance the responsibility to maintain adequate insurance coverage at all times during the period of CONTRACT shall be that of CONTRACTOR alone. CONTRACTOR's failure in this regard shall not relieve him of any of his responsibilities and obligations under CONTRACT. Any loss or damage to the equipment, during ocean transportation, port/custom clearance, inland and port handling, inland transportation, storage, erection and commissioning till such time the WORK is taken over by EMPLOYER, shall be to the account of CONTRACTOR. CONTRACTOR shall be responsible for preferring of all claims and make good for the damage or loss by way of repairs and/or replacement of the parts of the Work damaged or lost. CONTRACTOR shall provide the EMPLOYER with a copy of all insurance policies and documents taken out by him in pursuance of the CONTRACT. Such copies of document shall be submitted to the EMPLOYER immediately upon the CONTRACTOR having taken such insurance coverage. CONTRACTOR shall also inform the EMPLOYER at least 60(Sixty) days in advance regarding the expiry cancellation and/or changes in any of such documents and ensure revalidation/renewal etc., as may be necessary well in time. Statutory clearances, if any, in respect of foreign supply required for the purpose of replacement of equipment lost in transit and/or during erection, shall be made available by the EMPLOYER. CONTRACTOR shall, however, be responsible for obtaining requisite licences, port clearances and other formalities relating to such import. The risks that are to be covered under the insurance shall include, but not be limited to the loss or damage in handling, transit, theft, pilferage, riot, civil commotion, weather conditions, accidents of all kinds, fire, war risk (during ocean transportation only) etc. The scope of such insurance shall cover the entire value of supplies of equipments, plants and materials to be imported from time to time. All costs on account of insurance liabilities covered under CONTRACT will be to CONTRACTOR's account and will be included in VALUE OF CONTRACT. However, the EMPLOYER may from time to time, during the currency of the CONTRACT, ask the CONTRACTOR in writing to limit the insurance coverage risk and in such a case, the parties to the CONTRACT will agree for a mutual settlement, for reduction in VALUE OF CONTRACT to the extent of reduced premium amounts CONTRACTOR as far as possible shall cover insurance with Indian Insurance Companies, including marine Insurance during ocean transportation.

- 101.1.1 **EMPLOYEES STATE INSURANCE ACT:** The CONTRACTOR agrees to and does hereby accept full and exclusive liability for the compliance with all obligations imposed by the Employee State Insurance Act 1948 and the CONTRACTOR further agrees to defend, indemnify and hold EMPLOYER harmless for any liability or penalty which may be imposed by the Central, State or Local authority by reason of any asserted violation by CONTRACTOR or SUB-CONTRACTOR of the Employees' State Insurance Act, 1948, and also from all claims, suits or proceeding that may be brought against the EMPLOYER arising under, growing out of or by reasons of the work provided for by this CONTRACTOR, by third parties or by Central or State Government authority or any political sub- division thereof. The CONTRACTOR agrees to fill in with the Employee's State Insurance Corporation, the Declaration Forms, and all forms which may be required in respect of the CONTRACTOR's or SUB- CONTRACTOR's employees, who are employed in the WORK provided for or those covered by ESI from time to time under the Agreement. The CONTRACTOR shall deduct and secure the agreement of the SUB-CONTRACTOR to deduct the employee's contribution as per the first schedule of the Employee's State Insurance Act from wages and affix the Employees Contribution Card at wages payment intervals. The CONTRACTOR shall remit and secure the agreement of SUB-CONTRACTOR to remit to the State Bank of India, Employee's State Insurance Corporation Account, the Employee's contribution as required by the Act. The CONTRACTOR agrees to maintain all cards and Records as required under the Act in respect of employees and payments and the CONTRACTOR shall secure the agreement of the SUB- CONTRACTOR to maintain such records. Any expenses incurred for the contributions, making contributions or maintaining records shall be to the CONTRACTOR's or SUB-CONTRACTOR's account. The EMPLOYER shall retain such sum as may be necessary from the total VALUE OF CONTRACT until the CONTRACTOR shall furnish satisfactory proof that all contributions as required by the Employees State Insurance Act, 1948, have been paid. This will be pending on the CONTRACTOR when the ESI Act is extended to the place of work.
- 101.1.2 **WORKMEN COMPENSATION AND EMPLOYER'S LIABILITY INSURANCE:** Insurance shall be effected for all the CONTRACTOR's employees engaged in the performance of this CONTRACT. If any of the work is sublet, the CONTRACTOR shall require the SUB-CONTRACTOR to provide workman's Compensation and employer's liability insurance for the later's employees if such employees are not covered under the CONTRACTOR's Insurance.
- 101.1.3 **ACCIDENT OR INJURY TO WORKMEN:** The EMPLOYER shall not be liable for or in respect of any damages or compensation payable at law in respect or in consequence of any accident or injury to any workman or other person in the Employment of the CONTRACTOR or any SUB-CONTRACTOR save and except an accident or injury resulting from any act or default of the EMPLOYER, his agents or servants and the CONTRACTOR shall indemnify and keep indemnified the EMPLOYER against all such damages and compensation (save and except and aforesaid) and against all claims, demands, proceeding, costs, charges and expenses, whatsoever in respect or in relation thereto.
- 101.1.4 **TRANSIT INSURANCE** In respect of all items to be transported by the CONTRACTOR to the SITE of WORK, the cost of transit insurance should be borne by the CONTRACTOR and the quoted price shall be inclusive of this cost.
- 101.1.5 **COMPREHENSIVE AUTOMOBILE INSURANCE** This insurance shall be in such a form as to protect the Contractor against all claims for injuries, disability, disease and death to members of public including EMPLOYER's men and damage to the property of others arising from the use of motor vehicles during on or off the 'site' operations, irrespective of the Employership of such vehicles.
- 101.1.6 **COMPREHENSIVE GENERAL LIABILITY INSURANCE:**
- a) This insurance shall protect the Contractor against all claims arising from injuries, disabilities, disease or death of member of public or damage to property of others due to any act or omission on the part of the Contractor, his agents, his employees, his representatives and Sub- Contractor's or from riots, strikes and civil commotion.
 - b) Contractor shall take suitable Group Personal Accident Insurance Cover for taking care of injury, damage or any other risks in respect of his Engineers and other Supervisory staff who are not covered under Employees State Insurance Act.
 - c) The policy shall cover third party liability. The third party (liability shall cover the loss/ disablement of human life (person not belonging to the Contractor) and also cover the risk of damage to others materials/ equipment/ properties during construction, erection and commissioning at site. The value of third party liability for compensation for loss of human life or partial/full disablement shall be of required statutory value but not less than Rs. 2 lakhs per death, Rs. 1.5 lakhs per full disablement and Rs. 1 lakh per partial disablement and shall nevertheless cover such compensation as may be awarded by Court by Law in India and cover for damage to others equipment/ property as approved by the Purchaser. However, third party risk shall be maximum to Rs. 10(ten) lakhs to death.

- d) The Contractor shall also arrange suitable insurance to cover damage, loss, accidents, risks etc., in respect of all his plant, equipments and machinery, erection tools & tackles and all other temporary attachments brought by him at site to execute the work.
- e) The Contractor shall take out insurance policy in the joint name of EMPLOYER and Contractor from one or more nationalised insurance company from any branch office at Project site.
- f) Any such insurance requirements as are hereby established as the minimum policies and coverages which Contractor must secure and keep in force must be complied with, Contractor shall at all times be free to obtain additional or increased coverages at Contractor's sole expenses.

101.1.7 ANY OTHER INSURANCE REQUIRED UNDER LAW OR REGULATIONS OR BY EMPLOYER: CONTRACTOR shall also carry and maintain any and all other insurance(s) which he may be required under any law or regulation from time to time without any extra cost to EMPLOYER. He shall also carry and maintain any other insurance which may be required by the EMPLOYER.

102 Damage to Property or to any Person or any Third Party

- 102.1 CONTRACTOR shall be responsible for making good to the satisfaction of the EMPLOYER any loss or any damage to structures and properties belonging to the EMPLOYER or being executed or procured or being procured by the EMPLOYER or of other agencies within the premises of all the work of the EMPLOYER, if such loss or damage is due to fault and/or the negligence or willful acts or omission of the CONTRACTOR, his employees, agents, representatives or SUB-CONTRACTORS.
- 102.2 The CONTRACTOR shall take sufficient care in moving his plants, equipments and materials from one place to another so that they do not cause any damage to any person or to the property of the EMPLOYER or any third party including overhead and underground cables and in the event of any damage resulting to the property of the EMPLOYER or of a third party during the movement of the aforesaid plant, equipment or materials the cost of such damages including eventual loss of production, operation or services in any plant or establishment as estimated by the EMPLOYER or ascertained or demanded by the third party shall be borne by the CONTRACTOR. Third party liability risk shall be Rupees One lakh for single accident and limited to Rupees Ten lakhs.
- 102.3 The CONTRACTOR shall indemnify and keep the EMPLOYER harmless of all claims for damages to property other than EMPLOYER's property arising under or by reason of this agreement, if such claims result from the fault and/or negligence or willful acts or omission of the CONTRACTOR, his employees, agents, representative of SUB-CONTRACTOR.

SECTION-VIII LABOUR LAWS

103 Labour laws:

- 103.1 No labour below the age of 18 (eighteen) years shall be employed on the WORK.
- 103.2 The CONTRACTOR shall not pay less than what is provided under law to labourers engaged by him on the WORK.
- 103.3 The CONTRACTOR shall at his expense comply with all labour laws and keep the EMPLOYER indemnified in respect thereof.
- 103.4 The CONTRACTOR shall pay equal wages for men and women in accordance with applicable labour laws.
- 103.5 If the CONTRACTOR is covered under the Contract labour (Regulation and Abolition) Act, he shall obtain a licence from licensing authority (i.e. office of the labour commissioner) by payment of necessary prescribed fee and the deposit, if any, before starting the WORK under the CONTRACT. Such fee/deposit shall be borne by the CONTRACTOR.
- 103.6 The CONTRACTOR shall employ labour in sufficient numbers either directly or through SUB- CONTRACTOR's to maintain the required rate of progress and of quality to ensure workmanship of the degree specified in the CONTRACT and to the satisfaction of the ENGINEER-IN-CHARGE.
- 103.7 The CONTRACTOR shall furnish to the ENGINEER-IN- CHARGE the distribution return of the number and description, by trades of the work people employed on the works. The CONTRACTOR shall also submit on the 4th and 19th of every month to the ENGINEER-IN-CHARGE a true statement showing in respect of the second half of the preceding month and the first half of the current month (1) the accidents that occurred during the said fortnight showing the circumstances under which they happened and the extent of damage and injury caused by them and (2) the number of female workers who have been allowed Maternity Benefit as provided in the Maternity Benefit Act 1961 on Rules made thereunder and the amount paid to them.
- 103.8 The CONTRACTOR shall comply with the provisions of the payment of Wage Act 1936, Employee Provident Fund Act 1952, Minimum Wages Act 1948. Employers Liability Act 1938. Workmen's Compensation Act 1923, Industrial

Disputes Act 1947, the Maternity Benefit Act 1961 and Contract Labour Regulation and Abolition Act 1970, Employment of Children Act 1938 or any modifications thereof or any other law relating thereto and rules made thereunder from time to time.

- 103.9 The ENGINEER-IN-CHARGE shall on a report having been made by an Inspecting Officer as defined in Contract Labour (Regulation and Abolition) Act 1970 have the power to deduct from the money due to the CONTRACTOR any sum required or estimated to be required for making good the loss suffered by a worker or workers by reason of non-fulfillment of the Conditions of the Contract for the benefit of workers, non-payment of wages or of deductions made from his or their wages which are not justified by the terms of the Contract or non-observance of the said regulations.
- 103.10 The CONTRACTOR shall indemnify the EMPLOYER against any payments to be made under and for the observance of the provisions of the aforesaid Acts without prejudice to his right to obtain indemnity from his SUB-CONTRACTOR's. In the event of the CONTRACTOR committing a default or breach of any of the provisions of the aforesaid Acts as amended from time to time, of furnishing any information or submitting or filling and Form/ Register/ Slip under the provisions of these Acts which is materially incorrect then on the report of the inspecting Officers, the CONTRACTOR shall without prejudice to any other liability pay to the EMPLOYER a sum not exceeding Rs.50.00 as Liquidated Damages for every default, breach or furnishing, making, submitting, filling materially incorrect statement as may be fixed by the ENGINEER-IN- CHARGE and in the event of the CONTRACTOR's default continuing in this respect, the Liquidated Damages may be enhanced to Rs.50.00 per day for each day of default subject to a maximum of one percent of the estimated cost of the WORK put to tender. The ENGINEER-IN-CHARGE shall deduct such amount from bills or Contract Performance Security of the CONTRACTOR and credit the same to the Welfare Fund constitute under these acts. The decision of the ENGINEER-IN-CHARGE in this respect shall be final and binding.

104 Implementation of Apprentices Act, 1961:

- 104.1 The CONTRACTOR shall comply with the provisions of the Apprentices Act, 1961 and the Rules and Orders issued thereunder from time to time. If he fails to do so, his failure will be a breach of the CONTRACT and the ENGINEER-IN-CHARGE may, at his discretion, cancel the CONTRACT. The CONTRACTOR shall also be liable for any pecuniary liability arising on account of any violation by him of the provisions, of the Act.

105 Contractor to indemnify the Employer:

- 105.1 The CONTRACTOR shall indemnify the EMPLOYER and every member, office and employee of the EMPLOYER, also the ENGINEER-IN-CHARGE and his staff against all actions, proceedings, claims, demands, costs and expenses whatsoever arising out of or in connection with the matters referred to in Clause 102.0 and elsewhere and all actions, proceedings, claims, demands, costs and expenses which may be made against the EMPLOYER for or in respect of or arising out of any failure by the CONTRACTOR in the performance of his obligations under the CONTRACT DOCUMENT. The EMPLOYER shall not be liable for or in respect of or arising out of any failure by the CONTRACTOR in the performance of his obligations under the CONTRACT DOCUMENT. The EMPLOYER shall not be liable for or in respect of any demand or compensation payable by law in respect or in consequence of any accident or injury to any workmen or other person. In the employment of the CONTRACTOR or his SUB-CONTRACTOR the CONTRACTOR shall indemnify and keep indemnified the EMPLOYER against all such damages and compensations and against all claims, damages, proceedings, costs, charges and expenses whatsoever in respect thereof or in relation thereto.
- 105.2 PAYMENT OF CLAIMS AND DAMAGES: Should the EMPLOYER have to pay any money in respect of such claims or demands as aforesaid the amount so paid and the costs incurred by the EMPLOYER shall be charged to and paid by the CONTRACTOR and the CONTRACTOR shall not be at liberty to dispute or question the right of the EMPLOYER to make such payments notwithstanding the same, may have been made without the consent or authority or in law or otherwise to the contrary.
- 105.3 In every case in which by virtue of the provisions of Section 12, Sub-section (i) of workmen's compensation Act, 1923 or other applicable provision of Workmen Compensation Act or any other Act, the EMPLOYER is obliged to pay compensation to a workman employed by the CONTRACTOR in execution of the WORK, the EMPLOYER will recover from the CONTRACTOR the amount of the compensation so paid, and without prejudice to the rights of EMPLOYER under Section 12, Sub- section (2) of the said act, EMPLOYER shall be at liberty to recover such amount or any part thereof by deducting it from the Contract Performance Security or from any sum due to the CONTRACTOR whether under this CONTRACT or otherwise. The EMPLOYER shall not be bound to contest any claim made under Section 12, Sub-section (i) of the said act, except on the written request of the CONTRACTOR and upon his giving to the EMPLOYER full security for all costs for which the EMPLOYER might become liable in consequence of contesting such claim.

106 Health and sanitary arrangements for workers:

- 106.1 In respect of all labour directly or indirectly employed in the WORKS for the performance of the CONTRACTOR's part of this agreement, the CONTRACTOR shall comply with or cause to be complied with all the rules and regulations of the local sanitary and other authorities or as framed by the EMPLOYER from time to time for the protection of health and sanitary arrangements for all workers.
- 106.2 The CONTRACTOR shall provide in the labour colony all amenities such as electricity, water and other sanitary and health arrangements. The CONTRACTOR shall also provide necessary surface transportation to the place of work and back to the colony for their personnel accommodated in the labour colony.

SECTION-IX APPLICABLE LAWS AND SETTLEMENT OF DISPUTES

107 Arbitration:

- 107.1 Unless otherwise specified, the matters where decision of the Engineer-in-Charge is deemed to be final and binding as provided in the Agreement and the issues/disputes which cannot be mutually resolved within a reasonable time, all disputes shall be referred to arbitration by Sole Arbitrator. The Employer [GAIL (India) Ltd.] shall suggest a panel of three independent and distinguished persons to the bidder/contractor/supplier/buyer (as the case may be) to select any one among them to act as the Sole Arbitrator. In the event of failure of the other parties to select the Sole Arbitrator within 30 days from the receipt of the communication suggesting the panel of arbitrators, the right of selection of the sole arbitrator by the other party shall stand forfeited and the EMPLOYER (BCPL) shall have discretion to proceed with the appointment of the Sole Arbitrator. The decision of Employer on the appointment of the sole arbitrator shall be final and binding on the parties. The award of sole arbitrator shall be final and binding on the parties and unless directed/awarded otherwise by the sole arbitrator, the cost of arbitration proceedings shall be shared equally by the parties. The Arbitration proceedings shall be in English language and venue shall be New Delhi, India. Subject to the above, the provisions of (Indian) Arbitration & Conciliation ACT 1996 and the Rules framed there under shall be applicable. All matter relating to this contract are subject to the exclusive jurisdiction of the court situated in the state of Delhi. Bidders/suppliers/contractors may please note that the Arbitration & Conciliation Act 1996 was enacted by the Indian Parliament and is based on United Nations Commission on International Trade Law (UNCITRAL model law), which were prepared after extensive consultation with Arbitral Institutions and centers of International Commercial Arbitration. The United Nations General Assembly vide resolution 31/98 adopted the UNCITRAL Arbitration rules on 15 December 1976.
- 107.2 FOR THE SETTLEMENT OF DISPUTES BETWEEN GOVERNMENT DEPARTMENT AND ANOTHER AND ONE GOVERNMENT DEPARTMENT AND PUBLIC ENTERPRISE AND ONE PUBLIC ENTERPRISE AND ANOTHER THE ARBITRATION SHALL BE AS FOLLOWS: "In the event of any dispute or difference between the parties hereto, such dispute or difference shall be resolved amicably by mutual consultation or through the good offices of empowered agencies of the Government. If such resolution is not possible, then, the unresolved dispute or difference shall be referred to arbitration of an arbitrator to be nominated by Secretary, Department of Legal Affairs ("Law Secretary") in terms of the Office Memorandum No.55/3/1/75-CF, dated the 19th December 1975 issued by the Cabinet Secretariat (Department of Cabinet Affairs), as modified from time to time. The Arbitration Act 1940 (10 of 1940) shall not be applicable to the arbitration under this clause. The award of the Arbitrator shall be binding upon parties to the dispute. Provided, however, any party aggrieved by such award may make a further reference for setting aside or revision of the award to Law Secretary whose decision shall bind the parties finally and conclusively.

108 Jurisdiction:

- 108.1 The CONTRACT shall be governed by and constructed according to the laws in force in INDIA. The CONTRACTOR hereby submits to the jurisdiction of the Courts situated at Guwahati for the purposes of disputes, actions and proceedings arising out of the CONTRACT, the courts at Guwahati only will have the jurisdiction to hear and decide such disputed, actions and proceedings.

SECTION-X SAFETY CODES

109 General:

- 109.1 CONTRACTOR shall adhere to safe construction practice and guard against hazardous, and unsafe working conditions and shall comply with EMPLOYER's safety rules as set forth herein. Prior to start of construction,

CONTRACTOR will be furnished copies of EMPLOYER's "Safety Code" for information and guidance, if it has been prepared.

110 Safety regulations:

- 110.1 In respect of all labour, directly employed in the WORK for the performance of CONTRACTOR's part of this agreement, the CONTRACTOR shall at his own expense arrange for all the safety provisions as per safety codes of C.P.W.D., Indian Standards Institution. The Electricity Act, The Mines Act and such other acts as applicable.
- 110.2 The CONTRACTOR shall observe and abide by all fire and safety regulations of the EMPLOYER. Before starting construction work CONTRACTOR shall consult with EMPLOYER's safety Engineers or ENGINEER- IN-CHARGE and must make good to the satisfaction of the EMPLOYER any loss or damage due to fire to any portion of the work done or to be done under this agreement or to any of the EMPLOYER's existing property.

111 First aid and industrial injuries:

- 111.1 CONTRACTOR shall maintain first aid facilities for its employees and those of its SUB-CONTRACTOR.
- 111.2 CONTRACTOR shall make outside arrangements for ambulance service and for the treatment of industrial injuries. Names of those providing these services shall be furnished to EMPLOYER prior to start of construction and their telephone numbers shall be prominently posted in CONTRACTOR's field office.
- 111.3 All critical industrial injuries shall be reported promptly to EMPLOYER, and a copy of CONTRACTOR's report covering each personal injury requiring the attention of a physician shall be furnished to the EMPLOYER.

112 General rules:

- 112.1 Smoking within the battery area, tank farm or dock limits is strictly prohibited. Violators of the no smoking rules shall be discharged immediately.

113 Contractor's barricades:

- 113.1 CONTRACTOR shall erect and maintain barricades required in connection with his operation to guard or protect:-
- a) Excavations
 - b) Hoisting Areas.
 - c) Areas adjudged hazardous by CONTRACTOR's or EMPLOYER's inspectors.
 - d) EMPLOYER's existing property subject to damage by CONTRACTOR's Operations.
 - e) Rail Road unloading spots.
- 113.2 CONTRACTOR's employees and those of his SUB- CONTRACTOR's shall become acquainted with EMPLOYER's barricading practice and shall respect the provisions thereof.
- 113.3 Barricades and hazardous areas adjacent to, but not located in normal routes of travel shall be marked by red flasher lanterns at nights.

114 Scaffolding:

- 114.1 Suitable scaffolding should be provided for workmen for all works that cannot safely be done from the ground or from solid construction except such short period work as can be done safely from ladders. When a ladder is used an extra Mazdoor shall be engaged for holding the ladder and if the ladder is used for carrying material as well, suitable footholds and handholds shall be provided on the ladder and the ladder shall be given an inclination not steeper than 1 in 4 (1 horizontal and 4 vertical).
- 114.2 Scaffolding or staging more than 4 metres above the ground or floor, swing suspended from an overhead support or erected with stationary support shall have a guard rail properly attached, bolted, braced and otherwise retarded at least one metre high above the floor or platform of such scaffolding or staging and extending along the entire length of the outside and ends thereof with only such openings as may be necessary for the delivery of materials. Such scaffolding or staging shall be so fastened as to prevent it from swaying from the building or structure.
- 114.3 Working platform, gangway and stairway should be so constructed that they should not sag unduly or unequally and if the height of platform of the gangway or the stairway is more than 4 metres above the ground level or floor level, they should be closely boarded, should have adequate width and should be suitably fastened as in ii) above.
- 114.4 Every opening in the floor of a building or in a working platform shall be provided with suitable means to prevent the fall of persons or materials by providing suitable fencing or railing whose minimum heights shall be 1 metre.
- 114.5 Safe-means of access shall be provided to all working platforms and other working places, every ladder shall be securely fixed. No portable single ladder shall be over 9 metres in length while the width between side rails in rung

ladder shall in no case be less than 30 cms for ladder upto and including 3 metres in length. For longer ladder this width should be increased 5mm for each additional foot of length. Uniform steps spacing shall not exceed 30 cms. Adequate precautions shall be taken to prevent danger from electrical equipment. No materials on any of the sites or work shall be so stacked or placed to cause danger or inconvenience to any person or public. The CONTRACTOR shall also provide all necessary fencing and lights to protect the workers and staff from accidents, and shall be bound to bear the expenses of defense of every suit, action or other proceeding of law that may be brought by any person for injury sustained owing to neglect of the above precautions and pay any damages and costs which may be awarded in any such suit or action or proceeding to any such person or which may with the consent of the CONTRACTOR be paid to compromise any claim by any such person.

115 Excavation and trenching:

- 115.1 All trenches 1.2 metres or more in depth, shall at all times be supplied with at least one ladder for each 50 metres length or fraction thereof. Ladder shall be extended from bottom of the trenches to atleast 1 metre above the surface of the ground. The sides of the trenches which are 1.5M in depth shall be stepped back to give suitable slope or securely held by timber bracing, so as to avoid the danger of sides to collapse. The excavated materials shall not be placed within 1.5 metres of the edge of the trench or half of the trench width whichever is more. Cutting shall be done from top to bottom. Under no circumstances undermining or under-cutting shall be done.

116 Demolition/general safety:

- 116.1 Before any demolition work is commenced and also during the progress of the demolition work
- All roads and open areas adjacent to the work site shall either be closed or suitably protected.
 - No electric cable or apparatus which is liable to be a source of danger shall remain electrically charged.
 - All practical steps shall be taken to prevent danger to persons employed from risk of fire or explosion or flooding. No floor, roof or other part of the building shall be so overloaded with debris or materials as to render it unsafe.
- 116.2 All necessary personal safety equipment as considered adequate by the ENGINEER-IN-CHARGE, should be kept available for the use of the persons employed on the SITE and maintained in condition suitable for immediate use, and the CONTRACTOR shall take adequate steps to ensure proper use of equipment by those concerned.
- Workers employed on mixing asphaltic materials, cement and lime mortars shall be provided with protective footwear and protective gloves.
 - Those engaged in white washing and mixing or stacking or cement bags or any material which are injurious to the eyes be provided with protective goggles.
 - Those engaged in welding and cutting works shall be provided with protective face & eye shield, hand gloves, etc.
 - Stone breakers shall be provided with protective goggles and protective clothing and seated at sufficiently safe intervals.
 - When workers are employed in sewers and manholes, which are in use, the CONTRACTOR shall ensure that the manhole covers are opened and are ventilated atleast for an hour before the workers are allowed to get into the manholes, and the manholes so opened shall be cordoned off with suitable railing and provided with warning signals or board to prevent accident to the public.
 - The CONTRACTOR shall not employ men below the age of 18 years and women on the work of painting with products containing lead in any form. Wherever men above the age of 18 years are employed on the work of lead painting, the following precautions should be taken.
 - No paint containing lead or lead product shall be used except in the form of paste or readymade paint.
 - Suitable face masks should be supplied for use by the workers when paint is applied in the form of spray or a surface having lead paint dry rubbed and scrapped.
 - Overalls shall be supplied by the CONTRACTOR to the workmen and adequate facilities shall be provided to enable the working painters to wash them during and on cessation of work.
- 116.2.1 When the work is done near any place where there is risk of drowning, all necessary safety equipment should be provided and kept ready for use and all necessary steps taken for prompt rescue of any person in danger and adequate provision should be made for prompt first aid treatment of all injuries likely to be sustained during the course of the work.
- 116.2.2 Use of hoisting machines and tackles including their attachments, anchorage and supports shall conform to the following standards or conditions:
- These shall be of good mechanical construction, sound materials and adequate strength and free from patent defect and shall be kept in good working order.

- b. Every rope used in hoisting or lowering materials or as means of suspension shall be of durable quality and adequate strength and free from patent defects.
 - b) Every crane driver or hoisting appliance operator shall be properly qualified and no person under the age of 21 years should be in charge of any hoisting machine including any scaffolding, winch or give signals to the operator.
 - c) In case of every hoisting machine and of every chain ring hook, shackle, swivel, and pulley block used in hoisting or lowering or as means of suspension, the safe working load shall be ascertained by adequate means. Every hoisting machine and all gears referred to above shall be plainly marked with the safe working load of the conditions under which it is applicable and the same shall be clearly indicated. No part of any machine or any gear referred to above in this paragraph shall be loaded beyond safe working load except for the purpose of testing.
 - d) In case of departmental machine, the safe working load shall be notified by the ENGINEER-IN-CHARGE. As regards CONTRACTOR's machines, the CONTRACTOR shall notify the safe working load of the machine to the ENGINEER-IN-CHARGE whenever he brings any machinery to SITE of WORK and get it verified by the Engineer concerned.
 - e) Motors, gears, transmission lines, electric wiring and other dangerous parts of hoisting appliances should be provided with efficient safeguards. Hoisting appliances should be provided with such means as to reduce to minimum the accidental descent of the load, adequate precautions should be taken to reduce the minimum risk of any part or parts of a suspended load becoming accidentally displaced. When workers are employed on electrical installations which are already energised, insulating mats, wearing apparel, such as gloves, sleeves, and boots as may be necessary should be provided. The workers shall not wear any rings, watches and carry keys or other materials which are good conductors of electricity.
- 116.2.3 All scaffolds, ladders and other safety devices mentioned or described herein shall be maintained in safe conditions and no scaffolds, ladder or equipment shall be altered or removed while it is in use. Adequate washing facilities should be provided at or near places of work.
- 116.2.4 These safety provisions should be brought to the notice of all concerned by displaying on a notice board at a prominent place at the work-spot. The person responsible for compliance of the safety code shall be named therein by the CONTRACTOR.
- 116.2.5 To ensure effective enforcement of the rules and regulations relating to safety precautions, the arrangements made by the CONTRACTOR shall be open to inspection by the Welfare Officer, ENGINEER-IN-CHARGE or safety Engineer of the Administration or their representatives.
- 116.2.6 Notwithstanding the above clauses there is nothing in these to exempt the CONTRACTOR for the operations of any other Act or rules in force in the Republic of India. The work throughout including any temporary works shall be carried out in such a manner as not to interfere in any way whatsoever with the traffic on any roads or footpath at the site or in the vicinity thereto or any existing works whether the property of the Administration or of a third party. In addition to the above, the CONTRACTOR shall abide by the safety code provision as per C.P.W.D. Safety code and Indian Standard Safety Code from time to time.

117 Care in handling inflammable gas:

- 117.1.1 The CONTRACTOR has to ensure all precautionary measures and exercise utmost care in handling the inflammable gas cylinder/inflammable liquids/paints etc. as required under the law and/or as advised by the fire Authorities of the EMPLOYER.

118 Temporary combustible structures:

- 118.1 Temporary combustible structures will not be built near or around work site.

119 Precautions against fire:

- 119.1.1 The CONTRACTOR will have to provide Fire Extinguishers, Fire Buckets and drums at worksite as recommended by ENGINEER-IN-CHARGE. They will have to ensure all precautionary measures and exercise utmost care in handling the inflammable gas cylinders/ inflammable liquid/ paints etc. as advised by ENGINEER-IN-CHARGE. Temporary combustible structures will not be built near or around the work-site.

120 Explosives:

- 120.1.1 Explosives shall not be stored or used on the WORK or on the SITE by the CONTRACTOR without the permission of the ENGINEER-IN-CHARGE in writing and then only in the manner and to the extent to which such permission is given. When explosives are required for the WORK they will be stored in a special magazine to be provided at the cost of the CONTRACTOR in accordance with the Explosives Rules. The CONTRACTOR shall obtain the necessary licence for the storage and the use of explosives and all operations in which or for which explosives are employed shall be at sole risk and responsibility of the CONTRACTOR and the CONTRACTOR shall indemnify the EMPLOYER against any loss or damage resulting directly or indirectly there from.

121 Mines act:

- 121.1.1 SAFETY CODE: The CONTRACTOR shall at his own expense arrange for the safety provisions as required by the ENGINEER-IN-CHARGE in respect of all labour directly employed for performance of the WORKS and shall provide all facilities in connection therewith. In case the CONTRACTOR fails to make arrangements and provides necessary facilities as aforesaid, the ENGINEER-IN-CHARGE shall be entitled to do so and recover the costs thereof from the CONTRACTOR.
- 121.1.2 Failure to comply with Safety Code or the provisions relating to report on accidents and to grant of maternity benefits to female workers shall make the CONTRACTOR liable to pay Company Liquidated Damages an amount not exceeding Rs.50/- for each default or materially incorrect statement. The decision of the ENGINEER-IN-CHARGE in such matters based on reports from the Inspecting Officer or from representatives of ENGINEER-IN-CHARGE shall be final and binding and deductions for recovery of such Liquidated Damages may be made from any amount payable to the CONTRACTOR from all the provisions of the Mines Act, 1952 or any statutory modifications or re-enactment thereof the time being in force and any Rules and Regulations made there under in respect of all the persons employed by him under this CONTRACT and shall indemnify the EMPLOYER from and against any claim under the Mines Act or the rules and regulations framed there under by or on behalf of any persons employed by him or otherwise.

122 Preservation of place:

- 122.1.1 The CONTRACTOR shall take requisite precautions and use his best endeavors to prevent any riotous or unlawful behaviour by or amongst his worker and others employed on the works and for the preservation of peace and protection of the inhabitants and security of property in the neighborhood of the WORK. In the event of the EMPLOYER requiring the maintenance of a Special Police Force at or in the vicinity of the site during the tenure of works, the expenses thereof shall be borne by the CONTRACTOR and if paid by the EMPLOYER shall be recoverable from the CONTRACTOR.

123 Outbreak of infectious diseases:

- 123.1.1 The CONTRACTOR shall remove from his camp such labour and their facilities who refuse protective inoculation and vaccination when called upon to do so by the ENGINEER-IN-CHARGE's representative. Should Cholera, Plague or other infectious diseases break out the CONTRACTOR shall burn the huts, beddings, clothes and other belongings or used by the infected parties and promptly erect new huts on healthy sites as required by the ENGINEER-IN-CHARGE failing which within the time specified in the Engineer's requisition, the work may be done by the EMPLOYER and the cost thereof recovered from the CONTRACTOR.

124 Use of intoxicants:

- 124.1.1 The unauthorized sale of spirits or other intoxicants, beverages upon the work in any of the buildings, encampments or tenements owned, occupied by or within the control of the CONTRACTOR or any of his employee is forbidden and the CONTRACTOR shall exercise his influence and authority to the utmost extent to secure strict compliance with this condition. In addition to the above, the CONTRACTOR shall abide by the safety code provision as per C.P.W.D. safety code and Indian Standard Code framed from time to time.

PROFORMA OF INDEMNITY BOND FOR SUPPLY OF MATERIALS BY EMPLOYER

(To be executed on non-judicial stamped paper of appropriate value)

WHEREAS Brahmaputra Cracker & Polymer Ltd. (hereinafter referred to as BCPL) which expression shall unless repugnant to the context includes their legal representatives, successors and assigns having their registered office at Hotel Brahmaputra Ashok, M. G. Road, Guwahati - 781001 has entered into a CONTRACT with _____ (hereinafter referred to as the CONTRACTOR which expression shall unless repugnant to the context include their legal representatives, successors and assigns) for _____ on the terms and conditions as set out, inter-alia, in the CONTRACT No..... Dated..... and various documents forming part thereof hereinafter collectively referred to as the "CONTRACT" which expression shall include all amendments, modifications and/or variations thereto.

AND WHEREAS i) BCPL has agreed to supply to the CONTRACTOR, equipment, plants and materials (finished, semi-finished and raw) for the purpose of EXECUTION of the said CONTRACT by the CONTRACTOR (the equipment, plants and materials to be supplied by BCPL to the CONTRACTOR, hereinafter for the sake of brevity referred to as the "said materials") and pending execution by the CONTRACTOR of the CONTRACT incorporating the said materials, the said materials shall be under the custody and charge of the CONTRACTOR and shall be kept, stored, altered, worked upon and/or fabricated at the sole risk and expense of the CONTRACTOR.

ii) As a pre-condition to the supply of the said materials by BCPL to the CONTRACTOR, BCPL has required the CONTRACTOR to furnish to BCPL an Indemnity Bond in the manner and upon terms and conditions hereinafter indicated. NOW, THEREFORE, in consideration of the premises aforesaid the CONTRACTOR hereby irrevocably and unconditionally undertakes to indemnify and keep indemnified BCPL from and against all loss, damage and destruction (inclusive but not limited to any or all loss or damage or destruction to or of the said materials or any item or part thereof by theft, pilferage, fire, flood, storm, tempest, lightning, explosion, storage, chemical or physical action or reaction, binding, warping, exposure, rusting, faulty workmanship, faulty fabrication, or faulty method or technique of fabrication, strike, riot, civil commotion, or other act or omission or commission whatsoever within or beyond the control of the CONTRACTOR, misuse and misappropriation (inclusive but not limited to the misuse or misappropriation by the CONTRACTOR and the Contractor's servants and/or agents) whatsoever to, or of in the said materials or any part of them thereof from the date that the same or relative part of item thereof was supplied to the CONTRACTOR upto and until the date of return to BCPL of the said materials or relative part of item thereof or completed fabricated works(s) incorporating the said material and undertake to pay to BCPL forthwith on demand in writing without protest or demur the value as specified by BCPL of the said material or item or part thereof, lost, damaged, destroyed, misused and/or misappropriated, as the case may be or, together with BCPL'S costs and expenses (inclusive of but not limited to handling, transportation, cartage, insurance, freight, packing and inspection costs/or expenses upto) and aggregate limit of Rs. _____ (Rupees _____ Only). AND THE CONTRACTOR hereby agrees with BCPL that: i) This Indemnity/Undertaking shall be a continuing Indemnity/ Undertaking and shall remain valid and irrevocable for all claims of BCPL arising hereunder upto and until the midnight of _____. However, if the CONTRACT for which this Indemnity/Undertaking is given is not completed by this date, the CONTRACTOR hereby agrees to extend the Indemnity/Undertaking till such time as is required to fulfil the CONTRACT.

ii) This Indemnity/Undertaking shall not be determined by any change in constitution or upon insolvency of the CONTRACTOR but shall be in all respects and for all purposes be binding and operative until payment of all moneys payable to BCPL in terms of hereof.

iii) The mere statement of allegation made by or on behalf of BCPL in any notice or demand or other writing addressed to the CONTRACTOR as to any of the said material or item or part thereof having been lost, damaged, destroyed, misused or misappropriated while in the custody of the CONTRACTOR and/or prior to completion of the completed fabricated work(s) and delivery to job site thereof incorporating the said materials shall be conclusive of the factum of the said material or item or part thereof having been supplied to the CONTRACTOR and/or the loss, damage, destruction, misuse or misappropriation thereof, as the case may be, while in the custody of the CONTRACTOR and/or prior to the completion of the completed fabricated work(s) and delivery to job site thereof incorporating the said materials without necessity on the part of BCPL to produce any documentary proof or other evidence whatsoever in support of this.

iv) The amount stated in any notice of demand addressed by BCPL to the CONTRACTOR as to the value of such said materials lost, damaged, destroyed, misused or misappropriated, inclusive relative to the costs and expenses incurred by BCPL in connection therewith shall be conclusive of the value of such said materials and the said cost and expenses as also of the amount liable to be paid to BCPL to produce any voucher, bill or other documentation or evidence whatsoever in support thereof and such amount shall be paid without any demur and on demand and no dispute shall be raised concerning the same. The undersigned has full power to execute this Indemnity Bond on behalf of the

CONTRACTOR under the Power of Attorney dated
(SIGNED BY COMPETENT AUTHORITY)

Place:
Dated:
Official seal of the CONTRACTOR

PROFORMA FOR CONTRACT AGREEMENT

LOA No. BCPL / Dated -----

Contract Agreement for the work of ----- of Brahmaputra Cracker & Polymer Ltd. (BCPL) made on ----- between (Name and Address)-----, hereinafter called the "CONTRACTOR" (which term shall unless excluded by or repugnant to the subject or context include its successors and permitted assignees) of the one part and BCPL hereinafter called the "EMPLOYER" (which term shall, unless excluded by or repugnant to the subject or context include its successors and assignees) of the other part. WHEREAS

A. The EMPLOYER being desirous of having provided and executed certain work mentioned, enumerated or referred to in the Tender Documents including Letter Inviting Tender, General Tender Notice, General Conditions of Contract, Special Conditions of Contract, Specifications, Drawings, Plans, Time Schedule of completion of jobs, Schedule of Rates, Agreed Variations, other documents has called for Tender.

B. The CONTRACTOR has inspected the SITE and surroundings of WORK specified in the Tender Documents and has satisfied himself by careful examination before submitting his tender as to the nature of the surface, strata, soil, sub-soil and ground, the form and nature of site and local conditions, the quantities, nature and magnitude of the work, the availability of labour and materials necessary for the execution of work, the means of access to SITE, the supply of power and water thereto and the accommodation he may require and has made local and independent enquiries and obtained complete information as to the matters and thing referred to, or implied in the tender documents or having any connection therewith and has considered the nature and extent of all probable and possible situations, delays, hindrances or interferences to or with the execution and completion of the work to be carried out under the CONTRACT, and has examined and considered all other matters, conditions and things and probable and possible contingencies, and generally all matters incidental thereto and ancillary thereof affecting the execution and completion of the WORK and which might have influenced him in making his tender.

C. The Tender Documents including the Notice Letter Inviting Tender, General Conditions of Contract, Special Conditions of Contract, Schedule of Rates, General Obligations, SPECIFICATIONS, DRAWINGS, PLANS, Time Schedule for completion of Jobs, Letter of Acceptance of Tender and any statement of agreed variations with its enclosures copies of which are hereto annexed form

part of this CONTRACT though separately set out herein and are included in the expression "CONTRACT" wherever herein used.

AND WHEREAS The EMPLOYER accepted the Tender of the CONTRACTOR for the provision and the execution of the said WORK at the rates stated in the schedule of quantities of the work and finally approved by EMPLOYER (hereinafter called the "Schedule of Rates") upon the terms and subject to the conditions of CONTRACT.

NOW THIS AGREEMENT WITNESSETH AND IT IS HEREBY AGREED AND DECLARED AS FOLLOWS:- 1. In consideration of the payment to be made to the CONTRACTOR for the WORK to be executed by him, the CONTRACTOR hereby covenants with

EMPLOYER that the CONTRACTOR shall and will duly provide, execute and complete the said work and shall do and perform all other acts and things in the CONTRACT mentioned or described or which are to be implied there from or may be reasonably necessary for the completion of the said WORK and at the said times and in the manner and subject to the terms and conditions or stipulations mentioned in the contract.

2. In consideration of the due provision execution and completion of the said WORK, EMPLOYER does hereby agree with the CONTRACTOR that the EMPLOYER will pay to the CONTRACTOR the respective amounts for the WORK actually done by him and approved by the EMPLOYER at the Schedule of Rates and such other sum payable to the CONTRACTOR under provision of CONTRACT, such payment to be made at such time in such manner as provided for in the CONTRACT. A N D

3. In consideration of the due provision, execution and completion of the said WORK the CONTRACTOR does hereby agree to pay such sums as may be due to the EMPLOYER for the services rendered by the EMPLOYER to the CONTRACTOR, such as power supply, water supply and others as set for in the said CONTRACT and such other sums as

may become payable to the EMPLOYER towards the controlled items of consumable materials or towards loss, damage to the EMPLOYER'S equipment, materials construction plant and machinery, such payments to be made at such time and in such manner as is provided in the CONTRACT. It is specifically and distinctly understood and agreed between the EMPLOYER and the CONTRACTOR that the CONTRACTOR shall have no right, title or interest in the SITE made available by the EMPLOYER for execution of the works or in the building, structures or work executed on the said SITE by the CONTRACTOR or in the goods, articles, materials etc., brought on the said SITE (unless the same specifically belongs to the CONTRACTOR) and the CONTRACTOR shall not have or deemed to have any lien whatsoever charge for unpaid bills will not be entitled to assume or retain possession or control of the SITE or structures and the EMPLOYER shall have an absolute and unfettered right to take full possession of SITE and to remove the CONTRACTOR, their servants, agents and materials belonging to the CONTRACTOR and lying on the SITE. The CONTRACTOR shall be allowed to enter upon the SITE for execution of the WORK only as a licensee simpliciter and shall not have any claim, right, title or interest in the SITE or the structures erected thereon and the EMPLOYER shall be entitled to terminate such license at any time without assigning any reason. The materials including sand, gravel, stone, loose, earth, rock etc., dug up or excavated from the said SITE shall, unless otherwise expressly agreed under this CONTRACT, exclusively belong to the EMPLOYER and the CONTRACTOR shall have no right to claim over the same and such excavation and materials should be disposed off on account of the EMPLOYER according to the instruction in writing issued from time to time by the ENGINEER-IN-CHARGE In Witness whereof the parties have executed these presents in the day and the year first above written. Signed and Delivered for and on Signed and Delivered for and on behalf of EMPLOYER.

on behalf of the CONTRACTORS.

BRAHMAPUTRA CRACKER & POLYMER LIMITED

(NAME OF THE CONTRACTOR)

Date : _____

Date : _____

Place: _____

Place: _____

IN PRESENCE OF TWO WITNESSES

1. _____

1. _____

2. _____

2. _____

PROFORMA FOR BANK GUARANTEE FOR EARNEST MONEY DEPOSIT
(To be stamped in accordance with the Stamp Act)

Ref.-----

Bank Guarantee No.-----

Date-----

To
Brahmaputra Cracker & Polymer Ltd.
Main Fire Station Building, BCPL Project Site,
Lepetkata-786007, Dibrugarh
Assam

Dear Sir (s),

In accordance with Letter inviting Tender under your reference No.-----

M/s-----having their Registered/Head Office at-----
------(hereinafter called the Bidder) wish to participate in the said tender for-----

As an irrevocable Bank Guarantee against Earnest Money Deposit for an amount of -----is required to be submitted by the Bidder as a condition precedent for participation in the said Tender which amount is liable to be forfeited on the happening of any contingencies mentioned in the Tender Document.

We, the -----Bank at-----
having our Head Office -----

(Local Address) guarantee and undertake to pay immediately on demand by Brahmaputra Cracker & Polymer Limited., the amount -----without any reservation, protest, demur and recourse. Any such demand made by BCPL, shall be conclusive and binding on us irrespective of any dispute or difference raised by the Bidder.

This guarantee shall be irrevocable and shall remain, valid upto----- (This date should be 180 days (One hundred & eighty days) after the date finally set out for closing of tender). If any further extension of this guarantee is required the same shall be extended to such required period on receiving instructions from M/s----- on whose behalf this guarantee is issued.

In Witness whereof the Bank, through its authorized officer, has set its hand and stamp on this ----- day of -----2011 ----- at -----

WITNESS :

(SIGNATURE)
(NAME)

(OFFICIAL ADDRESS)

(SIGNATURE)
(NAME)

Designation with Bank Stamp
Attorney as per _____
Power of Attorney No. _____
Date : _____

PROFORMA FOR BANK GUARANTEE FOR SECURITY DEPOSIT
(ON NON-JUDICIAL PAPER OF APPROPRIATE VALUE)

To
Brahmaputra Cracker & Polymer Ltd.
Main Fire Station Building, BCPL Project Site,
Lepetkata-786007, Dibrugarh
Assam

Dear Sirs,

M/s _____ have been awarded the work of _____ for Brahmaputra Cracker & Polymer Limited, Dibrugarh – 786008, Assam. The Contracts conditions provided that the CONTRACTOR shall pay a sum of Rs----- (Rupees as Initial / full Security Deposit in the form therein mentioned). The form of payment of Security Deposit includes guarantee executed by Nationalized Bank, undertaking full responsibility to indemnify Brahmaputra Cracker & Polymer Limited, in case of default.

The said-----has approached us and at their request and in consideration of the premises we having our office at ----- have agreed to give such guarantee as hereinafter mentioned.

1. We _____ hereby undertake and agree with you that if default shall be made by M/s --- ----- in performing any of the terms and conditions of the tender or in payment of any money payable to Brahmaputra Cracker & Polymer Limited, we shall on demand pay to you in such manner as you may direct the said amount of Rupees----- only or such portion thereof not exceeding the said sum as you may from time to time require.
2. You will have the full liberty without reference to us and without affecting this guarantee, postpone for any time or from time to time the exercise of any of the powers and rights conferred on your under the contract with the said --- -----and to enforce or to forbear from endorsing any powers or rights or by reason of time being given to the said -----which under law relating to the sureties would but for provision have the effect of releasing us.
3. Your right to recover the said sum of Rs----- (Rupees -----) from us in manner aforesaid will not be affected or suspended by reason of the fact that any dispute or disputes have been raised by the said M/s -----and/or that any dispute or disputes are pending before any officer, tribunal or court.
4. The guarantee herein contained shall not be determined or affected by the liquidation or winding up dissolution or changes of constitution or insolvency of the save said but shall in all respects and for all purpose be binding and operative until payment of all money due to you in respect of such liabilities is paid.
5. This guarantee shall be irrevocable and shall remain valid upto-----If any further extension of this guarantee is required the same shall be extended to such required period on receiving instructions from M/s----- on whose behalf this guarantee is issued.
6. We have power to issue this guarantee in your favour under Memorandum and Articles of Association and the undersigned has full power to do under the Power of Attorney dated ----- granted to him by the Bank.

Yours faithfully,

_____ Bank

By its Constituted Attorney Signature of a person
duly authorized to sign on behalf of the Bank.

SCHEDULE OF RATE (SOR)

**EXTERNAL ELECTRIFICATION WORKS OF BCPL
TOWNSHIP FOR M/S BRAHMAPUTRA CRACKER &
POLYMER LIMITED AT LEPETKATA, DIBRUGARH,
ASSAM**

Sl.No.	Description of work	Unit	Qty	Rate		Amount in Words
	TRANSFORMER			(In Figure)	(In Words)	
1.00	Supplying, installation, testing and commissioning of 1500 KVA, 33/0.433 KV Vector Group DYN-11 Copper Wound Transformer with off load tap changer. (For detail spec. check Technical Specification.)	No.	3.00			
2.00	HT PANEL					
	a) Supplying including installation, commissioning of Vermin and dust proof (IP-52 protection) totally enclosed cubical type compartmental floor mounting double door panel board made of 16 SWG(1.66 mm) thick CR sheet and 75 mm x 40 mm x 5 mm size angle iron having 4 Nos legs at the bottom and CR sheet roofing on the top complete painting with 2 coats of Red Oxide metal primer and 2 coats of enamel paint complete and neatly wiring done with provision for 1No. 3P VCB and an Isolator as incoming fitted with one no. IDMTL Relay & 65/10 x 2 Cu Stripe and 3No.s 3P VCB as outgoing. All outgoing should be fitted with a multifunction meter with suitable CTs and on indication lamp as specified and directed by the dept. with provision for earthing trolley. (incoming and Outgoing switch gear of reqd. rating will be measured and paid separately	Set	1.00			
	INCOMING SWITCHGEAR					
	33KV, 1250A, 25KA Horizontal Draw out / Horizontal Isolation Indoor VCB, fitted with Motor operated spring charging mechanism with 230V AC Motor, shunt trip coil of 24V DC, Closing coil of 24V DC, Aux. Contact 3NO+3NC, Mechanical ON/OFF indicator and push button, mechanical operation counter with Inbuilt Mechanical Antipumping Feature.	No.	1.00			
	OUTGOING SWITCHGEAR					
	33KV, 630A, 25KA Horizontal Draw out / Horizontal Isolation Indoor VCB, fitted with Motor operated spring charging mechanism with 230V AC Motor, shunt trip coil of 24V DC, Closing coil of 24V DC, Aux. Contact 3NO+3NC, Mechanical ON/OFF indicator and push button, mechanical operation counter with Inbuilt Mechanical Antipumping Feature.	No.	3.00			

Sl.No.	Description of work	Unit	Qty	Rate		Amount in Words
				(In Figure)	(In Words)	
3.00	HT CONNECTING CABLE					
	Supplying and fixing of 33KV grade 3 core Alluminium Armoured Cable of the following sizes:-					
	a) 300 sq. mm.	RM	30.00			
	b) 150 sq. mm.	RM	55.00			
4.00	HT TERMINATION KIT					
	Supplying with fitting and fixing of 33KV heat shrinkable Cable End indoor/outdoor termination kit for XLPE Alluminium armoured cable of approved make.					
	INDOOR END TERMINATION					
	300 sq. mm	set	1.00			
	150 sq. mm	set	3.00			
	OUTDOOR END TERMINATION					
	300 sq. mm	set	1.00			
	150 sq. mm	set	3.00			
5.00	DCDB PANEL & BATTERY CHARGER					
	a) Supply, Installation, electrolyte filling 24 V D.C, 160 AH batteries made up of suitable nos. of 2V maintenance free batteries. The batteries shall rest on treated wooden planks fabricated from MS angle and free standing floor mounted rack with acid resistant finish and complete with series connecting electrical leads and charging of batteries .The batteries shall be accompanied with hydrometer to test the specific gravity of electrolyte.	No.	1.00			
	b) Supply & erection of suitable battery charger , enclosed in sheet metal with fan on top and it should automatically charge the batteries With booster and trickle charge . Charger shall be complete with incoming & outgoing leads.					
	Input – 230 volts AC + 10 %	No.	1.00			
	Output – float cum boost charge 24 V/160 AH					
	INCOMING SWITCHGEAR					
	Supplying with fitting and fixing DP 10KA 240/415V 50 Hz MCB of the of the following capacity complete with necessary connection as specified and directed by the department					
	i) 32A	No.	1.00			

Sl.No.	Description of work	Unit	Qty	Rate		Amount in Words
				(In Figure)	(In Words)	
	OUTGOING SWITCHGEAR					
	Supplying with fitting and fixing DP 10KA 240/415V 50 Hz MCB of the of the following capacity complete with necessary connection as specified and directed by the department					
	i) 20A	No.	3.00			
	ii) 10A	No.	3.00			
6.00	ACDB PANEL					
	Auxiliary A.C. Distribution board will have one no. 63 amps 4 P MCB as incomer and 3 nos. of 4P MCBs of 25 A, 5 nos. SP MCBs of 6A & 3 nos. SP MCBs of 16A with metal sheet enclosure of 2mm thick and suitably painted with RAL 7032. The unit will be complete with bus bars, accessories, links, terminal strip, clamps etc.	No.	1.00			
7.00	MAIN LT-PANEL					
	Supplying including installation,commissioning of Vermin and dust proof (IP-52 protection) totally enclosed cubical type compartmental floor mounting double door panel board made of 16 SWG(1.66 mm) thick CR sheet and 75 mm x 40 mm x 5 mm size angle iron having 4 Nos legs at the bottom and CR sheet roofing on the top complete painting with 2 coats of Red Oxide metal primer and 2 coats of enamel paint complete and neatly wiring done with provision for 5 Nos 4P Air Circuit Breaker withdrawable design with guide frame (EDO) as incomer and bus coupler and provision for 18 Nos 4PMCCB outgoing .All outgoing should be fitted with Amultifunction meter with suitable CTs and on indication lamp as specified and directed by the dept. (incoming and Outgoing switch gear of reqd.rating will be measured and paid separately	Set	1.00			
	INCOMING SWITCHGEAR					
	Suppling with fitting and fixing panel mounting open execution Icu=Ics=Icw(1sec)=50KA 440 V . 2000 A 4 pole rating In(A) , Ics = 100% Icu, Microprocessor based overload,Short-circuit,instantaneous & Earth-fault protections.ACB (Draw out electrical) as incomer and bus coupler.(Draw-out type circuit breaker with microprocessor based ET6G trip system)	No.	5.00			

Sl.No.	Description of work	Unit	Qty	Rate		Amount in Words
				(In Figure)	(In Words)	
	OUTGOING SWITCHGEAR					
	Suppling with fitting and fixing panel mounting open execution 25KA 415 V 50 Hz 4P MCCB (Ics= Icu, adjustable Ir setting 0.7-1,neutral adjustable with earth fault protecction and with rotary handle) (without enclosure) of the following capacity complete with making necessary connection a specified and directed by the deptt.					
	i) 125A	No.	1.00			
	ii) 100A	No.	1.00			
	iii) 63A	No.	3.00			
	Suppling with fitting and fixing panel mounting open execution 35/36KA 415 V 50 Hz 4P MCCB (Ics= Icu, adjustable Ir setting 0.7-1,neutral adjustable with earth fault protecction and with rotary handle) (without enclosure) of the following capacity complete with making necessary connection a specified and directed by the deptt.					
	i) 160A	No.	2.00			
	ii) 250 A	No.	4.00			
	iii) 315 A (Ics= Icu,adjustable Ir setting 0.5 -1, neutral adjustable)	No.	2.00			
	Suppling with fitting and fixing panel mounting open execution 50KA 415 V 50 Hz 4P MCCB (Ics= Icu, adjustable Ir setting 0.5-1,neutral adjustable with earth fault protecction and with rotary handle) (without enclosure) of the following capacity complete with making necessary connection a specified and directed by the deptt.					
	i) 630 A (Ics= Icu,adjustable Ir setting 0.5 -1, neutral adjustable)	No.	3.00			
	ii) 800 A (Ics= Icu,adjustable Ir setting 0.5 -1, neutral adjustable)	No.	3.00			
8.00	APFC PANEL					
	Supplying, fitting and fixing of an APFC PANEL of 350 KVAR with 12 stage APFC relay automatic/manual Power Factor Correction Panel shall be fabricated out of 2mm CRCA Sheets Modular, compartmentalized, Free Standing, Floor Mounting, Front hinged doors for indoor use, removable bottom gland plates for incoming cables, dust and vrrmin proof (IP: 52 protection) with TP Aluminium Busbars, complete with busbar connection, internal wiring, name plates, painting etc as per specified in the drawing or directed by the dept.	No.	3.00			

Sl.No.	Description of work	Unit	Qty	Rate		Amount in Words
				(In Figure)	(In Words)	
9.00	HIGH MAST					
	Supplying,erection and commissioning of 3 (three) section continuously tapered of 20 sided polygonal cross section presenting good visual appearance 16 M Height High Mast Lantern manufactured out from heavy duty hot dip galvanised sheet as per BS- EN 10025 having a heavy duty hot dip galvanised flange at the bottom of the pole. The sections of the mast structure shall be single longitudinal weldinfng and there shall not be any circumferential welding. The welding between mast shaft and flange shall be done by submerged arc welding (SAW) process. The mast is to be incorporated with anchor plate, anchor nuts and bolts. Intern carriage,SS rope power tool motor, double winch gear, head frame, finial, aviation light, multi pairs cable, luminaries etc. along with the control feeder panel. The mast is to be erected in M 20 grade RCC founding as per enclosed design and drawing.(PHILLIPS /CROMPTON/BAJAJ MAKE) The technical specification of Mast are shown as following :	No.	2.00			
	CAT. Ref. RVP 302/2XH PI-T 400 WATT (LAMP TYPE)					
	CAT. Ref. XGP 400 IXLED-K2/RD 240V (LED AVIATION LIGHT)					
	Technical Data for 16 meters high mast and components					
	1) HIGH MAST STRUCTURE					
	a) Height of Mast Height make = 16 mtrs as approved by the deptt					
	b) Matreials construction = BS -EN 10025					
	c)Thickness(in mm) : Top = 3 mm, Bottom = 4 mm					
	d) Cross section of Mast in Polygon (Number of side) = 20 sides					
	e) Length of individual section (in mtrs) = Top = 5.60m approx. bottom = 10.90m approx					
	f)Base dia and top diameter = Top diameter - 150 mm, Bottom diameter - 460 mm					
	g) Type of joints = street fit joint					
	h) Length of overlap = 0.50 Mt approx					
	i) Metal protection treatment for Mast section = Hot dip galvanised					
	j) Thickness of galvanisation(min) = 65 Micron: Top & Bottom					

k) Details of slack board inside the base compartment = Resin bonded plywood 600 mm x 200 mm x 8 mm					
l) Arrangement for cable transmission = TPN isolator					
m) Thickness of base plate = 25 mm					
n) Size of anchor plate and thickness = Uniform PCD of 590 mm					
o) Details of template = Uniform PCD of 590 mm					
p) Weight in kgs of 20 mtr mast (including base plate door, head frame)= 750 kgs approx					
q) Lightening protection final = To be provided					
2) DYNAMICAL LOADING AS PREVAILING					
a) Max wind speed = As per IS- 875 part 3 1987					
b) Max gust speed time are measured = 3 seconds					
c) Height above ground level these two factors = 10 mtr					
d) Factor of safety for wind load = 1.25					
e) Factor of safety for other load = 1.15					
3 LANTERN CARRIAGE					
a) Materials of construction = class BMS Tubes					
b) Diameter of carriage ring (mm) = 710/2300 mm approx					
c) Construction = To suit Requirement					
d) Number of Joint = 1(one)					
e) Buffer arrangement between carriage and mast = PVC sleeve on carriage					
f) Load carrying capacity = 750 kg					
g) Total weight of assembly with fitting = as per no of luminaries					
h) Number of fitting = 2 x 400 W HPSV luminaries = 6 Nos					
4 WINCH					
a) Make or winch number of drums/winch = Double drum type					
b) Make or winch number of drums/winch = 53:1					
c) Capacity = 750 kgs approx					
d) Operating speed = 180 RPM					
e) Individual drum rotation = Easily Possible					
f) Method of operation = Manual/Electrical					
g) Lubrication arrangement = Parliament oil bath					
h) Type of lubricant = ASE 40/90					
i) Gear material = cast iron					
j) Tested load per drum (kg) = 750 kgs/Drum 1500 kgs for winch					

	k) SWL of winch at 200 rpm= 750 kgs					
	5 STAINLESS STEEL WIRE ROPE					
	a) Make= BW Ltd					
	b) Grade =AISI 316					
	c) Number of Ropes = 2 continuos rope					
	d) Construction = 7 /19					
	e) Centre core Material = SS Core					
	f) Diameter(mm) = 6 mm					
	g) Thimbles & Talurit = SS Thimble, Copper Talurit					
	h) Braking load capacity = 2350 kgsx 2					
	i) Factor safety = 5 for system full load					
	6 POWER TOOL					
	a) Model = Integral					
	b) Input supply= 415 volts					
	c) Wattage/HP = 1100 watts					
	d) Number of speeds = single speed					
	e) Operating speed = 1440 RPM					
	f) Control system = Push button					
	7 TORQUE KUNUTER					
	a) Lifting capacity = up to 750 kgs					
	b) Adjustable/ Non Adjustable					
	c) Tripping Device = Mechanical					
10.00	X-BLOCK FEEDER PANEL					
	Fabrication, Supplying including installation,commissioning of outdoor type,weather proof suitable for operation in humid dusty and tropical condition having bottom entry for cables (IP-65 protection) totally enclosed cubical type compartmental floor mounting with closed bus bar chamber mounted on M.S. angle incorporating 200 Amp 4P bus bar of copper having suitable current density and proper dimensions . On Earthing bus bar of copper shall be incorporated. The entire panel totally enclosed made out of 1.6mm thick M.S. metal decent folded and welded. The Construction dimensionally accurate to accommodate different electrical equipments of MLTP with two coats of red oxide metal primer and 2 coats of enamel paint.The panel board is to be erected in 1:3:6 PCC foundation including excavation of trench and brick soling etc.complete neatly wiring done with provision for one no incomer MCCB and provision for 6 nos 4P MCB out going as specified and directed by the deptt. The interior of the cubicle accessible through the appropriately two nos. of hinged doors with lock/screw.	No.	1.00			

Sl.No.	<u>Description of work</u>	<u>Unit</u>	<u>Qty</u>	<u>Rate</u>		<u>Amount in Words</u>
				<u>(In Figure)</u>	<u>(In Words)</u>	
	The cubicle accommodates the required nos. of cable and bores. The crimping of the cable gland done proper size of cable gland and at point of termination of all incoming and outgoing cables. All the nuts and bolts nickel coated iron using both spring washers. One danger notice plate mounted in front of the cubical. Including M.F. meter and 150/5A CT one set and one set of indicator lamps etc. complete as required.(out panel)					
	INCOMING SWITCHGEAR					
	Suppling with fitting and fixing panel mounting open execution 25KA 415 V 50 Hz 4P MCCB (Ics= Icu, adjustable Ir setting 0.7-1,neutral adjustable with earth fault protection and with rotary handle) (without enclosure) of the following capacity complete with making necessary connection a specified and directed by the deptt.					
	i) 125 A	No.	1.00			
	OUTGOING SWITCHGEAR					
	Suppling with fitting and fixing 4pole 10KA 415V MCB of the following capacity complete with making necessary connection as specified and directed by the the by the deptt.					
	i) 40A	No.	7.00			
11.00	MFP A-BLOCK Fabrication, Supplying including installation,commissioning of outdoor type,weather proof suitable for operation in humid dusty and tropical condition having bottom entry for cables (IP-65 protection) totally enclosed cubical type compartmental floor mounting with closed bus bar chamber mounted on M.S. angle incorporating 200 Amp 4P bus bar of copper having suitable current density and proper dimensions . On Earthing bus bar of copper shall be incorporated. The entire panel totally enclosed made out of 1.6mm thick M.S. metal decent folded and welded. The Construction dimensionally accurate to accommodate different electrical equipments of MLTP with two coats of red oxide metal primer and 2 coats of enamel paint.The panel board is to be erected in 1:3:6 PCC foundation including excavation of trench and brick soling etc.complete neatly wiring done with provision for one no incomer MCCB and provision for 1 nos 4P MCB & 2 nos 4P MCCB out going as	No.	1.00			

Sl.No.	Description of work	Unit	Qty	Rate		Amount in Words
				(In Figure)	(In Words)	
		-	-			-
	specified and directed by the deptt. The interior of the cubicle accessible through the appropriately two nos. of hinged doors with lock/screw.					
	The cubicle accommodates the required nos. of cable and bores. The crimping of the cable gland done proper size of cable gland and at point of termination of all incoming and outgoing cables. All the nuts and bolts nickel coated iron using both spring washers. One danger notice plate mounted in front of the cubical. Including M.F. meter and 200/5A CT one set and one set of indicator lamps etc. complete as required.(outdoor panel)					
	(Outgoing switch gear of reqd.rating will be measured and paid separately					
	INCOMING SWITCHGEAR					
	Suppling with fitting and fixing panel mounting open execution 35/36KA 415 V 50 Hz 4P MCCB (Ics= Icu, adjustable Ir setting 0.7-1) (without enclosure) of the following capacity complete with making necessary connection a specified and directed by the deptt.					
	i) 160A	No.	1.00			
	OUTGOING SWITCHGEAR					
	Suppling with fitting and fixing panel mounting open execution 25KA 415 V 50 Hz 4P MCCB (Ics= Icu, adjustable Ir setting 0.7-1) (without enclosure) of the following capacity complete with making necessary connection a specified and directed by the deptt.					
	i) 63A	No.	2.00			
	Suppling with fitting and fixing 4pole 10KA 415V 50Hz MCB Conforming to IS/IEC 60898-1:2002 of the following capacity complete with making necessary connection as specified and directed by the department.					
	i) 40A	No.	1.00			

Sl.No.	Description of work	Unit	Qty	Rate		Amount in Words
				(In Figure)	(In Words)	
12.00	GATE HOUSE FEEDER PANEL - 2					
	Fabrication, Supplying including installation, commissioning of outdoor type, weather proof suitable for operation in humid dusty and tropical condition having bottom entry for cables (IP-65 protection) totally enclosed cubical type compartmental floor mounting with closed bus bar chamber mounted on M.S. angle incorporating 100 Amp 4P bus bar of copper having suitable current density and proper dimensions. On Earthing bus bar of copper shall be incorporated. The entire panel totally enclosed made out of 1.6mm thick M.S. metal decent folded and welded. The Construction dimensionally accurate to accommodate different electrical equipments of MLTP with two coats of red oxide metal primer and 2 coats of enamel paint. The panel board is to be erected in 1:3:6 PCC foundation including excavation of trench and brick soling etc. complete neatly wiring done with provision for one no incomer MCCB and provision for 6 nos 4P MCB out going as specified and directed by the deptt. The interior of the cubicle accessible through the appropriately two nos. of hinged doors	No.	1.00			
	with lock/screw.					
	The cubicle accommodates the required nos. of cable and bores. The crimping of the cable gland done proper size of cable gland and at point of termination of all incoming and outgoing cables. All the nuts and bolts nickel coated iron using both spring washers. One danger notice plate mounted in front of the cubical. Including M.F. meter and 150/5A CT one set and one set of indicator lamps etc. complete as required.(outdoor panel)					
	(Outgoing switch gear of reqd. rating will be measured and paid separately					
	INCOMING SWITCHGEAR					
	Suppling with fitting and fixing panel mounting open execution 25KA 415 V 50 Hz 4P MCCB (Ics= Icu, adjustable Ir setting 0.7-1, neutral adjustable with earth fault protection and with rotary handle) (without enclosure) of the following capacity complete with making necessary connection as specified and directed by the deptt.					

Sl.No.	Description of work	Unit	Qty	Rate		Amount in Words
				(In Figure)	(In Words)	
	i) 100 A	No.	1.00			
	OUTGOING SWITCHGEAR					
	Suppling with fitting and fixing 4pole 10KA 415V 50Hz MCB Conforming to IS/IEC 60898-1:2002 of the following capacity complete with making necessary connection as specified and directed by the department.					
	i) 16A	No.	4.00			
	ii) 32A	No.	1.00			
	iii) 63A	No.	1.00			
13.00	GATE HOUSE FEEDER PANEL - 1					
	Fabrication, Supplying including installation,commissioning of outdoor type,weather proof suitable for operation in humid dusty and tropical condition having bottom entry for cables (IP-65 protection) totally enclosed cubical type compartmental floor mounting with closed bus bar chamber mounted on M.S. angle incorporating 100 Amp 4P bus bar of copper having suitable current density and proper dimensions . On Earthing bus bar of copper shall be incorporated. The entire panel totally enclosed made out of 1.6mm thick M.S. metal decent folded and welded. The Construction dimensionally accurate to accommodate different electrical equipments of MLTP with two coats of red oxide metal primer and 2 coats of enamel paint.The panel board is to be erected in 1:3:6 PCC foundation including excavation of trench and brick soling etc.complete neatly wiring done with provision for one no incomer MCCB and provision for 6 nos 4P MCB out going as specified and directed by the deptt. The interior of the cubicle accessible through the appropriately two nos. of hinged doors with lock/screw.	No.	1.00			
	The cubicle accommodates the required nos. of cable and bores. The crimping of the cable gland done proper size of cable gland and at point of termination of all incoming and outgoing cables. All the nuts and bolts nickel coated iron using both spring washers. One danger notice plate mounted in front of the cubical. Including M.F. meter and 100/5A CT one set and one set of indicator lamps etc. complete as required.(outdoor panel)					

Sl.No.	Description of work	Unit	Qty	Rate		Amount in Words
				(In Figure)	(In Words)	
	(Outgoing switch gear of reqd.rating will be measured and paid separtely					
	INCOMING SWITCHGEAR					
	Suppling with fitting and fixing panel mounting open execution 25KA 415 V 50 Hz 4P MCCB (Ics= Icu, adjustable Ir setting 0.7-1,neutral adjustable with earth fault protecction and with rotary handle) (without enclosure) of the following capacity complete with making necessary connection a specified and directed by the deptt.					
	i) 63A	No.	1.00			
	OUTGOING SWITCHGEAR					
	Suppling with fitting and fixing 4pole 10KA 415V 50Hz MCB Conforming to IS/IEC 60898-1:2002 of the following capacity complete with making necessary connection as specified and directed by the department.					
	i) 16A	No.	3.00			
	ii) 40A	No.	1.00			
	iii) 63A	No.	1.00			
14.00	MFP D-BLOCK					
	Fabrication, Supplying including installation,commissioning of outdoor type,weather proof suitable for operation in humid dusty and tropical condition having bottom entry for cables (IP-65 protection) totally enclosed cubical type compartmental floor mounting with closed bus bar chamber mounted on M.S. angle incorporating 400 Amp 4P bus bar of copper having suitable current density and proper dimensions . On Earthing bus bar of copper shall be incorporated. The entire panel totally enclosed made out of 1.6mm thick M.S. metal decent folded and welded. The Construction dimensionally accurate to accommodate different electrical equipments of MLTP with two coats of red oxide metal primer and 2 coats of enamel paint.The panel board is to be errected in 1:3:6 PCC foundation including excavation of trench and brick soling etc.complete neatly wiring done with provision for one no incomer MCCB and provision for 1 nos 4P MCB & 2 nos 4P MCCB out going as specified and directed by the deptt. The interior of the cubicle accessible through the appropriately two nos. of hinged doors with lock/screw.	No.	1.00			

Sl.No.	<u>Description of work</u>	<u>Unit</u>	<u>Qty</u>	<u>Rate</u>		<u>Amount in Words</u>
				(In Figure)	(In Words)	
		-	-			-
	The cubicle accommodates the required nos. of cable and bores. The crimping of the cable gland done proper size of cable gland and at point of termination of all incoming and outgoing cables. All the nuts and bolts nickel coated iron using both spring washers. One danger notice plate mounted in front of the cubical. Including M.F. meter and 400/5A CT one set and one set of indicator lamps etc. complete as required.(outdoor panel)					
	(Outgoing switch gear of reqd.rating will be measured and paid separately					
	INCOMING SWITCHGEAR					
	Suppling with fitting and fixing panel mounting open execution 35/36KA 415 V 50 Hz 4P MCCB (Ics= Icu, adjustable Ir setting 0.7-1) (without enclosure) of the following capacity complete with making necessary connection a specified and directed by the deptt.					
	i) 250 A	No.	1.00			
	OUTGOING SWITCHGEAR					
	Suppling with fitting and fixing panel mounting open execution 25KA 415 V 50 Hz 4P MCCB (Ics= Icu, adjustable Ir setting 0.7-1) (without enclosure) of the following capacity complete with making necessary connection a specified and directed by the deptt.					
	i) 100A	No.	1.00			
	Suppling with fitting and fixing panel mounting open execution 35/36KA 415 V 50 Hz 4P MCCB (Ics= Icu, adjustable Ir setting 0.7-1) (without enclosure) of the following capacity complete with making necessary connection a specified and directed by the deptt.					
	i) 160A	No.	1.00			
	Suppling with fitting and fixing 4pole 10KA 415V 50Hz MCB Conforming to IS/IEC 60898-1:2002 of the following capacity complete with making necessary connection as specified and directed by the department.					
	i) 40A	No.	1.00			

Sl.No.	<u>Description of work</u>	<u>Unit</u>	<u>Qty</u>	<u>Rate</u>		<u>Amount in Words</u>
				(In Figure)	(In Words)	
15.00	MAIN FEEDER PANEL STREET LIGHT					
	Fabrication, Supplying including installation, commissioning of indoor type (IP-52 protection) totally enclosed cubical type compartmental floor mounting with closed bus bar chamber mounted on M.S. angle incorporating 200 Amp 4P bus bar of copper having suitable current density and proper dimensions . On Earthing bus bar of copper shall be incorporated. The entire panel totally enclosed made out of 1.6mm thick M.S. metal decent folded and welded. The Construction dimensionally accurate to accommodate different electrical equipments of MLTP with two coats of red oxide metal primer and 2 coats of enamel paint. The panel board is to be erected in 1:3:6 PCC foundation including excavation of trench and brick soling etc. complete neatly wiring done with provision for one no incomer MCCB and provision for 6 nos 4P MCB out going and a timer circuit along with push button start/stop switch as specified and directed by the depts. The interior of the cubicle accessible through the appropriately two nos. of hinged doors with lock/screw.	No.	1.00			
	The cubicle accommodates the required nos. of cable and bores. The crimping of the cable gland done proper size of cable gland and at point of termination of all incoming and outgoing cables. All the nuts and bolts nickel coated iron using both spring washers. One danger notice plate mounted in front of the cubical. Including M.F. meter and 200/5A CT one set and one set of indicator lamps etc. complete as required.(outdoor panel)					
	(Outgoing switch gear of reqd. rating will be measured and paid separately)					
	INCOMING SWITCHGEAR					
	Supplying with fitting and fixing panel mounting open execution 25KA 415 V 50 Hz 4P MCCB (Ics= Icu, adjustable Ir setting 0.7-1, neutral adjustable with earth fault protection and with rotary handle) (without enclosure) of the following capacity complete with making necessary connection as specified and directed by the depts.					
	i) 160 A	No.	1.00			

Sl.No.	Description of work	Unit	Qty	Rate		Amount in Words
				(In Figure)	(In Words)	
	OUTGOING SWITCHGEAR					
	Suppling with fitting and fixing 4pole 10KA 415V 50Hz MCB Conforming to IS/IEC 60898-1:2002 of the following capacity complete with making necessary connection as specified and directed by the department.					
	i) 32A	No.	1.00			
	ii) 40A	No.	3.00			
	iii) 63A	No.	1.00			
	iv) 100A	No.	2.00			
16.00	SUB-STREET LIGHT FEEDER PANEL					
	Fabrication, Supplying including installation,commissioning of outdoor type,weather proof suitable for operation in humid dusty and tropical condition having bottom entry for cables (IP-65 protection) totally enclosed cubical type compartmental floor mounting with closed bus bar chamber mounted on M.S. angle incorporating 100 Amp 4P bus bar of copper having suitable current density and proper dimensions . On Earthing bus bar of copper shall be incorporated. The entire panel totally enclosed made out of 1.6mm thick M.S. metal decent folded and welded. The Construction dimensionally accurate to accommodate different electrical equipments of MLTP with two coats of red oxide metal primer and 2 coats of enamel paint.The panel board is to be erected in 1:3:6 PCC foundation including excavation of trench and brick soling etc.complete neatly wiring done with provision for one no incomer MCB and provision for 5 nos 4P MCB out going as specified and directed by the deptt. The interior of the cubicle accessible through the appropriately two nos. of hinged doors with lock/screw.	No.	1.00			
	The cubicle accommodates the required nos. of cable and bores. The crimping of the cable gland done proper size of cable gland and at point of termination of all incoming and outgoing cables. All the nuts and bolts nickel coated iron using both spring washers. One danger notice plate mounted in front of the cubical. Including M.F. meter and 100/5A CT one set and one set of indicator lamps etc. complete as required.(outdoor panel)					

Sl.No.	Description of work	Unit	Qty	Rate		Amount in Words
				(In Figure)	(In Words)	
	(Outgoing switch gear of reqd.rating will be measured and paid separately)					
	INCOMING SWITCHGEAR					
	Suppling with fitting and fixing 4pole 10KA 415V 50Hz MCB Conforming to IS/IEC 60898-1:2002 of the following capacity complete with making necessary connection as specified and directed by the department.					
	i) 100 A	No.	1.00			
	OUTGOING SWITCHGEAR					
	Suppling with fitting and fixing 4pole 10KA 415V 50Hz MCB Conforming to IS/IEC 60898-1:2002 of the following capacity complete with making necessary connection as specified and directed by the department.					
	i) 25A	No.	1.00			
	ii) 32A	No.	1.00			
	iii) 40A	No.	3.00			
17.00	STFP-1					
	Fabrication, Supplying including installation,commissioning of outdoor type,weather proof suitable for operation in humid dusty and tropical condition having bottom entry for cables (IP-65 protection) totally enclosed cubical type compartmental floor mounting with closed bus bar chamber mounted on M.S. angle incorporating 100 Amp 4P bus bar of copper having suitable current density and proper dimensions . On Earthing bus bar of copper shall be incorporated. The entire panel totally enclosed made out of 1.6mm thick M.S. metal decent folded and welded. The Construction dimensionally accurate to accommodate different electrical equipments of MLTP with two coats of red oxide metal primer and 2 coats of enamel paint.The panel board is to be erected in 1:3:6 PCC foundation including excavation of trench and brick soling etc.complete neatly wiring done with provision for one no incomer MCB and provision for 5 nos 4P MCB out going as specified and directed by the deptt. The interior of the cubicle accessible through the appropriately two nos. of hinged doors with lock.	No.	1.00			
	The cubicle accommodates the required nos. of cable and bores. The crimping of the cable gland done proper size of cable gland and at point					

Sl.No.	Description of work	Unit	Qty	Rate		Amount in Words
				(In Figure)	(In Words)	
	of termination of all incoming and outgoing cables. All the nuts and bolts nickel coated iron using both spring washers. One danger notice plate mounted in front of the cubical. Including M.F. meter and 100/5A CT one set and one set of indicator lamps etc. complete as required.(out panel)					
	INCOMING SWITCHGEAR					
	Suppling with fitting and fixing 4pole 10KA 415V 50Hz MCB Conforming to IS/IEC 60898-1:2002 of the following capacity complete with making necessary connection as specified and directed by the department.					
	i) 63 A	No.	1.00			
	OUTGOING SWITCHGEAR					
	Suppling with fitting and fixing 4pole 10KA 415V 50Hz MCB Conforming to IS/IEC 60898-1:2002 of the following capacity complete with making necessary connection as specified and directed by the department.					
	i) 16A	No.	4.00			
	ii) 25A	No.	2.00			
18.00	STFP-2					
	Fabrication, Supplying including installation,commissioning of outdoor type,weather proof suitable for operation in humid dusty and tropical condition having bottom entry for cables (IP-65 protection) totally enclosed cubical type compartmental floor mounting with closed bus bar chamber mounted on M.S. angle incorporating 100 Amp 4P bus bar of copper having suitable current density and proper dimensions . On Earthing bus bar of copper shall be incorporated. The entire panel totally enclosed made out of 1.6mm thick M.S. metal decent folded and welded. The Construction dimensionally accurate to accommodate different electrical equipments of MLTP with two coats of red oxide metal primer and 2 coats of enamel paint.The panel board is to be erected in 1:3:6 PCC foundation including excavation of trench and brick soling etc.complete neatly wiring done with provision for one no incomer MCB and provision for 4 nos 4P MCB out going as specified and directed by the deptt. The interior of the cubicle accessible through the appropriately two nos. of hinged doors with lock.	No.	1.00			

Sl.No.	Description of work	Unit	Qty	Rate		Amount in Words
				(In Figure)	(In Words)	
	The cubicle accommodates the required nos. of cable and bores. The crimping of the cable gland done proper size of cable gland and at point of termination of all incoming and outgoing cables. All the nuts and bolts nickel coated iron using both spring washers. One danger notice plate mounted in front of the cubical. Including M.F. meter and 50/5A CT one set and one set of indicator lamps etc. complete as required.(out panel)					
	INCOMING SWITCHGEAR					
	Suppling with fitting and fixing 4pole 10KA 415V 50Hz MCB Conforming to IS/IEC 60898-1:2002 of the following capacity complete with making necessary connection as specified and directed by the department.					
	i) 40 A	No.	1.00			
	OUTGOING SWITCHGEAR					
	Suppling with fitting and fixing 4pole 10KA 415V 50Hz MCB Conforming to IS/IEC 60898-1:2002 of the following capacity complete with making necessary connection as specified and directed by the department.					
	i) 16A	No.	4.00			
	ii) 25A	No.	1.00			
19.00	STFP-3 Fabrication, Supplying including installation,commissioning of outdoor type,weather proof suitable for operation in humid dusty and tropical condition having bottom entry for cables (IP-65 protection) totally enclosed cubical type compartmental floor mounting with closed bus bar chamber mounted on M.S. angle incorporating 100 Amp 4P bus bar of copper having suitable current density and proper dimensions . On Earthing bus bar of copper shall be incorporated. The entire panel totally enclosed made out of 1.6mm thick M.S. metal decent folded and welded. The Construction dimensionally accurate to accommodate different electrical equipments of MLTP with two coats of red oxide metal primer and 2 coats of enamel paint.The panel board is to be erected in 1:3:6 PCC foundation including excavation of trench and brick soling etc.complete neatly wiring done with provision for one no incomer					

Sl.No.	<u>Description of work</u>	<u>Unit</u>	<u>Qty</u>	<u>Rate</u>		<u>Amount in Words</u>
				(In Figure)	(In Words)	
		-	-			-
	MCB and provision for 6 nos 4P MCB out going as specified and directed by the deptt. The interior of the cubicle accessible through the appropriately two nos. of hinged doors with lock/screw.	No.	1.00			
	The cubicle accommodates the required nos. of cable and bores. The crimping of the cable gland done proper size of cable gland and at point of termination of all incoming and outgoing cables. All the nuts and bolts nickel coated iron using both spring washers. One danger notice plate mounted in front of the cubical. Including M.F. meter and 50/5A CT one set and one set of indicator lamps etc. complete as required.(outdoor panel)					
	(Outgoing switch gear of reqd.rating will be measured and paid sepately					
	INCOMING SWITCHGEAR					
	Suppling with fitting and fixing 4pole 10KA 415V 50Hz MCB Conforming to IS/IEC 60898-1:2002 of the following capacity complete with making necessary connection as specified and directed by the department.					
	i) 40 A	No.	1.00			
	OUTGOING SWITCHGEAR					
	Suppling with fitting and fixing 4pole 10KA 415V 50Hz MCB Conforming to IS/IEC 60898-1:2002 of the following capacity complete with making necessary connection as specified and directed by the department.					
	i) 16A	No.	7.00			
20.00	STFP-4 Fabrication, Supplying including installation,commissioning of outdoor type,weather proof suitable for operation in humid dusty and tropical condition having bottom entry for cables (IP-65 protection) totally enclosed cubical type compartmental floor mounting with closed bus bar chamber mounted on M.S. angle incorporating 100 Amp 4P bus bar of copper having suitable current density and proper dimensions . On Earthing bus bar of copper shall be incorporated. The entire panel totally enclosed made out of 1.6mm thick M.S. metal decent folded and welded. The Construction					

Sl.No.	Description of work	Unit	Qty	Rate		Amount in Words
				(In Figure)	(In Words)	
		-	-			-
	dimensionally accurate to accommodate different electrical equipments of MLTP with two coats of red oxide metal primer and 2 coats of enamel paint. The panel board is to be erected in 1:3:6 PCC foundation including excavation of trench and brick soling etc. complete neatly wiring done with provision for one no incomer MCB and provision for 3 nos 4P MCB out going as specified and directed by the deptt. The interior of the cubicle accessible through the appropriately two nos. of hinged doors with lock/screw.	No.	1.00			
	The cubicle accommodates the required nos. of cable and bores. The crimping of the cable gland done proper size of cable gland and at point of termination of all incoming and outgoing cables. All the nuts and bolts nickel coated iron using both spring washers. One danger notice plate mounted in front of the cubical. Including M.F. meter and 50/5A CT one set and one set of indicator lamps etc. complete as required.(outdoor panel)					
	(Outgoing switch gear of reqd.rating will be measured and paid separately					
	INCOMING SWITCHGEAR					
	Suppling with fitting and fixing 4pole 10KA 415V 50Hz MCB Conforming to IS/IEC 60898-1:2002 of the following capacity complete with making necessary connection as specified and directed by the department.					
	i) 40 A	No.	1.00			
	OUTGOING SWITCHGEAR					
	Suppling with fitting and fixing 4pole 10KA 415V 50Hz MCB Conforming to IS/IEC 60898-1:2002 of the following capacity complete with making necessary connection as specified and directed by the department.					
	i) 16A	No.	3.00			
	ii) 25A	No.	1.00			

Sl.No.	<u>Description of work</u>	<u>Unit</u>	<u>Qty</u>	<u>Rate</u>		<u>Amount in Words</u>
				(In Figure)	(In Words)	
21.00	STFP-5					
	Fabrication, Supplying including installation, commissioning of outdoor type, weather proof suitable for operation in humid dusty and tropical condition having bottom entry for cables (IP-65 protection) totally enclosed cubical type compartmental floor mounting with closed bus bar chamber mounted on M.S. angle incorporating 100 Amp 4P bus bar of copper having suitable current density and proper dimensions. On Earthing bus bar of copper shall be incorporated. The entire panel totally enclosed made out of 1.6mm thick M.S. metal decent folded and welded. The Construction dimensionally accurate to accommodate different electrical equipments of MLTP with two coats of red oxide metal primer and 2 coats of enamel paint. The panel board is to be erected in 1:3:6 PCC foundation including excavation of trench and brick soling etc. complete neatly wiring done with provision for one no incomer MCB and provision for 6 nos 4P MCB out going as specified and directed by the deptt. The interior of the cubicle accessible through the appropriately two nos. of hinged doors with lock/screw.	No.	1.00			
	The cubicle accommodates the required nos. of cable and bores. The crimping of the cable gland done proper size of cable gland and at point of termination of all incoming and outgoing cables. All the nuts and bolts nickel coated iron using both spring washers. One danger notice plate mounted in front of the cubical. Including M.F. meter and 50/5A CT one set and one set of indicator lamps etc. complete as required. (outdoor panel)					
	(Outgoing switch gear of reqd. rating will be measured and paid separately)					
	INCOMING SWITCHGEAR					
	Supplying with fitting and fixing 4pole 10KA 415V 50Hz MCB Conforming to IS/IEC 60898-1:2002 of the following capacity complete with making necessary connection as specified and directed by the department.					

Sl.No.	Description of work	Unit	Qty	Rate		Amount in Words
				(In Figure)	(In Words)	
	i) 40 A	No.	1.00			-
	OUTGOING SWITCHGEAR					
	Suppling with fitting and fixing 4pole 10KA 415V 50Hz MCB Conforming to IS/IEC 60898-1:2002 of the following capacity complete with making necessary connection as specified and directed by the department.					
	i) 16A	No.	3.00			
	ii) 25A	No.	4.00			
22.00	STFP-6					
	Fabrication, Supplying including installation, commissioning of outdoor type, weather proof suitable for operation in humid dusty and tropical condition having bottom entry for cables (IP-65 protection) totally enclosed cubical type compartmental floor mounting with closed bus bar chamber mounted on M.S. angle incorporating 100 Amp 4P bus bar of copper having suitable current density and proper dimensions . On Earthing bus bar of copper shall be incorporated. The entire panel totally enclosed made out of 1.6mm thick M.S. metal decent folded and welded. The Construction dimensionally accurate to accommodate different electrical equipments of MLTP with two coats of red oxide metal primer and 2 coats of enamel paint. The panel board is to be erected in 1:3:6 PCC foundation including excavation of trench and brick soling etc. complete neatly wiring done with provision for one no incomer MCB and provision for 4 nos 4P MCB out going as specified and directed by the deptt. The interior of the cubicle accessible through the appropriately two nos. of hinged doors with lock/screw.	No.	1.00			
	The cubicle accommodates the required nos. of cable and bores. The crimping of the cable gland done proper size of cable gland and at point of termination of all incoming and outgoing cables. All the nuts and bolts nickel coated iron using both spring washers. One danger notice plate mounted in front of the cubical. Including M.F. meter and 50/5A CT one set and one set of indicator lamps etc. complete as required.(outdoor panel)					
	(Outgoing switch gear of reqd.rating will be measured and paid separetely					

Sl.No.	Description of work	Unit	Qty	Rate		Amount in Words
				(In Figure)	(In Words)	
	INCOMING SWITCHGEAR					
	Suppling with fitting and fixing 4pole 10KA 415V 50Hz MCB Conforming to IS/IEC 60898-1:2002 of the following capacity complete with making necessary connection as specified and directed by the department.					
	i) 40 A	No.	1.00			
	OUTGOING SWITCHGEAR					
	Suppling with fitting and fixing 4pole 10KA 415V 50Hz MCB Conforming to IS/IEC 60898-1:2002 of the following capacity complete with making necessary connection as specified and directed by the department.					
	i) 16A	No.	3.00			
	ii) 25A	No.	2.00			
23.00	STFP-7					
	Fabrication, Supplying including installation,commissioning of outdoor type,weather proof suitable for operation in humid dusty and tropical condition having bottom entry for cables (IP-65 protection) totally enclosed cubical type compartmental floor mounting with closed bus bar chamber mounted on M.S. angle incorporating 100 Amp 4P bus bar of copper having suitable current density and proper dimensions . On Earthing bus bar of copper shall be incorporated. The entire panel totally enclosed made out of 1.6mm thick M.S. metal decent folded and welded. The Construction dimensionally accurate to accommodate different electrical equipments of MLTP with two coats of red oxide metal primer and 2 coats of enamel paint.The panel board is to be erected in 1:3:6 PCC foundation including excavation of trench and brick soling etc.complete neatly wiring done with provision for one no incomer MCB and provision for 5 nos 4P MCB out going as specified and directed by the deptt. The interior of the cubicle accessible through the appropriately two nos. of hinged doors with lock/screw.	No.	1.00			

Sl.No.	Description of work	Unit	Qty	Rate		Amount in Words
				(In Figure)	(In Words)	
		-	-			-
	The cubicle accommodates the required nos. of cable and bores. The crimping of the cable gland done proper size of cable gland and at point of termination of all incoming and outgoing cables. All the nuts and bolts nickel coated iron using both spring washers. One danger notice plate mounted in front of the cubical. Including M.F. meter and 100/5A CT one set and one set of indicator lamps etc. complete as required.(outdoor panel)					
	(Outgoing switch gear of reqd.rating will be measured and paid separately					
	INCOMING SWITCHGEAR					
	Suppling with fitting and fixing 4pole 10KA 415V 50Hz MCB Conforming to IS/IEC 60898-1:2002 of the following capacity complete with making necessary connection as specified and directed by the department.					
	i) 100 A	No.	1.00			
	OUTGOING SWITCHGEAR					
	Suppling with fitting and fixing 4pole 10KA 415V 50Hz MCB Conforming to IS/IEC 60898-1:2002 of the following capacity complete with making necessary connection as specified and directed by the department.					
	i) 16A	No.	3.00			
	ii) 25A	No.	2.00			
	iii) 40A	No.	1.00			
24.00	STREET LIGHT					
	Supply, Installation, Testing and commissioning in complete including lamps, pole JB etc. a)Streetlighting luminaire type SGP 401, a pressure die-cast aluminium luminaire suitable for use with 1 x SON-T 150W	each	375.00			
	1. Single piece high-pressure die-cast aluminium housing with low copper content for sturdiness and excellent corrosion resistance					
	2. The lamp compartment consists of electrochemically brightened and anodized, high purity POT reflector for efficient distribution.					

Sl.No.	Description of work	Unit	Qty	Rate		Amount in Words
				(In Figure)	(In Words)	
		-	-			-
	3. Heat resistant toughened flat glass covers for glare free lighting.					
	4. The flat glass cover is fixed to the housing with two number stainless steel hinges and three number stainless steel clips					
	for maintaining contact pressure throughout life offering IP 65 LEVEL OF INGRESS PROTECTION FOR THE LAMP AS					
	WELL AS GEAR COMPARTMENT.					
	b) Specifications for 10 mtr GI octagonal Pole	each	375.00			
	Polygonal poles shall be designed as per ILE TR7 & BS5649 for structural design & as per IS875 (Part III), 1987 for dynamic loading.					
	The pole shaft shall be made single piece MS structure continuously tapered having polygonal (8/12 sides) cross section					
	and a single longitudinal welding. The welding will be done as per BS 5135 / IS 9595. No circumferential welding shall be					
	allowed in the pole shaft. The MS shall conform to BSEN 100025/100027. The structure shall be single hot dip galvanized					
	as per BS 729 / IS 2629. A suitably designed door shall be provided at approximate 600mm height from the pole base. The					
	door opening will be suitably reinforced for structural strength. The door shall be flushed with pole external surface and shall					
	provide easy access for electrical connections at a maintainable height. A Suitable base flange and a top flange will be					
	welded and suitable reinforcements will be provided. Foundation accessories will be as per IS 1367.					
	Dimensional Data:					
	1. MS sheet thickness: 3 mm					
	2. Galvanization thickness: 65 Microns (min.)					
	3. Door size: 250 mm x 75mm					
	4. Pole Height: 10 M					
	5. Top diameter.:75 mm (min.)					
	6. Bottom diameter.: 175 mm (min.)					
	7. Base Flange thickness : 16 mm (min.)					
	8. Base Plate Dimension : 275X275X20 mm					

Sl.No.	Description of work	Unit	Qty	Rate		Amount in Words
				(In Figure)	(In Words)	
		-	-			-
	9. Foundation Bolts:					
	a) Nos.: 4					
	b) Length: 750mm					
	c) Diam.: 24 mm					
	(Cost should be including brackets, 370 single arms and 5 double arms)					
25.00	EARTHING DETAILS					
	Earthing System :					
	Copper Plate Earthing Stations:					
	Supply, Assembling installing, testing and commissioning all the items for constructing Cu plate earthing station comprises of one number Cu. earthing plate 600 x 600 x 6mm thick, 50 mm dia medium class GI watering pipe,(minimum 4.5 m deep) GI funnel with stainless steel wire mesh strainer, concrete watering chamber, steel hinged door on a steel frame to cover up the watering pit, 100 Kg of common salt, 200 Kgs of fine charcoal powder, earthing conductor size 2 x 40 x 6.3 mm copper from the plate to the ground level as per the revised IS 3043 standard , required hardwares and miscellaneous items . The work involves digging pit in the soil, burying the earth electrode in the mixture of common salt and charcoal, connecting earthing conductor to plate, installing the watering pipe, back filling the soil and constructing the watering pit at the site , details contained in this document and sketch attached.	nos	6			
	GI plate Earthing Station : Supply, Assembling, installing, testing and commissioning all the items for constructing GI plate earthing station at the locations . The earthing station comprises of one number GI earthing plate 600 x 600 x 6 mm thick, 50mm dia medium class GI watering pipe,(minimum 4.5 m deep) GI funnel with stainless steel wire mesh strainer, concrete watering chamber, steel hinged door on a steel frame to cover up the watering pit, 100 Kg of common salt, 200 Kg of fine charcoal powder, earthing conductor size 2x50 x 6 mm GI from the plate to the ground level as per the revised IS 3043 standard, required hardwares and miscellaneous items. The work involves digging pit in the soil, burying the earth electrode in the mixture of common salt and charcoal, connecting earthing conductor to plate, installing the	nos	10			

Sl.No.	Description of work	Unit	Qty	Rate		Amount in Words
				(In Figure)	(In Words)	
	watering pipe, back filling the soil and constructing the watering pit at the site as directed by the department.					
	GI pipe Electrode Earthing Station :					
	Supply, assembling ,installing testing and commissioning with all the items for constructing GI pipe earthing station. The earthing station comprises of one number B class GI earthing pipe size 40 mm x 5 mm thick (minimum 4.5 mtr deep) GI funnel with stainless steel hinged door on steel frame (300 x 300 mm) to cover up the watering pit , 50 kg common salt ,100 kgs of fine charcoal powder ,earthing conductor size 25 mmx 3 mm GI flat from pipe to the ground level ,required hardware and miscellaneous items . The work involves digging pit on the soil ,burying the earth electrode in the mixture of common salt and charcoal , connecting earthing conductor to earthing electrode , backfilling the soil and constructing the watering pit at the site as specified and detail as per this document and sketch attached.	nos	30			
	Earthing Conductors					
	Supplying, straightening, shaping, laying under ground/ laying on a cable tray/ laying in cement concrete trench the following sizes of hot dipped galvanized iron conductor. The work is inclusive of providing clamping with the trays/ on the sides of the trenches, making joints where ever required and providing the hardwares and the terminating the hardwares and the termination to the equipment/ earthing station/ etc.,					
	40 mm x 6.3 mm copper flat	Mts	100			
	50 mm x 6 mm GI flat	Mts	3650			
	25 mm x 6 mm GI flat	Mts	6300			
	25 mm x 3 mm GI flat	Mts	500			
	8 gauge GI wire .	Mts	23,800.00			
	Green earth wire 4 sq mm Cu	Mts	20			
26.00	CABLE TRAY					
	Supply, fabrication and installation of GI factory built in perforated type cable trays complete with all bends, tees, elbows, reducers etc. of various width in two tier/three/ five tier fashion either on one side of the wall or on two sides of the wall or at other places and paint afterward if required.					

Sl.No.	Description of work	Unit	Qty	Rate		Amount in Words
				(In Figure)	(In Words)	
	150 mm (w) tray , 2mm thick ,50mm collar	Mts	35			
	GI Cover for cable tray covering	Mts	35			
27.00	U.G. ARMOURED CABLE					
	Supplying and laying of following size PVC/XLPE insulated and PVC sheathed 1.1KV Grade Aluminium conductor LT armoured U.G cable laid in /ground/partially in air (10% of cable length)including excavation of cable trench upto depth of 75cm,refilling ,protective brick covering,sand cushioning etc.complete handling of surplus spoil,debries etc. to proper place as specified and directed by the deptt.(Including end termination gland socket,lugs crimped Dowel make cable socket) All the outdoor termination will be double compression type.					
	a) 25.00sqmm 4 core U.G Cable	m	1,950.00			
	b) 35.00sqmm 4 core U.G Cable	m	330.00			
	d) 50.00sqmm 4 core U.G Cable	m	600.00			
	c) 70.00sqmm 4 core U.G Cable	m	1,400.00			
	f) 150.00sqmm 4 core U.G Cable	m	885.00			
	g) 240.00sqmm 4 core U.G Cable	m	640.00			
	h) 300.00sqmm 4 core U.G Cable	m	6,950.00			
	Supplying and laying of following size PVC/XLPE insulated and PVC sheathed 1.1KV gd aluminium conductor LT armoured U.G cable laid in /ground/partially in air (10% of cable length)including excavation of cable trench upto depth of 75cm,refilling ,protective brick covering,sand cushioning etc.complete handling of surplus spoil,debries etc. to proper place as specified and directed by the deptt.(Including end termination gland socket,lugs crimped cable socket) (2nos. 8 SWG GI Earth will run along with the cable in the same trench)					
	a) 10.00sqmm 4 Core U.G Cable	m	9,600.00			
	b) 16.00sqmm 4 Core U.G Cable	m	3,200.00			

Sl.No.	Description of work	Unit	Qty	Rate		Amount in Words
				(In Figure)	(In Words)	
28.00	ELECTRICAL ROAD CROSSING WORKS					
	Supplying, laying, testing and commissioning of R.C.C. hume pipe conforming to IS: 485 including rods and earth cutting (2.5 m to 3.5 m) depth from ground level and back fitting the same after work NP-3 class for electrical road crossing.					
	(a) 300 mm dia pipe	R.m.	150.00			
	(b) 200 mm dia pipe	R.m.	150.00			
	(c) 150 mm dia pipe	R.m.	150.00			
29	SAFETY EQUIPMENTS					
	Supply and erection of the following equipment at suitable place in the sub-station building as required and as per detailed specifications:					
	Carbon dioxide (CO ₂) type fire extinguisher with suitable base pipe & horn (conforming to IS 2876 with cylinders fully charged of capacity 5 Kg).	Nos.	2.00			
	G.I. buckets of 9 ltr capacity red paint and written with White paint 'Fire' and mounted on M.S. angle iron bracket of sizes 50 mm x 50 mm x 6 mm thick and 500 mm long including grouting in wall etc. as required including filling with dry sand. (Each set buckets contain 3 nos. of bucket)	Set	3.00			
	Shock treatment chart at least in two language duly mounted on a wooden frame with glass as required.	Nos.	2.00			
	Rubber mat 914.4 mm wide and 12 mm thick to withstand 1.1 KV dielectric strength as per IS 5424 - 969.	Mts.	15.00			
	Rubber mat 914.4 mm wide and 12 mm thick to withstand 33 KV dielectric strength as per IS 5424 - 969.	Mts.	3.00			
	Providing and fixing danger plates	Nos.	5.00			
	Providing and fixing High Voltage Danger Notice Plate 250 mm x 200 mm made of M.S. Steel at least 2 mm thick and vitreous enameled white on both sides and with inscription in single red colour on front side as required.	Nos.	1.00			

Sl.No.	<u>Description of work</u>	<u>Unit</u>	<u>Qty</u>	<u>Rate</u>		<u>Amount in Words</u>
				(In Figure)	(In Words)	
30.00	Supplying with fitting and fixing of suitable route marking for electrical cable trench(Post mounted CI Plate) as specified and directed by the deptt	Nos.	500.00			
31.00	Supplying with fitting and fixing of suitable Earth-Pit marking for electrical (Post mounted CI Plate) as specified and directed by the deptt.	Nos.	48.00			
32.00	FIRSTAID BOX					
	Supplying Standard first aid box shall contain minimum following material as prescribed by St. John Ambulance Brigade of Indian Red Cross. First Aid box should be of 18 Gauge M.S. sheet of size 14" x 7" x 5"(minimum) i) 6 wound dressings small (for injured figures). ii) 3 wound dressings medium for injured hands & feet. iii) 3 wound dressings(for other injuries) iv) 3 burn dressings (large) v) One absorbant cotton wool 13 gms. vi) One dressing scissors vii) 1 bottle liquid iodine I.D. 25 mls. viii) 1 bottle spirit of sal voatile I.P. 25 mls. ix) 1 packet pottassium permaganate I.P. 25 gms. x) 1 snake bite lace. xi) 1 packet of soda bi carb I.P. 25 gms. xii) 1 bottle of 100 tablets of 5 gms. aspirin xiii) 1 tube of burn ointment (Burnol/Furocin) xiv) 1 No.Artificial Respirater.	Nos.	2			
33.00	TOOL BOX					
	A standard tool box shall be made of 16 SWG., M.S. sheet and be of minimum 400mm x 200mm x 200mm size. It shall contain minimum following tools for the operation and maintenance of the sub-station equipment; i) Spanner set having 10 pieces from 6mm to 38mm size, open end type. ii) Spanner set having 10 pieces from 6mm to 38mm size, ring type. iii) Box spanners with rod for transformer terminal nuts - 1 set. iv) Insulated screw driver of 300 mm size - 1 No. iv) Insulated screw driver of 150 mm size - 1 No. v) Rubber gloves suitable for 33KV	Nos.	1			

-2 No.s vi) Line Tester - 1 No. vii) Adjustable spanner of 300 mm size - 1 No. viii) Insulated Pillar set 200 mm size - 1 No. ix) Wire cutter and peeler for wires upto 6mm size - 1 No.					
			Total cost Rs.		

Say

Amount in Words: (-----
-----) Only

DESCRIPTION: EXTERNAL ELECTRIFICATION WORKS OF BCPL TOWNSHIP FOR M/S BRAHMAPUTRA CRACKER & POLYMER LIMITED AT LEPETKATA, DIBRUGARH, ASSAM

TENDER NO: BCPL/DIB/C&P/SER/20110138/DBK

Quoted rate shall include all associated civil, electrical and related works. All the finishing jobs shall be strictly as per the finishing schedules.

Jobs shall be done strictly as per detailed specifications (APWD specifications are considered) drawings and as per tender provisions.

Signature and seal of the Contractor

VOLUME – 2 (Technical Part)

TECHNICAL SPECIFICATIONS FOR EXTERNAL ELECTRIFICATION WORKS OF BCPL TOWNSHIP FOR M/S BRAHMAPUTRA CRACKER & POLYMER LIMITED AT LEPETKATA, DIBRUGARH, ASSAM

TENDER NO: BCPL/DIB/C&P/SER/20110138/DBK

1. GENERAL

These special conditions are intended to amplify the General Conditions of Contract, and shall be read in conjunction with the same. For any discrepancies between the General Conditions and these Special Conditions, the more stringent shall apply.

2. SCOPE OF WORK

The general character and the scope of work to be carried out under this contract is illustrated in Drawings, Specifications. The Contractor shall carry out and complete the said work under this contract in every respect in conformity with the contract documents and with the direction of and to the satisfaction of the client's site representative. The contractor shall furnish all labour, materials and equipment as listed under Schedule of Quantities and specified otherwise, transportation and incidental necessary for supply, installation, testing and commissioning of the complete electrical system as described in the Specifications and as shown on the drawings. This also includes any material, equipment, appliances and incidental work not specifically mentioned herein or noted on the Drawings/Documents as being furnished or installed, but which are necessary and customary to be performed under this contract. The electrical system shall comprise of following:

- a. All conduit work including junction boxes, outlet boxes and wiring for lighting and power
- b. Switches, plug sockets, cover plates and other wiring accessories.
- c. Cables (HT / LT), Mains and Sub-Mains.
- d. LT panel, Main Distribution / Sub Distribution panels, Final Distribution panels & Capacitor Panels.
- e. Cables on cable trays including installation, cable trays, hangers, supports, cable terminations and all fixing accessories.
- f. Earthing (Grounding) System.
- g. Lightning Protection System.
- h. Installation of Lighting Fixtures supply by the contractor.
- i. Supply and installation of lighting fixtures

- j. 2 Pole structure, transformers & LT isolator panel
- k. Sub Station Earthing
- l. Supply, Installation and Commissioning of street lights.

3. **ASSOCIATED CIVIL WORKS**

Following civil works associated with Electrical installation are excluded from the scope of this contract except for all minor civil work like wall chasing by wall chaser, making holes etc. for installation of conduits/cables.

- i. PCC foundation blocks for erection of L.T. side outdoor panels.
- ii. Preparation of Earthing pits.
- iii. Foundation for Street Light Poles.

4. **PERFORMANCE GUARANTEE**

The contractor shall carry out the work in accordance with the Drawings, Specifications, and other documents forming part of the Contract.

The contractor shall be fully responsible for the performance of the selected equipment (installed by him) at the specified parameters and for the efficiency of the installation to deliver the required end result.

Complete set of architectural drawings is available in the Architect/Consultant's office and reference may be made to same for any details or information.

5. **DRAWINGS**

The Electrical Drawings listed, which may be issued with tenders, are diagrammatic only and indicate arrangement of various systems and the extent of work covered in the contract. These Drawings indicate the points of supply and of termination of services and broadly suggest the routes to be followed. Under no circumstances shall dimensions be scaled from these Drawings. The architectural drawings and details shall be examined for exact location of equipment, electrical points & fixtures.

Maximum headroom and space conditions shall be maintained at all points. Where headroom appears inadequate, the contractor shall notify the Architect/Consultant/client site representative before proceeding with the installation. In case installation is carried out without notifying, the work shall be rejected and contractor shall rectify the same at his own cost.

The contractor shall examine all architectural, structural, plumbing, telephone, TV and other services drawings and check the as-built works before starting the work, report to the consultant's site representative any discrepancies and obtain clarification. Any changes found essential to coordinate installation of his work with other services and trades, shall be made with prior approval of the Architect/Consultant.

6. MATERIALS AND EQUIPMENT

All materials and equipment shall conform to the relevant Indian Standards with energy efficient and environment friendly and shall be of the approved make and design. Makes shall be strictly in conformity with list of approved manufacturers

The Contractor shall be responsible for the safe custody of all materials and shall insure them against theft or damage in handling or storage etc. A list of items of materials and equipment, together with a sample of each shall be submitted to the site Consultant representative.

7. COMPLETION CERTIFICATE

On completion of the electrical installation a certificate shall be furnished by the Contractor countersigned by the licensed supervisor, under whose direct supervision the installation was carried out. This certificate shall be in the prescribed form as required by the local, state/central govt./ municipal / fire authorities concerned.

8. ON SITE TRAINING

Upon completion of all work and all tests, the Contractor shall furnish necessary operators, labour and helpers for operating the entire installation for a period of thirty (30) working days of ten (10) hours each, to enable the Owner's staff to get acquainted with the operation of the system. During this period, the contractor shall train the client's personnel in the operation, adjustment and maintenance of all equipment installed.

9. DEMONSTRATION TO OWNER

At completion, devices subject to manual operation shall be operated at least five times in presence of client site representative to demonstrate satisfactory operation.

10. TOOLS AND TACKLES

The Contractor shall provide and install all necessary hoists, ladders, scaffolding, tools and tackles, all transport for labour and materials and plant necessary for the proper execution and completion of the work to the satisfaction of the Owner's site representative.

11. SPECIAL NOTES

- i. Cable, Trays, Earthing and Other items shall be exactly measured as per actual at site before supply.
- ii. Before placing orders of any items, samples should be submitted to the EIC of the consultant for review.
- iii. No joints in cables shall be allowed. In case single length is less than 250 mts. Then cables should come in smaller drums of adequate lengths to avoid any jointing. Only in cases where the joint could not be avoided during the preliminary stages of laying of cable, this should be brought to the notice of the site in charge for proper approval.
- iv. The contractor should arrange for factory inspection of Transformers, HT/LT panels, Street Light Poles, and XLPE armoured cables accompanied by both Client & Consultant.
- v. Contractor should submit manufacturing drawings along with detailed specification of the HT/LT Panels and transformer for approval from client/consultant.
- vi. Before taking up any work by the sub-contractor from the main contractor, prior approval should be taken from the client/consultant.
- vii. All outdoor panels should be double door type and with canopy and bottom entry provision only for cables.
- viii. Expendable feature should be present in all panels for future provision.
- ix. All Equipments should be tested for atleast 5 days before commissioning.
- x. Before purchasing of cables, the contractor should practically measure the lengths in site and if any deviation is found, it should be brought into notice of the site incharge. Further purchasing should be done on measured length to avoid jointing.
- xi. Cable cost is inclusive of laying, termination for all underground cables.
- xii. All HT/LT panels, DCDB panels and transformer should be of Siemens Grey colour (RL-7032) and powder coated.

- IV

LIST OF INDIAN STANDARDS (IS)

IS : 694 - 1990	PVC insulated Electric cable for working voltage upto and including 1100 volts.
IS : 732 - 1989	Code of practice for electrical wiring and installation
IS : 1255 - 1983	Code of Practice for installation and maintenance of Power Cables upto and including 33 KV rating (Second Revision)
IS : 1258 - 1987	Bayonet lamp holders(Third revision)
IS : 1293 - 1988	Three pin plugs and sockets outlets rated voltage upto and including 250 volts and rated current upto and including 160 amps.
IS : 1554 - 1988 (Part - I)	PVC insulated (Heavy Duty) electric cables for working voltages upto and including 1100 volts.
IS : 1646 - 1982	Electrical installation fire safety of buildings (general) Code of practice.
IS : 1651 & 1652 - 1991	Stationary cell and batteries, lead acid type
IS : 1885 - 1971	Glossary of items for electrical cables and conductors
IS : 1913 – 1978	General and safety requirements for fluorescent lamps luminaries Tubular.
IS : 2026 – 1977 to 81 (Part-I to IV)	Power Transformer
IS : 2071 - 1974 - 76	Methods of high voltage testing
IS : 2309 - 1989	Protection of building and allied structures against lightning
IS : 2551-1982	Danger notice plate.
IS : 3043 - 1987	Code of practice for earthing.
IS : 4146 - 1983	Application guide for voltage transformers
IS : 5216 - 1982 (Part-I)	Guide for safety procedures and practices in electrical work.
IS : 5424 - 1969	Rubber mats for electrical purposes.

IS : 5578 & 11353-1985	Marking and arrangement of bus bars
IS : 7098 - 1985 (Part - II)	Cross linked polyethylene insulated PVC sheathed cables. For working voltages from 3.3 KV up to and including 33 KV
IS : 8130 - 1984	Conductors for insulated electric cables and flexible cords
IS : 8623 -1977 (Part -I)	Factory built assemblies of switchgear and control gear for voltages up to and including 1000 V AC and 1200 V D C.
IS : 8623 - 1980 (Part -II)	Bus Bar trunking system
IS : 8828 - 1996	Miniature Circuit Breakers
IS : 9537 - 1981	Rigid Steel Conduits for electrical wiring (Second Revisions)
IS : 10810 - 1988	Methods of test for cables.
IS : 11171 – 1985	Specifications for dry type transformers
IS : 12640 - 1988	Earth Leakage Circuit Breakers
IS : 13947-1989	Moulded Case Circuit Breakers
IS : 13947 - 1993	Degree of protection provided by enclosures for LV switchgear and control gear.
IS : 13947 - 1993	General requirement for switchgear and control gear for voltage not exceeding 1000 Volts.
IS : 1651 & 1652 1991	Stationary cells and batteries lead acid type.

TECHNICAL SPECIFICATIONS FOR EXTERNAL ELECTRIFICATION WORK
FOR BCPL TOWN SHIP, DIBRUGARH

CHAPTER 1
GENERAL AND COMMERCIAL

1.0 SCOPE:

- (i) These General Specifications indicate the requirements and precautions to be taken during the execution of External Electrical Installation works to ensure efficient, safe, economical and practical use of materials and equipments including prevention of risks and fire hazards.
- (ii) This Chapter also covers the general commercial requirements applicable to this work contracts for Electrical Installation works.

1.1 WORKS INCLUDED IN THIS SECTION:

- (i) 440V 3phase 4 wire Power distribution system complete.
- (ii) An adequate equipment grounding system.
- (iii) Providing, fixing & commissioning of feeder pillar.
- (iv) Providing, fixing & commissioning of street light pole and luminaries.
- (vii) Providing, fixing & commissioning of armoured cables etc.
- (vii) Providing, fixing & commissioning of Sub-Station Equipment.
- (viii) Providing and fixing route marking.
- (ix) Providing, fixing & commissioning of 33/.0433KV transformer.
- (x) Drawing of 33KV line from two-pole structure to the panel room.

1.2 L.T/H.T Panels

- i) General layout-Plan, section, elevations
- ii) Foundation/Fixing arrangement.
- iii) Wiring-Power & Control

1.2.1 Distribution Boards, L.T. Panels:

- (i) General layout-Plan, section, elevations
- (ii) Foundation/Fixing arrangement.
- (iii) Wiring-Power & Control

1.3.1 APPROVALS:

- 1.3.1 The contractor shall obtain all information relating to local regulations, Bye-Laws, sanction and release of electrical connection, application of any and all laws relating to his work or profession and his having to execute work as required. No additional claims shall be admissible on this account.
- 1.3.2 Contractor shall obtain approval of the installation from the relevant inspection/ sanctioning Authorities at all stages and on completion of the installation work. The Contractor shall also get the required electrical load sanctioned and released from the concerned authorities and nothing extra shall be paid.

1.4 CODE REQUIREMENTS:

All work shall be done in accordance with the Institute of Electrical Engineers/IS Code amended upto date/ Indian Electricity Rules.

1.5 MATERIALS:

All materials to be used in this work are new and also all products should be energy efficient and environment friendly.

1.6 WORKS TO BE DONE BY THE CONTRACTOR:

- (i) Unless and otherwise mentioned in the tender documents, the following works shall be done by the contractor, and therefore their cost shall be deemed to be included in their tendered cost.
- (ii) Cutting and making good all damages caused during installation and restoring the same to their original finish.
- (iii) Painting at site of all exposed metal surfaces of the installation other than pre-painted items like fittings, light pole, JB, switchgear/ distribution gear items, etc. Damages to finished surfaces of these items while handling and erection, shall however be rectified to the satisfaction of the consultants.
- (vi) Temporary shed if required over the storage space and locking arrangement thereof, and watches the materials and completed installation till completion of the work.
- (v) Testing and commissioning of completed installation.

1.7 TOOLS FOR HANDLING AND ERECTION:

All tools and tackles required for handling of equipments and materials at site of work as well as for their assembly and erection and also necessary test instruments shall be the responsibility of the contractor.

1.8 CARE OF THE SITE (ROADS, DRAINS ETC.) AND BUILDINGS:

Care shall be taken by the contractor to avoid damage to the roads, drains, building etc. during execution of his part of the work. He shall be responsible for repairing all damages and restoring the same to their original finish at his cost. He shall also remove at his cost all unwanted and waste materials arising out of his work from the site.

1.9 STRUCTURAL ALTERATIONS TO BUILDING

- (i) No structural member in the building shall be damaged/altered, without prior approval from the consultants.
- (ii) Structural provisions like openings, cutouts, if any, provided for the work, shall be used. Where these require modifications, or where fresh provisions are required to be made, such contingent works shall be carried out by the contractor at his cost with prior approval of the consultants.
- (iii) All chases required in connection with the electrical works shall be provided and filled by the contractor at his own cost to the original architectural finish of the buildings.

2.0 CONFORMITY TO IE ACT, IE RULES, AND STANDARDS:

All electrical works shall be carried out in accordance with the provisions of Indian Electricity Act, 1910 and Indian Electricity Rules, 1956 amended upto date. List of Rules of particular importance to building installations is given in Appendix for reference.

The works shall also conform to relevant Indian Standard Codes of Practice (COP) for the type of work involved.

In all electrical installation works, relevant safety codes of practice shall be followed. Guidelines on safety procedure outlined in Appendix 'C' should be adopted.

2.1 GENERAL REQUIREMENTS OF COMPONENTS:

2.1.1 Quality of materials:

All materials and equipments supplied by the contractor shall be new. They shall be of such design, size and material as to satisfactorily function under the rated conditions of operation and to withstand the environmental conditions at site.

2.1.2 Ratings of components

All components in a wiring installation shall be of appropriate ratings of voltage, current, and frequency, as indicated in drawing and BOQ.

All conductors, switches and accessories shall be of such size as indicated in drawing.

2.1.3 Conformity to Standards

All components shall conform to relevant Indian Standard Specification, wherever existing. Materials with ISI certification mark shall be preferred.

A broad list of relevant Indian Standards is given in Appendix 'A'. These Indian Standards, including amendments or revisions thereof upto the date of tender acceptance, shall be applicable in the respective contracts.

2.1.4 Interchangeability

Similar parts of all switches, lamp holders, distribution boards, switchgears, ceiling roses, brackets, pendants, fans and all other fittings of the same type shall be interchangeable in each installation.

CHAPTER 2

2.2 FITTINGS:

2.2.1 Types:

The All type of luminaries fittings shall be as specified by consultant/client.

2.3 SWITCHGEAR AND CONTROLGEAR - General aspects:

2.3.1

The types, ratings and/or categories of switchgear and protective gear shall be as specified in the drawing.

VCB, MCB, MCCB where specified, shall conform to the requirements of current rating, fault rating, single phase or three phase configuration and sensitivity laid down in the drawing or below this specification.

2.3.2 Independent earth terminal block:

Every distribution panel board (single phase as well as 3 phase) shall have an earth terminal block identical to, but independent from neutral terminal block, to enable termination of protective (loop earthing) conductors (incoming as well as outgoings) individually by screwed connection and without twisting.

Earthing terminal (1 for single phase and 2 for 3 phase) shall be provided on the metal cladding of switches and DBs for body earthing. These shall be suitably marked.

Knock out holes, with or without end plates as per standard design of manufacturers, shall be provided in the metal cladding of switches and DBs for termination of conduits/cables.

2.4 PRE-WIRED MCB DISTRIBUTION BOARDS:

Prewired MCB DBs shall be provided only where specified.

The complete board shall be factory fabricated and shall be duly pre-wired in the works, ready for installation at site.

The board shall be of wall mounted, cubical type construction, fabricated out of 1.6mm thick sheet steel, with stove enameled paint finish.

The board shall also be provided with a loose wire box as a compartment for the complete width and, depth of the board, and of minimum height of 125mm in case of TPN DB's, and 100mm in case of SPN DB's.

The board shall be provided with a hinged cover of 1.6mm thick sheet steel in the front. Only the knobs of the MCBs shall protrude out of the front covers through openings neatly machine made for the purpose.

Knock out holes at the bottom, and detachable plate with knock out holes at the top of the board shall be provided.

Each distribution board shall be provided with a circuit list giving details of each circuit which it controls and the current rating of the circuit, and the size of the MCB.

The board shall be fully prewired with single core PVC insulated copper conductors/insulated solid copper links, and terminated on to extended type terminal connectors, suitable for connections to the sizes of the respective conductors.

All incoming and outgoing wiring to the prewired MCBDB's shall be terminated only in the Elemex type extended terminal connectors to be provided within the DB. The terminal connectors shall, therefore, be so provided as to facilitate easy cable connections and subsequent maintenance.

A common copper earth bar shall be provided within the loose wire box. The common neutral bar as well as the terminal connectors shall, however, be provided within the main compartment just below the loose wire box.

2.5 MINIATURE CIRCUIT BREAKERS (MCB's):

'B' series MCB's shall be used only for normal 'lighting' circuits.

'C' series MCB's shall be invariably used for motor loads, halogen lamp fittings, sodium/mercury discharge lamps and all 'power' circuits.

Ratings (A), number of poles, type as MCB or isolator, etc. shall be as specified in the drawing. The MCB's shall be of minimum 3KA rupturing capacity.

2.6 MARKING OF APPARATUS:

(i) Marking of earthed neutral conductor

On the switchgear, the earthed conductor of a two wire system, or an earthed neutral conductor of a multi-wire system, an indication of a permanent nature shall be provided to identify the earthed neutral conductor. In this connection Rule 32(1) of Indian Electricity Rules 1956 (see Appendix C) shall be referred to. The neutral conductor shall be black in colour.

(ii) Main earthing terminal

The main earthing terminal in the main switch board shall be permanently marked as "SAFETY EARTH - DO NOT REMOVE".

All distribution boards shall be marked 'L' for lighting, or 'P' for power, and 'E' for essential as the case may be.

When a board is connected to a voltage higher than 250V, all the terminals or leads of the apparatus mounted on it shall be marked in the following colours to indicate the different poles or phases to which the apparatus or its different terminals may have been connected:

Three phases - Red, Blue & Yellow AND Neutral - Black

Where a four wire, three phase wiring is done, the neutral shall preferably be in one colour, and the other three wires in another colour.

All marking required under this rule shall be clear and permanent.

2.7 WORKMANSHIP:

Good workmanship is an essential requirement to be complied with. The entire work of manufacture/fabrication, assembly and installation shall conform to sound engineering practice.

The work shall be carried out under the direct supervision of a first class licensed foreman, or of a person holding a certificate of competency issued by the State Govt. for the type of work involved, employed by the contractor, who shall rectify then and there the defects pointed out by the consultants during the progress of work.

2.8 COMMISSIONING ON COMPLETION:

Before the workman leaves the work finally, he must make sure that the installation is in commission, after due testing.

2.9 DRAWINGS

The work shall be carried out in accordance with the drawings enclosed with the tender documents and also in accordance with modification thereto from time to time as approved by the consultants.

All circuits shall be indicated and numbered in the wiring diagram and all points shall be given the same number as the circuit to which they are electrically connected.

CHAPTER – 3

EARTHING:-

3.0 SCOPE:

This chapter covers the essential requirements of earthing system components and their installation. For details not covered in these Specifications, IS Code of Practice on Earthing (IS:3043-1987) shall be referred to.

3.1 APPLICATION

The electrical distribution system in the campus is with earthed neutral (i.e., neutral earthed at the transformer/ generator end). In addition to the neutral earthing, provision is made for earthing the metallic body of equipments and non-current carrying metallic components in the sub-station, as well as in the internal electrical installations.

Earthing requirements are laid down in Indian Electricity Rules, 1956, as amended from time to time, and in the Regulations of the Electricity Supply Authority concerned.

3.2 MATERIALS

3.2.1 EARTH ELECTRODES

3.2.2 Type

The type of earth electrode shall be Plate earth electrode and Pipe Earth Electrode as per specified in the drawings.

3.2.3 Electrode materials and dimensions

The materials and minimum sizes of earth electrodes shall be as per drawing and BOQ.

3.2.4 EARTHING CONDUCTOR:

The earthing conductor (protective conductor from earth electrode up to the main earthing terminal/earth bus, as the case may be) shall be of the same material as the electrode, viz. GI or copper, and in the form of wire or strip as specified in drawing.

3.2.5 HARDWARE ITEMS

All hardware items used for connecting the earthing conductor with the electrode shall be of GI in the case of GI pipe and GI plate earth electrodes, and forged tinned brass in case of copper plate electrodes.

3.2.6 PROTECTIVE (Earth continuity/Loop earthing) CONDUCTOR:

The material and size of protective conductors shall be as specified in the drawing.

4.0 LOCATION FOR EARTH ELECTRODES

Normally an earth electrode shall not be located closer than 2m from any building. Care shall be taken to see that the excavation for earth electrode does not affect the foundation of the building; in such cases, electrodes may be located further away from the building, with the prior approval of the consultants.

The location of the earth electrode will be such that the soil has a reasonable chance of remaining moist as far as possible. Entrances, pavements and road ways, should be avoided for locating earth electrodes.

5.0 INSTALLATION

5.1 ELECTRODES

5.1.1 Various types of electrodes

Plate electrode shall be buried in ground with its faces vertical, and its top not less than 3 m below the ground level.

When more than one electrode (plate/pipe) is to be installed, a separation of not less than 2 m shall be maintained between two adjacent electrodes.

5.1.2 Artificial treatment of soil

The electrode shall be surrounded by charcoal/coke and salt as indicated in tender drawings

5.1.3 Watering arrangement

In the case of plate earth electrodes, a watering pipe 20 mm dia. medium class pipe shall be provided and attached to the electrodes. A funnel with mesh shall be provided on the top of this pipe for watering the earth.

The watering funnel attachment shall be housed in a masonry enclosure of size as specified in the drawing.

A cast iron/MS frame with MS cover, 6 mm thick, and having locking arrangement shall be suitably embedded in the masonry enclosure.

6.0 EARTHING CONDUCTOR (Main Earthing lead)

In the case of plate earth electrode, the earthing conductor shall be securely terminated on to the plate with two bolts, nuts, check nuts and washers.

The earthing conductor from the electrode up to the building shall be protected from mechanical injury by a medium class by 40 mm dia. medium class GI pipe in the case of strip. The protection pipe in ground shall be buried at least 30 cm deep (to be increased to 60 cm in

case of road crossing and pavements). the portion within the building shall be recessed in walls and floors to adequate depth in due co-ordination with the building work.

The earthing conductor shall be securely connected at the other end to the earth stud/earth bar provided on the switch board by bolt, nut and washer.

7.0 PROTECTIVE (Loop earthing/earth continuity) CONDUCTOR

Earth terminal of every switch board in the distribution system shall be bonded to the earth bar/terminal of the upstream switch board by protective conductor(s).

Two protective conductors shall be provided for a switch board carrying a 3 phase switchgear thereon.

The earth connector in every distribution board (DB) shall be securely connected to the earth stud/earth bar of the corresponding switch board by a protective conductor.

All metallic switch boxes and regulator boxes in a circuit shall be connected to the earth connector in the DB by protective conductor (also called circuit protective or loop earthing conductor), looping from one box to another upto the DB.

The earth pin of socket outlets as well as metallic body of fan regulators shall be connected to the earth stud in switch boxes by protective conductor. Twisted earth connections shall not be accepted in any case.

8.0 EARTH RESISTANCE

The earth resistance at each electrode shall be measured. No earth electrode shall have a greater ohmic resistance than 5 ohms as measured by an approved earth testing apparatus.

Where the above stated earth resistance is not achieved, necessary improvement shall be made by additional provisions, such as additional electrode(s), different type of electrode, or artificial chemical treatment of soil etc., as may be directed by the consultants.

9.0 MARKING:

Earth bars/terminals at all switch boards shall be marked permanently, "E" or as;

Main earthing terminal shall be marked "SAFETY EARTH - DO NOT DISCONNECT".

CHAPTER - 4

TESTING OF INSTALLATION:-

SCOPE

This chapter describes the details of tests to be conducted in the completed External electrical installations, before commissioning.

10.0 GENERAL

10.1 Tests

On completion of installation, the following tests shall be carried out :-

1. Insulation resistance test.
2. Polarity test of switch.
3. Earth continuity test.
4. Earth electrode resistance test.

10.2 Witnessing of tests

Testing shall be carried out for the completed installations, in the presence of and to the satisfaction of the consultants by the contractor.

All test results shall be recorded & submitted to the consultants.

10.3 Test instruments

All necessary test instruments for the tests shall be arranged by the contractor.

10.4 TESTING OF EARTH CONTINUITY PATH

The earth continuity conductor, including metal conduits shall be tested for electric continuity. The electrical resistance of the same along with the earthing lead, but excluding any added resistance, or earth leakage circuit breaker, measured from the connection with the earth electrode to any point in the earth continuity conductor in the completed installation shall not exceed one ohm.

10.5 TEST CERTIFICATE

On completion of an electrical installation, a certificate shall be furnished by the contractor, countersigned by the certified supervisor under whose direct supervision the installation was carried out. This certificate shall be in addition to the test certificate required by the local Electric Supply Authorities.

CHAPTER – 5

11.0 CABLE WORK :

While laying underground cables, care should be taken so that any underground structure such as water pipes, sewage lines etc. are not damaged. Any telephone or other cable coming in the way shall be properly protected as per instructions of the consultant.

The LT cables shall be laid not less than 90cm below ground level in a trench 45cm wide minimum. The depth of the trenches shall be uniform throughout.

When the cables are properly strengthened and laid in the trench, it should be covered all around 80mm thick layer of sand. Approved cable indicators shall be fixed at suitable distance along the route of the cable.

Unless otherwise specified the cables shall be protected by second class bricks of not less than 22.5 x 10 x 7cm or stone tiles or any other approved material placed on sides and top of the cable to form a channel throughout the length.

Stoneware pipes or spun reinforced concrete pipes shall be provided for all road crossings. The size and nature of the shall be decided by the Engineer-in-charge and shall not be less than 10cm in diameter for a single cable and not less than 20cm for more than one cable. These pipes shall be laid in the ground with 10cm thick bed of cement concrete 1:5:10 and may be loose jointed. The top surface of pipe shall be at a minimum depth of 90cm from the ground level when laid under the roads/pavements.

11.1 TESTING BEFORE LAYING

At the time of issue of cables for laying, the cables shall be tested for continuity and insulation resistance.

The cable drum shall be properly mounted on jacks, or on a cable wheel at a suitable location, making sure that spindle, jack etc are strong enough to carry the weight of the drum without failure and that the spindle is horizontal in the bearing so as to prevent the drum creeping to one side while rotating.

The cable shall be pulled over on rollers in the trench steadily and uniformly without jerks and strain. The entire cable length shall as far as possible be laid off in one stretch. PVC/XLPE cables less than 120 sq mm size may be removed by "Flaking" i.e. by making one long loop in the reverse direction. After the cable has been so uncoiled, it shall be lifted slightly over the rollers beginning from one end by helpers standing about 10 m apart and drawing straight. The cable shall then be lifted off the rollers and laid in a reasonable straight line. The cable shall be tested for continuity of cores and insulation resistance and cable length shall be measured, before closing the trench.

12.0 CABLE JOINTING

- i) Before laying a cable, proper location for the proposed cable joints, if any, shall be decided, so that when the cable is actually laid, the joints are made in the most suitable places. As far as possible, water logged location, carriage ways, pavements, proximity to telephone cable, gas or water mains, inaccessible places, ducts, pipes, racks etc. shall be avoided for location of the cable joints.
- ii) Joints shall be staggered by 2m to 3m when joints are to be done for two or more cables laid together in the same trench.
- iii) Joint pits shall be of sufficient dimensions as to allow easy and comfortable working. The sides of the pit shall be well protected from loose earth falling into it. It shall also be covered by a tarpaulin to prevent dust and other foreign matter being blown on the exposed joints and jointing materials.
- iv) Sufficient ventilation shall be provided during jointing operation in order to disperse fumes given out by fluxing.

- v) A caution board indicating "CAUTION-CABLE JOINTING WORK IN PROGRESS" shall be displayed to warn the public and traffic where necessary.
- vi) Jointing materials and accessories like conductor ferrules, solder, flux, insulating and protective tapes, filling compound, jointing boxes, heat shrinking joint kit etc, of right quality and correct sizes. Conforming to relevant Indian standards, wherever they exist, shall be used
- vii) The design of the box and the composition of the filling compound shall be such as to provide an effective sealing against entry of moisture in addition to affording proper electrical characteristic to joints.
- viii) Where special type of splicing connector kits or epoxy resin spliced joints or heat shrinkable jointing kits are specified, materials approved for such application shall be used. Storing as well as jointing instruction of the manufacturer of such materials shall be strictly followed.
- ix) Jointing work shall be carried out by a licensed/experienced cable joiner.
- x) About 3 m long surplus cable shall be left on each side of joints as laid down.
- xi) A highly tenacious oxide film shall be removed by using appropriate type of flux from aluminum conductor.
- xii) The clamps for the armour shall be clean and tight.

13.0 Testing before backfilling

- i) All cables shall be subjected to the above –mentioned test, before covering the cables by protective covers and back filling and also before taking up any jointing operation.

14.0 Testing after laying

After laying and jointing, the cable shall be subjected to a 15 minutes DC pressure test. or in the absence of facilities for pressure testing as above, it is sufficient to test for one minute with 1,000V megger for cables of 1.1 KV grade and with 2,500/5000V megger for cables of higher-voltages.

14.1 CABLE TERMINATIONS (LT CABLE)

All the cable termination shall be executed with crimping tool using DOWEL make cable socket. Compression brass cable glands wherever used shall be of correct size for cable and terminations. No. oversize cable glands shall be used. The gland must grip the armour of the cable firmly, so that in the event of ground movement no undue stress is transferred to the cable conductors. Corrosion inhibiting compound shall be applied on the conductor before crimping the lugs. The gland must establish good electrical contact between cable armour, load sheath and body of switch gear. Identification ferrules indicating the circuit shall be used for incoming and outgoing cables. The ferrules shall be provided at both ends of each cable. All LT termination will be double compression type.

CHAPTER – 6

15.0 SUPPLY OF STEEL TUBULAR POLES AND ACCESSORIES.

Specifications for 10 mtr GI octagonal Pole

Polygonal poles shall be designed as per ILE TR7 & BS5649 for structural design & as per IS875 (Part III), 1987 for dynamic loading.

The pole shaft shall be made single piece MS structure continuously tapered having polygonal (8/12 sides) cross section and a single longitudinal welding. The welding will be done as per BS 5135 / IS 9595. No circumferential welding shall be allowed in the pole shaft. The MS shall conform to BSEN 100025/100027. The structure shall be single hot dip galvanized as per BS 729 / IS 2629. A suitably designed door shall be provided at approximate 600mm height from the pole base. The door opening will be suitably reinforced for structural strength. The door shall be flushed with pole external surface and shall provide easy access for electrical connections at a maintainable height. A Suitable base flange and a top flange will be welded and suitable reinforcements will be provided. Foundation accessories will be as per IS 1367.

Dimensional Data:

1. MS sheet thickness: 3 mm
2. Galvanization thickness: 65 Microns (min.)
3. Door size: 250 mm x 75mm
4. Pole Height: 10 M
5. Top diameter.:75 mm (min.)
6. Bottom diameter.: 175 mm (min.)
7. Base Flange thickness : 16 mm (min.)
8. Base Plate Dimension : 275X275X20 mm
9. Foundation Bolts:
 - a) Nos.: 4
 - b) Length: 750mm
 - c) Diam.: 24 mm

Street Light SGP 401 with 150 w SON-T Lamp

Streetlighting luminaire type SGP 401, a pressure die-cast aluminium luminaire suitable for use with 1 x SON-T 150W

1. Single piece high-pressure die-cast aluminium housing with low copper content for sturdiness and excellent corrosion resistance
2. The lamp compartment consists of electrochemically brightened and anodized, high purity POT reflector for efficient distribution.
3. Heat resistant toughened flat glass covers for glare free lighting.
4. The flat glass cover is fixed to the housing with two number stainless steel hinges and three number stainless steel clips for maintaining contact pressure throughout life **offering IP 65 LEVEL OF INGRESS PROTECTION FOR THE LAMP AS WELL AS GEAR COMPARTMENT.**

15.1.2 Installation

- i) Where the work involves provision of looping boxes for cable in street lighting works. These should be installed at least 60cm from ground level or above high flood level whichever is more. The cable shall be routed from ground through GI pipes of suitable size to the looping box. This pipe shall be suitably bent outwards and embedded when the foundation work is done, thus avoiding any cutting later.

- ii) Looping boxes for compound lighting poles may be installed within the concrete pedestal for the pole (before casting of the pedestal) at such a height that rain water may not enter these boxes. Necessary cable entry pipe(s) shall be fixed to the box, properly bent outwards, when fixing the box to the pole. Necessary chamfering should be done on the pedestal to enable lifting the front cover of looping box and having proper access inside for maintenance.
- iii) Bracket for luminaries shall be fixed to the poles firmly so as not to be disturbed by wind or by manual pressure during maintenance. Clamps, locking studs or any other reliable means shall be adopted for this purpose.
- iv) Wiring of poles from looping box to the fitting should be done with specified size of copper/aluminium conductor PVC insulated cables.
- v) Where compression type glands are used with boxes, the cable shall be terminated on to them. Where the cable entry pipes are terminated directly on to the boxes. Without the provision of cable gland(s), suitable metallic clamp shall be provided with each cable end for earthing the cable armour through the earth terminal in the boxes.
- vi) The poles shall be painted in approved colour with 2 coats of approved paints suitable for outdoor application. The interior of the looping boxes shall be painted with synthetic enamel paint. All poles shall be numbered with figure height of 30mm.

15.1.3 Pole earthing

- i) The earth terminal in the looping box shall be connected to this by bare GI wire.
- ii) Though earth continuity shall be ensured through cable armour, (2 runs) 4mm dia (8SWG) GI wire shall be run additionally along the cable route and lapped at the poles by stud and washers arrangement.
- iii) The luminaries body shall be connected to the earth stud in the looping box by bare conductor of 2.5 sq.mm. Aluminium.

CHAPTER - 7

16.0 BUS BAR COMPARTMENT:

Bus bar of rectangular cross section of insulated copper, supported by epoxy insulators designed to withstand full short circuit currents upto 18.4 KA for 1 seconds shall be provided at the rear of the panel.

16.1.1 L.T. CHAMBER:

L.T. Chamber of suitable height shall be provided mounted on the top front of the breaker panel to house the protection relays, meters and remote control equipment.

16.1.2 LOW VOLTAGE PLUG & SOCKET CONNECTOR:

The control instrumentation & interlock circuits on breaker truck and in the panel shall be connected by means of flexible leads and a 24 pin plug and socket connection. The plug and socket assembly shall be suitably interlocked with truck position like service and test/isolated position.

16.1.3 POTENTIAL TRANSFORMER:

Epoxy cast potential transformer shall be fitted in the panel wherever specified. Feeder connected P.Ts shall be mounted on the breaker trunk itself. Bus bar connected P.T. shall be supplied in P.T. Panels.

16.1.4 SAFETY DEVICES:

To ensure safety of operating personnel adequate safety devices not limited to followings shall be provided.

- a) Circuit breaker & sheet metal enclosure shall be fully earthed.
- b) Self locking shutters shall be provided which would close automatically when the breaker is withdrawn to test position.

16.1.5 INTERLOCKS & SAFETY DEVICES:

Minimum following interlocks shall be provided in the panel board:

- a) The truck can not be moved from either test to service position or vice versa, when the circuit breaker is ON.
- b) The circuit breaker cannot be switched ON when the truck is in any position between test and service position.
- c) Front part of the truck cannot be removed when the breaker is in ON position.
- d) The low voltage plug & socket cannot be disconnected in any position except test/Isolation position.
- e) The truck cannot be moved inside the panel when LT plug & socket is disconnected.
- f) Earthing switch cannot be switched ON when the truck is inside the panel.
- g) The truck cannot be inserted when the earthing switch is ON.
- j) The two incomer breakers & the one bus coupler breaker are interlocked electrically & mechanically so that only two of them can be switched on at a time.

17.0 PROTECTIVE EARTHING:

The earthing connection between the truck and cubicle shall be with the help of sliding contacts. This should be arranged in such a way so that the truck is already earthed in the isolated position when inserted. The earthing contact is maintained when the truck is pushed further into the connected position. When the track is being withdrawn, the earthing connection is not interrupted until the truck is moved past the isolated position.

Seperate earthing truck will be provided.

17.1 RELAYS AND CONTROLS

17.1.1 CODES AND STANDARDS

The design, manufacture and performance of equipment shall comply with all currently applicable i. e. rules and statutory regulations and safety codes in the locality where the equipment will be installed.

Unless otherwise specified, equipment shall conform to the latest applicable Indian Standards and in particular to the following:-

- 1) IS:1248 - Direct acting electrical indicating instruments.
- 2) IS-2208 - HRC cartridge fuses upto 650V.
- 3) IS-4064 - Specification for air brake switches disconnector & fuse combination units.

17.1.2 PANEL WIRING

Panel shall be supplied completely wired internally to equipment and terminal blocks and ready for purchaser's external cable connections at the terminal blocks. When panels are to be mounted adjacent to each other, all inter-panel wiring and connections between panels shall be furnished by Contractor.

All wiring shall be carried out with 1100V. grade, single core, standard copper conductor wires PVC insulated. The minimum size of the stranded copper conductor used for panel wiring shall be as follows:

- a) All circuits except CT circuits: 1.5 sq.mm
- b) CT circuit 2.5 sq.mm

Panel wiring shall be securely supported, neatly arranged, readily accessible and connected to equipment terminals blocks. Wiring troughs shall be used for this purpose.

Wire terminations shall be made with solderless crimping type of tinned copper lugs which firmly grip the conductor and insulation. Insulated sleeves shall be provided at all the wire terminations. Engraved core identification plastic ferrules, marked to correspond with panel wiring diagram shall be fitted at both ends of each wire. Ferrules shall fit tightly on the wires and shall not fall off when the wire is disconnected from terminal blocks. The wire numbers shown on the wiring diagram shall be in accordance with IS-375. All wires directly connected to trip circuit of breaker or device shall be distinguished by the addition of a red coloured lettered ferrule.

Contractor shall be solely responsible for the completeness and correctness of the internal wiring and for the proper functioning of the connected equipment.

Terminal blocks shall be 650V. grade, 15 amps rated, one piece moulded, complete with insulated barriers, stud type terminals, washers, nuts and lock nuts and identification strips. Marking on the terminal strips shall correspond to wire numbers on the wiring diagrams. Terminal blocks shall be suitable for connecting the following conductors:

- a) All circuits except CT circuits : Min of two 2.5 sq.mm copper.
- b) CT circuits : Min of four 2.5 sq.mm copper.

Terminal blocks for CT and VT secondary leads shall be provided with test links and isolating facilities. Also CT secondary leads shall be provided with short circuiting and earthing facilities.

At least 10 spare terminals shall be provided on each panel and these spare terminals shall be uniformly distributed on all terminal blocks.

All spare contacts and terminals of the panel mounted equipment and devices shall be wired to terminal blocks.

17.1.3 FUSES

All fuses shall be of the HRC cartridge type, conforming to IS:2208 mounted on plug-in type of fuse bases having a prospective current rating of not less than 46 KA. Fuses shall be provided with visible operation indicators to show that they have operated. Insulated fuse pulling handle shall be supplied with each control panel.

17.1.4 INDICATING INSTRUMENTS & METERS

Electrical indicating instruments shall be flush mounted electronic type.

17.1.5 RELAYS

All protective relays shall be of draw out type, suitable for flush mounting. Relays shall be equipped with externally reset, positive action operation indicator visible from the front. Voltage relays shall have sufficient thermal capacity for continuous energization, using external resistors, if necessary.

17.1.6 CONTROL AND SELECTOR SWITCHES

Control and instrument switches shall be of the rotary type and shall be provided with properly designated plate. Control switches shall have momentary contacts spring return to centre with pistol grip handle. Instrument and selector switches shall have stay put contacts. The number of contacts and operation of each switch shall be as per the requirements of the connected circuit enclosed data sheet/enclosed drawing.

17.1.7 PUSH BUTTONS

All push buttons shall be of push to actuate type have 2 'NO' and 2 'NC' self reset contacts. They shall be provided with designation plates, engraved with their functions. push button contacts shall be rated for 10 amps at 415V A.C. and 0.6 Amp. inductive breaking at 220V D.C.

17.1.8 INDICATING LAMPS

Indicating lamps shall be of the LED type having double contact bayonet caps and low watt consumption. Lamps shall preferably be provided with series resistors to prevent short circuiting of control supply of filament fusing. Colour of lens shall be as per enclosed drawing/data sheet. Lamp grip shall be supplied along with the panel so that replacement of the bulb can easily be done from the front of the panel.

17.1.9 SPACE HEATER

Strip type space heaters of adequate capacity shall be provided inside each cabinet to prevent moisture condensation. Space heaters shall be rated for 110V DC supply. Heaters shall be complete with rotary type 'ON-OFF' switch, HRC fuse and thermostat to control switching of the heater.

17.2 INTERIOR LIGHTING AND RECEPTACLE

Control cabinet shall be provided with a 220V,AC, 40w G.L.S. lamp for interior illumination controlled by a 'ON-OFF' switch and 220V. AC 20 amp. 3 pin metal clad plug receptacle with plug top.

17.3 ANNUNCIATORS

Annunciators of facia type having translucent plastic window of 35mm x 50mm (minimum) size engraved with appropriate function in block letters for each alarm point shall be provided on the control cabinet when specified on enclosed Schedule of Quantities. Annunciators shall be suitable for operation on the voltage specified and shall have a single alarm buzzer common to all points. Three push buttons for audible alarm reset, trouble lamp reset and lamp test with appropriate designation plates shall be provided common to all alarm points. Annunciators shall be suitable for operation with both normally open and normally closed alarm contacts. All necessary relays shall be supplied and mounted within the cabinet by the contractor.

On receiving an alarm impulse, even if necessary, the appropriate alarm relay shall pick up the signal energizing the corresponding visible and audible alarm units. It shall be possible for the operator to reset the audible alarm even if the 'alarm' (fault), condition persists. However, visible alarm shall not reset unless the alarm condition has disappeared and operator presses the lamp reset, push button. Annunciator shall provide sealed in lamp indication and audible alarm shall be ready to operate for any new alarm condition immediately after the alarm is reset for a previous alarm condition. Annunciators shall operate satisfactorily between 80% and 110% of rated supply voltage.

The panel shall be provided with the following hooters, buzzers etc as required:

- i) 1 No. Hooter for trip alarm.
- ii) 1 No. Buzzer for alarm circuit.
- iii) 1 No. Bell for D.C. failure.

17.4 LABELS

All door mounted equipment as well as equipment mounted inside the control panel shall be provided with individual labels with equipment designation engraved or with plastic stickers. Also the control panel shall be provided on the front with a label engraved with designation of the control panel as furnished by Consultants. .

Labels shall be made of non-rusting metal or engraved plastic. Labels shall have white letter on black or dark blue background or as agreed upon.

17.5 EARTHING TERMINALS

Controls cabinet shall be provided with two separate earthing terminals suitable to receive main earthing conductors of size 50mm x 6mm.

17.6 TESTS

Following routine tests shall be carried out on Relay and Control portion of the Panel:

- a) Mechanical Operation Test.
- b) High voltage test (2000 volts for 1 minute).
- c) Electrical control, Interlock and Sequential operation test.
- d) Verification of wiring as per approved schematic.
- e) Secondary injection test for Relays.

Five copies of type test and routine test certificates shall be submitted for Consultant's approval before dispatch.

17.7 INSPECTION

Inspection including witnessing tests will be carried out by Consultants/bank or his authorized representatives.

Contractor shall notify Consultants/client representative in writing at least fifteen (15) days prior to Firm's scheduled inspection tests. No material shall be dispatched without the written dispatch advise from the Consultants.

17.8 GUARANTEE

Contractor shall guarantee design, materials/workmanship and performance for a period of twelve (12) months from the date of initial commissioning of the Sub-Station.

18.0 DRAWINGS

Contractor shall submit four prints of the following drawings for approval from consultant.

- 1) Outline dimensions and general arrangement including plan, all sides' elevations, and relevant cross sectional views.
- 2) Drawing showing ground opening for cabling.
- 3) Schematic control circuit Diagram.
- 4) Three sets of manufacturer's descriptive literature on various equipment mounted on the control panel.
- 5) Detailed wiring diagram including terminal block details numbers, ferrule numbers and cable connections.

One print of each drawing will be returned to the contractor after making all necessary corrections, changes and required clarifications. Contractor shall incorporate these and send within fifteen (15) days, five prints of each drawing marked "certified for record and use".

18.1 TESTING

The transformer shall be subject to the following tests at the factory before dispatching the same and test certificates shall be furnished.

- a. Measurement of winding resistance.
- b. Ratio polarity and phase relationship.
- c. Impedance voltage.
- d. Load losses.
- e. No-load losses and no-load current.
- f. Insulation resistance.
- g. Induced over voltage withstand.
- h. Separate - source voltage withstand.
- j. Temperature rise.
- k. Di-electric strength of oil.

CHAPTER – 8

MAIN H.T. PANEL

Indoor Type 33KV, 1250/630A, 25 KA, 4 VCB Panel Switchboard

Description	Qty.	IC	OG
33 KV VACUUM CIRCUIT BREAKER PANEL	/	1 No	3 No
The Indoor Enclosure is of 2mm GI Sheet & Front & Back doors	1 set	Y	Y
are in 2mm CRCA Sheet Steel with Powder Coating &			
Provision for receiving incoming or outgoing power cable through			
rear & side bottom entry,excluding termination kits & glands.			
Bus connection 630A, Copper Bus-Bar	1 set	Y	Y
Surge Arrestor for 33KV	1	Y	N
VACUUM CIRCUIT BREAKER			
33KV,1250A,25KA Horizontal Draw out / Horizontal Isolation Indoor			
VCB ,fitted with Motor operated spring charging			
mechanism with 230V AC Motor ,shunt trip coil of 24V DC,	1	Y	N
Closing coil of 24V DC, Aux.Contact 3NO+3NC , Mechanical			
ON/OFF indicator and push button,mechanical operation counter.			

with Inbuilt Mechanical Antipumping Feature.			
33KV,630A,25KA Horizontal Draw out / Horizontal Isolation Indoor VCB ,fitted with Motor operated spring charging mechanism with 230V AC Motor ,shunt trip coil of 24V DC, Closing coil of 24V DC, Aux.Contact 3NO+3NC , Mechanical ON/OFF indicator and push button,mechanical operation counter. with Inbuilt Mechanical Antipumping Feature.	1	N	Y
POTENTIAL TRANSFORMER :			
Resin cast, Single Phase Fixed type PT With HT/LT Fuses.	3	Y	N
PTR :33KV/Rt.3,110V AC/Rt.3/110V AC/Rt.3, Ratio Class of Accuracy : 1.0			
VA Burden : 100VA			
CURRENT TRANSFORMER :			
Epoxy Cast Resin CT	3	Y	N
CTR : 200/5+5A			
Core 1 : Class 1.0			
Core 2 : Class 5P10			
VA Burden : 15VA			
Epoxy Cast Resin CT	3	N	Y
CTR : 50/5+5A			
Core 1 : Class 1.0			
Core 2 : Class 5P10			
VA Burden : 15VA			
PROTECTION :			
Numerical type 3O/C+1E/F Relay (Sepam S 10 B) having Inbuilt features as follows :- 1) O/C+E/F Relay, 2) Master Trip Relay	1	Y	Y
Master Trip Relay	1	Y	Y
Aux. Relay	2	N	Y
METERING:			
Digital Voltmeter, 96x96 sq.mm.with 4 position Selector Switch	1	Y	N
Digital Ammeter, 96x96 sqmm with 4 position Selector Switch	1	Y	Y
Load Manager (EM 6433)	1	Y	Y
INDICATION LAMPS / ANNUNCIATION :			
C.B. ON/OFF/TRIP/Trip Circuit Healthy/Spring Charged	5	Y	Y
R,Y,B Indication Lamps	3	Y	N
8 Window Annunciator	1	N	Y
CONTROL SWITCHES			
T-N-C Switch (Breaker Control Switch)	1	Y	Y
Trip Circuit Healthy Push Button	1	Y	Y
Control wiring with appropriate colours	1 lot	Y	Y
COMMON FOR SWITCH GEAR :			
Space heater with ON/OFF switch, cubicle illumination lamp, MCBs for AC/DC Control & Hooter.	1 set	Y	Y

NOTES:-'Y' means Included and 'N' means not included

MAIN L.T. PANEL

19.1 MAIN L.T. PANEL

The Main L.T. Panel shall be with alluminium bus bars, indoor type, free standing, floor mounting type, extensible on either side.

19.1.1 STANDARDS:

The design, manufacture & testing of the various items are covered by the following standards:

IS 8623 - 1993	: Low Voltage switchgear & control gear assemblies.
IS13947(P1)-1993	: General requirement for Switchgear and Control gear for voltages not exceeding 1000V.
IS12729 -1988	: General requirement for Switchgear and Control gear for voltages exceeding 1000V.
IS13947(P1)-1993	: Degree of protection provided by enclosure for low voltage switchgear and Control gear.
IS 3619 - 1966) IS 6005 - 1970)	: Phosphate treatment.
IS 5 - 1978	: Colour for ready mixed paints & enamels.
IS 5082 - 1969	: Wrought aluminium for electrical purpose.
BS - 162	: Clearance & creep age for bus systems.
IS 5578	: Marking arrangement for bus bar/ cable.
IS 13947 Part-1	: Clearances & Creep ages for devices.
IS 13945	: Push buttons & related control (Part-1, Sec.-1)switches including control contactors.
IS 13703 Part I &	: HRC Fuses.
IS13947 (P-2)-1993	: LV switchgear & control gear circuit breakers.
IS 3231 - 1965	: Protective relays.
IS 3156 - 1992	: Voltage transformers.
IS 2705 - 1992	: Current transformers.

IS 1248 - 1968	: Elect. indicating instruments.
IS 8878 - 1993	: Miniature Circuit Breakers.
IS 10118(P3) –1982	: Code of Practice for Installation of Switchgear.
Protection of enclosure.	: IP43. And IP65.

CONSTRUCTION:

The standard L.T. Panel shall contain a basic frame assembly reinforced with formed sheet steel profiles and cross members. Sheet steel partitions shall be bolted to this frame to form the full structure. Basic structure is made out of minimum 2 mm. thick sheet steel. The load bearing members are made out of 2mm thick and non-load member items are out of 1.6 mm. thick sheet steel. All sheet steel shall be cold rolled.

The pretreatment process shall involve de-greasing, rinsing, de-scaling, rinsing, de-rusting, rinsing, phosphating, rinsing & passivation. After this, it shall be spray finished with a primer, oven dried and spray painted with a finish paint, 2 coats wet on wet. Then it shall be baked in oven to achieve an uniform, smooth and tough film. The standard shade offered shall be light gray shade 631 semigloss as per IS:5. The painting shall be with synthetic enamel stoving grade to a final overall dry film thickness of 50/60 microns.

The Panel design shall be of single front cubicle with horizontal busbars mounted at top, extensible on either side. The breaker, instruments and aux. equipments shall be accessible from front. The cable terminations shall be accessible from the rear side.

A standard transportable shipping section shall contain max. **four** sections with length not exceeding 4 m and weight not exceeding 3.0 tonnes.

The incoming terminals of the breakers shall be connected to the busbar by suitable links. The outgoing terminals shall be extended in the cable chamber for direct Bus Truncking/ cable connections. These shall be identified by colored PVC tape/paint, wherever required link extension to form bus duct entry from bottom shall be provided. Adequate shrouding and caution notice plate shall be provided to prevent the accidental contact to live terminals.

The ACBs shall be mounted on the channel frame and shall be partitioned at the top by insulated barrier on the either side by sheet metal barrier with necessary cutout for power linking for control wiring. The control equipment, fuses, timers, contractors, etc., shall be laid out in standard fashion on a painted base plate and fixed with screws to the frame at appropriate location.

Each ACB module compartment shall be provided with front access door made out of 2 mm. thick sheet steel.

Basic instrument such as multi functioning meters, with selector switch and lamps shall be provided on the ACB module door itself. Meters such as KW, Hz, may be provided in a separate module for a single tier ACB or on the vertical bus door for a 2 tier ACB panel. KWh meters or KVA meter with or without MDI and protective relays shall be located in the bottom most compartment or on the vertical bus chambers. Meters/relays shall be identified with feeder identification name plates when they are located away from feeder module.

Suitable inscription plates shall be provided to identify the feeders, function of the doors mounted devices and caution plate shall be provided at appropriate locations.

Cubicle illuminating lamp, 240V, 5A, 3 pin plug and socket shall be provided with MCB for protection in cable chamber a standard item in each compartment.

Suitable M.S. removable, undrilled gland plates shall be provided. For single core cables non magnetic gland plates shall be provided.

SAFETY INTERLOCKS

The following safety interlock shall be provided for each module:

- i) When ACB is ON door cannot be opened - electrically or mechanically. (Defeat interlock to be provided.)
- ii) Padlocking in OFF position (locks to be provided.)

Tech specs of Moulded Case Circuit-Breakers(MCCB)

1.Rated Operation and insulation voltage:

MCCB's shall have a rated service voltage up to 690V.

Rated insulation voltage shall be minimum 800V.

The rated impulse withstand voltage shall not be lesser than 8Kv.

The MCCBs must have double insulation and positive operation features.

2.Release:

The thermal release should be adjustable. Also all the ratings selected will have the release calibrated at 40 degree Celsius to take care of the temperature surrounding the MCCB during operation.

If adjustable releases are required the setting ranges shall be as detailed below:

Thermal: 70% to 100.

Magnetic: Fixed (10 X In) up to 160A and adjustable (5-10 X In) above that.

The above settings are desired to prevent nuisance tripping when motors or transformers are switched on.

3.Electrical features:

All Incoming and outgoing feeder MCCB's shall be selected on the basis of rated current and shall have Ics short circuit ratings as indicated in the SLD and Ics value shall be equal to Icu value.

Tech specs of Air Circuit Breaker (ACB)

1. General aspects

- The air circuit-breakers (ACB's) used in low-voltage installations shall be designed, built and tested in compliance with the standards of the IEC 947-2 & EN 60947.
- The ACB's shall have a rated operating voltage of up to 690 V (50/60 Hz) and the rated insulation voltage shall be equal to or greater than 1000 V.
- The rated impulse withstand voltage shall be equal to 12 Kv; the device can be used for every installation category in this way, in compliance with the international standards CEI IEC 664-1
- The range of air circuit-breakers shall be equipped with microprocessor-based releases.
- The ACB shall have withstand capacity (Icw) of 50 KA for 1 sec.
- All ACB shall be EDO type and accessories can be fitted from the front side of the breaker.
- ACB shall have minimum 2NO + 2NC inbuilt Aux contact.

2. Protection releases.

- The Air circuit-breakers shall be equipped with microprocessor-based Over current, Short circuit & Earth fault protection releases.
- The protection releases shall be able to operate even when there is no auxiliary power supply and shall be sensitive to the true r.m.s. value of the fault current.
- The protection release shall have protection against Over load (L), Delayed short circuit (S), Instantaneous short circuit (I) and Earth fault (G). The release must have a feature rating plug.
- The microprocessor release shall have the feature distinct fault identification LED.

CHAPTER – 9

BUSBAR SYSTEM:

HORIZONTAL BUSBAR:

The horizontal busbars shall be located at the top/ bottom/ center busbar compartment. The busbars shall be of electrical grade, high conductivity, copper sections of required ratings.

VERTICAL BUSBAR:

The vertical busbar shall also be made from high conductivity electrical grade copper sections, the rating and size shall depend upon the total rating of all feeders in the column considering the diversity factors 0.8. The busbars shall be provided with black heat shrinkable PVC sleeving/PVC taping with R.Y.B phase identification at regular intervals.

NEUTRAL BUS:

It shall run parallel to horizontal and vertical busbars. Standard neutral busbar size is half the size of main busbar.

CONTROL BUSBAR:

Control bus of 60A and 415V shall be provided at top in the front portion. These shall be supported with insulator at required interval.

BUS JOINTS:

Joining between busbars shall be by using rigid or flexible buslinks.

BUS BAR SUPPORTS:

Both horizontal and vertical busbars shall be supported at uniform intervals on high impact, anti-tracking, non-hygroscopic, arc resistant, flame retardant, self extinguishing GRP (Glass reinforced plastics), insulators. These insulators shall be type tested for short circuits withstand capacity.

MODULES:**INCOMER:**

ACB in single tier or in 2 tiers shall be provided as incomer from transformer. Cable entry from bottom shall be provided for each incomer breaker.

OUTGOING FEEDERS:

The outgoing feeders shall be as indicated in B.O.Q./ Drawing. Irrespective of the panel depths, the panels shall be coupled front flush. Each outgoing feeder shall have the provision for Cable/bus duct connection from the bottom/top.

CONTROL WIRING:

All control wiring shall be done as a standard, using 1.5 sq.mm. multistrand pvc insulated copper wires. These shall be black in colour for AC and grey in colour for DC. The C.T. connections shall be done using 2.5 sq.mm. multistrand PVC insulated copper wires of red colour.

The outgoing control wires shall be terminated from the equipment terminals to control terminal block in cable chamber. Whenever required PVC channels shall be used for wire routing. On either ends of these wires self locking yellow ferrules with black letters shall be provided. Multistrand wire termination shall be provided with crimping type lugs.

INTER-MODULE WIRING:

The control wiring between modules located in the same vertical section shall be connected at the respective terminal blocks/terminals. These shall be routed through the cable duct in PVC wire channels. Inter connections between adjacent cubicle in the same shipping sections shall be done in a similar way.

CURRENT TRANSFORMERS:

Current transformer meant for metering & protection shall be mounted on the bus links either on the incoming side or outgoing side as the case may be. They shall be wired and terminated suitably for external connection.

FUSES

All fuses shall be of the HRC cartridge type, conforming to IS:13703 mounted on plug-in type of fuse bases having a prospective current rating of not less than 50 KA. Fuses shall be provided with visible operation indicators to show that they have operated. Insulated fuse pulling handle shall be supplied with each control panel.

INDICATING INSTRUMENTS & METERS

Electronic indicating instruments shall be flush mounted digital type having min. 96 mm square.

CONTROL AND SELECTOR SWITCHES

Control and instrument switches shall be of the rotary type and shall be provided with properly designated plate. Control switches shall have momentary contacts spring return to center with pistol grip handle. Instrument and selector switches shall have stay put contacts.

PUSH BUTTONS

All push buttons shall be of push to actuate type having 2 'NO' and 2 'NC' self reset contacts. They shall be provided with designation plates, engraved with their functions. push button contacts shall be rated for 10 amps at 415V A.C. and 0.6 Amp. inductive breaking at 220V D.C.

INDICATING LAMPS

Indicating lamps shall be of the LED type having double contact bayonet caps and low watt consumption. LED shall preferably be provided with series resistors to prevent short circuiting of control supply. Colour of lens shall be as per enclosed drawing/data sheet. Lamp grip shall be supplied along with the panel so that replacement of the bulb can easily be done from the front of the panel.

. CHAPTER – 10

OUT DOOR FEEDER PILLAR

- i) Feeder pillar shall be of floor mounting free standing type, suitable for out door installation in, dust, vermin and weather proof construction .
- ii) This shall be suitable for continuous .operation on 415(normal) 3 phase 4 wire 50 Hz supply.

FEEDER PILLAR/CONTROL PANEL

- i) The feeder pillar shall be installed on a suitable pedestal of masonry or RCC .The pedestal shall be built to appropriate dimensions, with provision for cable entry through the pedestal and cable bending from below into the feeder pillar. The minimum height of the pedestal above ground level shall be 45cm.This may be increase, where so specified considering the local conditions (like high flood level) in individual cases.
- ii) The installation shall be done at location approved by the consultant/EIC. The locations shall be at about 1m to 2m from any road beam, clear of any service pipes, ducts, cable routes etc.and convenient in taking the distribution cables.
- iii) Finishing coats (2 coats) of painting shall be given in approved colour, using approved makes and type of paint in original containers.
- iv) Danger board shall be provided on each door .Flexible earth connection with the body should be provided for each door.
- v) Each feeder pillar shall be earthed with 2 nos. copper Plate electrodes.
- vi) All cable connection shall be made using appropriate accessories like crimped lugs, flat and spring washers, bolts and nuts etc.as suitable for the type of termination. in no case, any mechanical pull from cable connections shall be experienced at the termination.
- vii) Circuit details should be indicated by painting on the back of one of the doors.

- viii) After all cable termination no opening or unplugged holes shall be allowed, which may allow ingress of insect etc.
- ix) All incoming and out going switchgears shall be properly marked indicating the load connected, cable sizes and outgoing etc.

TESTING

The feeder pillar shall be tested using a 500V DC meager before commissioning.

DRAWINGS

The contractor shall provide the following drawings for approval to Consultants/Engineer in Charge before commencement of supply/fabrication.

- i) General layout-Plan, section, elevations
- ii) Foundation
- iii) Wiring-Power & Control

TECHNICAL SPECIFICATION FOR LEAD ACID BATTERY AND BATTERY CHARGER

1.0 GENERAL TECHNICAL REQUIREMENTS

1.1 All materials/components used in battery chargers and batteries shall be free from flaws and defects and shall conform to the relevant Indian standards and good engineering practice.

1.2 DC system shall consist of one float-cum-boost charger and one battery sets for 24 V system shall have one battery bank with one float cum boost chargers.

1.3 The contractor shall submit the drawings and get the owner's approval before proceeding.

2.0 BATTERY

2.1 The DC Batteries shall be stationary Lead-Acid type with (Plate or Tubular positive plates) for standby duty. Tubular type batteries shall be Normal Discharge type and plate type batteries shall be high discharge type. These Batteries shall be suitable for a long life under continuous float operations at 2.15 to 2.25 volts per cell, and occasional discharges. The 24 V DC system is - ve earth system.

2.2 Cell Terminals: All cell terminals shall have adequate current carrying capacity and shall be of lead alloy or lead alloy reinforced with copper core inserts. Cell terminal posts shall be equipped with connection bolts having acid resisting bolts and nuts.

2.3 Container : Containers shall be made of glass or hard rubber or suitable plastic material or glass fibre reinforced plastics or lead lined wood. Containers shall be robust, heat resistant, leak proof, non-absorbent, acid resistant and free from flaws. Glass containers shall be transparent. Electrolyte level lines shall be marked on container in case of transparent containers. Float type level indicator shall be provided in case of opaque containers. The marking for the electrolyte level should be for the upper, normal and lower limits. The material of level indicator shall be acid-proof and oxidation proof. 2.4 Vent Plugs: Vent plugs shall be provided in sealed type cells. They shall be of anti-splash type, having more than one exit hole and shall allow the gases to escape freely but shall prevent acid from coming out. Open type cells shall be provided with suitable arrestors to prevent spilling of electrolyte.

Plates : The plates shall be designed for maximum durability during all service conditions including high rate of discharge and rapid fluctuations of load. The construction of plates shall conform to latest revisions of IS : 1651 or IS:1652 as applicable. The separators shall maintain the electrical insulation between the plates and shall allow the electrolyte to flow freely. The positive and negative terminal posts shall be clearly marked.

2.4 Sediment Space: Sufficient sediment space shall be provided so that cells will not have to be cleaned out during normal life.

2.5 Cell Insulator: Each cell shall be separately supported on porcelain or hard rubber insulators fixed on to the racks with adequate clearance between adjacent cells.

2.6 Electrolyte: The electrolyte shall be prepared from battery grade sulphuric acid conforming to IS:226 and distilled water conforming to IS:1069. The cells shall be shipped dry and uncharged. The electrolyte for initial filling shall be furnished separately. A minimum of 10% extra electrolyte shall be supplied after completion of initial charging.

2.7 Manufacturer's Identification System

The following information shall be indelibly marked on outside of each cell :

- ☐ Manufacturer's name and trade mark
Country and year of manufacture
- ☐ Manufacturer's type designation
AH capacity at 10 hr. discharge rate
Serial Number
Upper and lower electrolyte level in case of transparent containers.

2.8 Connectors and Fasteners

Lead or lead coated connectors shall be used for connecting up adjacent cells, rows and end take off. Bolts, nuts and washers shall be effectively lead coated to prevent corrosion. End take off connectors shall be provided for end connections from positive and negative poles of the batteries to the Power cables. More than one cable may be required to be connected to the battery terminals. Suitable arrangement for termination of multiple cables shall be provided so as to avoid extra load on the battery terminals. The cable will be single core having stranded aluminium conductor and PVC insulation which will be arranged by the Employer separately. Necessary wooden supports and lugs for termination of these cables on Batteries shall also be supplied by the Contractor. All connectors and lugs shall be capable of continuously carrying the 30 Minute discharge current of the respective Batteries and shall be capable to carry 4 kA for 1 sec.

2.11 Battery Racks

Battery Shall be floor mounted.

3.0 TESTS

3.1 Batteries shall conform to all type tests as per the latest issue of IS: 1651 or IS: 1652 (whichever is applicable depending on type of Battery being offered).

3.2 All Acceptance tests as required by the relevant Indian Standards shall be carried out at site after completion of installation. The capacity tests shall be carried out for 10 hr. discharge rating. The Contractor shall arrange for all necessary equipment, including the variable resistor, tools, tackles and instruments. If a Battery fails to meet the guaranteed requirements the OWNER shall have the option of asking the contractor to replace the same with appropriate batteries at no extra cost and without affecting the commissioning schedule of the employer.

3.3 If successful Contractor has not manufactured & commissioned the specified cell size, they must manufacture & test the prototype in advance and obtain Employer's approval for the same.

3.4 Following type tests shall be carried out on each type of cells in the presence of Employer's representative, if desired by the OWNER:

- i. Capacity tests
- ii. Watt hour and AH efficiency tests

The Contractor shall give at least three (3) weeks advance notice of the date when the tests are to be carried out. Three (3) copies of Type test certificates shall be furnished to the EMPLOYER for approval before the dispatch of the equipment from works. The cost of the cells to be used for type tests shall be included in the respective Type tests charges quoted by Contractor, these cells shall not be supplied.

4.0 ACCESSORIES

4.1 The following information shall be given on the instruction cards supplied with the Battery:

- a) Manufacturer's instruction for filling and initial charging of the Battery together with starting and finishing charging rate.
- b) Maintenance instructions.

c) Designation of cell in accordance with IS: 1651 or IS: 1652 (whichever applicable).

d) Storing conditions of electrolyte and battery cells.

4.2 A complete Set of all the accessories and devices for maintenance of Batteries shall be supplied along with each type of battery bank. The following items comprise the complete set of accessories:

i) 8 Nos. of Hydrometers.

ii) 8 sets of Hydrometer syringes suitable for the vent holes in different cells.

iii) 8 Nos. of thermometers for measuring electrolyte temperature.

iv) 6 No. of Specific gravity correction chart.

v) 8 Nos. of Wall mounting type holders made of teak wood for hydrometer and thermometer.

vi) 6 Nos. of Cell testing voltmeter (3-0-3V) conforming to IS : 1248.

vii) 4 No. of Rubber apron.

viii) 4 Pairs of Rubber gloves

ix) 4 Set of spanners

x) 6 nos. Instructions cards

5.0 BATTERY CHARGER

The DC system shall be of 30 Volt or indicated in BPS, DC having -ve earthed. The Battery Chargers as well as their automatic regulators shall be of static type. All battery chargers shall be capable of continuous operation at the respective rated load in float charging mode, i.e. Float charging the associated DC Lead-Acid Batteries at 2.15 to 2.25 Volts per cell while supplying the DC load. The chargers shall also be capable of Boost charging the associated DC Battery at 2.0-2.7 volts per cell at the desired rate.

5.1 All Battery Chargers shall be provided with facility for both automatic and manual control of output voltage and current. A selector switch shall be provided for selecting the mode of output voltage/current control, whether automatic or manual. When on automatic control mode during Float charging, the Charger output voltage shall remain within +1% of the set value, for AC input voltage variation of +10%, frequency variation of +5%, a combined voltage and frequency variation of +10%, and a DC load variation from zero to full load.

5.2 All battery chargers shall have constant voltage characteristics throughout the range (from zero to full load) at the floating value of the voltage so as to keep the battery fully charged but without harmful overcharge.

5.3 All chargers shall have load limiters having drooping characteristic, which shall cause, when the voltage control is in automatic mode, a gradual lowering of the output voltage when the DC load current exceeds the Load limiter setting of the Charger. The Load-limiter characteristics shall be such that any sustained overload or short circuit in DC System shall not damage the Charger, nor shall it cause blowing of any of the Charger fuses. The Charger shall not trip on overload or external short circuit.

5.4 Uniform and step less adjustments of voltage setting (in both manual and automatic modes) shall be provided on the front of the Charger panel covering the entire float charging output range specified. Stepless adjustments of the Load-limiter setting shall also be possible from 80% to 100% of the rated output current for Charging mode.

5.5 During Boost Charging, the Battery Charger shall operate on constant current mode (when automatic regulator is in service). It shall be possible to adjust the Boost charging current continuously over a range of 50 to 100% of the rated output current for Boost charging mode.

5.6 The Charger output voltage shall automatically go on rising, when it is operating on Boost mode, as the Battery charges up. For limiting the output voltage of the Charger, a potentiometer shall be provided on the front of the panel, whereby it shall be possible to set the upper limit of this voltage any where in the output range specified for Boost Charging mode.

5.7 The Charger manufacturer may offer an arrangement in which the voltage setting device for Float charging mode is also used as output voltage limit setting device for Boost charging mode and the Load-limiter of Float charging mode is used as current setting device in boost charging mode.

5.8 Suitable filter circuits shall be provided in all the chargers to limit the ripple content (Peak to Peak) in the output voltage to 1%, irrespective of the DC load level, when they are not connected to a Battery.

CHAPTER-11

SPECIFICATION FOR 1.5MVA 33/433 kV DISTRIBUTION TRANSFORMERS

1.0 SCOPE

This Specification covers the general requirements of the design, manufacture, testing, supply and delivery of 1.5MVA 33/433kV Distribution Transformers with Off Load Tap Changer.

2.0 SYSTEM PARAMETERS

a) Nominal Voltage -	33kV
b) System highest voltage -	36kV
c) System frequency -	50Hz
d) Number of phases -	03
e) System fault current -	25k A

3.0 SERVICE CONDITIONS

a) Annual average ambient temperature -	30°C
b) Maximum ambient temperature -	40°C
c) Maximum relative humidity -	90%

4.0 APPLICABLE STANDARDS

The equipment and the components supplied shall be in accordance with the latest edition of the standards specified below and amendments thereof. However the CEB Specification shall supersede these Standards in the event there is a discrepancy

- a) IEC60076 Power Transformers
- b) IEC 60137 Insulating bushing for alternating voltages above 1 kV
- c) IEC 60156 Insulating liquids-determination of the breakdown voltage at power frequency – test methods
- d) IEC 60296 Specification for unused minerals insulating oils for transformers and switch-gear
- e) IEC 60354 Loading guide for oil -immersed transformers
- f) IEC 60551 Determination of transformer and reactor sound levels
- g) IEC 60616 Terminal and tapping markings for power Transformers
- h) IEC 60722 Guide to the lightning impulse and switching impulse testing of power transformers and reactors.
- i) IEC 60815 Guide for the selection of insulators in respect of polluted conditions CEB Standard 108-3:20053
- j) BS 2562 Cable boxes for transformers and reactors
- k) BS4360 Specification Weldable structural steel or latest relevant editions
- l) BS 5493 Protective coating of iron and steel structures against corrosion

5.0 TECHNICAL REQUIREMENTS

5.1 Medium Voltage Characteristics

a) Nominal voltage	33 kV
b) Rated voltage	36 kV
d) Rated fault current	25kA
e) Lightning impulse withstand voltage (peak)	170kV
f) One min power frequency withstand voltage	70kV
g) Off load tapping (Primary side)	-2.5%, -5%, -7.5%
h) Insulator creepage distance	900mm

BASIC FEATURES

Transformer should have inbuilt WT, OT, Buchholz's Relay, Annunciation Facia etc. The transformers shall be 3 phase oil immersed hermetically sealed type and suitable for outdoor application. They shall be fully rated at ambient temperature of 45 degreeC. and the typical operating characteristics specified in clause 5.0 technical requirements shall apply to all transformers. They shall comply with the requirements of IEC 60076 & 60354 as regards to temperature rise and overloads on all tapplings and with the voltage of the secondary winding at the specified nominal voltage.

Transformer Construction

The transformers shall be double-wound, mineral oil immersed, naturally cooled (ONAN) and hermetically sealed with nitrogen cushion type to accommodate the expansion and contraction of Insulating oil due to variation of load. The transformer shall have base (Skid) suitable for plinth mounting. The core shall be of high grade cold rolled grain oriented silicon sheet steel and securely clamped. The transformer core shall be of three limbs stacked core type.

The primary and secondary windings shall be constructed from high conductivity E.C. grade copper. All turns of windings shall be adequately supported to prevent movement. The windings shall be of layered winding type.

No material which can be deleteriously affected by the action of oil under the operating conditions of the transformers shall be used in the transformers or leads or bushings.

To ensure that the core and coils of transformers are seated on the floor of the tank, supporting frames shall be designed to accommodate variations in tank height. The core and coil assembly shall be rigidly connected to the tank and suitably closed lugs shall be provided for removing the core and coil assembly from the tank.

Construction features shall permit local repairs to be easily carried out in the event of equipment failure. CEB Standard 108-3:20055

Drying shall be carried out by vapour phase treatment to ensure complete moisture free condition before filling with insulating oil. Documentary evidence shall be provided with the offer to confirm this.

Transformers supplied against each order shall be designed to operate in parallel satisfactorily with the others when operating on the same tap position.

Transformer Tank

Each transformer shall be enclosed in a suitable stiffened welded steel tanks such that the transformer can be lifted and transported without permanent deformation or oil leakage. The construction shall employ weldable mild steel comply with BS4360 and shall be of sufficient strength and rigidity to withstand moving, shipping and handling without deformation.

Radiators provided shall be detachable fin type and connected to the main tank through flanged valves mounted on the tank at top and bottom and each bank shall be fitted with drain valve and air release plug.

Lifting lugs shall be provided, suitable for the weight of the transformer, including core and windings, fittings, and with the tank filled with oil. Each tank shall be provided with jacking lugs suitably positioned for transport.

All matching faces of joints shall be made oil tight and finished with a smooth surface to ensure that the gasketing materials make a satisfactory joint.

It must be possible to remove any bushing without removing the tank cover.

Pockets shall be provided for a stem type thermometer and for the bulbs of temperature indicators where specified. These pockets shall be located in the position of maximum oil temperature and it must be possible to remove any bulb without lowering the oil level in the tank. Captive screwed caps shall be provided to prevent the ingress of water to the thermometer pockets when they are not in use.

Flanges and covers of tanks shall be of sufficient thickness to prevent any depression

occurring, which would retain water around the bolts.

All the nut and bolts used shall be hot dip galvanised and spaced at sufficiently close intervals to avoid buckling of either flange or covers and shall provide reasonably uniform compression of the gasket.

All transformers shall be suitable for outdoor mounting on plinth platforms and shall have four mounting lugs with 12 mm diameter holes suitable for bolting the transformer to the platform. Bolt hole spacing shall be as specified by the CEB to suit mounting requirements.

The transformer tank shall be capable of withstanding, without permanent deflection, a vacuum of 2 millibar pressure when empty of oil or the vacuum required by the recommended drying-out procedure, whichever is the greater.

Transformer Sealing / Gasket

The transformers shall be of the hermetically sealed type and provided with a satisfactory lid sealing gaskets.

The gasket shall be of the good quality to maintain the sealing effect through its life span and shall prevent seeping of oil due to ageing and extreme operating temperature CEB Standard 108-3:20056

Gaskets provided with the transformers shall be suitable for making oil tight joints, and there would be no deleterious effects on either gaskets or oil when the gaskets are continuously in contact with hot oil. No gaskets shall be used in which the material of the gasket is mounted on a textile backing.

Exterior gaskets shall be of rubberized cork material, weatherproof and shall not be affected by strong sunlight.

Internal and External Finish

Interiors of oil tanks shall be thoroughly cleaned by shot blasting or other approved methods and, where exposed to corrosion before use, shall be coated with an approved corrosion preventing compound. The internal surfaces of oil tanks that will be exposed to atmosphere in service shall be painted with an epoxy or other approved oil resisting compound. The exterior shall be thoroughly cleaned by shot blasting or other approved methods and shall be treated with hot zinc spray of minimum 50 micron thickness. Then it shall be painted with a etch primer of 50 micron minimum thickness and a 100 micron minimum thickness undercoating. Then it shall be painted with a gloss or semi gloss paint of minimum 50 micron thickness. The ultimate dry film thickness shall not be less than 300 microns.

Radiators shall be hot dip, galvanised as per BS EN ISO 1461 (1999) and be artificially weathered and given one coat of zinc chromate primer followed by the same number and type of paint coatings specified for the transformer tank and accessories.

Rating Plate

A stainless steel rating plate shall be fitted to each transformer in an accessible position. The information shall be deeply etched including the diagram of the connections of the windings, the vector diagram showing the general phase relations of the transformer, and a diagrammatic plan of the transformer cover showing the terminal positions and marking and other essential particulars as per clause 7 of IEC60076 -1. indelibly in English language.

Following information in addition to the requirement of clause 7 of IEC60076-1. also shall be marked

- a) Type of Insulating oil
- b) No load losses
- c) Full load losses
- d) Vacuum withstand capability

Bushings

The transformer shall be provided with outdoor type porcelain insulator bushings, conforming to IEC 60137, from a reputed manufacturer, for 33kV phase terminal and 11kV phase & neutral terminal. Creepage distances of the 33kV and 11kV bushing insulators shall be 900mm and 300 mm respectively.

33kV Bushings, 11kV Bushings and the 11kV Neutral bushing shall be mounted on the tank cover in a manner such that the minimum phase to phase clearance and phase to earth clearance shall not be less than those stated in IEC 76.

The porcelain shall not engage directly with the hard metal and gaskets shall be interposed between them and the surface in contact with the gasket shall be unglazed. They shall be installed in a manner to prevent ingress of moisture and to facilitate easy removal. The neutral bushings and stems shall be identical to those provided for phase CEB Standard 108-3:20057

terminations. Bushing palms shall be made of brass and be suitable for the bolting of conductor compression lugs.

The palms shall be suitably dimensioned, to suit the bushing rod and the holes spaced sufficiently apart to enable tightening of bolts using standard spanners and to prevent overlap of lugs.

Terminal Leads

Outgoing leads shall be brought out through bushings, the leads shall be such that the core and coils could be removed with the least possible interference with these leads, and they shall be specially supported inside the transformer to withstand the effects of vibration and short circuits.

The leads shall be so fixed that they do not break at the connection and would not twist and touch each other in case the bushing is turned accidentally.

Off Load Tap Changer

Voltage tappings shall be provided on the primary side of each transformer. Tapping step shall be +5% to -7.5%. Number of tappings shall 2.5%.

The tappings shall be selected by an 'off load' tapping switch with an external hand wheel with provision for locking on to a selected tapping. The shaft shall be adequately sealed so that no seepage of oil occurs under all conditions of service.

The voltage operating positions, together with tap change positions shall be clearly and indelibly marked.

Oil Temperature Indicators

The Transformers shall be provided with acceptable and approved devices to indicate the oil temperature. Full detail of the method of operation of the devices shall be furnished. The devices shall have a dial type indicator, and, in addition, a pointer to register the highest temperature reached, which shall be re-settable.

Surge Arrester Mounting Bracket

The surge arrester mounting bracket made of steel shall be provided on the transformer cover plate. The bracket shall be hot dip galvanised and suitable to accommodate three Nos. of surge arresters on the 33kV side

Oil

Transformers shall be filled to the required level with new, unused, clean, standard mineral insulating oil compliance with IEC 60296".Class 1A or Class 2A.

Pressure Relief Valve

The transformer tank shall be fitted with a suitable pressure relief valve to operate when the pressure exceeds 0.3 bars to prevent explosion of the transformer due to internally generated pressure.

Pressure Gauge

The transformer tank shall be fitted with an approved pressure gauge to indicate the pressure inside the transformer tank.

ADDITIONAL REQUIREMENTS

Terminal Marking

All transformers shall have the primary and secondary terminal markings plainly and indelibly marked on the transformer adjacent to the relevant terminal. These markings shall be 25mm in height.

Radio Interference

When operated at voltage even up to 10% in excess of the normal system rating, transformers shall be substantially free from partial discharges (i.e. corona discharges in either internal or external insulation) which are likely to cause interference with radio or telephone communication.

Routine Tests

The following routine tests as per IEC 60076 : 1993 shall be carried out on all the power transformers ordered and the routine test reports shall be made available for the observation of the CEB Inspector at the time of inspection.

- a) Measurement of winding resistance
- b) Measurement of voltage ratio and check of voltage vector relationship
- c) Measurement of impedance voltage, short -circuit impedance and load loss
- d) Measurement of no-load loss and current
- e) Dielectric routine tests
- f) Oil breakdown test
- g) Pressure test at 0.25 bar above atmospheric

Spare Parts and Tools

The supplier shall specify the spare parts required for proper and continuous functioning of the transformers. The supplier shall also specify if any special tools are required for the maintenance of transformers. A schedule of prices and quantities of spare parts and special tools shall be given by the supplier. CEB Standard 108-3:20059

11.2 DRAWINGS AND LEAFLETS

Three copies of operation and maintenance manual with complete instructions for the installation, operations, maintenance and repairs, circuit diagram, foundation and trenching details shall be provided with the transformer.

CHAPTER - 12

MISCELLANEOUS

1. FIRST AID BOX

Standard first aid box shall contain minimum following material as prescribed by St. John Ambulance Brigade of Indian Red Cross. First Aid box should be of 18 Gauge M.S. sheet of size 14" x 7" x 5"(minimum)

- i) 6 wound dressings small (for injured figures).
- ii) 3 wound dressings medium for injured hands & feet.
- iii) 3 wound dressings(for other injuries)
- iv) 3 burn dressings (large)
- v) One absorbant cotton wool 13 gms.
- vi) One dressing scissors
- vii) 1 bottle liquid iodine I.D. 25 mls.
- viii) 1 bottle spirit of sal volatile I.P. 25 mls.
- ix) 1 packet pottassium permaganate I.P. 25 gms.
- x) 1 snake bite lace.
- xi) 1 packet of soda bi carb I.P. 25 gms.
- xii) 1 bottle of 100 tablets of 5 gms. aspirin
- xiii) 1 tube of burn ointment (Burnol/Furocin)
- xiv) 1 No.Artificial Respirater.

2. TOOL BOX

A standard tool box shall be made of 16 SWG., M.S. sheet and be of minimum 400mm x 200mm x 200mm size. It shall contain minimum following tools for the operation and maintenance of the sub-station equipment;

- i) Spanner set having 10 pieces from 6mm to 38mm size, open end type.
- ii) Spanner set having 10 pieces from 6mm to 38mm size, ring type.
- iii) Box spanners with rod for transformer terminal nuts - 1 set.
- iv) Insulated screw driver of 300 mm size - 1 No.
- iv) Insulated screw driver of 150 mm size - 1 No.

- v) Rubber gloves suitable for 33 KV -2 No.s
- vi) Line Tester - 1 No.
- vii) Adjustable spanner of 300 mm size - 1 No.
- viii) Insulated Pillar set 200 mm size - 1 No.
- ix) Wire cutter and peeler for wires upto 6mm size - 1 No.

3. DRAWINGS/LAYOUTS

A standard set of drawings/layouts to be provided in the sub-station shall include the followings. These drawings/layout shall be drawn on tracing cloth/film in ink, framed on 3mm thick hard board and covered with transparent polythene sheet. The minimum size of each drawing shall be 900mm x 600mm.

- i) Equipment layout in sub-station room including location of earth stations, earthing conductor routes, H.T. & L.T. cable routes, bus duct routes, rising main routes clearance between various equipments and walls.
- ii) Schematic power wiring diagram indicating rating of feeders and size of cables/bus ducts/rising mains.
- iii) Control wiring diagram of H.T. & L.T. switchgear.

4. ENTRY RESTRICTION BOARD

A M.S. sheet board of 16 SWG. With 'ENTRY RESTRICTED TO AUTHORISED PERSONS ONLY' shall be providing near the main entrance of the sub-station. The lettering shall be with black paint on yellow back ground.

5. GENERAL

The contractor shall make arrangements for watch and ward of the electrical installations until the time he finally hands over the same to the clients. No extra payment shall be made on this account.

- 6. It will be the responsibility of the contractor to arrange for obtaining the required electrical connection sanctioned and released and also for the inspection of all medium pressure and H.V. installation by the Chief Electrical Inspectorate, Local Administration, etc. and see that they are passed by him. as per actual against proof of its payment. In case any defects are pointed out by the Electrical Inspector, the contractor shall arrange to remove the same and arrange for the re-inspection. Till such time he approves the installation and issues a certificate to that affect all charges for re-inspection shall be borne by the contractor.
- 7. The Consultant shall have full powers to get the materials or the workmanship, etc., inspected and tested by an independent body at the contractor's expense in order to ascertain soundness and adequacy of the same.

CHAPTER – 13

DRAWINGS:-

The contractor shall submit one complete set of originals on R.T.F. and further SIX copies of drawings to the consultants after completion of the work.

These drawings must give the following information:

- a) Location of all equipments viz. transformers, H.T.Panel, L.T.Panel, Battery Bank, Capacitors and earthing stations etc.
- b) Cable routes clearly indicating the sizes & number of cables.
- c) Earthing layout - indicating the type of earth station & size of earth conductor.
- d) Wiring diagram of L.T. Panels.
- e) Complete single line diagram for Normal and Emergency supplies.
- f) Any other information the consultants-in-charge may deem fit.

No completion certificate will be issued until the drawings are submitted. The drawings will be prepared and submitted by the contractor without any extra charge.

APPENDIX-C

SAFETY PROCEDURE

1. The Indian Electricity Rules 1956, as amended up to date, are to be followed in their entirety. Any installation or portion of installation which does not comply with these rules should be got rectified immediately.
2. The detailed instructions on safety procedures given in B.I.S. Code No. 5216-1969-"Code of Safety Procedures and Practices in Electrical Works" shall be strictly followed.
3. No inflammable materials shall be stored in places other than the rooms specially constructed for this purpose in accordance with the provisions of Indian Explosives Act. If such storage is unavoidable, it should be allowed only for a short period and in addition, special precautions, such as cutting off the supply to such places at normal times, storing materials away from wiring and switch boards, giving electric supply for a temporary period with the permission of consultants shall be taken.
4. The electrical switchgears and distribution boards should be clearly marked to indicate the areas being controlled by them.
5. Before energizing on an installation after the work is completed, it should be ensured that all tools have been removed and accounted, no person is present inside any enclosure of the switch board etc. any earthing connection made for doing the work has been removed.

SCHEDULE OF APPROVED MAKES OF MATERIALS

ELECTRICAL ITEMS

1.	HT Panel	:	SEIMENS/ABB
2.	HT Termination kit	:	3M/RAYCHEM
3.	LT Panel	:	Electra Power Pvt. Ltd/Maklik/Aldec/SCHNEIDER
4.	ACB	:	SCHNEIDER/L&T/SIEMENS
5.	VCB	:	SCHNEIDER/L&T/SIEMENS
6.	MCCB & MCB	:	SCHNEIDER/L&T/SIEMENS
7.	TRANSFORMER	:	VoltAmp/Crompton/Kirloskar/Areva T&D India Ltd.
8.	STREET LIGHT	:	Philips or equivalent
9.	HT CABLES(33KV XLPE)	:	CCI/Fort Gloster/NICCO/Polycab Wires
10.	LT CABLES(1.1KV XLPE)	:	CCI/Fort Gloster/Gemscab/Havells
11.	BATTERY CHARGER	:	Voltron/Chabbi Electricals Pvt. Ltd/
12.	BATTERY	:	Exide/Sukam
13.	APFC PANEL	:	BCH/L&T/ABB/SCHNEIDER
14.	LUGS	:	Dowells
15.	COMPRESSION GLANDS	:	Comet
16.	MS powder coated Cable Tray/Raceway	:	M.M.Enterprise or equivalent.

In addition to above, materials of ISI marked may also be used after approval of EIC / BCPL,
Dibrugarh.

LIST OF DRAWINGS

SL. No.	DRAWING TITLE	DRAWING NUMBER
1.	MAIN ELECTRICAL SLD (MAIN PANEL)	RAA/BCPL/EXTERNAL/ELEC-01
2.	STREET LIGHT LAYOUT DIAGRAM	RAA/BCPL/EXTERNAL/ELEC-02
3.	STREET LIGHT CONNECTION LAYOUT DIAGRAM	RAA/BCPL/EXTERNAL/ELEC-03
4.	OVERALL PANEL CABLE LAYOUT	RAA/BCPL/EXTERNAL/ELEC-04
5.	EARTHING PIT DETAILS	RAA/BCPL/EXTERNAL/ELEC-05
6.	EARTH PIT LAYOUT DIAGRAM	RAA/BCPL/EXTERNAL/ELEC-05(A)
7.	SCHEMATIC DIAGRAM OF HT PANEL	RAA/BCPL/EXTERNAL/ELEC-06
8.	PANELS FOR DIFFERENT BLOCK UNITS	RAA/BCPL/EXTERNAL/ELEC-07
9.	STREET LIGHT SLD	RAA/BCPL/EXTERNAL/ELEC-08
10.	STREET LIGHT AND HIGH MAST DETAILS	RAA/BCPL/EXTERNAL/ST-HM POLE-09
11.	DETAIL LOCATION PLAN OF SUBSTATION & TRANSFORMER LAYOUT	RAA/BCPL/EXTERNAL/ELEC-09
12.	LOCATION PLAN OF SUBSTATION & TRANSFORMER LAYOUT	RAA/BCPL/EXTERNAL/ELEC-10
13.	LAYOUT AND DETAILS OF PANEL ROOM	RAA/BCPL/EXTERNAL/ELEC-11