E- TENDER DOCUMENT

FOR

OHE WORK IN CONNECTION WITH ISOLATION OF LOOP LINES AT VARIOUS STATIONS OF NEW REWARI - NEW KISHANGARH SECTION UNDER OF DFCCIL JAIPUR.

DEDICATED FREIGHT CORRIDOR CORPORATION OF INDIA LIMITED

(A Government of India Undertaking)

MINISTRY OF RAILWAYS

CGM/JP/DFCCIL OFFICE

C-16, Khushi Vihar, Patrakar Colony,
Mansarovar, Jaipur-302020 (Rajasthan)

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TOP SHEET

Tender No. :	**DFCC-JP-EL-REJN-KSGN-T-02**	**Date: 07.01.2022**
Name of work:	**OHE work in connection with isolation of Loop lines at various stations of New Rewari - New Kishangarh section under of DFCCIL Jaipur.**	
Estimated Cost of work:	**Rs. 1,10,97,303.00 (Rs. One Crore Ten Lakh Ninety-Seven Thousand Three Hundred and Three only.)(Including GST)**	
Earnest Money Deposit	Rs 2,22000/- (Rupees Two Lakh, Twenty-Two Thousand Only). (To be submitted in DFCCIL account. Account Detail Mentioned in Appendix to tender). Or MSEs registered with a body specified by Ministry of MSME for the item tendered are exempted from submission of Earnest Money Deposit, for which, the tenderers will have to upload the exemption certificate on the E-Tender Portal	
Completion Period:	Total 04 (Four) Months from the date of issue of letter of acceptance.	
Date of Opening:	27.01.2022 at 15:30 hrs.	

For and on behalf of
CGM/JP DFCCIL Office

TENDER FORM

Place:……..
Date: ……..

Chief General Manager,
Dedicated Freight Corridor Corporation of India Limited,
C-16, Khushi Vihar, Patrakar Colony,
Mansarovar, Jaipur-302020 (Rajasthan)

I / We …… have read the various conditions of tender attached hereto and hereby agree to abide by the said conditions.
I / We also agree to keep this tender open for your acceptance for a period of **90 days** from the date fixed for opening the same.

1. I /We offer to do the work for **"OHE work in connection with isolation of Loop lines at various stations of New Rewari - New Kishangarh section under of DFCCIL Jaipur.."** at the percentage/rates quoted in attached schedule and hereby bind myself/ourselves to complete the work in all respects within **04 (Months) months from the date of issue of letter of acceptance of the tender**.

2. I / We also hereby agree to abide by all the DFCCIL/Indian Railway Standard General Conditions of Contract, with all correction slip up to date and to carry out the work according to the Special Conditions of Contract and Specifications of materials and works as laid down by DFCCIL/Railway in the annexed Special Conditions/Specifications, Schedule of Rates with all correction slip up-to-date for the present contract.

3. The full value of the earnest money deposited shall stand forfeited without prejudice to any other rights or remedies if:

a. I / We do not execute the contract document within Seven days after receipt of notice issued by DFCCIL that such documents are ready.

OR

b. I / We do not commence the work within 15 days after receipt of LOA issued.

4. Until a formal agreement is prepared and executed, acceptance of this tender shall constitute a binding contract between us subject to modifications, as may be mutually agreed to between us and indicated in the letter of acceptance of my/our offer for this work.

Signature of Witness: Signature of Tenderer(s)

(1) …… Date…….

(2) ……. Address…….

Dedicated Freight Corridor Corporation of India Limited
(A Government of India Undertaking)
MINISTRY OF RAILWAYS

Tender No. DFCC-JP-EL-REJN-KSGN-T-02 **Date: 07.01.2022**

M/s _____
_____
_____

NOTICE INVITING E- TENDER

1. Chief General Manager/JP, DFCCIL, C-16, Khushi Vihar, Patrakar Colony, Mansarovar, Jaipur-302020 (Rajasthan)., invites **open E - Tenders in single packet system** on prescribed forms from firms/companies meeting qualifying requirements and having requisite experience and financial capacity for the following works: -

Tender No.	**DFCC-JP-EL-REJN-KSGN-T-02**
Name of Work	**"OHE work in connection with isolation of Loop lines at various stations of New Rewari - New Kishangarh section under of DFCCIL Jaipur."**
Estimated Cost of work	**Rs. 1,10,97,303.00 (Rs. One Crore Ten Lakh Ninety Seven Thousand Three Hundred and Three only.) (Including GST)**
Period of Contract	**Total 04 (Four) Months**
Earnest Money Deposit	Rs 2,22,000/- (Rupees Two Lakh, Twenty-Two Thousand Six Only). (To be submitted in DFCCIL account. Account Detail Mentioned in Appendix to tender). **Or** MSEs registered with a body specified by Ministry of MSME for the item tendered are exempted from submission of Earnest Money Deposit, for which, the tenderers will have to upload the exemption certificate on the E-Tender Portal
Tender Document Cost	Rs.5900.00 (inclusive of all taxes and duties) to be Submitted in DFCCIL account on IREPS Portal. **Or** MSEs registered with a body specified by Ministry of MSME for the item tendered are exempted from submission of Cost of Document, for which, the tenderers will have to upload the exemption certificate on the E-Tender Portal.
Date of Sale (Online)	**From Date 07.01.2022**
Issue of Corrigendum, if any	**On or after Date 07.01.2022 (on www.ireps.gov.in)**
Date and Time of submission of tender	**On or before Date 27.01.2022 and time 15:00hrs**
Date and Time of opening of tender	**Date 27.01.2022 and time 15:30hrs**
Defect Liability Period	**12 Months**

2 **ELIGIBILITY CRITERIA**

Eligibility of the applicants shall be assessed based on the **"Eligibility Criteria", "Essential Qualifying Criteria" and "Other Qualifying Criteria" as given in *Notice Inviting E-Tender*.**

The Tender document can be downloaded from IREPS website www.ireps.gov.in and DFCCIL's website www.dfccil.com.Tenderers are advised not to make any corrections, additions or alterations in the downloaded tender documents. In case, any corrections, additions or alterations in the downloaded tender documents are made, such tender shall summarily rejected.

3. The cost of tender documents shall be deposited in DFCCIL account on IREPS portal.

4. DFCCIL may issue addendum(s)/corrigendum(s) to the tender documents. In such case, the addendum(s)/corrigendum(s) shall be issued and placed on IREPS website. The tenderers who have downloaded the tender documents from website must visit the website and ensure that such addendum(s)/corrigendum(s) (if any) is also downloaded by them. Such addendum(s)/corrigendum(s) (if any) shall also be submitted, duly stamped and signed, along with the submission of the tenders.

5. The tender documents shall be submitted in online mode through website www.ireps.gov.in in single bids only. Single offer viz. containing Technical offer and financial offer along with necessary documents like scanned copy of TDC to be uploaded. Detailed credentials as per the requirement of eligibility criteria in "**Technical offer**" as well as "**Financial offer**" to be submitted through IREPS portal. **Bids are required to be submitted only by online mode and uploaded on the e-tendering web site using Digital Signature for signing the documents**.

6. Tenders shall be opened at **the address given below** at 15:30 hours on the same day in the presence of the tenderer(s) or their authorized representatives intending to attend the opening.

Address of Office of the Chief General Manager/ JP (for Opening of E- tenders):

Chief General Manager/JP, DFCCIL, C-16, Khushi Vihar, Patrakar Colony, Mansarovar, Jaipur - 302020
All the Bids received shall be opened on the date and time mentioned above in the tender notice, through process of e-tendering. The sequence of opening shall be:

i) Earnest Money Deposit (EMD)
ii) Technical offer.
iii) Financial offer.

7. Tender shall be submitted as per "Instructions to Tenderers" as followed on IREPS portal.

8. Any tender received without Earnest Money in the form as specified in tender documents shall not be considered and shall be summarily rejected.

9. DFCCIL reserves the right to cancel the tenders before submission/opening of tenders, postpone the tender submission/opening date and to accept / reject any or all tenders without assigning any reasons thereof. DFCCIL's assessment of suitability as per eligibility criteria shall be final and binding.

10. Tenderers may note that they are liable to be disqualified at any time during tendering process in case any of the information furnished by them is not found to be true. The decision of DFCCIL in this regard shall be final and binding.

11. DFCCIL reserves the right to pre-qualify the bidder(s) provisionally based on the documents submitted by them and open financial bid(s), subject to their final verification. In the event of any document being found false, the provisional qualification shall stand withdrawn, and the next lower bidder shall automatically come to the position of such disqualified bidder. Action against such disqualified tenderers shall be taken as per above Clause No. 10.0 of Notice Inviting Tender.

12. The validity of the offer shall be 90 days.

13. The transfer of tender documents purchased by one intending tenderer to another tenderer is not admissible. Tenderer can submit tenders only on the documents purchased/downloaded from website mentioned above.

We look forward for your active participation.

For and on behalf of **DFCCIL**

Chief General Manager/JP

ANNEXURE -I

1.0 ELIGIBILTY CRITERIA

The tenderer shall satisfy the following eligibility criteria to qualify for this tender:

I. Essential Qualifying Criteria

A. Firms/companies

(i) The tenderer should have a registered office anywhere in India.

*The documentary proof regarding **A**. above should be submitted as part of the tender document.*

Note: For the purpose of documentary proof of "registered office "as mentioned in (i) above any address of office as mentioned in any of the following documents submitted along with the original offer by tenderer(s) may be considered as registered office of the tenderer(s).

1. Address mentioned in the article of association of company duly registered under Companies Act, 1956.
2. Address mentioned in Partnership Deed
3. Address mentioned in Trade License obtained by the individual from Govt. body.
4. Address mentioned in any tax departments.
5. Address mentioned in P.F. Registration documents.

B. Technical capability:

1. In support of their credentials, the Tenderer(s) should have to submit documents as stipulated in tender document along with their tenders.

2. THE TENDERER(S) SHOULD SATISFY THE FOLLOWING MINIMUM ELIGIBILITY CRITERIA AS UNDER –

   Firm must have satisfactorily completed in the last three previous financial years and the current financial year upto the date of opening of the tender, one similar single work for a minimum of 35% advertised value of the tender.

   Work executed with Central/State Govt./Semi-Govt. organizations/Authorities, PSUs, Govt. of India undertakings shall only be considered to qualify above eligibility. Certificates from the private Individuals/ Organizations shall not be considered.

   The Tenderer(s) will produce/attach the certificate of Work completion with the Tender Document as per above and such certificate should clearly supported by following details:-

   a) Name of Agency issuing a certificate.
   b) Date of issue of certificate.
   c) The name of Work.
   d) The Acceptance letter no.
   e) The date of issue of Acceptance letter.
   f) Agreement no.
   g) Date of execution of Agreement.
   h) Date of original Completion of Work as per Acceptance Letter.
   i) Date of Actual completion of Work.
   j) The Amount of Work done as per Agreement (in Rupees).
   k) The Final Amount of Work at the time of Completion of Work (in Rupees).
   l) Whether the Work is completed satisfactory or not satisfactory.

Notes:

Following will be considered as similar work:

Similar nature of work of this tender is**:- "Design, supply, erection /maintenance, testing & commissioning of 25 kV single phase A.C. or 2X25 kV OHE, anywhere in the Railway system."**

The tenderer (s) must be an established, experienced and reputed construction firm and have regularly undertaken works of the similar type tendered for and have adequate technical knowledge and practical experience in field.

C. **Financial capability**

The contractual payments received by the Firm or the arithmetic sum of contractual payments received by Firm in the previous three financial years and current financial year upto the date of opening of tender shall be at least 150% of the estimated value of the work as mentioned in the tender.

Certified true copy of audited annual account are to be submitted as a proof along with bid documents. In case the annual accounts are not audited, the contract sum received for the required period should be duly certified by the chartered Accountant."

Each tenderer has to satisfy the eligibility criteria for technical capability, competence as well as for financial capacity and organizational resources as specified in the tender documents to qualify for consideration of bid submitted by tenderer(s).

There should not be any unsatisfactory performance Report of the Contractor from any source.

Tenderer(s) may please note that their offers will be evaluated as per the credentials/ documents attached by the tenderer(s) along with the tender/offer.

D. **JVs SHALL NOT BE CONSIDERED.**

E. **ELECTRICAL CONTRACTOR LICENSE—**

(i) The Contractor should have valid A-Class Electrical license to be submitted along with tender failing which tender would be consider ineligible (i.e., not eligible).

(ii) The work shall be carried out by the contractor, having valid Electrical Contractor`s License for carrying out installation work under the direct supervision of the persons holding valid certificates of competency issued by the State Government.

(iii) The successful tenderer shall furnish the names and particulars of the certificate of competency of supervisor and workmen to be engaged for carrying out this work.

II. **System of verification of Tenderer's credentials**: -

Railway board letter no. 2017/Trans/01/Policy dated 08.02.2018, accordingly following changes have been approved by Railway board.

For the works tenders, it has been decided to adopt the affidavit-based system of credential verification. The tenderer shall submit along with the tender document, documents in support of his/their claim to fulfill the eligibility criteria as mentioned in the tender document. Each page of the copy of documents/certificates in support of credentials, submitted by the tenderer, shall be self-attested/digitally signed by the tenderer or authorized representative of the tendering firm. Self-attestation shall include signature, stamp and date (on each page). Only those documents which are declared explicitly by the tenderer as "documents supporting the claim of qualifying the laid down eligibility criteria", will be considered for evaluating his/their tender. The system shall be applicable once it is made operational in IREPS. This system is already being followed by some of Railway/DFCCIL PSUs.

1. In all works tender documents, followings para may be added in the section describing the qualification and eligibility criteria.

"The tenderers shall submit a notarized affidavit on a non-judicial stamp stating that they are not liable to be disqualified and all their statements/documents submitted along with bid are true and factual. Standard format of the affidavit to be submitted by the bidder is enclosed as Annexure-V. Non submission of an affidavit by the bidder shall result in summary rejection of his/their bid. And it shall be mandatorily incumbent upon the tenderer to identify, state and submit the supporting documents duly self-attested by which they/he is qualifying the Qualifying Criteria mentioned in the tender document. It will not be obligatory on the part of Tender Committee to scrutinize beyond the submitted document of tenderer as far as his qualification for the tender is concerned".

With the submission of the affidavit as mentioned above, the practice of verification of tenderer(s) documents by the Railway/DFCCIL may be dispensed with.

a) The Railway/DFCCIL reserves the right to verify all statements, information and documents submitted by the bidder in his tender offer, and the bidder shall when so required by the Railway/DFCCIL, make available such information, evidence and documents as may be necessary for such verification. Any verification or lack of such verification, by the Railway/DFCCIL shall not relieve the bidder of its obligations or liabilities hereunder nor will it affect any right of the Railway/DFCCIL thereafter.
b) In case any wrong information submitted by the tenderer, the contract shall be terminated, Earnest Money Deposit (EMD), Performance Guarantee (PG) and Security Deposit (SD) of contract forfeited and agency barred for doing business on entire Indian Railway/DFCCILs for 5 (five) years.
c) With such a system of self-certification of credentials, tender finalization should also be speed up. It has accordingly been decided that the tender validity period should be reduced to 45 days for single packet and 60 days for two packet system of tendering (in place of the present limits of 90 days and 120 days) for tenderers having affidavit based system of credential verification.

2. The tenderers shall provide satisfactory documentary evidences acceptable to Railway/DFCCIL along with the tender to show that:

2.1 They have an established technically competent and adequate staff organization to ensure that the services required under this tender can do satisfactorily.

2.2 They have sufficient equipments; plants and machinery to meet the obligations under the contract and to complete the work contract all within the stipulated time schedule and accepted by him.

3 The tenderer should submit the details of similar works done in the past.

4 The tenderer should submit the attested copies of the certificates obtained from the agencies wherever the works have completed successfully. These certificates should indicate the details of installation and successful commissioning of the similar type of equipments executed by the tenderer.

5 The tenderer will submit, along with offer list of work in hand indicating description of work, contract value, approximate value of balance work yet to be done and date of award of work.

6 They have adequate financial resources to meet the obligations under the contract. They have also required to submit the report from recognized bank of financial institutions.

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GENERAL INFORMATION	
Tender No.	**Tender No. DFCC-JP-EL-REJN-KSGN-T-02**
Name of Work	**"OHE work in connection with isolation of Loop lines at various stations of New Rewari - New Kishangarh section under of DFCCIL Jaipur."**
Estimated Cost	**Rs. 1,10,97,303.00 (Rs. One Crore Ten Lakh Ninety Seven Thousand Three Hundred and Three only.) (Including GST)**
Period of Contract	**Total 04 (Four) Months**
Earnest Money Deposit	Rs 2,21,946/- (Rupees Two Lakh, Twenty-One Thousand, Nine Hundred Forty-Six Only). (To be submitted in DFCCIL account. Account Detail Mentioned in Appendix to tender). **Or** MSEs registered with a body specified by Ministry of MSME for the item tendered are exempted from submission of Earnest Money Deposit, for which, the tenderers will have to upload the exemption certificate on the E-Tender Portal
Cost of Tender Documents	**Rs.5900/-**(inclusive of all taxes and duties) to be Submitted in DFCCIL account. Detail of Bank account mentioned in Appendix to Tender.
	Or
	MSEs registered with a body specified by Ministry of MSME for the item tendered are exempted from submission of Cost of Documents, for which, the tenderers will have to upload the exemption certificate on the E-Tender Portal.
Date of issue of Tenders (online)	**From Date 07.01.2022**
Issue of Corrigendum, if any	**On or after Date 10.01.2022** **(on** www.ireps.gov.in ,www.dfccil.com)
Last Date& Time of submission of tender	**On or before Date 27.01.2022, time 15:00 hrs.**
Date & Time of opening of tender	**Date 27.01.2022, time 15:30 hrs.**
Validity of Offer	**90 days**
Retention Money/ Security Deposit	Earnest Money deposit of the successful tenderer shall be converted into security deposit. Balance security deposit shall be recovered@10% through running account bills till it reaches 5% of the contract value**.**
Performance Guarantee(PG) in the form of Bank Guarantee or Fixed Deposit Receipt (FDR)	To be submitted within **30 days** from the date of issue of Letter of Acceptance by DFCCIL; (an irrevocable **Bank Guarantee or Fixed Deposit receipt (FDR)** for the amount 3% of the contract value).
Defect Liability Period :-	**12 Months** after successful completion of this contract**.**

APPENDIX

TO

TENDER

DFCC-JP-EL-REJN-KSGN -T-02

APPENDIX TO TENDER

Description	Reference Clause
Name of Work:	
"OHE work in connection of isolation of Loop lines at various stations of New Rewari - New Kisangarh section under of DFCCIL Jaipur."	1.1.3.1 of Instruction to Tenderer
Employer:	
CHIEF GENERAL MANAGER/JAIPUR, DFCCIL, C-16, Khushi Vihar, Patrakar Colony Mansarovar, Jaipur-302020, Rajasthan	1.1.3.3 of Instruction to Tenderer
Scope of Work:- As indicated at Clause 1.2.4 of Special conditions of contract	1.1.3.5 of Instruction to Tenderer
Rs. 1,10,97,303.00 (Rs. One Crore Ten Lakh Ninety Seven Thousand Three Hundred and Three only.)	1.1.3.6 of Instruction to Tenderer
Earnest Money Deposit	1.1.10 of Instruction to Tenderer
Period of Validity of Tender 90 days	1.1.11 of Instruction to Tenderer
Period of completion 04 (Four) months from the date of issue of LOA	1.2.25 of Special Condition of Contract.
Retention money	1.2.35 of Special Condition of Contract
Performance Bank Guarantee	1.2.37 of Special Condition of Contract
Defect Liability Period 12 Months	1.2.38 of Special Condition of Contract
Bank Detail of DFCCIL	**Name of Account:** **CPM - DFCCIL, Jaipur**
Name of Bank: Union Bank of India Branch: Bapu Nagar, Jaipur	**Account Number: 369201010054636** **Type of account:- Current Account.** **IFSC code :-UBIN0536920**

FORMAT-I

DETAILS OF SIMILAR WORKS COMPLETED IN LAST THREE YEARS

S. N.	Description of the work	Contract No. and date	Date of award of work	Stipulated date of completion	Date of actual completion	Value of completed work (In Lakhs of Rs)	Reasons of delays, if any	Penality. If any, imposed for delay	Any other relevant information	Remarks
1										
2										
3										
4										
5										

Note: 1. Please attach copies of the certificates issued by the client.

2. Only those works shall be considered for evaluation for which copies of the Certificates issued by the client are attached**.**

FORMAT - II

ANNUAL TURNOVERS FOR THE LAST 3 YEARS

S.N.	YEAR	Turnover from similar nature of works (In lacks of Rs)	Turnover from all sources (In lacs of Rs)	Remarks
1				
2				
3				
4				
5				

Note:

1. **Please attach certified/attested copies in support of which the attested certificate from Employer/Client, TDS certificate/Audited Balance Sheet/P&L Account duly certified by Chartered Accountant etc.**

FORMAT-III

DETAILS OF ONGOING WORKS

S. N.	Description of the work	Name and address of Employer	Contract No. and date	Date of award of work	Stipulated date of completion	Value of work as per order (In Lakhs of Rs)	Value of work completed so far (In Lakhs of Rs)	Anticipated date of completion of work	Any other relevant information	Remarks
1										
2										
3										
4										
5										
6										
7										
8										
9										

Note: 1. ***JVs shall not be considered.***

PART – I

CHAPTER –I

Instructions to Tenderer and Conditions of Tendering

1.1.1 General (for on line tendering system)

Submission of Online Bids is mandatory for this Notice Inviting Tender. E-Tendering is a new methodology for conducting Public Procurement in a transparent and secured manner. Suppliers/ Vendors will be the biggest beneficiaries of this new system of procurement. For conducting electronic tendering, DFCCIL, Delhi has decided to use the portal (https://www.ireps.gov.in) of Government of India. Benefits to Suppliers/service providers are outlined on the Home-page of the portal.

1.1.2 Instructions

a. Online E-Bidding Methodology:

Online E- Bid System – Financial bids and Technical bids shall be submitted by the bidder at the same time in single Packet

b. Broad outline of activities from Bidders perspective:

i. Procure a Digital Signing Certificate (DSC)
ii. Register on Electronic Tendering System (ETS)
iii. Create Users and assign roles on ETS
iv. View Notice Inviting Tender (NIT) on ETS
v. Download Official Copy of Tender Documents from ETS
vi. Clarification to Tender Documents on ETS – Query to DFCCIL (Optional) - view response to queries posted by DFCCIL, through addenda.
vii. Bid-Submission on ETS: Prepare and arrange all document/paper for submission of bid online and tender fees and EMD deposit on offline.
viii. Attend Public Online Tender Opening Event (TOE) on ETS
ix. Post-TOE Clarification on ETS (Optional)-Respond to DFCCILL"s Post-TOE queries
x. Attend Public Online Tender Opening Event (TOE) on ETS

For participating in this tender online, the following instructions are to be read carefully. These instructions are supplemented with more detailed guidelines on the relevant screens of the ETS.

Note 1: It is advised that all the documents to be submitted are kept scanned and converted to PDF format in a separate folder on your computer before starting online submission. Fin. offer tab brings up the Financial Offer Page where the bidder can submit his rates against the schedule items included in the tender.

Note 2: While uploading the documents, it should be ensured that the file name should be the name of the document itself.

c. Digital Certificates

For integrity of data and its authenticity/non-repudiation of electronic records and to be compliant with IT Act 2000, it is necessary for each user to have a Digital Certificate (DC), also referred to as Digital Signature Certificate (DSC), of Class-III issued by a Certifying Authority (CA) licensed by Controller of Certifying Authorities (CCA) [refer http://www.cca.gov.in].

d. Registration

The Tender document can be downloaded from the website www.ireps.gov.in and to be submitted in the e-format. Cost of the Tender Document has to be submitted to DFCCIL online through IREPS portal before the scheduled date and time of submission of the tender and Bid security (EMD) on line has to be submitted otherwise the Bid will not be considered. Amendments, if any, to the tender document will be notified in the above website as and when such amendments are notified. It is the responsibility of the bidders who have downloaded the tender document from the website to keep themselves abreast of such amendments before submitting the tender document.

Intending bidders are requested to register themselves with www.ireps.gov.in for obtaining user-id, Digital Signature etc. by paying Vendor registration fee and processing fee for participating in the above mentioned tender.

e. DFCCIL, has decided to use process of e-tendering for inviting this tender and thus the physical copy of the tender would not be sold.

1.1.3 **General (for tender)**

1.1.3.1 **OHE WORK IN CONNECTION WITH ISOLATION OF LOOP LINES AT VARIOUS STATIONS OF NEW REWARI - NEW KISHANGARH SECTION UNDER OF DFCCIL JAIPUR**

1.1.3.2 "A bidder in the capacity of Individual or Sole Proprietor, Partnership Firm, or Company can participate in the tender and the bidder must forward attested copies of the constitution of its firm such as partnership deed, Memorandum and Articles of Association, etc. along with original Power of Attorney of authorized Signatory".

1.1.3.3 The work is proposed to be executed under the following relationship

a. **Employer**: DFCCIL address - CGM/JP, DFCCIL, C-16, Khushi Vihar, Patrakar Colony, Mansarovar, Jaipur – 302020
b. **Contractor**: The successful tenderer to whom the work is awarded shall become the contractor for the execution of this work.

1.1.3.4 Throughout these bidding documents, the terms "bid" and "tender" and their derivatives ("bidder"/"tenderer"), "bid/tendered", "bidding"/"tendering", etc.) are synonymous. Day means calendar day. Singular also means plural.

1.1.3.5 Scope of Work -

OHE WORK IN CONNECTION WITH ISOLATION OF LOOP LINES AT VARIOUS STATIONS OF NEW REWARI - NEW KISHANGARH SECTION UNDER OF DFCCIL JAIPUR.

The scope given above is only indicative. The detailed scope has been described in the tender documents.

1.1.3.6 Estimated cost of the work **Rs. 1,10,97,303.00 (Rs. One Crore Ten Lakh Ninety Seven Thousand Three Hundred and Three only.)** including GST.

1.1.3.7 Tenderer(s) may carefully note that they are liable to be disqualified at any time during tendering process in case any of the information furnished by them is not found to be true. The decision of Employer in this respect shall be final and binding.

1.1.3.8 A bidder shall submit only one bid in the capacity of an Individual or Sole Proprietor, Partnership firm or Company. Violation of this condition is liable to disqualify the tenders in which such bidder has participated.

1.1.4 Cost of Bidding

1.1.4.1 The bidder shall bear all costs associated with the preparation and submission of the bid and the Employer will in no case be responsible or liable for these costs regardless of the conduct or the outcome of the bidding process.

B. The Bidding Documents

1.1.5 Content of bidding documents submitted through online mode only

1.1.5.1 The bidding documents include the following:

1. Notice Inviting Tender
2. Instructions to tenderer(s)
3. Tender Form
4. Form of Bid
5. Special Conditions of Contract
6. General Terms and Conditions of Contract
7. Financial bid and Bill of Quantities

1.1.5.2 The bidder is expected to examine all instructions, terms, conditions, forms, specifications and other information in the bidding documents. Failure to furnish all information required by the bidding documents or submission of a bid not substantially responsive to the bidding documents in every respect will be at the bidder's risk and may result in rejection of his bid.

1.1.6 Understanding and Amendment of Tender Documents

1.1.6.1 The bidder must obtain for itself on its own responsibility and its own cost all the information including risks, contingencies and other circumstances in execution of the work. It shall also carefully read and understand all its obligations and liabilities given in tender documents.

1.1.6.2 The bidder is advised to visit and examine the site where the work is to be executed and its surroundings or other areas as deemed fit by the bidder and obtain for itself on its own responsibility all information that may be necessary for preparing the bid and execution of the contract. The cost of visiting the site and collecting relevant data shall be at the bidder's own expenses. It is a condition of the tender that the tenderer is deemed to have visited the site and

satisfied himself with all the conditions prevailing including any difficulties for executing the work.

1.1.6.3 At any time prior to the deadline for submission of bids, Employer may for any reason whether at its own initiative or in response to any request by any prospective bidder amend the bidding documents by issuing Corrigendum, which shall be part of the Tender documents.

1.1.6.4 Employer may at its discretion extend the deadline for submission of the bids at any time before the time of submission of the bids.

C. Preparation of the Bids

1.1.7 Language of Bid

1.1.7.1The bid prepared by the bidder and all documents related to the bid shall be written in English.

1.1.8 Signing of All Bid papers and Completing Bill of Quantities

1.1.8.1 All the pages of the tender documents and credentials submitted by tenderer shall be digitally signed by the tenderer or his representative holding the Power of Attorney.

1.1.8.2 The tenderer must fill and submit the prices as per instructions given in schedule of rates. He shall not make any addition or alteration in the tender documents. The requisite details should be filled in by the tenderer wherever required in the documents. Incomplete tender or tender not submitted as per instructions is liable to be rejected. If a tenderer does not quote a price/rate as per instructions, his tender shall be summarily rejected.

1.1.8.3 The tenderer must ensure that tender documents shall be submitted online through class 3 Digital Signature only. To participate in the E-Bid submission, it is mandatory for the bidders to have user ID and password in www.ireps.gov.in through IREPS portal.

1.1.9 Deviations

The tenderer should clearly read and understand all the terms and conditions, specifications, etc. mentioned in the original tender documents. If the tenderer has any observations, the same may be indicated in his forwarding letter along with the tender. Tenderers are advised not to make any corrections, additions or alterations in the in his own entries the same shall be initialed and stamped by him. If this condition is not complied with, tender is liable to be rejected.

1.1.10 Earnest Money

The tenderer must furnish the Earnest Money as indicated in "Appendix to Tender" for the work as specified, failing which the tender shall be summarily rejected. **The Earnest Money shall be deposited in DFCCIL account only. Bank Detail are mentioned in Appendix to Tender.**

or

MSEs registered with a body specified by Ministry of MSME **for the item tendered** are exempted from submission of **Earnest Money Deposit**, for which, the tenderer(s)will have to **upload the exemption certificate** on the E-Tender Portal.
No interest shall be allowed on Earnest Money Deposit.

1.1.11 Period of validity of the tender:

1.1.11.1 The tender shall remain valid for the period 90 days after the date of the opening of the tender. If the Tenderer gives validity period less than that fixed/prescribed by Employer, the tender shall be liable to be rejected.

1.1.11.2 Notwithstanding the above clause, Employer may solicit the tenderer's consent to an extension of the validity period of the tender. The request and the response shall be made in writing.

Submission of Bids

1.1.12 Deadline for submission of tender

1.1.12.1 The tender documents shall be submitted in online mode through website www.ireps.gov.in in single bids only. Single offer viz. containing Technical offer and financial offer along with necessary documents like scanned copy of EMD and scanned copy of TDC to be uploaded. Detailed credentials as per the requirement of eligibility criteria in "**Technical offer**" as well as in "**Financial offer"** are to be uploaded. **Bids are required to be submitted only by online mode through e-tendering web site (IREPS portal) using Digital Signature class 3 for signing the documents**.

1.1.12.2 A tender received without on line to Employer is liable to be rejected.

1.1.12.3 Tender document fees received after opening of the tender shall be rejected.

1.1.13 Withdrawal of tender

No tender can be withdrawn after submission and during tender validity period.

1.1.13.1 Submission of a tender by a tenderer implies that he had read all the tender documents including amendments if any, visited the site and has made himself aware of the scope and specifications of the work to be done, local conditions and other factors having any bearing on the execution of the work.

1.1.14 Submission of tender/bid:-

1.1.14.1 The tenders shall be submitted on or before the due date and time with all the relevant documents as mentioned -

a) Forwarding letter of the tenderer.

b) Documents to be submitted as per required documents

c) Scanned copy of tender document fees.

d) The Bill of Quantities with prices quoted as mentioned.

1.1.14.2 Tender document fees shall be deposited in DFCCIL account and proof of transition along with transaction ID to be scanned and uploaded along with Tender document.

1.1.15 Bid opening and Evaluation

1.1.15.1 **Opening of the Tender**:-Tenders will be opened on line at the address mentioned in "Notice Inviting Tender" in presence of tenderer(s) or authorized representatives of tenderer(s) who wish to attend the opening of tenders.

The sequence of opening shall be:

i) Earnest Money Deposit
ii) Technical offer.
iii) Financial offer.

1.1.15.2 Tenderer(s) or their authorized representatives who are present shall sign register in evidence of their attendance.

1.1.15.3 Tenderer's name, presence or absence of Earnest Money Deposit (EMD) total cost of work quoted or any other details as Employer may consider appropriate will be announced and recorded at the time of bid opening.

1.1.16 Clarification of the tenders

1.1.16.1 To assist the examination, evaluation and comparison of the tenders, Employer may at his discretion ask the tenderers for any clarifications as considered essential. All such correspondence shall be in writing and no change in price or substance of the tender shall be sought or permitted. The above clarification for submission of the details shall form part of the tender and shall be binding on tenderer.

1.1.17 Preliminary examination of bids

1.1.17.1 The Employer shall examine the bids to determine whether they are complete, whether any computational errors have been made, whether the documents have been properly signed and whether the bids are generally in order.

1.1.17.2 Arithmetical errors shall be rectified on the following basis if found. If there is a discrepancy between the unit price and the total price, which is obtained by multiplying the unit price and quantity, or between subtotals and the total price, the unit or subtotal price shall prevail, and the total price shall be corrected. If there is a discrepancy between words and figures, the rate in words shall prevail.

1.1.17.3 Prior to the detailed evaluation, Employer shall determine whether each bid is of acceptable quality, is generally complete and is substantially responsive to the bidding documents. For purposes of this determination, a substantially responsive bid is one that conforms to all the terms, conditions and specifications of the bidding documents without material deviations, objections, conditionality or reservation. A material deviation, objections, conditionality or reservation is one:

i) That affects in any substantial way the scope, quality or performance of the contract.

ii) That limits in any substantial way, inconsistent with the bidding documents, the Employers" rights or the successful Bidder's obligations under the contracts; or

iii) Whose rectification would unfairly affect the competitive position of other Bidders who are presenting substantially responsive bids.

1.1.17.4 If a bid is not substantially responsive, it shall be rejected by the Employer.

1.1.17.5 In case of tenders containing any conditions or deviations or reservations about contents of tender document, Employer may ask for withdrawal of such conditions/deviations/reservations. If the tenderer does not withdraw such conditions/deviations/ reservations, the tender shall be treated as non-responsive. Employer's decision regarding responsiveness or non-responsiveness of a tender shall be final and binding.

1.1.18 Evaluation and comparison of tenders

1.1.18.1 In case of open tenders, bids, which are determined as substantially responsive, shall be evaluated based on criteria as given in **"Eligibility Criteria".** The tenderer must submit all necessary authentic data with necessary supporting certificates of the various items of evaluation criteria failing which his tender is liable to be rejected.

1.1.18.2 The Employer reserves the right to negotiate the offer submitted by the tenderer to withdraw certain conditions or to bring down the rates to a reasonable level. The tenderer must note that during negotiations of rates of items of BOQ can only be reduced and not increased by

the tenderer. In case the tenderer introduces any new condition or increases rates of any item of BOQ, his negotiated offer is liable to be rejected and the original offer shall remain valid and binding on him.

1.1.19 Canvassing

No tenderer is permitted to canvass to Employer on any matter relating to this tender. Any tenderer found doing so may be disqualified and his bid may be rejected.

1.1.20 Right to accept any tender or reject all tenders

Employer reserves the right to accept, split, divide, negotiate, cancel or reject any tender or to annul and reject all tenders at any time prior to the award of the contract without incurring any liability to the affected tenderers or any obligation to inform affected tenderer, the grounds of such action.

1.1.21 If the tenderer, as individual or as a partner of partnership firm, expires after the submission of his tender but before award of work, the Employer shall deem such tender as invalid.

1.1.22 Award of Contract

1.1.22.1 Employer shall notify the successful tenderer in writing by a Registered Letter /Courier /Speed Post/email or per bearer that his tender has been accepted.

1.1.22.2 Letter of Acceptance after it is signed by the Contractor in token of his acceptance shall constitute a legal and binding contract between Employer and the contractor till such time the contract agreement is signed.

1.1.23 Help desk for E-Tendering

1.1.23.1 For any difficulty in downloading and submission of tender document visit at website www.ireps.gov.in.Users can send their queries to the Help desk through E-Mail. E-Mail ID of Help Desk is mentioned on the Help desk page (helpdesk.eps@cris.org.in). The reply to the query will be sent to the E-Mail ID of the user.

List of Contact persons for this tender & Bank Account Details of DFCCIL

Help Desk	
Telephone / Mobile Number	

DFCCIL Contact- 1	**Sh. Piyush Joshi**
Telephone/Mobile No.	**7357465111**
E-mail ID	**pjoshi@dfcc.co.in**

DFCCIL Contact- 2	**Sh. Manoj Kumar Chaudhary**
Telephone/Mobile No.	**9602276276**
E-mail ID	**mkchaudhary@dfcc.co.in**

Name	CPM DFCCIL Jaipur
Bank account number	369201010054636
IFSC code	UBIN0536920
Bank Name	Union Bank of India
Bank Branch	Bapu Nagar, Jaipur (Rajasthan)

1.1.23.2 Bidder manual and system requirement is available on web site www.ireps.gov.in for Necessary help.

(GENERAL CONDITIONS OF CONTRACT)

GENERAL CONDITIONS OF CONTRACT

DEFINITIONS AND INTERPRETATION

1. (1) Definition: - In these General conditions of Contract, the following terms shall have the meaning assigned hereunder except where the context otherwise requires:-

(a) "Railway" shall mean the President of the Republic of India or the Administrative Officers of the DFCCIL or of the Successor DFCCIL authorized to deal with any matters which these presents are concerned on his behalf.

(b) "General Manager of Railway" shall mean the officer -in-charge of the General Superintendence and Control of the Railway and shall mean and include their successors, of the successor Railway;

(c) "Chief Engineer" shall mean the officer -in-charge of the Engineering Department of Railway and shall also include Chief Engineer (Construction), Chief Signal and Telecommunication Engineer, Chief Signal and Telecommunication Engineer (Construction), Chief Electrical Engineer, Chief Electrical Engineer (Construction) and shall also include CPM/GGM/GM of DFCCIL.

(d) "Divisional Railway Manager" shall mean the Officer in-charge of a Division of the Railway and shall also mean any officer nominated by Managing Director / DFCCIL and shall mean and include their successors of the successor Railway.

(e) "Engineer" and Employer's Engineer shall mean the General Manager/Co of DFCCIL / PMC appointed by DFCCIL.

(f) "Engineer's Representative" shall mean the Assistant Engineer, Assistant Signal and Telecommunication Engineer and Assistant Electrical Engineer, APM / PM / Dy. CPM / Add. CPM of DFCCIL in direct charge of the work and shall include any Sr. Sec. / Sec / Jr. Engineer / Executive / Sr. Executive, APM/PM / Dy.CPM of DFCCIL of Civil Engineering / Signal & Telecommunication Engineering / Electrical Engineering Department appointed by the Railway / DFCCIL and shall mean and include the Engineer's Representative of the successor Railway / DFCCIL.

(g) "Contractor" shall mean the person / Firm / Company whether incorporated or not who enters into the contract with the DFCCIL and shall include their executors, administrators and successors and permitted assigns.

(h) "Contract" shall mean and include the Agreement of Work Order, the accepted schedule of rates of the Schedule or Rates of Railway/DFCCIL modified by the tender percentage for items of work quantified, or not quantified, General Conditions of Contract, Special Conditions of Contracts, if any, Drawings, Specifications, Additional / Special Specifications, if any and tender forms, if any, and all other documents included as part of contract.'

(i) Works" shall mean the works to be executed in accordance with the contract. (j) "Specifications" shall mean the Specifications for materials and works referred / mentioned in tender documents.

(k) "Schedule of rates of Railway" shall mean the schedule of rates issued under the authority of the Chief Engineer from time to time and shall also include Rates specified in tender document.

(l) "Drawing" shall mean the maps, drawings, plans and tracings or prints there of annexed to the contract and shall include any modifications of such drawings and further drawings as may be issued by the Engineer from time to time.

(m) "Constructional Plan" shall mean all appliances or things of whatsoever nature required for the execution, completion or maintenance of the works or temporary works (as hereinafter defined) but does not include materials or other things intended to form or forming part of the permanent work.

(n) "Temporary Works" shall mean all temporary works of every kind required for the execution completion and/or maintenance of the works.

(o) "Site" shall mean the lands and other places on, under, in or through which the works are to be carried out and any other lands or places provided by the Railway for the purpose of the contract.
(p) "Period of Maintenance" shall mean the defect liability period from the date of completion of the works as certified by the Engineer.

1. (2) Singular and Plural:- Words importing the singular number shall also include the plural and vice versa where the context requires.

1.(3) Headings & marginal headings:-The headings and marginal headings in these general conditions are solely for the purpose of facilitating reference and shall not be deemed to be part thereof or be taken into consideration in the interpretation or construction thereof or the contract.

GENERAL OBLIGATION

2. (1) Execution Co-relation and intent of contract Documents:-The contract documents shall be signed in triplicate by the DFCCIL and the Contractor. The contract documents are complementary, and what is called for by any one shall be as binding as if called for by all, the intention of the documents is to include all labour and materials, equipment's and transportation necessary for the proper execution of work. Materials or work not covered by or properly inferable from any heading or class of the specifications shall not be supplied by the DFCCIL to the contractors unless distinctly specified in the contract documents. Materials or works described in words which so applied have a well-known technical or trade meaning shall be held to refer to such recognized standards.

2.(2)If a work is transferred from the jurisdiction of one Railway to another Railway or to a Project Authority/ DFCCIL or vice versa while contract is in subsistence, the contract shall be binding on the Contractor and the Successor Railway/Project in the same manner & take effect all respects as if the Contractor and the Successor Project were parties there to from the inception and the corresponding officer or the Competent Authority in the Successor Railway/Project will exercise the same powers and enjoy the same authority as conferred to the Predecessor Railway/Project under the original contract/agreement entered into.

2.(3)If for administrative or other reasons the contract is transferred to the Successor Railway/Successor Project Authority of DFCCIL the contract shall not withstanding any things contained herein contrary there to, be binding on the Contractor and the Successor Railway /Project Authority/ DFCCIL in the same manner and take effect in all respect as if the Contractor and the Successor Railway/ successor Project Authority of DFCCIL had been parties thereto from the date of this contract. The contract shall be Administered/Managed by GGM/GM/Co/ GM nominated by DFCCIL.

3. (1) Law governing the contract:-The contract shall be governed by the law for the time being in force in the Republic of India.

3.(2) Compliance to regulations and bye-laws:-The contractor shall conform to the provision of any statute relating to the works and regulations and by-laws of any location authority and of any water and lighting companies or undertakings, with whose system the work is proposed to be connected and shall before making any variation from the drawings or the specifications that may be necessitated by so confirming give to the Engineer notice specifying the variation proposed to be made and the reasons for making the variation and shall not carry out such variation until he has received instructions from the Engineer in respect thereof. The contractor shall be bound to give all notices required by statute, regulations or bye-laws as aforesaid and to pay all fees and taxes payable to any authority in respect thereof.

4. Communications to be in writing:- All notices, communications, reference and complaints made by the DFCCIL or the Engineer or the Engineer's representative or the contractor inters concerning the work shall be in writing and no notice, communication, reference or complaint not in writing shall be recognized.

5. Service of Notices on Contractors:-The contractor shall furnish to the Engineer the name designation and address of his authorized agent and all complaints, notices, communications and references shall be deemed to have been duly given to the contractor if delivered to the contractor or his authorized agent or left at or posted to the address so given and shall be deemed to have been so given in the case of posting on day on which they would have reached such address in the ordinary course of post or on the day on which they were so delivered or left. In the case of contract

by partners, any change in the constitution of the firm shall be forthwith notified by the contractor to the Engineer.

6. Occupation and use of land:- No land belonging to or in the possession of the Railway/DFCCIL shall be occupied by the Contractor without the permission of the Railway/DFCCIL. The Contractor shall not use, or allow to be used; the site for any purposes other than that of executing the works. Whenever non-railway bodies/persons are permitted to use railway premises with competent authority's approval, conservancy charges as applicable from time to time may be levied.

7. Assignment or subletting of contract: - The contractor shall not assign or sublet the contract or any part thereof or allow any person to become interested therein any manner whatsoever without the special permission in writing of the DFCCIL. Any breach of this condition shall entitle the DFCCIL to rescind the contract under clause 62 of these conditions and also render the contractor liable for payment to the DFCCIL in respect of any loss or damage arising or ensuing from such cancellation. Provided always that execution of the details of the work by petty contractor under the direct and personal supervision of the Contractor or his agent shall not be deemed to be sub-letting under this clause. The permitted subletting of work by the contractor shall not establish any contractual relationship between the sub- contractor and the DFCCIL and shall not relieve the contractor of any responsibility under the contract.

8. Assistance by the DFCCIL for the Stores to be obtained by the Contractor:- Owing to difficulty in obtaining certain materials (including Tools & Plant) in the market, the DFCCIL may have agreed without any liability therefore to endeavor to obtain or assist the contractor in obtaining the required quantities of such materials as may be specified in the tender. In the event of delay or failure in obtaining the required quantities of the aforesaid material the contractor shall not be deemed absolved of his own responsibility and shall keep in touch with day to day positions regarding their availability and accordingly adjust progress of works including employment of labour and the DFCCIL shall not in any way be liable for the supply of materials or for the non-supply thereof for any reasons whatsoever nor for any loss or damage arising in consequence of such delay or no supply.

9. Deleted

10. Carriage of materials: - No forwarding orders shall be issued by the DFCCIL for the of contractor's materials, tools and plant by Rail which may be required for use in the works and the contractor shall pay full freight charges at public tariff rates therefore.

11. Deleted

12. Representation on Works: - The contractor shall, when he is not personally present on the site of the works place and keep a responsible agent at the works during working hours who shall on receiving reasonable notice, present himself to the Engineer and orders given by the Engineer or the engineer's representative to the agent shall be deemed to have the same force as if they had been given to the Contractor. Before absenting himself, the contractor shall furnish the name and address of his agent for the purpose of this clause and failure on the part of the Contractor to comply with this provision at any time will entitle the DFCCIL to rescind the contract under clause 62 of these conditions.

13. Relics and Treasures: - All gold, silver, oil and other minerals of any description and all precious stones, coins, treasures relics antiquities and other similar things which shall be found in or upon the site shall be the property of the DFCCIL and the Contractor shall duly preserve the same to the

satisfaction of the DFCCIL and shall from time to time deliver the same to such person or persons as the DFCCIL may appoint to receive the same.

14. Excavated material:-The contractor shall not sell or otherwise dispose of or remove except for the purpose of this contract, the sand, stones, clay, ballast, earth, rock or other substances or materials which may be obtained from any excavation made for the purpose of the works or any building or produced upon the site at the time of delivery of the possession thereof but all the substances, materials, buildings and produce shall be the property of the DFCCIL provided that the contractor may, with the permission of the Engineer, use the same for the purpose of the works either free of cost or pay the cost of the same at such rates as may be determined by the Engineer.

15. Indemnity by Contractors: - The contractor shall indemnify and save harmless the Railway/DFCCIL from and against all actions, suit proceedings losses, costs, damages, charges, claims and demands of every nature and description brought or recovered against the Railways/DFCCIL by reason of any act or omission of the contractor, his agents or employees, in the execution of the works or in his guarding of the same. All sums payable by way of compensation under any of these conditions shall be considered as reasonable compensation to be applied to the actual loss or damage sustained, and whether or not any damage shall have been sustained.

16. (1) Security Deposit: - The earnest money deposited by the contractor with this tender will be retained by the DFCCIL as part of security for the due and faithful fulfilment of the contract by the contractor. The balance to make up the security deposit, the rates for which are given below, may be deposited by the contractor in cash or may be recovered by percentage deduction from the contractor's "on account" bills. Provided also that in case of defaulting contractor the DFCCIL may retain any amount due for payment to the contractor on the pending "on account bills" so that the amounts so retained may not exceed 10% of the total value of the contract.

16.(2) Recovery of Security Deposit: - Unless otherwise specified in the special conditions, if any, the Security Deposit / rate of recovery / mode of recovery shall be as under:

(a) Security Deposit for each work should be 5% of the contract value.

(b) The rate of recovery should be at the rate of 10% of the bill amount till the full security Deposit is recovered.

(c) Security Deposits will be recovered only from the running bills of the contract and no other mode of collecting SD such as SD in the form of instruments like BG (except Note (ii) below); FD etc. shall be accepted towards Security Deposit. Security deposit shall be returned to the contractor after the expiry of the Defect Liability Period in all the cases other than Note (i) mentioned below and after passing the final bill based on No Claim Certificate with the approval of the Competent Authority. The Competent Authority shall normally be the authority who is competent to sign the contract. If this competent authority is of the rank lower than JA grade / General Manager/Co, DFCCIL, then JA grade officer / General Manager/Co, DFCCIL (Concerned with the work) should issue the certificate. The certificate, inter alia, should mention that the work has been completed in all respects and that all the contractual obligations have been fulfilled by the contractor and that there is no due from the contractor to Railways/DFCCIL against the contract concerned. Before releasing the SD, an unconditional and unequivocal no claim certificate from the contractor concerned should be obtained.

Note :-

(i) After the work is physically completed, security deposit recovered from the running bills of a contractor can be returned to him if he so desires, in lieu of FDR / irrevocable Bank Guarantee for equivalent amount to be submitted by him.

(ii) In case of contracts of value Rs.50 crore and above, irrevocable Bank Guarantee can also be accepted as a mode of obtaining security deposit.

16.(3) No interest will be payable upon the Earnest Money and Security Deposit or amounts payable to the contractor under the contract, but Government Securities deposited in terms of Sub-clause (1) of this clause will be payable with interest accrued thereon.

16. (4) Performance Guarantee (P.G.)
The procedure for obtaining Performance Guarantee is outlined below:

The successful bidder shall have to submit a Performance Guarantee (PG) within 30 (thirty) days from the date of issue of Letter of Acceptance (LOA). Extension of time for submission of PG beyond 30 (thirty) days and up to 60 days from the date of issue of LOA may be given by the Authority who is competent to sign the contract agreement. However, a penal interest of 15% per annum shall be charged for the delay beyond 30 (thirty) days, i.e. from 31st day after the date of issue of LOA. In case the contractor fails to submit the requisite PG even after 60 days from the date of issue of LOA, the contract shall be terminated duly forfeiting EMD and other dues, if any payable against that contract. The failed contractor shall be debarred from participating in re-tender for that work.

(b) The successful bidder shall submit the performance Guarantee in any of the following forms amounting to 3% of the contract value: -
(i) A deposit of Cash
(ii) Irrevocable Bank Guarantee
(iii) Government Securities including State Loan Bonds at 5 percent below the market value
(iv) Deposit receipts, pay orders, Demand Drafts and Guarantee Bonds. These forms of Performance Guarantee could be either of the State Bank of India or of any of the Nationalized Banks;
(v) Guarantee Bonds executed or Deposits Receipts tendered by all Scheduled Banks;

(vi) A Deposit in the Post Office Saving Bank;
(vii) A deposit in the National Savings Certificates.
(Viii) Twelve years National Defence Certificates;
(ix) Ten years Defence Deposits;
(x) National Defence Bonds; and
(xi) Unit Trust Certificates at 5 per cent below market value or at the face value whichever is less.

Note: The instruments as listed above will also be acceptable for Guarantees in case of Mobilization advance.

(c) The performance Guarantee shall be submitted by the successful bidder after the letter of acceptance has been issued, but before signing of the contract agreement. The agreement should normally be signed within 30 (thirty) days after the issue of LOA and the Performance Guarantee shall also be submitted within this time limit. This P. G. shall be initially valid up to the stipulated date of completion plus 60 days beyond that. In case, the time limit for completion of work gets extended, the contractor shall get the validity of Performance Guarantee extended to cover such extended time for completion of work plus 60 days.

(d) The value of PG to be submitted by the contractor will not change for variation upto 25 % (either increase or decrease). In case during the course of execution, value of the contract increases by more than 25 % of the original contract value, an additional performance guarantee amounting to 3 % (five percent) for the excess value over the original contract value shall be deposited by the contractor.

(e) The performance Guarantee (PG) shall be released after the physical completion of the work based on the 'completion certificate' issued by the competent authority stating that the contractor has completed the work in all respects satisfactorily. The security deposit shall, however, be released

only after the expiry of the defect liability period and after passing the final bill based on 'No Claim Certificate' from the contractor.

(f) Whenever the contract is rescinded, the security deposit shall be forfeited and the Performance Guarantee shall be encashed. The balance work shall be got done independently without risk and cost of the failed contractor, the failed contractor shall be debarred from participating in the tender for executing the balance work. If the failed contractor is a partnership firm, then every member / partner of such a firm shall be debarred from participating in the tender for the balance work in his / her individual capacity or as a partner of any other JV/partnership firm.

(g) The Engineer shall not make a claim under the Performance Guarantee except for amounts to which the President of India / DFCCIL is entitled under the contract (no withstanding and/or without prejudice to any other provisions in the contract agreement) in the event of:

(i) Failure by the contractor to extend the validity of the Performance Guarantee as described herein above, in which event the Engineer may claim the full amount of the Performance Guarantee.

(ii) Failure by the contractor to pay President of India / DFCCIL any amount due, either as agreed by the contractor or determined under any of the Clauses/conditions of the agreement, within 30 days of the service of the notice to the effect by Engineer.

(iii) The contract being determined or rescinded under provision of the GCC the Performance Guarantee shall be forfeited in full and shall be absolutely at the disposal of the President of India.

17. Force Majeure Clause:- If at any time, during the continuance of this contract, the Performance in whole or in part by either party of any obligation under this contract shall be prevented or delayed by reason of any war, hostility, acts of public enemy, civil commotion, sabotage, serious loss or damage by fire, explosions, epidemics, strikes, lockouts or act of God (hereinafter, referred to events) provided, notice of the happening of any such event is given by either party to the other within 30 days from the date of occurrence thereof, neither party shall by reason of such event, be entitled to terminate this contract nor shall either party have any claim for damages against the other in respect of such non- performance of delay in performance, and works under the contract shall be resumed as soon as practicable after such event has come to an end or ceased to exist, and the decision of the Engineer as to whether the works have been so resumed or not shall be final and conclusive, PROVIDED FURTHER that if the performance in whole or in part of any obligation under this contract is prevented or delayed by reason of any such event for a period exceeding 120 days, either party may at its option terminate the contract by giving notice to the other party.

17-A Extension of time in Contracts: - Subject to any requirement in the contract as to completion of any portion or portions of the works before completion of the whole, the contractor shall fully and finally complete the whole of the works comprised in the contract (with such modifications as may be directed under conditions of this contract) by the date entered in the contract or extended date in terms of the following clauses: -

(i) Extension due to modification:- If any modifications have been ordered which in the opinion of the Engineer have materially increased the magnitude of the work, then such extension of the contracted date of completion may be granted as shall appear to the Engineer to be reasonable in the circumstances, provided moreover that the Contractor shall be responsible for requesting such extension of the date as may be considered necessary as soon as the cause thereof shall arise and in any case not less than one month before the expiry of the date fixed for completion of the works.

(ii) Extension for delay not due to DFCCIL or Contractor:-If in the opinion of the Engineer the progress of work has any time been delayed by any act or neglect of Railways/DFCCIL's

employees or by other contractor employed by the DFCCIL under sub-clause (4) of clause 20 of these conditions or in executing the work not forming part of the contract but on which contractor's performance necessarily depends or by reasons of proceeding taken or threatened by or dispute with adjoining or to neighboring owners or public authority arising otherwise through the Contractor's own default etc. or by the delay authorized by the Engineer pending arbitration or in consequences of the contractor not having received in due time necessary instructions from the DFCCIL for which he shall have specially applied in writing to the Engineer or his authorized representative then upon happening of any such event causing delay, the contractor shall immediately give notice thereof in writing to the Engineer within 15 days of such happening but shall nevertheless make constantly his best endeavors to bring down or make good the delay and shall do all that may be reasonably required of him to the satisfaction of the Engineer to proceed with the works. The contractor may also indicate the period for which the work is likely to be delayed and shall be bound to ask for necessary extension of time. The Engineer on receipt of such request from the contractor shall consider the same and shall grant such extension of time as in his opinion is reasonable having regard to the nature and period of delay and the type and quantum of work affected thereby.

No other compensation shall be payable for works so carried forward to the extended period of time, the same rates, terms and conditions of contract being applicable as if such extended period of time was originally provided in the original contract itself.

(iii) Extension for delay due to Railways / DFCCIL:- In the event of any failure or delay by the Railway / DFCCIL to hand over the Contractor possession of the lands necessary for the execution of the works or to give the necessary notice to commence the works or to provide the necessary drawings or instructions or any other delay caused by the DFCCIL due to any other cause whatsoever, then such failure or delay shall in no way affect or vitiate the contract or alter the character thereof or entitle the contractor to damages or compensation therefore, but in any such case, the DFCCIL may grant such extension or extensions of the completion date as may be considered reasonable.

17-B Extension of time for delay due to contractor: - The time for the execution of the work or part of the works specified in the contract documents shall be deemed to be the essence of the contract and the works must be completed no later than the date(s) as specified in the contract. If the contractor fails to complete the works within the time as specified in the contract for the reasons other than the reasons specified in clause 17 and 17-A, the DFCCIL may, if satisfied that the works can be completed by the contractor within reasonable short time thereafter, allow the contractor for further extension of (Performa at Form No. 14) time as the Engineer may decide. On such extension the DFCCIL will be entitled without prejudice to any other right and remedy available on that behalf, to recover from the contractor as agreed damages and not by way of penalty a sum equivalent to ½ of 1% of the contract value of the works for each week or part of the week.

For the purpose of this clause, the contract value of the works shall be taken as value of work as per contract agreement including any supplementary work order/contract agreement issued. Provided also, that the total amount of liquidated damages under this condition, shall not exceed the under noted percentage value or of the total value of the item or groups of items of work for which a separate distinct completion period is specified in the contract.

(i) For contract value up to Rs. 2 lakhs - 10% of the total value of the contract
(ii) For contracts valued above Rs. 2 lakhs- 10% of the first Rs.2 lakhs and 5% of the balance

Further competent authority while granting extension to the currency of contract under clause 17. (B) Of GCC may also consider levy of token penalty as deemed fit based on the merit of the case. Provided further, that if the DFCCIL is not satisfied that the works can be completed by the Contractor and in the event of failure on the part of the contractor to complete the work within further extension of time allowed as aforesaid, the DFCCIL shall be entitled without prejudice to any other right or remedy available in that behalf, to appropriate the contractor's

security deposit and rescind the contract under clause 62 of these conditions, whether or not actual damage is caused by such default.

18.(1) Illegal Gratification:- Any bribe, commission, gift or advantage given, promised or offered by or on behalf to the contractor or his partner, agent or servant or, anyone on his behalf, to any officer or employee of the DFCCIL, or to any person on his behalf in relation to obtaining or execution of this or any other contract with the DFCCIL shall, in addition to any criminal liability which he may incur, subject contractor to the rescission of the contract and all other contracts with the DFCCIL and to the payment of any loss or damage resulting from such decision and the DFCCIL shall be entitled to deduct the amounts so payable from any moneys due to the Contractor(s) under this contract or any other contracts with the DFCCIL.

18.(2) The contractor shall not lend or borrow from or have or enter into any monitory dealings and transactions either directly or indirectly with any employee of the DFCCIL and if he shall do so, the DFCCIL shall be entitled forthwith to rescind the contract and all other contracts with the DFCCIL. Any question or dispute as to the commission or any such offence or compensation payable to the DFCCIL under this clause shall be settled by the General Manager/Co /Jaipur of the DFCCIL, in such a manner as he shall consider fit and sufficient and his decision shall be final and conclusive. In the event of rescission of the contract under this clause, the contractor will not be paid any compensation whatsoever except payments for the work done up to the date of rescission.

EXECUTION OF WORKS

19.(1) Contractor's understanding:- It is understood and agreed that the contractor has, by careful examination, satisfied himself as to the nature and location of the work, the conformation of the ground, the character, quality and quantity of the materials to be encountered, the character of equipment and facilities needed preliminary to and during the progress of the works, the general and local conditions, the labour conditions prevailing therein and all other matters which can in any way affect the works under the contract.

19.(2) Commencement of works:-The contractor shall commence the works within 15 days after the receipt by him of an order in writing to this affect from the Engineer and shall proceed with the same with due expedition and without delay.

19.(3) Accepted Program of work:- The contractor who has been awarded the work shall as soon as possible but not later than 30 days after the date of receipt of the acceptance letter in respect of contracts with initial completion period of two years or less or not later than 90 days for other contracts have to submit the detailed program of work indicating the time schedule of various items of works in the form of Bar Chart/PERT/ General Manager/Co. He shall also submit the details of organization (in terms of labor and supervisors) plant and machinery, that he intends to utilize (from time to time) for execution of the work within stipulated date of completion. The program of work amended as necessary by discussions with the Engineer, shall be treated as the agreed program of the work for the purpose of this contract and the contractor shall endeavor to fulfil this program of work. The progress of work will be watched accordingly and the liquidated damages will be with reference to the overall completion date. Nothing stated herein shall preclude the contractor in achieving earlier completion of item or whole of the works than indicated in the program.

19. (4) Setting out of works: - The contractor shall be responsible for the correct setting out of all works in relation to original points, lines and levels of reference at his cost. The contractor shall execute the work true to alignment, grade, levels and dimensions as shown in the drawing and as directed by the Engineer's representative and shall check these at frequent intervals. The contractor shall provide all facilities like labour and instruments and shall co- operate with the Engineer's representative to check all alignment, grades, levels and dimensions. If, at any time, during the

progress of the works any error shall appear or arise in any part of the work, the contractor, on being required so to do by the Engineer's representative shall, at his own cost rectify such errors, to the satisfaction of the Engineer's representative. Such checking shall not absolve the contractor of his own responsibility of maintaining accuracy in the work. The contractor shall carefully protect and preserve all bench marks, sight rails, pegs and other things used in setting out the work.

20.(1) Compliance to Engineer's instructions: -The Engineer shall direct the order in which the several parts of the works shall be executed and the contractor shall execute without delay all orders given by the Engineer from time to time but the contractor shall not be relieved thereby from responsibility for the due performance of the works in all respects.

20.(2) Alterations to be authorized:-No alterations in or additions to or omissions or abandonment of any part of the works shall be deemed authorized, except under instructions from the Engineer, and the contractor shall be responsible to obtain such instructions in each and every case in writing from the Engineer.

20.(3) Extra works: - Should works over and above those included in the contract require to be executed at the site, the contractor shall have no right to be entrusted with the execution of such works which may be carried out by another contractor or contractors or by other means at the option of the DFCCIL.

20. (4) Separate contracts in connection with works: - The DFCCIL shall have the right to let other contracts in connection with the works. The contractor shall afford other contractors reasonable opportunity for the storage of their materials and the execution of their works and shall properly connect and coordinate his work with theirs. If any part of the contractors work depends for proper execution or result upon the work of another contractor(s), the contractor shall inspect and promptly report to the Engineer any defects in such works that render it unsuitable for such proper execution and results. The contractor's failure so-to inspect and report shall constitute an acceptance of the other contractor's work as fit and proper for the reception of his work, except as to defects which may develop in the other contractor's work after the execution of his work.

21. Instruction of Engineer's Representative: - Any instructions or approval given by the Engineer's representative to contractor in connection with the works shall bind the contractor as though it had been given by the Engineer provided always as follows.

(a) Failure of the Engineer's representative to disapprove any work or materials shall not prejudice, the power of the Engineer thereafter to disapprove such work or material and to order the removal or breaking up thereof.

(b) If the Contractor shall be dissatisfied by reason of any decision of the Engineer's representative, he shall be entitled to refer the matter to the Engineer who shall there upon confirm or vary such decision.

22. (1) Adherence to specifications and drawings: - The whole of the works shall be executed in perfect conformity with the specifications and drawings of the contract. If contractor performs any works in a manner contrary to the specifications or drawings or any of them and without such reference to the Engineer he shall bear all the costs arising or ensuing therefore and shall be responsible for all loss to the DFCCIL.

22. (2) Drawings and specifications of the works: - The contractor shall keep one copy of drawings and specifications at the site, in good order, and such contract documents as may be necessary available to the Engineer or the Engineer's representative.

22. (3) Ownership of drawings and specifications: - All drawings and specifications and copies thereof furnished by the DFCCIL to the Contractor are deemed to be the property of the DFCCIL.

They shall not be used on other works and with the exception of the signed contract set, shall be returned by the contractor to the DFCCIL on completion of the work or termination of the contract.

22.(4) Compliance with Contractor's request for details: - The Engineer shall furnish with reasonable promptness, after receipt by of the contractor's request for the same, additional instructions by means of drawings or otherwise, necessary for the proper execution of the works or any part thereof. All such drawing and instructions shall be consistent with the contract Documents and reasonably inferable there from.

22.(5) Meaning and intent of specification and drawings:- If any ambiguity arises as to the meaning and intent of any portion of the specifications and drawings or as to execution or quality of any work or material, or as to the measurements of the works the decision of the Engineer thereon shall be final subject to the appeal (within 7 days of such decision being intimated to the contractor) to the Chief Engineer/ General Manager/Co who shall have the power to correct any errors, omissions, or discrepancies in aforementioned items and whose decision in the matter in dispute or doubt shall be final and conclusive.

23 Working during night: - The contractor shall not carry out any work between sun-set and sun-rise without the previous permission of the Engineer/DFCCIL.

24. Damage to Railway / DFCCIL property or private life and property:-The contractor shall be responsible for all risk to the work and for trespass and shall make good at his own expense all loss or damage whether to the works themselves or to any other property of the Railway/DFCCIL or the lives, persons or property of others from whatsoever cause in connection with the works until they are taken over by the Railway/ DFCCIL and this although all reasonable and proper precautions may have been taken by the contractor, and in case the Railway / DFCCIL shall be called upon to make good any costs, loss or damages, or to pay an compensation, including that payable under the provisions of the Workmen's Compensation Act or any statutory amendments thereof to any person or persons sustaining damages as aforesaid by reason of any act, or any negligence or omissions on the part of the contractor the amount of any costs or charges including costs and charges in connection with legal proceedings, which the Railway / DFCCIL may incur in reference thereto, shall be charged to the contractor. The Railway / DFCCIL shall have the power and right to pay or to defend or compromise any claim of threatened legal proceedings or in anticipation of legal proceedings being instituted consequent on the action or default of the contractor, to take such steps as may be considered necessary or desirable to ward off or mitigate the effect of such proceedings, charging to contractor, as aforesaid any sum or sums of money which may be paid and any expenses whether for reinstatement or otherwise which may be incurred and the propriety of any such payment, defence or compromise, and the incurring of any such expenses shall not be called in question by the contractor.

25. Sheds, stores houses and Yards:-The contractor shall at his own expense provide himself with sheds, stores houses and yards in such situations and in such numbers as in the opinion of the Engineer is requisite for carrying on the works and the contractor shall keep at each such sheds, stores houses and yard a sufficient quantity of materials and plant in stock as not to delay the carrying out of the works with due expedition and the Engineer and the Engineer's representative shall have free access to the said sheds, store houses and yards at any time for the purpose of inspecting the stock of materials or plant so kept in hand, and any materials or plan which the Engineer may object to shall not be brought upon or used in the works, but shall be forthwith removed from the sheds, store houses or yards by the contractor. The contractor shall at his own expenses provide and maintain suitable mortar mills, soaking vats or any other equipment necessary for the execution of the works.

26. Provision of efficient and competent Staff at work sites by the Contractor: -

26.1 The contractor shall place and keep on the works at all times efficient and competent staff to give the necessary directions to his workmen and to see that they execute their work in sound and proper manner and shall employ only such supervisors, workmen and labourers in or about the execution of any of these works as are careful and skilled in the various trades.

26.2 The contractor shall at once remove from the works any agents, permitted sub-contractor, supervisor, workman or labourer who shall be objected to by the Engineer and if and whenever required by the Engineer, he shall submit a correct return showing the names of all staff and workmen employed by him.

26.3 In the event of the Engineer being of the opinion that the contractor is not employing on the works a sufficient number of staff and workmen as is necessary for the proper completion of the works within the time prescribed, the contractor shall forthwith on receiving intimation to this effect deploy the additional number of staff and labour specified by the Engineer within seven days of being so required and failure on the part of the contractor to comply with such instructions will entitle the Railway to rescind the contract under clause 62 of these conditions.

26A. Deployment of Qualified Engineers at Work Sites by the Contractor: -

26A.1 The contractor shall also employ Qualified Graduate Engineer or Qualified Diploma Holder Engineer, based on value of contract, as may be prescribed by the Ministry of Railways through separate instructions from time to time.

26A.2 In case the contractor fails to employ the Engineer, as aforesaid in Para 26A.1, he shall be liable to pay penalty at the rates, as may be prescribed by the Ministry of Railways through separate instructions from time to time for the default period for the provisions, as contained in Para 26A.1.

26A.3 Deleted

27.(1) Workmanship and testing:- The whole of the works and / or supply of materials specified and provided in the contract or that may be necessary to be done in order to form and complete any part thereof shall be executed in the best and most substantial workman like manner with materials of the best and most approved quality of their respective kinds, agreeable to the particulars contained in or implied by the specifications and as referred to in and represented by the drawings or in such other additional particulars, instructions and drawings may be found requisite to be given during the carrying on of the works and to the entire satisfaction of the Engineer according to the instructions and directions which the contractors may from time to time receive from the Engineer. The materials may be subjected to tests by means of such machines, instruments and appliances as the Engineer may direct and wholly at the expense of the contractor.

27. (2) Removal of improper work and materials:- The Engineer or the Engineer's Representative shall be entitled to order from time to time:

(a) The removal from the site within the time specified in the order of any materials which in his opinion are not in accordance with the specifications or drawings.
(b) The substitution of proper and suitable materials, and
(c) the removal and proper re-execution, notwithstanding any previous tests thereof or on account payments therefore, of any work which in respect of materials or workmanship; is not in his opinion in accordance with the specifications and in case of default on the part of the contractor in carrying out such order the DFCCIL shall be entitled to rescind the contract under clause 62 of these conditions.

28. Facilities for inspection:- The contractor shall afford the Engineer and the Engineer's Representative every facility for entering in and upon every portion of the work at all hours for the purpose of inspection or otherwise and shall provide all labour, materials, planks, ladders, pumps,

appliances and things of every kind required for the purpose and the Engineer and the Engineer's Representative shall at all times have free access to every part of the works and to all places at which materials for the works are stored or being prepared.

29. Examination of work before covering up:- The contractor shall give 7 days' notice to the Engineer or the Engineer's representative whenever any work or materials are intended to be covered up in the earth, in bodies or walls or otherwise to be placed beyond the reach of measurements in order that the work may be inspected or that correct dimensions may be taken before being so covered, placed beyond the reach of measurement in default whereof, the same shall at the option of the Engineer or the Engineer's representative be uncovered and measured at the contractor's expense or no allowance shall be made for such work or materials.

30. Temporary Works: - All temporary works necessary for the proper execution of the works shall be provided and maintained by the contractor and subject to the consent of the Engineer shall be removed by him at his expenses when they are no longer required and in such manner as the Engineer shall direct. In the event of failure on the part of the contractor to remove the temporary works, the Engineer will cause them to be removed and cost as increased by supervision and other incidental charges shall be recovered from the contractor. If temporary huts are provided by the contractor on the Railway / DFCCIL land for labour engaged by him for the execution of works, the contractor shall arrange for handing over vacant possession of the said land after the work is completed; if the contractor's labour refuse to vacate, and have to be rejected by the Railway / DFCCIL necessary expenses incurred by the Railway / DFCCIL in connection therewith shall be borne by the contractor.

31. (1) Contractor to supply water for works: - Unless otherwise provided in the contract, the contractor shall be responsible for the arrangements to obtain supply of water necessary for the works.

31.(2) Deleted

31.(3) Deleted

31.(4)(a) Contractor to arrange supply of Electric power for works:- Unless otherwise provided in the contract, the contractor shall be responsible for arrangements to obtain supply of electric power for the works.

31.(4) (b) Deleted

32. Property in materials and plant:- The materials and plant brought by the Contractor upon the site or on the land occupied by the Contractor in connection with the works and intended to be used for the execution thereof shall immediately, they are brought upon the site of the said land, be deemed to be the property of the Railway / DFCCIL. Such of them as during the progress of the works are rejected by the Engineer under Clause 25 of these conditions or are declared by him not to be needed for the execution of the works or such as on the grant of the certificate of completion remain unused shall immediately on such rejection, declaration or grant cease to be deemed the property of the Railway / DFCCIL and the Contractor may then (but not before) remove them from the site or the said land. This clause shall not in any way diminish the liability of the Contractor nor shall the Railway / DFCCIL be in any way answerable for any loss or damage which may happen to or in respect of any such materials or plant either by the same being lost, stolen, injured or destroyed by fire, tempest or otherwise.

33. (1) Tools, Plant and Materials Supplied by Railway / DFCCIL: - The Contractor shall take all reasonable care of all tools, plant and materials or other property whether or a like description or not belonging to the Railway/DFCCIL and committed to his charge for the purpose of the works and shall be responsible for all damage or loss caused by him, his agents, permitted subcontractor,

or his workmen or others while they are in his charge. The Contractors shall sign accountable receipts for tools, plants and materials made over to him by the engineer and on completion of the works shall hand over the unused balance of the same to the Engineer in good order and repair, fair wear and tear excepted, and shall be responsible for any failure to account for the same or any damage done thereto.

33.(2) Hire of DFCCIL / Railway's Plant:- The Railway / DFCCIL may hire to the Contractor such plant as concrete mixers, compressors and portable engines for use during execution of the works on such terms as may be specified in the special conditions or in a separate agreement for Hire of Plant.

34. (1) Precaution during progress of works: - During the execution of works, unless otherwise specified, the Contractor shall at his own cost provide the materials for and execute all shoring, timbering and strutting works as is necessary for the stability and safety of all structures, excavations and works and shall ensure that no damage, injury or loss is caused or likely to be caused to any person or property.

34.(2) Roads and Water courses:- Existing roads or water courses shall not be blocked, cut through, altered, diverted or obstructed in any way by the Contractor, except with the permission of the Engineer. All compensations claimed for any unauthorized closure, cutting through, alterations, diversion or obstruction to such roads or water courses by the Contractor or his agent or his staff shall be recoverable from the Contractor by deduction from any sums which may become due to him in terms of contract, or otherwise according to law.

34.(3) Provision of access to premises:- During progress of work in any street or thoroughfare, the Contractor shall make adequate provision for the passage of traffic, for securing safe access to all premises approached from such street or thoroughfare and for any drainage, water supply or means of lighting which may be interrupted by reasons of the execution of the works and shall react and maintain at his own cost barriers, lights and other safeguards as prescribed by the Engineer, for the regulation of the traffic, and provide watchmen necessary to prevent accidents. The works shall in such cases be executed night and day if so ordered by the Engineer and with such vigour so that the traffic way be impeded for as short a time as possible.

34.(4) Safety of Public:- The Contractor shall be responsible to take all precautions to ensure the safety of the public whether on public or DFCCIL/Railway property and shall post such look out men as may in the opinion of the Engineer be required to comply with regulations pertaining to the work.

35. Deleted.

36.(1) Suspension of works:- The Contractor shall on the order of the Engineer, suspend the progress of the works or any part thereof for such time or times and in such manner as the Engineer may consider necessary and shall during such suspension properly protect and secure the work so far as is necessary in the opinion of the Engineer. If such suspension is:-

(a) Provided for in the contract, or
(b) Necessary for the proper execution of the works or by the reason of weather conditions or by some default on the part of the Contractor, and/or
(c) Necessary for the safety of the works or any part thereof.

36.(2) The Contractor shall not be entitled to the extra costs, if any, incurred by him during the period of suspension of the works, but in the event of any suspension ordered by the Engineer for reasons other than aforementioned and when each such period of suspensions exceeds 14 days, the

contractor shall be entitled to such extension of time for completion of the work as the Engineers may consider proper having regard to the period or periods of such suspensions and to such compensations as the Engineer may consider reasonable in respect of salaries or wages paid by the Contractor to his employees during the periods of such suspension.

36.(3) Suspension lasting more than 3 months:- If the progress of the works or any part thereof is suspended on the order of the Engineer for more than three months at a time, the Contractor may serve a written notice on the Engineer requiring permission within 15 days from the receipt thereof to proceed with the works or that part thereof in regard to which progress is suspended and if such permission is not granted within that time the Contractor by further written notice so served may, but is not bound to, elect to treat the suspension where it affects part only of the works as an omission of such part or where it affects the whole of the works, as an abandonment of the contract by the DFCCIL.

37. Rates for items of works:- The rates, entered in the accepted Schedule of Rates of the Contract are intended to provide for works duly and properly completed in accordance with the general and special (if any) conditions of the contract and the specifications and drawings together with such enlargements, extensions, diminutions, reductions, alterations or additions as may be ordered in terms of Clause 42 of these conditions and without prejudice to the generality thereof and shall be deemed to include and cover superintendence and labour, supply, including full freight, of materials, stores, patterns, profiles, moulds, fittings, centring, scaffolding, shoring props, timber, machinery, barracks, tackle, roads, pegs, posts, tools and all apparatus and plant required on the works, except such tools, plant or materials as may be specified in the contract to be supplied to the Contractor by the DFCCIL, the erection, maintenance and removal of all temporary works and, buildings, all watching, lighting, bailing, pumping and draining, all prevention of or compensation for trespass, all barriers and arrangements for the safety of the public or of employees during the execution of works, all sanitary and medical arrangements for labour camps as may be prescribed by the DFCCIL, the setting of all work and of the construction, repair and upkeep of all centre lines, bench marks and level pegs thereon, site clearance, all fees duties, royalties, rent and compensation to owners for surface damage or taxes and impositions payable to local authorities in respect of land, structures and all material supplied for the work or other duties of expenses for which the Contractor may become liable or may be put to under any provision of law for the purpose of or in connection with the execution of the contract, and all such other incidental charges or contingencies as may have been specially provided for in the specifications.

38. Deleted

39.(1) Rates for extra items of works:- Any type of work carried out by the Contractor on the instructions of the Engineer which is not included in the accepted schedules of rates shall be executed at the rates set forth in the "Schedule of Rates of Railway" modified by the tender percentage and such items are not contained in the latter, at the rate agreed upon between the Engineer and the Contractor before the execution of such items of work and the Contractors shall be bound to notify the Engineer at least seven days before the necessity arises for the execution of such items of works that the accepted schedule of rates does not include rate or rates for the extra work involved. The rates payable for such items shall be decided at the meeting to be held between the Engineer and Contractor, in as short a period as possible after the need for the special item has come to the notice. In case the Contractor fails to attend the meeting after being notified to do so or in the event of no settlement being arrived at, the DFCCIL shall be entitled to execute the extra works by other means and the Contractor shall have no claim for loss or damage that may result from such procedure.

39.(2) Provided that if the Contractor commences work or incurs any expenditure in regard thereto before the rates as determined and agreed upon as lastly hereunto fore-mentioned, then and in such a case the Contractor shall only be entitled to be paid in respect of the work carried out or expenditure incurred by him prior to the date of determination of rates as aforesaid according to the rates as shall be fixed by the Engineer. However if the Contractor is not satisfied with the decision of

the Engineer in this respect he may appeal to the General Manager/Co. within 30 days of getting the decision of the Engineer, supported by analysis of the rates claimed. The General Manager/CO.'s decision after hearing both the parties in the matter would be final and binding on the Contractor and the DFCCIL.

40. (1) Handing over of works: - The Contractor shall be bound to hand over the works executed under the contract to the DFCCIL complete in all respects to the satisfaction of the Engineer. The Engineer shall determine the date on which the work is considered to have been completed, in support of which his certificate shall be regarded as sufficient evidence for all purposes. The Engineer shall determine from time to time, the date on which any particular section of the work shall have been completed, and the contractor shall be bound to observe any such determination of the Engineer.

40.(2) Clearance of site on completion:- On completion of works, the Contractor shall clear away and remove from the site all constructional plant, surplus materials, rubbish and temporary works of every kind and leave the whole of the site and works clean and in a workman like condition to the satisfaction of the Engineer. No final payment in settlement of the accounts for the works shall be paid, held to be due or shall be made to the, Contractor till, in addition to any other condition necessary for final payment, site clearance shall have been affected by him, and such clearance may be made by the Engineer at the expense of the Contractor in the event of his failure to comply with this provision within 7 days after receiving notice to that effect. Should it become necessary for the Engineer to have the site cleared at the expenses of the Contractor, the DFCCIL shall not be held liable for any loss or damage to such of the Contractor's property as may be on the site and due to such removal there from which removal may be effected by means of public sales of such materials and property or in such a way as deemed fit and convenient to the Engineer.

VARIATIONS IN EXTENT OF CONTRACT

41. Modification to contract to be in writing: - In the event of any of the provisions of the contract requiring to be modified after the contract documents have been signed, the modifications shall be made in writing and signed by the DFCCIL and the Contractor and no work shall proceed under such modifications until this has been done. Any verbal or written arrangement abandoning, modifying, extending, reducing or supplementing the contract or any of the terms thereof shall be deemed conditional and shall not be binding on the DFCCIL unless and until the same is incorporated in a formal instrument and signed by the DFCCIL and the Contractor, and till then the DFCCIL shall have the right to repudiate such arrangements.

42.(1) Powers of modification to contract:- The Engineer on behalf of the DFCCIL shall be entitled by order in writing to enlarge or extend, diminish or reduce the works or make any alterations in their design, character position, site, quantities, dimensions or in the method of their execution or in the combination and use of materials for the execution thereof or to order any additional work to be done or any works not to be done and the contractor will not be entitled, to any compensation for any increase/reduction in the quantities of work but will be paid only for the actual amount of work done and for approved materials supplied against a specific order.

42.(2) (i) Unless otherwise specified in the contract, the accepted variation in quantity of each individual item of the contract would be up to 25% of the quantity originally contracted, except in case of foundation work. The contractor shall be bound to carry out the work at the agreed rates and shall not be entitled to any claim or any compensation whatsoever up to the limit of 25% variation in quantity of individual item of works.

(ii) In case of earthwork, the variation limit of 25% shall apply to the gross quantity of earth work and variation in the quantities of individual classifications of soil shall not be subject to this limit.

(iii) In case of foundation work, no variation limit shall apply and the work shall be carried out by the contractor on agreed rated irrespective of any variation.

42.(3) Valuation of variations:- The enlargements, extensions, diminution, reduction, alterations or additions referred to in sub-clause (2) of this clause shall in no degree affect the validity of the contract but shall be performed by the Contractor as provided therein and be subject to the same conditions, stipulations and obligations as if they had been originally and expressively included and provided for in the specifications and drawings and the amounts to be paid therefore shall be calculated in accordance with the accepted schedule of rates. Any extra items / quantities of work falling outside the purview of the provisions of sub-clause (2) above shall be paid for at the rates determined under clause-39 of these conditions.

42.(4) Variations In Quantities During Execution of Works Contracts :-The procedure detailed below shall be adopted for dealing with variations in quantities during execution of works contracts:

1. Individual NS items in contracts shall be operated with variation of plus or minus 25% and payment would be made as per the agreement rate. For this, no finance concurrence would be required.

2. In case an increase in quantity of an individual item by more than 25% of the agreement quantity is considered unavoidable, the same shall be got executed by floating a fresh tender. If floating a fresh tender for operating that item is considered not practicable, quantity of that item may be operated in excess of 125% of the agreement quantity subject to the following conditions:

Operation of an item by more than 125% of the agreement quantity needs the approval of Competent Authority of DFCCIL;

(i) Quantities operated in excess of 125% but up to 140% of the agreement quantity of the concerned item, shall be paid at 98% of the rate awarded for that item in that particular tender;
(ii) Quantities operated in excess of 140% but up to 150% of the agreement quantity of the concerned item shall be paid at 96% of the rate awarded for that item in that particular tender;
(iii) Variation in quantities of individual items beyond 150% will be prohibited and would be permitted only in exceptional unavoidable circumstances with the concurrence of associate finance and shall be paid at 96% of the rate awarded for that item in that particular tender.

(b) The variation in quantities as per the above formula will apply only to the Individual items of the contract and not on the overall contract value.

(c) Execution of quantities beyond 150% of the overall agreement value should not be permitted and, if found necessary, should be only through fresh tenders or by negotiating with existing contractor, with approval of Competent Authority of DFCCIL.

3. In cases where decrease is involved during execution of contract:

(a) The contract signing authority can decrease the items up to 25% of individual item without finance concurrence.

(b) For decrease beyond 25% for individual items or 25% of contract agreement value, the approval of competent authority, after obtaining 'No Claim Certificate' from the contractor and with finance concurrence, giving detailed reasons for each such decrease in the quantities.

(c) It should be certified that the work proposed to be reduced will not be required in the same work.

4. The limit for varying quantities for minor value items shall be 100% (as against 25% prescribed for other items). A minor value item for this purpose is defined as an item whose original agreement value is less than 1 % of the total original agreement value.

5. No such quantity variation limit shall apply for foundation items.

6. As far as SOR items are concerned, the limit of 25% would apply to the value of SOR schedule as a whole and not on individual SOR items. However, in case of NS items, the limit of 25% would apply on the individual items irrespective of the manner of quoting the rate (single percentage rate or individual item rate).

7. - Deleted -

8. - Deleted -

9. - Deleted -

10. The aspect of vitiation of tender with respect to variation in quantities should be checked and avoided. In case of vitiation of the tender (both for increase as well as decrease of value of contract agreement), sanction of the competent authority as per schedule of power of DFCCIL as per single tender should be obtained.

Note: Variation to be approved should be limited so as not to completely change the scope, character and purpose of the original contract.

CLAIMS

43. (1) Monthly Statement of Claims: - The Contractor shall prepare and furnish to the Engineer once in every month an account giving full and detailed particulars of all claims for any additional expenses to which the Contractor may consider himself entitled to and of all extra or additional works ordered by the Engineer which he has executed during the preceding month and no claim for payment for and such work will be considered which has not been included in such particulars.

43.(2) Signing of "No Claim" Certificate:- The Contractor shall not be entitled to make any claim whatsoever against the DFCCIL under or by virtue of or arising out of this contract, nor shall the DFCCIL entertain or consider any such claim, if made by the Contractor, after he shall have signed a "No Claim" Certificate in favour of the DFCCIL in such form as shall be required by the DFCCIL after the works are finally measured up. The contractor shall be debarred from disputing the correctness of the items covered by "No Claim" Certificate or demanding a clearance to arbitration in respect thereof.

MEASUREMENTS, CERTIFICATES AND PAYMENTS

44. Quantities in schedule annexed to Contract: - The quantities set out in the accepted schedule of rates with items of works quantified are the estimated quantities of the works and they shall not be taken as the actual and correct quantities of the work to be executed by the Contractor in fulfilment of his obligations under the contract.

45. Measurement of works: - The Contractor shall be paid for the works at the rates in the accepted schedule of rates and for extra works at rates determined under Clause 39 of these conditions on the measurements taken by the Engineer or the Engineer's representative in accordance with the rules prescribed for the purpose by the DFCCIL. The quantities for items the unit of which in the accepted schedule of rates is 100 or 1000 shall be calculated to the nearest whole number, any; fraction below half being dropped and half and above being taken as one; for items the unit of which in the accepted schedule of rates is single, the quantities shall be calculated to two places of decimals. Such measurements will be taken of the work in progress from time to time and at such intervals as in the opinion of the Engineer shall be proper having regard to the progress of works. The date and time on which "on account" or final measurements are to be made shall be communicated to the Contractor who shall be present at the site and shall sign the results of the measurements (which shall also be signed by the Engineer or the Engineer's representative) recorded in the official measurements book as an acknowledgement of his acceptance of the accuracy of the measures. Failing the Contractor's attendance the work may be measured up in his absence and such measurements shall, notwithstanding such absence, be binding upon the Contractor whether or not he shall have signed the measurement books provided always that any objection made by him to measurement shall be duly investigated and considered in the manner set out below:-

(a) It shall be open to the Contractor to take specific objection to any recorded measurements or Classification on any ground within seven days of the date of such measurements. Any re-measurement taken by the engineer or the Engineer's representative in the presence of the Contractor or in his absence after due notice has been given to him in consequence of objection made by the Contractor shall be final and binding on the Contractor and no claim whatsoever shall thereafter be entertained regarding the accuracy and classification of the measurements.

(b) If an objection raised by the Contractor is found by the Engineer to be incorrect the Contractor shall be liable to pay the actual expenses incurred in measurements.

46. (1) "On-Account" Payments:- The Contractor shall be entitled to be paid from time to time by way of "One-Account" payment only for such works as in the opinion of the Engineer he has executed in terms of the contract.

All payments due on theEngineer's or the Engineer's representative's certificates of measurements shall be subject to any deductions which may be made under these presents and shall further be subject to, unless otherwise required by Clause 16 of these conditions, a retention of ten percent by way of security deposits, until the amount of security deposit by way of retained earnest money and such retentions shall amount to 10% of the total value of the contract provided always that the Engineer may by any certificate make any correction or modification in any previous certificate which shall have been issued by him and that the Engineer may withhold any certificate if the works or any part thereof are not being carried out to his satisfaction.

46.(2) Rounding off amounts: - The total amount due on each certificate shall be rounded off to the nearest rupee i.e. sum less than 50 paise shall be omitted and sums of 50 paise and more up to Re. 1/- will be reckoned as Re. 1/-

46.(3) On Account Payments not prejudicial to final settlement: - "On- Account" payments made to the 'Contractor shall be without prejudice to the final making up of the accounts (except where measurements are specifically noted in the Measurement Book as "Final Measurements" and as such have been signed by the Contractor) and shall in no respect be considered or used as evidence of any facts stated in or to be inferred from such accounts nor of any particular quantity of work having been executed nor of the manner of its execution being satisfactory.

46. (4) Manner of payment: - Unless otherwise specified payments to the Contractor will be made by Cheque /RTGS but no Cheque/RTGS will be issued for and amount less than Rs. 100/-

46A PRICE VARIATION CLAUSE:

Not applicable

47.0 Maintenance of works:- The Contractor shall at all times during the progress and continuance of the works and also for the period of maintenance specified in the Tender Form after the date of passing of the certificate of completion by the Engineer or any other earlier date subsequent to the completion of the works that may be fixed by the Engineer be responsible for and effectively maintain and uphold in good substantial, sound and perfect condition all and every part of the works and shall make good from time to time and at all times as often as the Engineer shall require, any damage or defect that may during the above period arise in or be discovered or be in any way connected with the works, provided that such damage or defect is not directly caused by errors in the contract documents, act of providence or insurrection or civil riot, and the contractor shall be liable for and shall pay and make good to the DFCCIL or other persons legally entitled thereto whenever required by the Engineer so to do, all losses, damages, costs and expenses they or any of them may incur or be put or be liable to by reasons or in consequence of the operations of the Contractor or of his failure in any respect.

48. (1) Certificate of completion of works: - As soon as in the opinion of the Engineer, the works has been completed and has satisfactorily passed any final test or tests that may be prescribed, the Engineer shall issue a certificate of completion duly indicating the date of completion in respect, of the work and the period of maintenance of the work shall commence from the date of completion mentioned in such certificate. The Engineer may also issue such a certificate indicating date of completion with respect to any part of the work (before the completion of the whole of work), which has been both completed to the satisfaction of the Engineer and occupied or used by the DFCCIL. When any such certificate is given in respect of part of a work, such part shall be considered as completed and the period of maintenance of such part shall commence from the date of completion mentioned in the completion certificate issued for that part of the work.

48.(2) Contractor not absolved by completion Certificate:- The Certificate of completion in respect of the works referred to in sub-clause (1) of this clause shall not absolve the Contractor from his liability to make good any defects imperfections, shrinkages or faults which may appear during the period of maintenance specified in the tender arising in the opinion of the Engineer from materials or workmanship not in accordance with the drawings or specifications or instruction of the Engineer, which defects, imperfections, shrinkages or faults shall upon the direction in writing of the Engineer be amended and made good by the Contractor at his own cost: and in case of default on the part of Contractor the Engineer may employ labour and materials or appoint another Contractor to amend and make good such defects, imperfections, shrinkages and faults and all expenses consequent thereon and incidental thereto shall be borne by the Contractor and shall be recoverable from any moneys due to him under the contract.

49.0 Approval only by maintenance Certificate:- No certificate other than maintenance certificate referred to in Clause 50 of the conditions shall be deemed to constitute approval of any work or other matter in respect of which it is issued or shall be taken as an admission of the due performance of the contract or any part thereof or of the accuracy of any claim or demand made by the Contractor or of additional varied work having been ordered by the Engineer nor shall any other certificate conclude or prejudice any of the powers of the Engineer.

50.(1) Maintenance Certificate:- The Contract shall not be considered as completed until a Maintenance Certificate shall have been signed by the Engineer stating that the works have been completed and maintained to his satisfaction. The Maintenance Certificate shall be given by the Engineer upon the expiration of the period of maintenance or as soon thereafter as any works ordered during such period pursuant to sub clause (2) Clause 48 of these conditions shall have been completed to the satisfaction of the Engineer and full effect shall be given to this Clause notwithstanding the taking possession of or using the works or any part thereof by the DFCCIL.

50.(2) Cessation of Railway's / DFCCIL Liability: - The DFCCIL shall not be liable to the Contractor for any matter arising out of or in connection with the contract of the execution of the works unless the contractor shall have made a claim in writing in respect thereof before the issue of the Maintenance Certificate under this clause.

50.(3) Unfulfilled Obligations:- Notwithstanding the issue of the Maintenance certificate the Contractor and (subject to sub-clause 2 of this clause) the DFCCIL shall remain liable for the fulfilment of any obligation incurred under the provision of the contract prior to the issue of the maintenance Certificate which remains unperformed at the time such certificate is issued and for the purposes of determining the nature and extent of any such obligations the contract shall be deemed to remain in force between the parties thereto.

51.(1) Final Payment:- On the Engineer's certificate of completion in respect of the works, adjustment shall be made and the balance of account based on the Engineer or the Engineer's representative's certified measurements of the total quantity of work executed by the contractor up to the date of completion and on the accepted schedule or rates and for extra works on rates determined under Clause 39 of these conditions shall be paid to the Contractor subject always to any deduction which may be made under these presents and further subject to the Contactor having delivered to the Engineer either a full account in detail of all claims he may have on the DFCCIL in respect of the works or having delivered "No Claim Certificate" and the Engineer having after the receipt of such account given a certificate in writing that such claims are correct, that the whole of the works to be done under the provisions of the Contracts have been completed, that they have been inspected by him since their completion and found to be in good and substantial order, that all properties, works and things, removed, disturbed or injured in consequence of the woks have been properly replaced and made good and all expenses and demands incurred by or made upon

the DFCCIL for or in the respect of damage or loss by from or in consequence of the works, have been satisfied agreeably and in conformity with the contract.

51.(2) Post Payment Audit:- It is an agreed term of contract that the DFCCIL reserves to itself the right to carry out a post-payment audit and or technical examination of the works and the final bill including all supporting vouchers, abstracts etc. and to make a claim on the contractor for the refund any excess amount paid to him if as a result of such examination any over-payment to him is discovered to have made in respect of any works done or alleged to have been done by him under the contract.

51A. Production of vouchers etc. by the Contractor:-

(i) For a contract of more than one crore of rupees, the contractor shall, whenever required, produce or cause to be produced for examination by the Engineer any quotation, invoice, cost or other account, book of accounts, voucher, receipt, letter, memorandum, paper of writing or any copy of or extract from any such document and also furnish information and returns verified in such manner as may be required in any way relating to the execution of this contract or relevant for verifying or ascertaining cost of execution of this contract (the decision of the engineer on the question of relevancy of any documents, information or return being final and binding in the parties).The contractor shall similarly produce vouchers; etc., if required to prove to the Engineer, that materials supplied by him, are in accordance with the specifications laid down in the contract.

(ii) If any portion of the work in a contract of value more than one crore of rupees be carried out by a sub-contractor or any subsidiary or allied firm or company (as per Clause 7 of the General Conditions of Contract), the Engineer shall have power to secure the books of such sub-contract or any subsidiary or allied firm or company, through the contractor, and such books shall be open to his inspection.

(iii) The obligations imposed by sub clause (i) & (ii) above is without prejudice to the obligations of the contractor under any statute rules or orders binding on the contractor.

52.0 Withholding and lien in respect of sums claimed:- Whenever any claim or claims for payment of a sum of money arises out of or under the contract against the contractor, the DFCCIL shall be entitled to withhold and also have a lien to retain such sum or sums in whole or in part from the security, if any, deposited by the contractor and for the purpose aforesaid, the DFCCIL shall be entitled to withhold the said cash security deposit or the security if any, furnished as the case may be and also have a lien over the same pending finalization or adjudication of any such claim. In the event of the security being insufficient to cover the claimed amount or amounts or if no security has been taken from the contractor, the DFCCIL shall be entitled to withhold and have a lien to the extent of the such claimed amount or amounts referred to supra, from any sum or sums found payable or which at any time thereafter may become payable to the contractor under the same contract or any other contract with this or any other DFCCIL or any Department of the Central Government pending finalization or adjudication of any such claim.

It is an agreed term of the contract that the sum of money or moneys so withheld or retained under the lien referred to above, by the DFCCIL will be kept withheld or retained as such by the DFCCIL till the claim arising out of or under the contract is determined by the arbitrator (if the contract governed by the arbitration clause) or by the competent court as the case may be and that the contractor will have no claim for interest or damages whatsoever on any account in respect of such withholding or retention under the lien referred to supra and duly notified as such to the contractor. For the purpose of this clause, where the contractor is a partnership firm or a limited company, the DFCCIL shall be entitled to withhold and also have a lien to retain towards such claimed amount or amounts in whole or in

part from any sum found payable to any partner/limited company, as the case may be whether in his individual capacity or otherwise.

52A. Lien in respect of claims in Other Contracts:-

(i) Any sum of money due and payable to the contractor (including the security deposit returnable to him) under the contract may be withheld or retained by way of lien by the DFCCIL, against any claim of this or any other DFCCIL or any other Department of the Central Government in respect of a payment of a sum of money arising out of or under any other contract made by the contractor with this or any other Department of the Central Government.

(ii) However, recovery of claims of DFCCIL in regard to terminated contracts may be made from the Final Bills, Security Deposits and Performance Guarantees of other contract or contracts, executed by the contractor. The Performance Guarantees submitted by the Contractor against other contracts, if required, may be withheld and encashed. In addition, 10% of each subsequent 'on-account bill' may be withheld, if required, for recovery of DFCCIL/Railways' dues against the terminated contract.

(iii) It is an agreed term of the contract that the sum of money so withheld or retained under this clause by the DFCCIL will be kept withheld or retained as such by the DFCCIL till the claim arising out of or under any other contract is either mutually settled or determined by arbitration, if the other contract is governed by arbitration clause or by the competent court as the case may be and contractor shall have no claim for interest or damages whatsoever on this account or on any other ground in respect of any sum of money withheld or retained under this clause and duly notified as such to the contractor.

53.0 Signature on Receipts for Amounts:- Every receipt for money which may become payable or for any security which may become transferable to the Contractors under these presents, shall, if signed in the partnership name by anyone of the partners of a Contractor's firm be a good and sufficient discharge to the DFCCIL in respect of the moneys or security purported to be acknowledged thereby and in the event of death of any of the Contractor, partners during the pendency of the contract it is hereby expressly agreed that every receipt by anyone of the surviving Contractor partners shall if so signed as aforesaid be good a sufficient discharge as aforesaid provided that nothing in this clause contained shall be deemed to prejudice or effect any claim which the DFCCIL may hereafter have against the legal representative of any contractor partner so dying for or in respect to any breach of any of the conditions of the contract, provided also that nothing in this clause contained shall be deemed to prejudice or effect the respective rights or obligations of the Contractor partners and of the legal representatives of any deceased Contractor partners interest.

LABOUR

54.0 Wages to Labour: -The Contractor shall be responsible to ensure compliance with the provision of the Minimum Wages Act, 1948 (hereinafter referred to as the "said Act" and the Rules made there under in respect of any employees directly or through petty contractors or subcontractors employed by him on road construction or in building operations or in stone breaking or stone crushing for the purpose of carrying out this contract.

If, in compliance with the terms of the contract, the Contractor supplied any labour to be used wholly or partly under the direct orders and control of the DFCCIL whether in connection with any work being executed by the Contractor or otherwise for the purpose of the DFCCIL such labour shall, for the purpose of this clause, still be deemed to be persons employed by the Contractor.

If any moneys shall, as a result of any claim or application made under the said Act be directed to be paid by the DFCCIL, such money shall be deemed to be moneys paid by it as aforesaid within seven days after the same shall have been demanded, the Railway/DFCCIL shall be entitled to recover the same form any moneys due or accruing to the Contractor under this or any other Contract with the DFCCIL.

54A. Apprentices Act: - The Contractor shall be responsible to ensure compliance with the provisions of the Apprentices Act, 1961 and the Rules and Orders issued there under from time to time in respect of apprentices directly or through petty contractors or sub-contractors employed by him for the purpose of carrying out the Contract.

If the contractor directly or through petty contractors or sub-contractors fails to do so, his failure will be a breach of the contract and the DFCCIL may, in its discretion, rescind the contract. The contractor shall also be liable for any pecuniary liability arising on account of any violation of the provisions of the Act.

Note: The contractors are required to engage apprentices when the works undertaken by them last for a period of one year or more and / the cost of works is rupees one lakh or more.

55.0 Provisions of payments of Wages Act: - The Contractor shall comply with the provisions of the Payment of Wages Act, 1936 and the rules made there under in respect of all employees directly or through petty contractors or sub-contractors employed by him in the works. If In compliance with the terms of the contract, the Contractor directly or through petty contractors of sub-contractors shall supply any labour to be used wholly or partly under the direct orders and control of the Engineer whether in connection with the works to be executed hereunder or otherwise for the purpose of the Engineer such labour shall never the less be deemed to comprise persons employed by the contractor and any moneys which may be ordered to be paid by the Engineer shall be deemed to be moneys payable by the Engineer on behalf of the Contractor and the Engineer may on failure of the contractor to repay such money to the Railways/DFCCIL deduct the same from moneys due to contractor in the terms of contract. The DFCCIL shall be entitled to deduct from any moneys due to the contractor (whether under this contract or any other contract) all moneys paid or payable by the DFCCIL by the way of compensation of aforesaid or for costs of expenses in connection with any claim thereto and the decision of the Engineer upon any question arising out of the effect or force of this clause shall be final and binding upon the Contractor.

55A. Provisions of Contract labour (Regulation and Abolition) Act, 1970:

55A.(1) The contractor shall comply with the provision of the contract labour (Regulation and Abolition) Act, 1970 and the Contract labour (Regulation and Abolition) Central Rules 1971 as modified from time to time, wherever applicable and shall also indemnify the DFCCIL from and against any claims under the aforesaid Act and the Rules.

55A.(2)The Contractor shall obtain a valid license under the aforesaid Act as modified from time to time before the commencement of the work and continue to have a valid license until the completion of the work. Any failure to fulfil the requirement shall attract the penal provision of the Contract arising out of the resultant non-execution of the work.

55A. (3)The Contractor shall pay to the labour employed by him directly or through subcontractors the wages as per provision of the aforesaid Act and the Rules wherever applicable. The Contractor shall notwithstanding the provisions of the contract to the contrary, cause to be paid the wages to labour indirectly engaged on the works including any engaged by subcontractors in connection with the said work, as if the labour had been immediately employed by him.

55A.(4)In respect of all labour directly or indirectly employed in the work for performance of the contractor's part of, the contract, the Contractor shall comply with or cause to be complied with the provisions of the aforesaid Act and Rules wherever applicable.

55A.(5)In every case in which, by virtue of the provisions of the aforesaid Act or the Rules, the DFCCIL is obliged to pay any amount of wages to a workman employed by the Contractor or his sub-contractor in execution of the work or to incur any expenditure on account of the Contingent, liability of the DFCCIL due to the contractor's failure to fulfil his statutory obligations under the aforesaid Act or the rules the DFCCIL will recover from the Contractor, the amount of wages so paid or the amount of expenditure so incurred, and without prejudice to the rights of the DFCCIL under the section 20, sub-section (2) and section 2, sub-section (4) of the aforesaid Act, the DFCCIL shall be at liberty to recover such amount or part thereof by deducting it from the security deposit and/ or from any sum due by the DFCCIL to the contractor whether under the contract or otherwise. The DFCCIL shall not be bound to contest any claim made against it under sub-section (1) of section 20 and sub-section (4) of section 21 of the aforesaid Act except on the written request of the contractor and upon his giving to the DFCCIL full security for all costs for which the DFCCIL might become liable in contesting such claim. The decision of the DFCCIL regarding the amount actually recoverable from the contractor as stated above shall be final and binding on the Contractor.

55B. Provisions of Employees Provident Fund and Miscellaneous Provisions Act, 1952:
The Contractor shall comply with the provisions of Para 30 & 36-B of the Employees Provident Fund Scheme, 1952; Para 3 & 4 of Employees' Pension Scheme, 1995; and Para 7 & 8 of Employees Deposit Linked Insurance Scheme, 1976; as modified from time to time through enactment of "Employees Provident Fund & Miscellaneous Provisions Act, 1952", wherever applicable and shall also indemnify the DFCCIL from and against any claims under the aforesaid Act and the Rules.

55.C. Provisions of "The Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Act, 1996" and "The Building and Other Construction Workers' Welfare Cess Act, 1996":

The tenderers, for carrying out any construction work, must get themselves registered with the Registering Officer under Section-7 of the Building and Other Construction Workers Act, 1996 and rules made thereto by the concerned State Govt. and submit certificate of Registration, issued from the Registering Officer of the concerned State Govt. (Labour Dept.). As per this Act, the tenderer shall be levied a cess @1% of cost of construction work, which would be deducted from each bill. Cost of material, when supplied under a separate schedule item, shall be outside the purview of cess.

56.0 Reporting of Accidents of Labour: - The Contractor shall be responsible for the safety of all employees directly or through petty contractors or sub- contractor employed by him on the works and shall report serious accidents to any of them however and wherever occurring on the works to the Engineer or the Engineers Representative and shall made every arrangements to render all possible assistance.

57.0 Provision of Workmen's Compensation Act:- In every case in which by virtue of the provisions of section 12 sub-section (1) of the Workmen's Compensation Act 1923, DFCCIL is obliged to pay compensation to a workman directly or through petty contractor or subcontractor employed by the Contractor in executing the work, DFCCIL will recover from the Contractor the amount of the compensation so paid, and, without prejudice to the rights of DFCCIL under Section 12 Sub-section (2) of the said Act, DFCCIL shall be at liberty to recover such amount or any part thereof by deducting it from the security deposit or from any sum due by DFCCIL to the Contractor whether under these conditions or otherwise, DFCCIL shall not be bound to contest any claim made against it under Section 12 Sub-section (1) of the said Act except on the written request of the Contractor and upon his giving to DFCCIL full security for all costs for which DFCCIL might become liable in consequence of contesting such claim.

57A. Provision of Mines Act:- The contractor shall observe and perform all the provisions of the Mines Act, 1952 or any statutory modifications or re-enactment thereof for the time being in force and any rules and regulations made there under in respect of all the persons directly or through the petty contractors or sub-contractors employed by him under this contract and shall indemnify the DFCCIL from and against any claims under the Mines Act, or the rules and regulations framed there under, by or on behalf of any persons employed by him or otherwise.

58.0 DFCCIL not to provide quarters for Contractors: - No quarters shall normally be provided by the DFCCIL for the accommodation of the contractor or any of his staff employed on the work.

59.(1) Labour Camps:- The contractor shall at his own expense make adequate arrangements for the housing, supply of drinking water and provision of latrines and urinals for his staff and workmen, directly or through the petty contractors or sub-contractors and for temporary crèche (Bal-mandir) where 50 or more women are employed at a time. Suitable sites on DFCCIL land, if available, may be allotted to the contractor for the erection of labour camps, either free of charge or on such terms and conditions that may be prescribed by the DFCCIL. All camp sites shall be maintained in clean and sanitary conditions by the contractor at his own cost.

59. (2) Compliance to rules for employment of labour: - The contractor(s) shall conform to all laws, by-laws rules and regulations for the time being in force pertaining to the employment of local or imported labour and shall take all necessary precautions to ensure and preserve the health and safety of all staff employed directly or through petty contractors or sub-contractors on the works.

59. (3) Preservation of peace: - The contractor shall take requisite precautions and use his best endeavors to prevent any riotous or unlawful behaviour by or amongst his workmen and other employed directly or through the petty contractors or sub-contractors on the works and for the preservation of peace and protection of the inhabitants and security of property in the neighbourhood of the works. In the event of the DFCCIL 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 DFCCIL shall be recoverable from the contractor.

59.(4) Sanitary arrangements:- The contractor shall obey all sanitary rules and carry out all sanitary measures that may from time to time be prescribed by the Railway Medical Authority and permit inspection of all sanitary arrangements at all times by the Engineer, the Engineer's Representative of the Medical staff of the DFCCIL. Should the contractor fail to make the adequate sanitary arrangements, these will be provided by the DFCCIL and the cost therefore recovered from the contractor.

59.(5) Outbreak of infectious disease:- The contractor shall remove from his camp such labour and their families as refuse protective inoculation and vaccination when called upon to do so by the Engineer or the Engineer's representative on the advice of the DFCCIL. Should cholera, plague or other infectious disease break out, the contractor shall burn the huts, beddings, clothes and other belongings of or used by the infected parties and promptly erect new huts on health sites as required by the engineer, failing which within the time specified in the Engineer's requisition, the work may be done by the DFCCIL and the cost therefore recovered from the contractor.

59. (6) Deleted

59.(7) Medical facilities at site: - The Contractor shall provide medical facilities at the site as may be prescribed by the Engineer on the advice of the DFCCIL in relation to the strength of the Contractor's resident staff and workmen.

59.(8) Use of intoxicants: - The sale of ardent spirits or other intoxicating beverages upon the work or in any of the buildings, encampments or tenements owned, occupied by or within the control of the contractor or any of his employees shall be forbidden and the Contractor shall

exercise his influence and authority to the utmost extent to secure strict compliance with this condition.

59. (9) Non-employment of female labour: - The Contactor shall see that the employment of female labour on / in Cantonment areas, particularly in the neighbourhood of soldier's barracks, should be avoided as far as possible.

59.(10) Restrictions On The Employment Of Retired Engineers Of Railway/DFCCIL Services Within one Year Of Their Retirement : The Contractor shall not, if he is a retired Government Engineer of Gazetted rank, himself engage in or employ or associate a retired Government Engineer of Gazetted rank, who has not completed one year from the date of retirement, in connection with this contract in any manner whatsoever without obtaining prior permission of the President and if the Contractor is found to have contravened this provision it will constitute a breach of contract and administration will be entitled to terminate the contract and forfeit Earnest Money Deposits (EMD),Performance Guarantee (PG)and Security Deposits (SD) of that contract.

60. (1) Non-employment of labours below the age of 15:- the Contractor shall not employ children below the age of 15 as labourers directly or through petty contractors or subcontractors for the execution of work.

60.(2) Medical Certificate of fitness for labour: - It is agreed that the contractor shall not employ a person above 15 and below 19 years of age for the purpose of execution of work under the contract unless a medical certificate of fitness in the prescribed form (Performa at Form No.15) granted to him by a certifying surgeon certifying that he is fit to work as an adult is obtained and kept in the custody of the contractor or a person nominated by him in this behalf and the person carries with him, while at work; a token giving a reference to such certificate. It is further agreed that the responsibility for having the adolescent examined medically at the time of appointment or periodically till he attains the age of 19 years shall devolve entirely on the contractor and all the expenses to be incurred on this account shall be borne by him and no fee shall be charged from the adolescent or his parent for such medical examination.

60. (3) Period of validity of medical fitness certificate:- A certificate of fitness granted or renewed for the above said purposes shall be valid only for a period of one year at a time. The certifying surgeon shall revoke a certificate granted or renewed if in his opinion the holder of it is, no longer fit for work in the capacity stated therein. Where a certifying surgeon refuses to grant or renew a certificate or revoke a certificate, he shall, if so required by the person concerned, state his reasons in writing for doing so.

60.(4) Medical re-examination of labourer:- Where any official appointed in this behalf by the Ministry of labour is of the opinion that any person employed in connection with the execution of any work under this contract in the age group 15 to 19 years is without a certificate of fitness or is having a certificate of fitness but no longer fit to work in the capacity stated in the certificate, he may serve on the Contractor, or on the person nominated by him in the regard, a notice requiring that such persons shall be examined by a certifying surgeon and such person shall not if the concerned official so directs, be employed or permitted to do any work under this contract unless he has been medically examined and certified that he has been granted a certificate of fitness or a fresh certificate of fitness, as the case may be.

EXPLANATIONS:-

(1) Only qualified medical practitioners can be appointed as "Certifying Surgeons" and the term "Qualified Medical Practitioners" means a person holding a qualification granted by an authority specified in the Schedule to the Indian Medical Degrees Act, 1916 (VII to 1916) or in the Schedule to the Indian Medical Council Act, 1933 (XXVII) of 1933.

(2) The Certifying surgeon may be a medical officer in the service of State or Municipal Corporation.

DETERMINATION OF CONTRACT

61.(1) Right of DFCCIL of determine the contract:- The DFCCIL shall be entitled to determine and terminate the contract at any time should, in the DFCCIL/Railway's opinion, the cessation of work becomes necessary owing to paucity of funds or from any other cause whatever, in which case the value of approved materials at site and of work done to date by the Contractor will be paid for in full at the rate specified in the contract. Notice in writing from the DFCCIL of such determination and the reasons therefore shall be conclusive evidence thereof.

61. (2) Payment on determination of contract: - Should the contract be determined under sub clause (1) of this clause and the Contractor claims payment for expenditure incurred by him in the expectation of completing the whole of the work, the Railways /DFCCIL shall admit and consider such claims as are deemed reasonable and are supported by vouchers to the satisfaction of the Engineer. The DFCCIL/Railway's decision on the necessity and propriety of such expenditure shall be final and conclusive.

61.(3) The contractor shall have no claim to any payment of compensation or otherwise, howsoever on account of any profit or advantage which he might have derived from the execution of the work in full but which he did not derive in consequence of determination of contract.

62. (1) Determination of contract owing to default of contractor: - If the Contractor should:-
Becomes bankrupt or insolvent, or
Make an arrangement with of assignment in favour of his creditors, or agree to carry out the contract under a Committee of Inspection of his creditors, or
Being a Company or Corporation, go into liquidation (other than a voluntary liquidation for the purposes of amalgamation or reconstruction), or
(iv) Have an execution levied on his goods or property on the works, or
(v) Assign the contract or any part thereof otherwise than as provided in Clause 7 of these conditions, or
(vi) Abandon the contract, or
(vii) Persistently disregard the instructions of the Engineer, or contravene any provision of the contract, or
(viii) Fail to adhere to the agreed program of work by a margin of 10% of the stipulated period, or
(ix) Fail to remove materials from the site or to pull down and replace work after receiving from the Engineer notice to the effect that the said materials or works have been condemned or rejected under clause 25 and 27 of these conditions, or
(x) Fail to take steps to employ competent or additional staff and labour as required under clause 26 of the conditions
(xi) Fail to afford the Engineer or Engineer's representative proper facilities for inspecting the work or any part thereof as required under clause 28 of the conditions, or
(xii) Promise, offer or give any bribe, commission, gift or advantage either himself or through his partner, agent or servant to any officer or employee of the DFCCIL or to any person on his or on their behalf in relation to the execution of this or any other contract with this DFCCIL.

(xiii) (A) At any time after the tender relating to the contract, has been signed and submitted by the Contractor, being a partnership firm admit as one of its partners or employee under it or being an incorporated company elect or nominate or allow to act as one of its directors or employee under it in any capacity whatsoever any retired engineer of the gazetted rank or any other retired gazetted

officer working before his retirement, whether in the executive or administrative capacity, or whether holding any pensionable post or not, in the Railways/DFCCIL for the time being owned and administered by the President of India before the expiry of one year from the date of retirement from the said service of such Engineer or Officer unless such Engineer or Officer has obtained permission from the President of India or any officer duly authorized by him in this behalf to become a partner or a director or to take employment under the contract as the case may be, or

(xiii) (B) Fail to give at the time of submitting the said tender:-

(a) The correct information as to the date of retirement of such retired engineer or retried officer from the said service, or as to whether any such retired engineer or retired officer was under the employment of the Contractor at the time of submitting the said tender, or

(b) The correct information as to such engineers or officers obtaining permission to take employment under the contractor, or

(c) Being a partnership firm, the correct information as to, whether any of its partners was such a retired engineer or a retired officer, or

(d) Being in incorporated company, correct information as to whether any of its directors was such a retired engineer or a retired officer, or

(e) Being such a retired engineer or retried officer suppress and not disclose at the time of submitting the said tender the fact of his being such a retired engineer or a retired officer or make at the time of submitting the said tender a wrong statement in relation to his obtaining permission to take the contract or if the contractor be a partnership firm or an incorporated company to be a partner or director of such firm or company as the case may be or to seek employment under the contractor.

Then and in any of the said clause, the Engineer on behalf of the DFCCIL may serve the Contractor with a notice (Proforma at Form No.16) in writing to that effect and if the contractor does not within seven days after the delivery to him of such notice proceed to make good his default in so far as the same is capable of being made good and carry on the work or comply with such directions as aforesaid of the entire satisfaction of the Engineer, the DFCCIL shall be entitled after giving 48 hours' notice (Proforma at Form No. 17) in writing under the hand of the Engineer to rescind the contract as a whole or in part or parts (as may be specified in such notice) and after expiry of 48 hours' notice, a final termination notice (Proforma at Form No. 18) should be issued and adopt the following courses:

To measure up or the whole or part of the work from which the contractor has been removed and get it completed by another contractor, the manner and method in which such work is completed shall be in the entire discretion of the Engineer whose decision shall be final.

62. (2) Right of DFCCIL after, rescission of contract owing to default of contractor:

In the event of any or several of the courses, referred to in sub-clause (1) of the clause, being adopted.

(a) The contractor shall have no claim to compensation for any loss sustained by him by reason of his having purchased or procured any materials or entered into any commitments or made any advances on account of or with a view to the execution of the works or the performance of the contract and contractor shall not be entitled to recover or be paid any sum for any work thereto for actually performed under the contract unless and until the Engineer shall have certified the performance of such work and the value payable in respect thereof and the contractor shall only be entitled to be paid the value so certified.

(b) The Engineer or the Engineer's representative shall be entitled to take possession of any materials, tools, implements, machinery and buildings on the works or on the property on which these are being or ought to have been executed, and to retain and employ the same in the further execution of the works or any part thereof until the completion of the works without the contractor being entitled to any compensation for the use and employment thereof or for wear and tear or destruction thereof.

(c) The Engineer shall as soon as may be practicable after removal of the contractor fix and determine ex-parte or by or after reference to the parties or after such investigation or enquiries as he may consider fit to make or institute and shall certify what amount(if any) had at the time of rescission of the contract been reasonably earned by or would reasonably accrue to the contractor in respect of the work then actually done by him under the contract and what was the value of any unused, or partially used materials, any constructional plan and any temporary works upon the site. The legitimate amount due to the contractor after making necessary deductions and certified by the Engineer should be released expeditiously.

STATEMENT OF DISPUTES - INDIAN RAILWAY ARBITRATION RULES

63.0 Matters finally determined by the DFCCIL – All disputes and differences of any kind whatsoever arising out of or in connection with the contract, whether during the progress of the work or after its completion and whether before or after the determination of the contract, shall be referred by the contractor to the Director(PP) /General Manager/GM/Co, DFCCIL and the Director(PP)/General Manager/GM/Co. DFCCIL shall within 120 days after receipt of the contractor's representation make and notify decisions on all matters referred to by the contractor in writing provided that matter for which provision has been made in clauses 8, 18, 22.(5), 39, 43.(2), 45.(a), 55, 55A.(5), 57, 57A, 61.(1), 61.(2) and 62.(1) to (xiii)(B) of General Conditions of contract or in any special clause of the conditions of the contract shall be deemed as 'excepted matters' (matters not arbitrable) and decisions of the DFCCIL authority, thereon shall be final and binding on the contractor; provided further that 'excepted matters' shall stand specifically excluded from the purview of the arbitration clause.

64. (1) Demand for Arbitration:-

64. (1)(i) In the event of any dispute or difference between the parties hereto as to the construction or operation of this contract, or the respective rights and liabilities of the parties on any matter in question, dispute or difference on any account or as to the withholding by the DFCCIL of any certificate to which the contractor may claim to be entitled to, or if the DFCCIL fails to make a decision within 120 days, then and in any such case, but except in any of the 'excepted matters' referred to in clause 63 of these conditions, the contractor, after 120 days but within 180 days of his presenting his final claim on disputed matters shall demand in writing that the dispute or difference be referred to arbitration.

64.(1) (ii) The demand for arbitration shall specify the matters which are in question, or subject of the dispute or difference as also the amount of claim item wise. Only such dispute or difference, in respect of which the demand has been made, together with counter claims or set off, given by the DFCCIL, shall be referred to arbitration and other matters shall not be included in the reference.

64. (1) (iii)

(a) The arbitration proceedings shall be assumed to have commenced from the day, a written and valid demand for arbitration is received by the DFCCIL.

(b) The claimant shall submit his claim stating the facts supporting the claims along with all the relevant documents and the relief or remedy sought against each claim within a period of 30 days from the date of appointment of the Arbitral Tribunal.

(c) The DFCCIL shall submit its defence statement and counter claim(s), if any, within a period of 60 days of receipt of copy of claims from Tribunal thereafter, unless otherwise extension has been granted by Tribunal.

(d) The place of arbitration would be New Delhi

64.(1)(iv) No new claim shall be added during proceedings by either party. However, a party may amend or supplement the original claim or defence thereof during the course of arbitration proceedings subject to acceptance by Tribunal having due regard to the delay in making it.

64.(1)(v) – If the contractor(s) does/do not prefer his/their specific and final claims in writing, within a period of 90 days of receiving the intimation from the Railways/DFCCIL that the final bill is ready for payment, he/they will be deemed to have waived his/their claim(s) and the Railways/DFCCIL shall be discharged and released of all liabilities under the contract in respect of these claims.

64.(2) Obligation During Pendency of Arbitration:– Work under the contract shall, unless otherwise directed by the Engineer, continue during the arbitration proceedings, and no payment due or payable by the DFCCIL shall be withheld on account of such proceedings, provided, however, it shall be open for Arbitral Tribunal to consider and decide whether or not such work should continue during arbitration proceedings.

64. (3) Appointment of arbitrator

64.(3)(a)(i) In cases where the total value of all claims in question added together does not exceed Rs.25,00,000 (Rupees twenty five lakhs only), the Arbitral tribunal shall consist of a sole arbitrator nominated by the MD/DFCCIL The sole arbitrator shall be appointed within 60 days from the day when a written and valid demand for arbitrator is received by MD/DFCCIL .

64. (3) (a) (ii) In cases not covered by the clause 64(3) (a) (i), the Arbitral Tribunal shall consist of a Panel of three officials, as the arbitrators. For this purpose, the DFCCIL will send a panel of more than 3 names of DFCCIL officers which may also include the name(s) of Officer(s) empanelled to work as Arbitrator to the contractor within 60 days from the day when a written and valid demand for arbitration is received by the MD/DFCCIL. Contractor will be asked to suggest to MD/DFCCIL at least 2 names out of the panel for appointment as contractor's nominee within 30 days from the date of dispatch of the request by Railway /DFCCIL. The MD/DFCCIL shall appoint at least one out of them as the contractor's nominee and will, also simultaneously appoint the balance number of arbitrators either from the panel or from outside the panel, duly indicating the 'presiding arbitrator' from amongst the 3 arbitrators so appointed. MD/DFCCIL shall complete this exercise of appointing the Arbitral Tribunal within 30 days from the receipt of the names of contractor's nominees. While nominating the arbitrators it will be necessary to ensure that one of them is from the Accounts department. An officer of selection grade of accounts department shall be considered of equal status to the officers in SA grade of other department of DFCCIL for the purpose of appointment of arbitrator.

64.(3)(a)(iii) If one or more of the arbitrators appointed as above refuses to act as arbitrator, withdraws from his office as arbitrator, or vacates his/their office/offices or is/are unable or unwilling to perform his functions as arbitrator for any reason whatsoever or dies or in the opinion of the MD/DFCCIL fails to act without undue delay, the MD/DFCCIL shall appoint new arbitrator/arbitrators to act in his/their place in the same manner in which the earlier arbitrator/arbitrators had been appointed. Such re-constituted Tribunal may, at its discretion, proceed with the reference from the stage at which it was left by the previous arbitrator(s).

64. (3) (a) (iv) The arbitral Tribunal shall have power to call for such evidence by way of affidavits or otherwise as the arbitral Tribunal shall think proper, and it shall be the duty of the parties hereto to do or cause to be done all such things as may be necessary to enable the arbitral Tribunal to make the award without any delay. The arbitral Tribunal should record day-to-day proceedings. The proceedings shall normally be conducted on the basis of documents and written statements.

64. (3) (a) (v) While appointing arbitrator(s) under sub-clause (i), (ii) & (iii) above, due care shall be taken that he/they is/are not the one/those who had an opportunity to deal with the matters to which the contract relates or who in the course of his/their duties as DFCCIL servant(s) expressed views

on all or any of the matters under dispute or differences. The proceedings of the arbitral Tribunal or the award made by such Tribunal will, however, not be invalid merely for the reason that one or more arbitrator had, in the course of his service, opportunity to deal with the matters to which the contract relates or who in the course of his/their duties expressed views on all or any of the matters under dispute.

64. (3) (b) (i) the arbitral award shall state item wise, the sum and reasons upon which it is based. The analysis and reasons shall be detailed enough so that the award could be inferred there from.

64.(3)(b)(ii) A party may apply for corrections of any computational errors, any typographical or clerical errors or any other error of similar nature occurring in the award of a tribunal and interpretation of a specific point of award to tribunal within 60 days of receipt of the award.

64.(3)(b)(iii) A party may apply to tribunal within 60 days of receipt of award to make an additional award as to claims presented in the arbitral proceedings but omitted from the arbitral award.

64. (4) In case of the Tribunal, comprising of three Members, any ruling on award shall be made by a majority of Members of Tribunal. In the absence of such a majority, the views of the Presiding Arbitrator shall prevail.

64. (5) where the arbitral award is for the payment of money, no interest shall be payable on whole or any part of the money for any period till the date on which the award is made.

64. (6) the cost of arbitration shall be borne by the respective parties. The cost shall inter-alia include fee of the arbitrator(s), as per the rates fixed by the DFCCIL from time to time and the fee shall be borne equally by both the parties.

64(7) Subject to the provisions of the aforesaid Arbitration and Conciliation Act 1996 and the rules there under and any statutory modifications thereof shall apply to the arbitration proceedings under this clause.

65.0 JOINT VENTURE (JV) FIRMS IN WORKS TENDERS

Joint Venture firms are not eligible

66. MSME

66.1 Public Procurement Policy for Micro and Small Enterprises (MSEs) is being followed. Participating MSE shall enclose with their offers the proof of their being MSE registered with any of the agencies mentioned in the notification of Ministry of MSME indicated below:

District Industries Centers.
Khadi and Village Industries Commission.
Khadi and Village Industries Board.
Coir Board.
National Small Industries Corporation.
Directorate of Handicraft and Handloom.
Any other body specified by Ministry of MSME.

The MSEs must also indicate the terminal validity date of their registration. MSEs owned by Scheduled Castes or Scheduled Tribes (SC/ST) Entrepreneurs may be indicated and proof of same may be enclosed.

(SPECIAL CONDITIONS OF CONTRACT)

PART-I
CHAPTER -II

SPECIAL CONDITIONS OF CONTRACT

1.2.1 INTRODUCTION

Dedicated Freight Corporation of India (DFCCIL) is a Public Sector Undertaking under the administrative control of Government of India (Ministry of DFCCILs) for construction, maintenance and operation of the Dedicated Rail Freight Corridors. At present the company is undertaking construction of Eastern and Western corridors and has its corporate office at New Delhi and Field Units at various cities associated with CGM unit.

CGM/Jaipur unit have jurisdiction from New Rewari to Madar Rajasthan and Haryana.

1.2.2 Definitions

1.2.2.1 In the Conditions of Contract, the following terms shall have the meanings assigned here under except where the context otherwise requires:

i) "Railway/DFCCIL" shall mean the President of the Republic of India or the Administrative Officers of the DFCCIL/Railway/DFCCIL or of the successor. DFCCIL authorized or any other officer of DFCCIL authorized to deal with any matters which these presents are concerned on his behalf.

ii) "CHIEF GENERAL MANAGER" shall mean the officer in administrative in-charge of the project in charge of (Rewari to Madar) and shall mean and include their successors, of the successor DFCCIL.

iii) "GENERAL MANAGER" shall mean the officer in charge of lot wise or department /S&T/Electrical/Finance wise (Engineering department) of the DFCCIL include their successors of and shall mean and the successor DFCCIL.

iv) "DEPUTY CHIEF PROJECT MANAGER " shall mean the officer in charge of lot wise or department /S&T/Electrical/Finance wise (Engineering department) of the DFCCIL include their successors of and shall mean and the successor DFCCIL.

iv) PROJECT MANAGER/ DEPUTY PROJECT MANAGER/ASSISTANT PROJECT MANAGER shall mean the officer department wise (Engineering /S&T/ Electrical/ Finance Department) of the DFCCIL and shall mean and include their successors of the success of DFCCIL.

v) "TENDER or BID" means the offer (Technical and/or Financial) made by individual, firm, Company, corporation, or Consortium for the execution of the works.

vi) "TENDERER" shall mean the person/ the firm or company whether incorporated or not who tenders for the work with a view to execute the works on contract with DFCCIL and shall include their personal representatives, successors and permitted assigns.

vii) "WORKS" shall mean the works contemplated in scope and schedules set forth in the tender forms and required to be executed according to terms and condition mentioned.

viii) "Bill of Quantities (B.O.Q.)"/ "Schedule of Rates" means list of items of work, their quantities and rates as accepted and forming part of contract agreement.

ix) "EMPLOYER" means the Dedicated Freight Corridor Corporation of India Limited, A Govt. of India Undertaking (DFCCIL in abbreviation) acting through its Managing Director or any other authorized officer and shall include their legal successors in title and permitted assignees.

xi) "CONTRACT" shall mean and include the Agreement or Letter of Acceptance, the accepted Bill of Quantities and Rates, the General Conditions of Contract, Special Conditions of Contract, Appendix to Tender, Tender Form, and Instructions to the Tenders and other Tender Documents.

xii) "CONTRACTOR" shall mean the person or firm, company, corporation, whether incorporated or not who enters into the contract with DFCCIL and shall include legal representatives of such individual or persons comprising such firm or company or successors of such firm or company as the case may be such individual, or firm or company.

xiii) "ENGINEER OR ENGINEER IN CHARGE" means the Chief General Manager of DFCCIL/ Jaipur (Employer), or any other officer authorized by the Employer to act on his behalf and for the purpose of operating the contract. "Engineers Representative" shall mean officer authorized by DFCCIL in direct charge of works.

xv) "ACCEPTING AUTHORITY" shall mean the Chief General Manager/Jaipur of DFCCIL or any other officer authorized for dealing with the works for the purpose of this tender/Contract.

xvi) Definitions mentioned in these tender documents elsewhere will be followed. In Case there is an ambiguity in any definition, the decision of CHIEF GENERALMANAGER /Jaipur / DFCCIL regarding the interpretation shall be final and binding.

1.2.3 GENERAL DESCRIPTION OF SITE AREA, CLIMATIC CONDITIONS AND SYSTEM PARTICULARS

1.2.3.1 The tenderer(s) are requested to visit the area of work and ascertain himself/themselves with the proposed works / services, surroundings and prevailing law and order conditions.

1.2.3.2 The location of work is located in the state of Haryana & Rajasthan.

1.2.4 SCOPE OF WORK:-

OHE work in connection with isolation of Loop lines at various stations of New Rewari - New Kishangarh section under of DFCCIL Jaipur.

1.2.4.1 The ***brief scope of work covers "OHE work in connection with isolation of Loop lines at various stations of New Rewari - New Kishangarh section under of DFCCIL Jaipur.".***

1.2.4.2 **Place of work-** In the jurisdiction of DFCCIL, New Rewari – New Kishangarh section under CGM Jaipur, there are 09 nos. of stations namely New Rewari, New Ateli, New Dabla, New Bhagega, New Shrimadhopur, New Pacharmalikpur, New Phulera, New Sakhun, New Kisangarh and OCC at Ahmedabad. The work shall be executed under supervision of authorized representative of CGM/JP or GM/EL/JP. If required by DFCCIL any other station/Site may be included under Schedule of work and no additional charges shall be given for this.

1.2.4.3 Quantities in schedule annexed to Contract- The quantities set out in the accepted schedule of rates with item of work quantified are the estimated quantities of the works and they shall not be taken as the actual and correct quantities of the works to be executed by the Contractor in fulfillment of his obligations under the contract. The actual/final quantity shall be executed as per approved design and drawing which is to be prepared by contractor if required. All the design calculations, if any, shall be done by contractor before execution of work. The contractor shall be responsible for any wastage of material due to mistake in design calculations.

1.2.4.4 New item of work – If during execution of the work, the contractor is called upon to carry out any new item of work not included in schedule of prices, the contractor shall execute such work at such prices as may be mutually agreed with the purchaser before commencement.

If required by DFCCIL, the contractor have to execute some portion of work as per/under the tender schedule at new location (at the same rate/ Price) over Rajasthan& Haryana.

1.2.5 LOCAL CONDITIONS :

1.2.5.1 It will be imperative on each tenderer to fully acquaint himself with all the local conditions and factors which would have any effect on the performance of the contract and cost of the stores. The DFCCILs shall not entertain any request for clarifications from the tenderer regarding such local conditions. No request for the change of price, or time schedule of completion of work on account of any local condition or factor shall be entertained after the offer is accepted.

1.2.5.2 The intending tenderer will be deemed to have satisfied himself by actual inspection of the site and locality of the works, that all conditions liable to be encountered during the execution of the works are taken into account and that the rates he enters in the tender papers are adequate and all inclusive, for the completion of works to the entire satisfaction of the DFCCILs.

1.2.5.3 In the event of the intending tenderer desiring to have a field survey before furnishing his tender/quotations, he may apply to DFCCILs for permission in this regard. The DFCCILs will give such permission in writing but all the expenses in this regard will be borne by the tenderers.

1.2.5.4 The intending tenderer is advised to study the tender papers carefully, any submission of a bid by the tenderers shall be deemed to have been done after a careful study and examination of these documents with full understanding of the implication thereof. These conditions and specifications shall be deemed to have been accepted unless otherwise, specifically commented upon by the Tenderer in his offer. Failure to adhere to anyone of these instructions may render his offer liable to be ignored without any references.

1.2.6 INTEGRATION WITH EXISTING WORKS:

1.2.6.1 The tenderer should keep in mind, visit the location of works, take due note and give proper consideration of integrating the new works (sometimes on replacement account) with the existing system.

1.2.7 ELECTRIC SUPPLY:

The contractor shall make his own arrangements for electricity required by him for the purpose of execution of the contract. However, the DFCCIL shall arrange the required power supply for testing and commissioning of the works completed by the contractor.

1.2.8 SCHEME OF WORK AND PROGRESS REPORT:

1.2.8.1 The Contractor shall within fifteen (15) days of the date of award of the contract submit a BAR/PERT CHART and scheme for the execution. The contractor shall indicate in the form of notes of the assumptions and the basis adopted for the preparation of this BAR/PERT CHART.

1.2.8.2 The contractor shall submit a monthly progress report detailing the actual progress made in all activities as compared to the above BAR/PERT CHART. The monthly progress report shall indicate the reasons for the variations if any between the schedule quantities and actual progress, the action proposed and corrective measures required wherever necessary.

1.2.9 INDIRECT TAXATION

In the event of any new indirect taxation being imposed after the date of opening of tender and of being of such a nature that the contractor has to bear additional cost of material directly on account of such additional taxation the purchaser shall reimburse the contractor for such additional costs on receiving satisfactory proof that such taxation was legally leviable and that the contractor has actually incurred the additional costs.

1.2.10 FORCE MAJEURE:

If at any time, during the continuance of this contract, the performance in whole or in part by either party of any obligation under this contract shall be prevented or delayed by reason of any war, hostility, acts of public enemy, civil commotion, sabotage, serious loss or damage by fire, explosions, epidemics/pandemic, strikes, lockouts or acts of God (hereinafter, referred to events) provided, notice of the happening of any such event is given by either party to the other within 30 days from the date of occurrence thereof, neither party shall by reason of such event, be entitled to terminate this contract nor shall either party have any claim for damages against the other in respect of such non-performance of delay in performance, and works under the contract shall be resumed as soon as practicable after such event has come to an end or ceased to exist, and the decision of the Engineer as to whether the works have been so resumed or not shall be final and conclusive, PROVIDED FURTHER that if the performance in whole or in part of any obligation under this contract is prevented or delayed by reason of any such event for a period exceeding 120 days, either party may at its option terminate the contract by giving notice to the other party.

1.2.11 AGREEMENT:

The successful tenderer shall within 14 (fourteen) days after having been called upon by notice to do so be bound to execute an agreement based on accepted rates and lodge the same with purchaser together with the conditions of contract, specification and schedule of prices referred to therein duly completed.

1.2.12 A)EXPENSES OF CONTRACTOR DRAWINGS ETC.:

Any calculation, designs, drawings, schedules information, progress charts etc. required by the purchaser's Engineers in connection with the contract, shall be furnished by the contractor at his own expenses.

B) CONTRACTOR'S DRAWINGS:

If required, before execution of the work the contractor shall submit to the purchaser for approval, three copies of all required drawings, work schedule program which are necessary to ensure correct/ satisfactory performance as detailed in tender papers.

1.2.13 SUB CONTRACTORS

The contractor shall not sublet any part of the work under this contract for the purpose of this. However contractor may enter into contract with supplier for supply of the material for the purpose of this work. However such suppliers should be approved sources of RDSO for materials for which RDSO approved sources are available.

1.2.14 DEFAULT AND DELAY

1.2.14.1 The contractor shall execute the work with due diligence and expedition keeping to the approved time schedule. Should he refuse or neglect to comply with any reasonable orders given to him in writing by the Engineer's representative in connection with the work or contrivance the provision of the contract or the progress of work lags persistently behind the time schedule due to his neglect, the purchaser shall be at liberty to give seven (7) days' notice in writing to the contractor requiring him to make good the neglect or contravention complained and should the contractor fail to comply with requisition made in the notice within seven days from the receipt thereof, it shall be lawful for the purchaser to take the work wholly or in part, out of the contractor's hands without any further reference and get the work or any part thereof as the case may be completed by other agencies at expense of the contractor without prejudice to any other right or remedy of the purchaser.

1.2.14.2 LOSS SUSTAINED DUE TO DEFAULT AND DELAY:

In the event of any loss to the purchaser on account of execution and/or completion of the work or any parts thereof by agencies other than the contractor, the contractor shall be liable to reimburse the loss to the purchaser without prejudice to any other right and remedies of the purchaser, and as the case may be met at the option, of the purchaser, from out of all or any of the following sources viz.

i) Any amount due and payable to the purchaser on any account whatsoever.
ii) The contractor's security deposit with the purchaser so far as available and
iii) Any other assets whatsoever belonging to contractor.

1.2.15 CONTRACTOR'S RESPONSIBILITY FOR DISCREPANCY:

All designs and drawings submitted by the contractor shall be based on thorough study and shall be such that the contractor is satisfied about their suitability. The purchaser's approval will be based on these considerations. Notwithstanding approval communicated by the purchaser, during the progress of the contract for designs and drawings, proto type samples of material after inspection of materials

a) after erection and adjustments to installations the ultimate responsibility for correct designs and execution of work shall rest with the contractor.

b) The contractor shall be responsible for and bear and pay the costs for any alteration of works arising from any discrepancies errors or omissions in the design and drawings supplied by him, whether such designs and drawings have been approved by the purchaser or not.

1.2.16 Provision of Efficient and Competent Staff at Work Sites by the Contractor:

1.2.16.1 The Contractor shall place and keep on the works at all times efficient and competent staff to give the necessary directions to his workmen and to see that they execute their work in sound and proper manner and shall employ only such supervisors, workmen and labourers in or about the execution of any of these works as are careful and skilled in the various trades.

1.2.16.2 The Contractor shall at once remove from the works any agents, permitted sub-contractor, supervisor, workman or labourer who shall be objected to by the Engineer and if and whenever required by the Engineer, he shall submit a correct return showing the names of all staff and workmen employed by him.

1.2.16.3 In the event of the Engineer being of the opinion that the Contractor is not employing on the works a sufficient number of staff and workmen as is necessary for proper completion of the works within the time prescribed, the Contractor shall forthwith on receiving intimation to this effect deploy the additional number of staff and labour as specified by the Engineer within seven days of being so required and failure on the part of the Contractor to comply with such

instructions will entitle the Railway/DFCCIL to rescind the contract under Clause 62 of these conditions.

1.2.17 Deployment of Qualified Engineers at Work Sites by the Contractor:

1.2.17.1 The Contractor shall also employ qualified Graduate Engineer(s) or equivalent, or qualified Diploma Engineer(s).

1.2.17.2 In case the Contractor fails to employ the Engineer as mentioned in tender document, he shall be liable to pay liquidated damages at the rates, as prescribed in the tender documents.

1.2.18 **WORKS BY OTHER AGENCIES:**

Any other works undertaken at the same time by the purchaser or the DFCCIL direct or through some other agency at the same site where the contractor is carrying out his work will not entitle the contractor to prefer any claim, regarding any delays or hindrance he may have to face on this account. The contractor shall comply with any instructions which may be given to him by the purchaser in order to permit simultaneous execution of his own works and of those undertaken by other contractors or the DFCCIL without being entitled on this account to any extra charge.

1.2.19 **ACCESS TO WORK SITE:**

a) The purchaser shall afford access to the site for the purpose of this contract to the contractor at all reasonable times. In the execution of the work, no person other than the contractor or his only appointed representatives or approved sub-contractor and bona-fide workman shall have access to site. Access to the site of work at all times shall be allowed by contractor to officials or approved representative of the purchaser or to DFCCIL staff for purpose of maintenance.

b) The purchaser or his authorized representative shall have the right to refuse admission to the work site to any. Person employed by the contractor to whom the purchaser or his engineer may consider undesirable.

c) The engineer or his representative shall be at liberty to object to the presence of any representative or other person employed by the contractor in or about the works on the ground of misconduct, incompetence or negligence, the contractor on receipt of notices of such objection in writing, shall forthwith remove the person so objected to and provide in his place another competent person and shall not allow such person to enter the site of work subsequently. The purchaser will not be able to pay any cost or damage on this account.

1.2.20 INSURANCE:

1.2.20.1 The contractor shall take out and keep in force a policy or policies of insurance against all liabilities of the contractor or the purchaser at common law or under any status in respect of accidents to person who shall be employed by the contractor in or about the site of the contractor's office for the purpose of carrying out the works on the site. The contractor shall also take out and keep in force a policy or policies of insurance against all recognized risks to their offices and depots. Such insurance shall in all respects to be the approval of the purchaser and if he so requires in his name.

1.2.21

PENALTY FOR DELAY IN COMPLETION:

a) If the contractor fails to execute and complete the work within time specified in the agreement or within the period of extension granted except in so far that the delay is on the purchaser's account; the contractor shall accept reduction in the total amount

payable to him by the purchaser at the rate of ½% (half percent) per week of the contract value for the actual delay occurred and until the work shall have been completed under the contract and such reduction shall be accepted by the purchaser in full satisfaction of the contractor's liability arising from delay only. The Engineer shall at his sole discretion, specify a time limit within which the unfinished portion of the work shall be completed. In the event of failure of the contractor, the purchaser shall be at liberty to take action in accordance with provision in General Conditions of Contract July 2014(Part-II) of Indian Railway, along with latest correction slips and amendments.

b) Extension of time- If aforesaid shall have arisen from any cause which the purchaser may admit as being a responsible ground for extension of time the purchaser shall allow such additional time as he may in his absolute discretion consider to be reasonably justified by the circumstances of the case.

c) The contractor in the presence of the purchaser or his representative shall carry out tests as required under the specification as soon as possible after commissioning. The contractor at his own expense shall carry out any other additional test that the purchaser may prescribe for testing the satisfactory operation of the plants. Necessary electrical power required in C/W the test will be supplied free of any charges by the purchaser. The contractor shall submit six copies of the results to the purchaser for acceptance. The contractor shall also submit 6 copies of the manufacturer's test certificates for equipments such as motor, cable etc.

d) Should the result of the test not be satisfactory, an extension of one month will be granted to the contractor to make good the defects and or any deficiencies pointed out by the purchaser a fresh test will then be carried out after the contractor has attended to the defects and deficiencies. If these do not yield satisfactory results, the purchaser may proceed at the contractor's expense, by all means as deemed expedient to have installation made satisfactory until they comply with the specification, approved drawings and designs.

e) In such a case or in a case of delay in completion of the work under this contract within the time limit, the purchaser reserves the right to get the work completed by contractor as per provisions of contract. The purchaser will give to the contractor for this purpose 7 days previous notice. The contractor shall then take at his own expense all necessary steps to complete the works in accordance with the provision of the contract. In case it becomes impossible to proceed with the above mentioned taking over tests, for reason other than for which the contractor is responsible, the "Provisional Acceptance Certificate" shall be issued at or within a mutually agreed reasonable period not exceeding 6 months after completion of the work.

f) Imposition of token penalty for delay in the completion of work- Competent authority while granting extension to the currency of contract under clause 17 (B) of GCC may also consider levy of token penalty as deemed fit based on the merit of the case.

1.2.22 **FINAL ACCEPTANCE:**

a) The final acceptance of the entire plant shall take effect from the date of expiration of the period of guarantee provided the installations provisionally accepted are still in perfect working order.

b) If on the other hand the installations are not in the perfect working order at the end of the guarantee period the purchaser may either extend the period of guarantee until necessary works are carried out by the contractor, or carry out these works or have them

carried out on behalf of the contractor and at his expense. A certificate of final acceptance shall then be issued by the purchaser, which will terminate the contract.

1.2.23 **MATERIAL-** All materials, components and fittings etc. to be supplied by the contractor shall be procured from reputed suppliers/ vendors/manufactures. Inspection of material to be done by RITES or authorized representative of GM/EL/JP in OEM premises before dispatch. For low value item "**on site inspection**" will be done by authorized representative of GM/EL/JP. Firm will provide necessary document for the inspection.

1.2.24 **Safety Gear**- During execution of the work, contractors shall ensure that all safety precautions are taken by their men to protect themselves and site to prevent any untoward incident. DFCCIL reserve the right to stop the work in the absence of proper safety gear and no claim shall be entertained in this regard; decision of the Engineer-in-charge will be final and binding upon the contractor. The cost of all the safety gear is deemed to have been included in the rates quoted and nothing extra is payable under this contract.

1.2.25 **TIME SCHEDULE: -**

1.2.25.1 The entire work is required to be completed in all respects within 04 (Four) months from the date of issue of acceptance letter/telegram. Time is the essence of contract. The contractor will be required to maintain steady and regular progress to the satisfaction of the engineer to ensure that the work will be completed in all respects within the stipulated time failing which action may be taken by the DFCCIL Administration in terms of General Conditions of Contract July 2014(Part-II) of Indian Railway, along with latest correction slips and amendments.

1.2.25.2 The Contractor shall be expected to initiate work immediately after receipt of "**Letter of Acceptance**".

1.2.26 RATES: -

1.2.26.1 The rates quoted and accepted by DFCCIL shall be firm and final during the currency of contract.

1.2.26.2 All statutory taxes and liabilities levied/may be levied in future by the Central and State Government or any other governing authority/agency from time to time shall be borne by the contractor and the rate shall be inclusive of all such liabilities.

1.2.26.3 GST is inclusive for this tender.

1.2.26.4 The Work Provider will, for the purpose, aforesaid continuously monitor the Works being rendered by it to ensure that these are up to the standards required by DFCCIL.

1.2.26.5 The Work Provider shall indemnify and keep DFCCIL indemnified and harmless from and against all disputes, claims, fines, penalties, litigations criminal as well as civil that may be initiated against the DFCCIL on account of and/or arising out of the failure of the Work Provider to adhere to any statutory requirement, or to follow such rules regulations, guidelines or procedures as may be required under any statute or directive.

1.2.27 QUANTITY VARIATION:

Rates quoted in the schedule of items shall be valid for a variation of the quantity up to maximum of (±) 25% for each item. In case of variation in quantities beyond ±25%, the rates for the additional quantities beyond ±25% variation shall be negotiated/decided on mutually acceptable terms, provided the rate so arrived does not exceed the originally accepted rate as per agreement.

(i) Unless otherwise specified in the special conditions of the contract, the accepted variation in quantity of each individual item of the contract would be upto 25% of the quantity originally contracted, except

in case of foundation work. The Contractor shall be bound to carry out the work at the agreed rates and shall not be entitled to any claim or any compensation whatsoever upto the limit of 25% variation in quantity of individual item of works.
(ii) In case of earthwork, the variation limit of 25% shall apply to the gross quantity of earth work and variation in the quantities of individual classifications of soil shall not be subject to this limit.
(iii) In case of foundation work, no variation limit shall apply and the work shall be carried out by the contractor on agreed rates irrespective of any variation.
(iii) Individual NS items in contracts shall be operated with variation of plus or minus 25% and payment would be made as per the agreement rate. For this, no finance concurrence would be required.
(iv) In case an increase in quantity of an individual item by more than 25% of the agreement quantity is considered unavoidable, the same shall be got executed by floating a fresh tender. If floating a fresh tender for operating that item is considered not practicable, quantity of that item may be operated in excess of 125% of the agreement quantity subject to the following conditions: (a) Operation of an item by more than 125% of the agreement quantity needs the approval of an officer of the rank not less than S.A. Grade;

(i) Quantities operated in excess of 125% but upto 140% of the agreement quantity of the concerned item, shall be paid at 98% of the rate awarded for that item in that particular tender;

(ii) Quantities operated in excess of 140% but upto 150% of the agreement quantity of the concerned item shall be paid at 96% of the rate awarded for that item in that particular tende(iii) Variation in quantities of individual items beyond 150% will be prohibited and would be permitted only in exceptional unavoidable circumstances with the concurrence of associate finance and shall be paid at 96% of the rate awarded for that item in that particular tender.

(b) The variation in quantities as per the above formula will apply only to the Individual items of the contract and not on the overall contract value.

(c) Execution of quantities beyond 150% of the overall agreemental value should not be permitted and, if found necessary, should be only through fresh tenders or by negotiating with existing contractor, with prior personal concurrence of Finance/DFCCIL and approval of General Manager.

(v). In cases where decrease is involved during execution of contract :

(a) The contract signing authority can decrease the items upto 25% of individual item without finance concurrence.

(b) For decrease beyond 25% for individual items or 25% of contract agreement value, the approval of an officer not less than rank of S.A. Grade may be taken, after obtaining 'No Claim Certificate' from the contractor and with finance concurrence, giving detailed reasons for each such decrease in the quantities.

(c) It should be certified that the work proposed to be reduced will not be required in the same work.
(vi). The limit for varying quantities for minor value items shall be 100% (as against 25% prescribed for other items). A minor value item for this purpose is defined as an item whose original agreement value is less than 1 % of the total original agreement value.
(vii). No such quantity variation limit shall apply for foundation items.
(viii). As far as SOR items are concerned, the limit of 25% would apply to the value of SOR schedule as a whole and not on individual SOR items. However, in case of NS items, the limit of 25% would apply on the individual items irrespective of the manner of quoting the rate (single percentage rate or individual item rate).
(ix). For the tenders accepted at Zonal Railways level, variations in the quantities will be approved by the authority in whose powers revised value of the agreement lies.
(x). For tenders accepted by General Manager, variations upto 125% of the original agreement value may be accepted by General Manager.
(xi). For tenders accepted by Board Members and Railway Ministers, variations upto 110% of the original agreement value may be accepted by General Manager.
(xii). The aspect of vitiation of tender with respect to variation in quantities should be checked and avoided. In case of vitiation of the tender (both for increase as well as decrease of value of contract agreement), sanction of the competent authority as per single tender should be obtained.

1.2.28 **TERMINATION OF CONTRACT: -**

In case the work of the contractor is not found satisfactory, or there is a breach of any of the terms and conditions of the contract and/or fails/neglects to carry out any instruction issued to it by DFCCIL from time to time the same can be terminated by DFCCIL on giving of the notice as stipulated in GCC.

1.2.29 **IMPLEMENTATION OF INTEGRITY PACT IN DFCCIL :-**

As per office memorandum no F.No DPE/13(12)/11-Fin Dated 09.09.2011 issued by Ministry of Heavy Industries (DPE) all PSU should enter into Integrity pact in the required Performa in their procurement transaction/ Contracts with suitable changes specific to the situation in which the pact is to be used. The pact, entering into which would be a preliminary qualification for any bidder, essentially envisages an agreement between the prospective vendors / bidders and the DFCCIL, committing the persons/ officials on both sides not to resort to any corrupt practices in any aspect / stage of the contract.
The pact has to be implemented through a panel of independent external monitor who will review independently and objectively the compliance of the obligations by both the parties. As these IEM's are to be appointed by the CVC in consultation with the CVO and are being processed separately.

A copy of pre contract integrity pact is enclosed at Annexure IX for signature of bidder as acceptance, as and when Independent External monitor is appointed.

1.2.30 **ORDER OF PRIORITY OF CONTRACT DOCUMENTS:-**

The documents forming the Contract are to be taken as mutually explanatory of one another. For the purposes of interpretation, the priority of the documents shall be in accordance with the following sequence:

i) The Contract Agreement.

ii) Letter of Acceptance.

iii) Tender Form

iv) General Information

v) Notice Inviting Tender (with Annexes)

vi) Instructions to Tenderers

vii) Special Conditions of Contract

viii) Annexures

ix) Bill of Quantities (BOQ)/Schedule of Rate

x) General Terms and Conditions of Contract

1.2.31 JURISDICTION OF COURTS:-

In case of any disputes/differences between contractor and DFCCIL the jurisdiction shall be of Jaipur Courts only.

1.2.32 In case of any deviation in downloaded copy of the tender documents, the Master Copy kept in the office of Chief General Manager/JP/ DFCCIL, will prevail and the interpretation of CGM/ JP will prevail.

1.2.33 **RISK PURCHASE:-**During execution of this Tender, if any delay is observed due to reasons attributable to tenderer other than force majeure conditions which may cause delay in completion of the work, DFCCIL shall be at liberty to cancel the contract, totally or partially, at any point of time without assigning any reason, whatsoever, and take alternative measures at your risk and cost.

1.2.34 **Penalties for Safety Lapses**:-Any violation in adhering to the terms and conditions stipulated in I.R GCC July-2014 would also attract to penalties payable by you as per IR GCC July-2014 Provisions.

1.2.35 **RETENTION MONEY:**

Retention money for all contracts shall be recovered from on account/ final bills of the Contractor at 10% of gross value of each bill after adjusting EMD amount till the amount so recovered including EMD amount adds up to 5% of the contract value of the work etc. variation and extra work. No interest shall be payable to the Contractor on the amount towards retention money.

1.2.36 **RELEASE OF RETENTION MONEY:**

1.2.36.1The Retention Money shall be returned to the contractor after the expiry of the Defect Liability Period after passing the final bill based on the No Claim Certificate with the approval of Competent Authority. The competent authority shall normally be the authority who is competent to sign the Contract Before releasing the Retention Money/ Security Deposit, an unconditional and unequivocal 'No Claim Certificate' from the contractor concerned should be obtained.

1.2.36.2 If requested by the Contractor, 50% of the Retention money may be released on deduction of retention money reaching 5% of the contract value against submission of Bank Guarantee for an equivalent amount by the Contractor in the prescribed Performs from any scheduled Bank. This Bank Guarantee shall be kept valid till the period of three months beyond the expiry of Defect Liability Period. Fixed Deposit Receipt (FDR) from a scheduled bank endorsed in favour of the Employer can be submitted by the Contractor in lieu of the Bank Guarantee for release of 50% Retention Money. In case of the requirement, the Bank Guarantee/FDR shall be extended by the contractor, for the period as directed by the Engineer/Employer.

1.2.37 PERFORMANCE BANK GAURENTEE

The procedure for obtaining Performance Guarantee is outlined below:

(a) The successful bidder shall have to submit a Performance Guarantee (PG) within 30 (Thirty) days from the date of issue of Letter of Acceptance (LOA). Extension of time for submission of PG beyond 30 (Thirty) days and upto 60 days from the date of issue of LOA may be given by the Authority who is competent to sign the contract agreement. However, a penal interest of 15% per annum shall be charged for the delay beyond 30 (Thirty) days, i.e. from 31st day after the date of issue of LOA. In case, the Contractor fails to submit the requisite PG even after 60 days from the date of issue of LOA, the contract shall be terminated duly forfeiting Earnest Money Deposit and other dues, if any payable against that contract. The failed Contractor shall be debarred from participating in re-tender for that work.

(b) The successful bidder shall submit the Performance Guarantee (PG) in any of the following forms, amounting to 3% of the contract value:
   (i) A deposit of Cash;
   (ii) Irrevocable Bank Guarantee;
   (iii) Government Securities including State Loan Bonds at 5% below the market value;
   (iv) Deposit Receipts, Pay Orders, Demand Drafts and Guarantee Bonds. These forms of Performance Guarantee could be either of the State Bank of India or of any of the Nationalized Banks;
   (v) Guarantee Bonds executed or Deposits Receipts tendered by all Scheduled Banks;
   (vi) Deposit in the Post Office Saving Bank;
   (vii) Deposit in the National Savings Certificates;
   (viii) Twelve years National Defence Certificates;
   (ix) Ten years Defence Deposits;
   (x) National Defence Bonds and
   (xi) Unit Trust Certificates at 3% below market value or at the face value whichever is less. Also, FDR in favour of CGM/JP/DFCCIL/Jaipur (free from any encumbrance) may be accepted.

(c) The Performance Guarantee shall be submitted by the successful bidder after the Letter of Acceptance (LOA) has been issued, but before signing of the contract agreement. This P.G. shall be initially valid upto the stipulated date of completion plus 60 days beyond that. In case, the time for completion of work gets extended, the Contractor shall get the validity of P.G. extended to cover such extended time for completion of work plus 60 days.

(d) The value of PG to be submitted by the Contractor will not change for variation upto 25% (either increase or decrease). In case during the course of execution, value of the contract increases by more than 25% of the original contract value, an additional Performance Guarantee amounting to 3% (Three percent) for the excess value over the original contract value shall be deposited by the Contractor. On the other hand, if the value of contract decreases by more than 25% of the original contract value, Performance Guarantee amounting to 3% (Three percent) of the decrease in the contract value shall be returned to the Contractor. The PG amount in excess of required PG for decreased contract value, available with Railway/DFCCILs, shall be returned to Contractor as per his request duly safeguarding the interest of Railway/DFCCILs

(e) The Performance Guarantee (PG) shall be released after physical completion of the work based on 'Completion Certificate' issued by the competent authority stating that the Contractor has completed the work in all respects satisfactorily. The Security Deposit shall, however, be released only after expiry of the maintenance period and after passing the final bill based on 'No Claim Certificate' from the contractor.

(f) Whenever the contract is rescinded, the Security Deposit shall be forfeited and the

Performance Guarantee shall be encashed. The balance work shall be got done independently without risk & cost of the failed contractor. The failed contractor shall be debarred from participating in the tender for executing the balance work. If the failed contractor is a JV or a Partnership firm, then every member/partner of such a firm shall be debarred from participating in the tender for the balance work in his/her individual capacity or as a partner of any other JV /partnership firm.

(g) The Engineer shall not make a claim under the Performance Guarantee except for amounts to which the DFCCIL is entitled under the contract (not withstanding and/or without prejudice to any other provisions in the contract agreement) in the event of:

(i) Failure by the Contractor to extend the validity of the Performance Guarantee as described herein above, in which event the Engineer may claim the full amount of the Performance Guarantee.

(ii) Failure by the Contractor to pay DFCCIL any amount due, either as agreed by the Contractor or determined under any of the Clauses/Conditions of the Agreement, within 30 days of the service of notice to this effect by Engineer.

(iii) The Contract being determined or rescinded under provision of the GCC, the Performance Guarantee shall be forfeited in full and shall be absolutely at the disposal of the DFCCIL.

1.2.38 **DEFECT LIABILITY PERIOD :**

The period of defect liability for the works shall be 12 (Twelve) Months starting from the date of completion of the work or as certified by the DFCCIL.

1.2.39 **ELECTRICAL CONTRACTOR LICENSE:**

Contractor must have valid Class-'A', Electrical Contractor License issued from appropriate government authority to execute mentioned works.

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PART -I

CHAPTER -III

PRICES AND PAYMENT

1.3.1 SCOPE:

This chapter deals with prices to be paid to the contractor for completion of various items of work. The contractor shall be paid for completed works in accordance with accepted schedule of prices and rates, as stipulated in the tender document.

1.3.2 SCHEDULE OF PRICES:

(a) UNIT PRICES FOR MATERIALS:

The unit prices of materials as given in Schedule of quantities shall be inclusive of all charges including transport, loading/unloading handling all insurance premium, banker's charges, all Taxes, Duties and levies (including Octroi etc.) applicable on works contracts etc.

(b) FOR ERECTION:

The unit prices given in Schedule of quantities shall include cost of erection, testing, commissioning and cover all cost of administration of the contract, insurance premium, bankers' charges for guarantees, cost of storage, loading, unloading and handling of materials, and for any road transport which the Contractor may use for carriage of materials between his depot and depot/s and site of work etc.

Unit prices quoted shall be FIRM. No price variation shall be allowed, on any account.

1.3.3 QUANTITIES:

The approximate estimated quantities of various items of works are included in Schedule of quantities and rates. However, quantities can be increased/ decreased as stipulated in Special Conditions of Contract.

1.3.4 NEW ITEMS OF WORK:

If during the execution of the work, the Contractor is called upon to carry out any new item of work not included in **Schedules,** the Contractor shall execute such works at such prices as may be mutually agreed in writing with the Purchaser.

1.3.5 DEDUCTION OF TAXES FROM CONTRACTOR'S BILLS:

Wherever the law makes it statutory for the purchaser to deduct any amount towards Sales Tax/Income tax on works contract, the same will be deducted and deposited with the concerned authority.

The tenderer for carrying out any construction work in Rajasthan and Haryana must get themselves registered from the Registering Office the Building and other Construction Workers Act, and rules made thereto by the Rajasthan & Haryana Government and submit certificate of Registration issued from the Registering Officer of the Rajasthan and Haryana Government (Labor Department). For enactment of this Act, the tenderer shall be required to pay cess @1% of cost of construction work to be deducted from each bill. Cost of material shall be outside the purview of cess, when supplied under a separate schedule item.

1.3.6 SUBMISSION OF BILLS:

On award of contract, a procedure order for submission of bills for payment shall be jointly drawn by finance and the purchaser. The contractor will be required to submit the bills as per the joint procedure order.

1.3.7 PAYMENT:

80% of the item price (material cost) shall be paid on receipt of material in DFCCIL/Railway custody after inspection. If for any item of work, price of material and erection is not separately available, 80% of the cost of item of work will be considered as material cost.

Further payment of material and erection cost to cover 90% of the cost of item of work shall be made on successful testing and commissioning of the installation.

Final Payment – Balance 10% payment shall be released on issue of completion certificate by the Purchasers Engineer.

1.3.8 RELEASE OF PERFORMANCE GUARANTEE:

The Performance Guarantee (PG) shall be **released after physical completion of the work** based on 'Completion Certificate' issued by the competent authority stating that the Contractor has completed the work in all respects satisfactorily.

1.3.9 RELEASE OF SECURITY DEPOSIT:

Security Deposit shall be returned to the Contractor after the following:

(a) Final Payment of the Contract as per relevant GCC clause and

(b) Signature of Final Supplementary Agreement or Certification by Engineer that DFCCIL has No Claim on Contractor and

(c) Issue of Maintenance Certificate on expiry of the maintenance period as per relevant GCC clause.

Forfeiture of Security Deposit:

Whenever the contract is rescinded as a whole under relevant GCC clause , the Security Deposit already with Railways/DFCCIL under the contract shall be forfeited. However, in case the contract is rescinded in part or parts under relevant GCC clause , the Security Deposit shall not be forfeited.

No interest shall be payable upon the Earnest Money and Security Deposit or amounts payable to the Contractor under the Contract, but Government Securities deposited, will be payable with interest accrued thereon as per relevant GCC –Clause.

1.3.10 RATES FOR ITEMS OF WORKS:

(i) The rates, entered in the accepted Schedule of Rates of the Contract are intended to provide for works duly and properly completed in accordance with the General and Special (if any) Conditions of the Contract and the Specifications and drawings together with such enlargements, extensions, diminutions, reductions, alterations or additions as may be ordered in terms of Clause 42 of these conditions and without prejudice to the generality thereof and shall be deemed to include and cover superintendence and labour, supply, including full freight of materials, stores, patterns, profiles, moulds, fittings, centerings, scaffolding, shoring props, timber, machinery, barracks, tackle, roads, pegs, posts, tools and all apparatus and plant required on the works, except such tools, plant or materials as may be specified in the contract to be supplied to the Contractor by the Railway, the erection, maintenance and removal of all temporary works and buildings, all watching, lighting, bailing, pumping and draining, all prevention of or compensation for trespass, all barriers and arrangements for the safety of the public or of employees during the execution of works, all sanitary and medical arrangements for labour camps as may be prescribed by the Railway/DFCCIL, the

setting of all work and of the construction, repair and upkeep of all centre lines, bench marks and

level pegs thereon, site clearance, all fees duties, royalties, rent and compensation to owners for surface damage or taxes and impositions payable to local authorities in respect of land, structures and all material supplied for the work or other duties of or expenses for which the Contractor may become liable or may be put to under any provision of law for the purpose of or in connection with the execution of the contract and all such other incidental charges or contingencies as may have been specially provided for in the Specifications.

However, if rates of existing GST or cess on GST for Works Contract is increased or any new tax /cess on Works Contract is imposed by Statute after the date of opening of tender but within the original date of completion/date of completion extended under relevant GCC clause and the Contractor thereupon properly pays such taxes/cess, the Contractor shall be reimbursed the amount so paid.

Further, if rates of existing GST or cess on GST for Works Contract is decreased or any tax/cess on Works Contract is decreased / removed by Statute after the date of opening of tender, the reduction in tax amount shall be recovered from Contractor's bills/Security Deposit or any other dues of Contractor with the Government of India.

PRICE VARIATION CLAUSE in Works Contracts is dealt with in accordance with provisions of of **GCC July 2014 with latest amendments & correction slips.**

As per Railway Board's letter no. 2017/Trans/01/Policy dated 08/02/2018, **Since, the Cost of advertisement value of this tender is less than Rs 5 crore, so PVC will not be applicable.**

1.3.12 Maintenance of Works: The Contractor shall at all times during the progress and continuance of the works and also for the period of maintenance specified in the Tender Form after the date of issue of the certificate of completion by the Engineer or any other earlier date subsequent to the completion of the works that may be fixed by the Engineer, be responsible for and effectively maintain and uphold in good substantial, sound and perfect condition all and every part of the works and shall make good from time to time and at all times as often as the Engineer shall require, any damage or defect that may during the above period arise in or be discovered or be in any way connected with the works, provided that such damage or defect is not directly caused by errors in the contract documents, act of providence or insurrection or civil riot, and the Contractor shall be liable for and shall pay and make good to the Railway/DFCCIL or other persons legally entitled thereto whenever required by the Engineer so to do, all losses, damages, costs and expenses they or any of them may incur or be put or be liable to by reasons or in consequence of the operations of the Contractor or of his failure in any respect.

1.3.13.1 Certificate of Completion of Works: As soon as in the opinion of the Engineer, the work has been completed and has satisfactorily passed any final test or tests that may be prescribed, the Engineer shall issue a certificate of completion duly indicating the date of completion in respect of the work and the period of maintenance of the work shall commence from the date of completion mentioned in such certificate. The certificate, inter alia, should mention that the work has been completed in all respects and that all the contractual obligations have been fulfilled by the Contractor and that there is no due from the Contractor to Railways/DFCCIL against the contract concerned.

The Engineer may also issue such a certificate indicating date of completion with respect to any part of the work (before the completion of the whole of work), which has been both completed to the satisfaction of the Engineer and occupied or used by the Railway. When any such certificate is given in respect of part of a work, such part shall be considered as completed and the period of

maintenance of such part shall commence from the date of completion mentioned in the completion certificate issued for that part of the work.

1.3.13.2 Contractor not Absolved by Completion Certificate: The Certificate of Completion in respect of the works referred to in Sub-Clause (1) of this Clause shall not absolve the Contractor from his liability to make good any defects imperfections, shrinkages or faults which may appear during the period of maintenance specified in the tender arising in the opinion of the Engineer from materials or workmanship not in accordance with the drawings or specifications or instruction of the Engineer, which defects, imperfections, shrinkages or faults shall upon the direction in writing of the Engineer be amended and made good by the Contractor at his own cost; and in case of default on the part of Contractor, the Engineer may employ labour and materials or appoint another Contractor to amend and make good such defects, imperfections, shrinkages and faults and all expenses consequent thereon and incidental thereto shall be borne by the Contractor and shall be recoverable from any moneys due to him under the contract.

1.3.13.3 Final Supplementary Agreement: After the work is completed and taken over by the Railway/DFCCIL as per terms and conditions of the contract agreement or otherwise concluded by the parties with mutual consent and full and final payment is made by the Railway/DFCCIL to the Contractor for work done, and there is unequivocal no claim on either side under the contract, the parties shall execute the final supplementary agreement annexed as **Annexure IV**.

1.3.14 Approval only by Maintenance Certificate: No certificate other than maintenance certificate referred to in relevant Clause of GCC of the Conditions shall be deemed to constitute approval of any work or other matter in respect of which it is issued or shall be taken as an admission of the due performance of the contract or any part thereof.

1.3.15.1 Maintenance Certificate: The Contract shall not be considered as completed until a Maintenance Certificate shall have been signed by the Engineer stating that the works have been completed and maintained to his satisfaction. The Maintenance Certificate shall be given by the Engineer upon the expiration of the period of maintenance or as soon thereafter as any works ordered during such period.
The Competent Authority to issue above Maintenance Certificate shall normally be the authority who is competent to sign the contract. If this Competent Authority is of the rank lower than JA Grade, then a JA Grade Officer (concerned with the work) should issue the certificate. The certificate, inter alia, should mention that the work has been completed in all respects and that all the contractual obligations have been fulfilled by the Contractor and that there is no due from the Contractor to Railways/DFCCIL against the contract concerned.

1.3.15.2 Cessation of Railway's/DFCCIL's Liability: The Railway/DFCCIL shall not be liable to the Contractor for any matter arising out of or in connection with the contract for execution of the works unless the Contractor has made a claim in writing in respect thereof before the issue of the Maintenance Certificate under this clause.
1.3.15.3 Unfulfilled Obligations: Notwithstanding the issue of the Maintenance Certificate the Contractor and the Railway/DFCCIL shall remain liable for the fulfillment of any obligation incurred under the provision of the contract prior to the issue of the Maintenance Certificate which remains unperformed at the time such certificate is issued and for the purposes of determining the nature and extent of any such obligations, the contract shall be deemed to remain in force between the parties thereto.

1.3.16.1 Final Payment: On the Engineer's certificate of completion in respect of the works, adjustment shall be made and the balance of account based on the Engineer or the Engineer's representative's certified measurements or Engineer's certified "contractor's authorized engineer's measurements" of the total quantity of work executed by the Contractor upto the date of completion

and on the accepted schedule of rates and for extra works on rates determined shall be paid to the Contractor subject always to any deduction which may be made under these presents and further subject to the Contractor having signed delivered to the Engineer enclosing either a full account in detail of all claims he may have on the Railway/DFCCIL in respect of the works or having delivered No Claim Certificate. and the Engineer having after the receipt of such account given a certificate in writing that the whole of the works to be done under the provisions of the Contracts have been completed, that they have been inspected by him since their completion and found to be in good and substantial order, that all properties, works and things, removed, disturbed or injured in consequence of the works have been properly replaced and made good and all expenses and demands incurred by or made upon the Railway/DFCCIL for or in the respect of damage or loss by from or in consequence of the works, have been satisfied agreeably and in conformity with the contract.

1.3.16.2 Post Payment Audit: It is an agreed term of contract that the Railway reserves to itself the right to carry out a post-payment audit and/ or technical examination of the works and the final bill including all supporting vouchers, abstracts etc. and to make a claim on the Contractor for the refund of any excess amount paid to him till the release of security deposit or settlement of claims, whichever is later, if as a result of such examination any over-payment to him is discovered to have been made in respect of any works done or alleged to have been done by him under the contract.

1.3.17 PRODUCTION OF VOUCHERS ETC BY THE CONTRACTOR:

(i) For a contract of more than one crore of rupees, the Contractor shall, whenever required, produce or cause to be produced for examination by the Engineer any quotation, invoice, cost or other account, book of accounts, voucher, receipt, letter, memorandum, paper of writing or any copy of or extract from any such document and also furnish information and returns verified in such manner as may be required in any way relating to the execution of this contract or relevant for verifying or ascertaining cost of execution of this contract (the decision of the Engineer on the question of relevancy of any documents, information or return being final and binding in the parties). The Contractor shall similarly produce vouchers etc, if required to prove to the Engineer, that materials supplied by him, are in accordance with the specifications laid down in the contract.

(ii) If any portion of the work in a contract of value more than one crore of rupees be carried out by a sub-contractor or any subsidiary or allied firm or company , the Engineer shall have power to secure the books of such sub-contract or any subsidiary or allied firm or company, through the Contractor, and such books shall be open to his inspection.

(iii) The obligations imposed by Sub Clause (i) & (ii) above is without prejudice to the obligations of the Contractor under any statute rules or orders binding on the Contractor.

1.3.18 LABOUR:

1.3.18.1 Wages to Labour: The Contractor shall be responsible to ensure compliance with the provision of the Minimum Wages Act, 1948 (hereinafter referred to as the "said Act") and the Rules made there under in respect of any employees directly or through petty Contractors or sub- contractors employed by him for the purpose of carrying out this contract.

If, in compliance with the terms of the contract, the Contractor supplied any labour to be used wholly or partly under the direct orders and control of the Railways whether in connection with any work being executed by the Contractor or otherwise for the purpose of the Railway such labour shall, for the purpose of this Clause, still be deemed to be persons employed by the Contractor.

If any moneys shall, as a result of any claim or application made under the said Act be directed to

be paid by the Railway, such money shall be deemed to be moneys payable to the Railway by the Contractor and on failure by the Contractor to repay the Railway any moneys paid by it as aforesaid within seven days after the same shall have been demanded, the Railways shall be entitled to recover the same from Contractor's bills/Security Deposit or any other dues of Contractor with the Government of India.

1.3.18.2 Apprentices Act: The Contractor shall be responsible to ensure compliance with the provisions of the Apprentices Act, 1961 and the Rules and Orders issued thereunder from time to time in respect of apprentices directly or through petty Contractors or sub-contractors employed by him for the purpose of carrying out the Contract.

If the Contractor directly or through petty Contractors or sub-contractors fails to do so, his failure will be a breach of the contract and the Railway may, in its discretion, rescind the contract. The Contractor shall also be liable for any pecuniary liability arising on account of any violation of the provisions of the Act.

1.3.18.3 Provisions of Payments of Wages Act: The Contractor shall comply with the provisions of the Payment of Wages Act, 1936 and the rules made there under in respect of all employees employed by him either directly or through petty Contractors or sub-contractors in the works. If in compliance with the terms of the contract, the Contractor directly or through petty Contractors or sub-contractors shall supply any labour to be used wholly or partly under the direct orders and control of the Engineer whether in connection with the works to be executed hereunder or otherwise for the purpose of the Engineer, such labour shall nevertheless be deemed to comprise persons employed by the Contractor and any moneys which may be ordered to be paid by the Engineer shall be deemed to be moneys payable by the Engineer on behalf of the Contractor and the Engineer may on failure of the Contractor to repay such money to the Railways deduct the same from any moneys due to the Contractor in terms of the contract. The Railway shall be entitled to recover the same from Contractor's bills/Security Deposit or any other dues of Contractor with the Government of India all moneys paid or payable by the Railway by way of compensation of aforesaid or for costs of expenses in connection with any claim thereto and the decision of the Engineer upon any question arising out of the effect or force of this Clause shall be final and binding upon the Contractor.

1.3.18.4 Provisions of Contract Labour (Regulation and Abolition) Act, 1970:

(1) The Contractor shall comply with the provision of the contract labour (Regulation and Abolition) Act, 1970 and the Contract labour (Regulation and Abolition) Central Rules 1971 as modified from time to time, wherever applicable and shall also indemnify the Railway from and against any claims under the aforesaid Act and the Rules.

(2) The Contractor shall obtain a valid license under the aforesaid Act as modified from time to time before the commencement of the work and continue to have a valid license until the completion of the work. Any failure to fulfill the requirement shall attract the penal provision of the Act.

(3) The Contractor shall pay to the labour employed by him directly or through sub-contractors the wages as per provision of the aforesaid Act and the Rules wherever applicable. The Contractor shall notwithstanding the provisions of the contract to the contrary, cause to be paid the wages to labour, indirectly engaged on the works including any engaged by sub-contractors in connection with the said work, as if the labour had been immediately employed by him.

(4) In respect of all labour directly or indirectly employed in the work for performance of the Contractor's part of the contract, the Contractor shall comply with or cause to be complied with the provisions of the aforesaid Act and Rules wherever applicable.

(5) In every case in which, by virtue of the provisions of the aforesaid Act or the rules, the Railway is obliged to pay any amount of wages to a workman employed by the Contractor or his sub-contractor in execution of the work or to incur any expenditure on account of the contingent, liability of the Railway due to the Contractor's failure to fulfill his statutory obligations under the aforesaid Act or the rules, the Railway will recover from the Contractor, the amount of wages so paid or the amount of expenditure so incurred and without prejudice to the rights of the Railway under the Section 20, Sub-Section (2) and Section 2, Sub-Section (4) of the aforesaid Act, the Railway shall be at liberty to recover such amount or part thereof from Contractor's bills/Security Deposit or any other dues of Contractor with the Government of India. The Railway shall not be bound to contest any claim made against it under Sub-Section (1) of Section 20 and Sub-Section (4) of Section 21 of the aforesaid Act except on the written request of the Contractor and upon his giving to the Railway full security for all costs for which the Railway might become liable in contesting such claim. The decision of the Chief Electrical Engineer regarding the amount actually recoverable from the Contractor as stated above shall be final and binding on the Contractor.

1.3.18.5 Provisions of Employees Provident Fund and Miscellaneous Provisions Act, 1952:
The Contractor shall comply with the provisions of Para 30 & 36-B of the Employees Provident Fund Scheme, 1952; Para 3 & 4 of Employees' Pension Scheme, 1995; and Para 7 & 8 of Employees Deposit Linked Insurance Scheme, 1976; as modified from time to time through enactment of "Employees Provident Fund & Miscellaneous Provisions Act, 1952", wherever applicable and shall also indemnify the Railway from and against any claims under the aforesaid Act and the Rules.

1.3.18.6 Contractor is to abide by the provisions of Payment of Wages act & Minimum Wages act in terms Indian Railways General Condition of Contract. In order to ensure the same, an application has been developed and hosted on website 'www.shramikkalyan.indianrailways.gov.in'. Contractor shall register his firm/company etc. and upload requisite details of labour and their payment in this portal. These details shall be available in public domain. The Registration/ updation of Portal shall be done as under:

(a) Contractor shall apply for one time registration of his company/firm etc. in the **Shramikkalyan portal** with requisite details subsequent to issue of Letter of Acceptance. Engineer shall approve the contractor's registration in the portal within 7 days of receipt of such request.

(b) Contractor once approved by any Engineer, can create password with login ID (PAN No.) for subsequent use of portal for all LOAs issued in his favour.

(c) The contractor once registered on the portal, shall provide details of his Letter of Acceptances (LOA) / Contract Agreements on shramikkalyan portal within 15 days of issue of any LoA for approval of concerned engineer. Engineer shall update (if required) and approve the details of LoA filled by contractor within 7 days of receipt of such request.

(d) After approval of LOA by Engineer, contractor shall fill the salient details of contract labours engaged in the contract and ensure updating of each wage payment to them on shramikkalyan portal on monthly basis.

(e) It shall be mandatory upon the contractor to ensure correct and prompt uploading of all

salient details of engaged contractual labour & payments made thereof after each wage period.

(f) While processing payment of any 'On Account bill' or 'Final bill' or release of 'Advances' or 'Performance Guarantee / Security deposit', contractor shall submit a certificate to the Engineer or Engineer's representatives that "I have uploaded the correct details of contract labours engaged in connection with this contract and payments made to them during the wage period in Railway's Shramikkalyan portal at **'www.shramikkalyan.indianrailways.gov.in'** till Month, Year."

1.3.18.7 Provisions of "The Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Act, 1996" and "The Building and Other Construction Workers' Welfare Cess Act, 1996":
The tenderers, for carrying out any construction work, shall get themselves registered with the Registering Officer under Section-7 of the Building and Other Construction Workers Act, 1996 and rules made thereto by the concerned State Govt., and submit certificate of Registration issued from the Registering Officer of the concerned State Govt. (Labour Dept.). The Cess shall be deducted from contractor's bills as per provisions of the Act.

1.3.18.8 Reporting of Accidents: The Contractor shall be responsible for the safety of all employees directly or through petty Contractors or sub-contractor employed by him on the works and shall report serious accidents to any of them however and wherever occurring on the works to the Engineer or the Engineers Representative and shall make every arrangements to render all possible assistance.

1.3.18.9 Provision of Workmen's Compensation Act: In every case in which by virtue of the provisions of Section 12 Sub-Section (1) of the Workmen's Compensation Act 1923, Railway is obliged to pay compensation to a workman directly or through petty Contractor or sub-contractor employed by the Contractor in executing the work, Railway will recover from the Contractor the amount of the compensation so paid, and, without prejudice to the rights of Railway under Section 12 Sub-section (2) of the said Act, Railway shall be at liberty to recover such amount or any part thereof from Contractor's bills/Security Deposit or any other dues of Contractor with the Government of India. Railway shall not be bound to contest any claim made against it under Section 12 Sub-Section (1) of the said Act except on the written request of the Contractor and upon his giving to Railway full security for all costs for which Railway might become liable in consequence of contesting such claim.

1.3.18.10 Provision of Mines Act: The Contractor shall observe and perform all the provisions of the Mines Act, 1952 or any statutory modifications or re-enactment thereof for the time being in force and any rules and regulations made thereunder in respect of all the persons directly or through the petty Contractors or sub-contractors employed by him under this contract and shall indemnify the Railway from and against any claims under the Mines Act, or the rules and regulations framed thereunder, by or on behalf of any persons employed by him or otherwise.

1.3.19 DETERMINATION OF CONTRACT:

1.3.19.1 Right of Railway/DFCCIL to Determine the Contract: The Railway/DFCCIL shall be entitled to determine and terminate the contract at any time, should in the Railway's opinion, the cessation of work becomes necessary owing to paucity of funds or from any other cause whatever, in which case the value of approved materials at site and of work done to date by the Contractor will be paid for in full at the rate specified in the contract. Notice in writing from the Railway of such determination and the reasons therefore shall be conclusive evidence thereof.

1.3.19.2 Payment on Determination of Contract: Should the contract be determined under sub clause (1) of this clause and the Contractor claims payment for expenditure incurred by him in the expectation of completing the whole of the work, the Railways/DFCCIL shall admit and consider such claims as are deemed reasonable and are supported by vouchers to the satisfaction of the Engineer. The Railway's/DFCCIL's decision on the necessity and propriety of such expenditure shall be final and conclusive.

1.3.19.3 The Contractor shall have no claim to any payment of compensation or otherwise, howsoever on account of any profit or advantage which he might have derived from the execution of the work in full but which he did not derive in consequence of determination of contract.

1.3.19.4 Determination of Contract owing to Default of Contractor: If the Contractor should:

(i) Becomes bankrupt or insolvent, or

(ii) Make an arrangement for assignment in favour of his creditors, or agree to carry out the contract under a Committee of Inspection of his creditors, or

(iii) Being a Company or Corporation, go into liquidation (other than a voluntary liquidation for the purposes of amalgamation or reconstruction), or

(iv) Have an execution levied on his goods or property on the works, or

(v) Assign the contract or any part thereof otherwise than as provided in Clause 7 of these Conditions, or

(vi) Abandon the contract, or

(vii) Persistently disregard the instructions of the Engineer, or contravene any provision of the contract, or

(viii) Fail to adhere to the agreed program of work by a margin of 10% of the stipulated period, or

(ix) Fail to execute the contract documents.

(x) Fails to submit the documents pertaining to identity of JV and PAN. Form available in the Regulations for Tenders and Contracts.

(xi) Fail to remove materials from the site or to pull down and replace work after receiving from the Engineer notice to the effect that the said materials or works have been condemned or rejected.

(x**ii)** Fail to take steps to employ competent or additional staff and labour as required.

(xiii) Fail to afford the Engineer or Engineer's representative proper facilities for inspecting the works or any part thereof as required.

(xiv) Promise, offer or give any bribe, commission, gift or advantage either himself or through his partner, agent or servant to any officer or employee of the Railway/DFCCIL or to any person on his or on their behalf in relation to the execution of this or any other contract with this Railway.

(xv)(A) At any time after the tender relating to the contract, has been signed and submitted by the Contractor, being a partnership firm admit as one of its partners or employee under it or being an incorporated company elect or nominate or allow to act as one of its directors or employee under it in any capacity whatsoever any retired Engineer of the Gazetted rank or any other retired Gazetted officer working before his retirement, whether in the executive or administrative capacity, or

whether holding any pensionable post or not, in the Railways/DFCCIL for the time being owned and administered by the President of India before the expiry of one year from the date of retirement from the said service of such Engineer or Officer unless such Engineer or Officer has obtained permission from the President of India or any officer duly authorized by him in this behalf to become a partner or a director or to take employment under the contract as the case may be, or

(xv)(B) Fail to give at the time of submitting the said tender:

(a) The correct information as to the date of retirement of such retired Engineer or retired officer from the said service, or as to whether any such retired Engineer or retired officer was under the employment of the Contractor at the time of submitting the said tender, or

(b) The correct information as to such Engineers or officers obtaining permission to take employment under the Contractor, or

(c) Being a partnership firm, the correct information as to, whether any of its partners was such a retired Engineer or a retired officer, or

(d) Being in incorporated company, correct information as to whether any of its directors was such a retired Engineer or a retired officer, or

(e) Being such a retired Engineer or retired officer suppress and not disclose at the time of submitting the said tender the fact of his being such a retired Engineer or a retired officer or make at the time of submitting the said tender a wrong statement in relation to his obtaining permission to take the contract or if the Contractor be a partnership firm or an incorporated company to be a partner or director of such firm or company as the case may be or to seek employment under the Contractor.

(f) Submits copy of fake documents / certificates in support of credentials, submitted by the tenderer

Then and in any of the **said Clause**, the Engineer on behalf of the Railway/DFCCIL may serve the Contractor with a notice in writing to that effect and if the Contractor does not within seven days after the delivery to him of such notice proceed to make good his default in so far as the same is capable of being made good and carry on the work or comply with such directions as aforesaid of the entire satisfaction of the Engineer, the Railway shall be entitled after giving 48 hours' notice in writing under the hand of the Engineer to rescind the contract as a whole or in part or parts (as may be specified in such notice) and after expiry of 48 hours' notice, a final termination notice should be issued.

Note: Engineer at his discretion may resort to the part termination of contract with notices, only in cases where progress of work is more than or equal to 80% of the original scope of work.

1.3.19.5 Right of Railway/DFCCIL after Rescission of Contract owing to Default of Contractor:
In the event of any or several of the courses, referred to in Sub-Clause (1) of this Clause, being adopted:

(a) The Contractor shall have no claim to compensation for any loss sustained by him by reason of his having purchased or procured any materials or entered into any commitments or made any advances on account of or with a view to the execution of the works or the performance of the contract and Contractor shall not be entitled to recover or be paid any sum for any work thereto for actually performed under the contract unless and until the Engineer shall have certified the performance of such work and the value payable in respect thereof and the Contractor shall only be entitled to be paid the value so certified.

(b) In the contract which has been rescinded as a whole, the Security Deposit already with railways under the contract shall be encashed/ forfeited and the Performance Guarantee already submitted for the contract shall be encashed. The balance work shall be got done independently without risk & cost of the failed Contractor. The failed Contractor shall be debarred from participating in the tender for executing the balance work. If the failed Contractor is a JV or a Partnership firm, then every member/partner of such a firm shall be debarred from participating in the tender for the balance work in his/her individual capacity or as a partner of any other JV /partnership firm.

Further the authorized representative of failed Contractor cannot be accepted as authorized representative in new contract.

(c) In the contract rescinded in part or parts,

(i) The full Performance Guarantee for the contract shall be recovered. No additional Performance Guarantee shall be required for balance of work being executed through the part terminated contract. The contract value of part terminated contract stands reduced to the balance value of work under the contract.

(ii) The Security Deposit of part terminated contract shall be dealt as per relevant clause of GCC.

(iii) The defaulting Contractor shall not be issued any completion certificate for the contract.

(iv) The balance work shall be got done independently without risk & cost of the failed Contractor. The failed Contractor shall be debarred from participating in the tender for executing the balance work. If the failed Contractor is a JV or a Partnership firm, then every member/partner of such a firm shall be debarred from participating in the tender for the balance work in his/her individual capacity or as a partner of any other JV /partnership firm.

(v) Further the authorized representative of failed Contractor will not be accepted as authorized representative in new contract.

(d) The Engineer or the Engineer's Representative shall be entitled to take possession of any materials, tools, implements, machinery and buildings on the works or on the property on which these are being or ought to have been executed, and to retain and employ the same in the further execution of the works or any part thereof until the completion of the works without the Contractor being entitled to any compensation for the use and employment thereof or for wear and tear or destruction thereof.

(e) The Engineer shall as soon as may be practicable after removal of the Contractor fix and determine ex-parte or by or after reference to the parties or after such investigation or enquiries as he may consider fit to make or institute and shall certify what amount (if any) had at the time of rescission of the contract been reasonably earned by or would reasonably accrue to the Contractor in respect of the work then actually done by him under the contract and what was the value of any unused, or partially used materials, any constructional plant and any temporary works upon the site. The legitimate amount due to the Contractor after making necessary deductions and certified by the Engineer should be released expeditiously.

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PART – I

CHAPTER- IV

SCOPE OF WORK & EXPLANATORY NOTES

OHE work in connection with isolation of Loop lines at various stations of New Rewari - New Kishangarh section under of DFCCIL Jaipur.

1.4.1 Explanatory notes for various items of work in schedule.

1.4.2 The basic quantities of components and materials required to make up a unit of work for selected items are indicated for guidance only. There may be minor variation to suit erection but no adjustment in prices of Schedule shall be made on that account. In estimating the prices for various items of work provision for loss and wastage in transit and erection should be provided for over and above the basic quantities of components and materials required to make up a unit work, indicated herein, except where otherwise specified for materials supplied by the purchaser.

1.4.3 In the explanatory notes given in this Chapter, the term 'Small Parts Steel work' is meant to cover fabricated steel work made from rolled steel sections, complete with bolts and nuts and washers where required for fastening the small parts steel work to any structural member. The term "attachment" wherever used is intended to cover castings, forging, machined or welded components or fittings, which are attached directly to a structural member, or mounted on small parts steel work and shall include bolts and nuts for fastening the attachment to the structural member or small parts steel work.

1.4.4 In the explanatory notes given in this Chapter, the term "bimetallic connection" is meant to cover any connection between a copper conductor and an aluminum conductor. The clamps used for such connections shall be made up of a suitable aluminum alloy or copper alloy and the copper/aluminum conductor shall be wrapped with a bimetallic (aluminum copper) strip to prevent direct contact between aluminum and copper.

1.4.5 Special notes for measurements are included in this chapter under various items, where necessary.

1.4.6 Reconciliation of Materials Supplied by the Purchaser:

(a) The following procedure shall be adopted for the final reconciliation of the various equipments, materials fittings and conductors supplied by the purchaser.

(b) All the materials supplied by the purchaser shall be correctly accounted for and quantities reconciled on completion of the work by the Contractor. On completion of work, all surplus materials supplied by the Purchaser together with the ones found defective or that have become defective or broken on account of defective materials and/or workmanship shall be returned to purchaser by the Contractor.

(c) **Steel:** Cost of rolled steel masts, gantry masts, fabricated steel work damaged or not accounted for, will be recovered at rates specified in note at the end of this pare.

(d) **Wires and Conductors:** Same as (c) above.

(e) **Other Equipments, Fittings and Components:** The purchaser will supply the requirement of the various other equipment's, components or fittings listed in Annexure. If there are any shortages during final reconciliation, their cost will be recovered by the purchaser from the contractor at the prices inclusive of all charges as specified in Note below:

Note:

(i) If there are any shortage during final reconciliation, their cost will be recovered by the purchaser from the contractor at the book rate or the last purchase rate or the prevailing market rate whichever is higher plus 5% on account of initial freight, 2% on account of incidental charges together with supervision charges @ 12.5% of the total cost inclusive of material freight and incidental charges. Freight between the purchaser's source of supply and the contractor's depot shall be on the Contractor's account.

(ii) No recovery/reconciliation shall however, be made as per the preceding paras if the items stated under clause 1.4.6 are made contractor supply by including the respective optional items in the contract.

(f)Surplus /Excess Material: The quantity of materials indicated in Schedule are approximate. All the materials supplied / erected by the contractor shall be correctly accounted for quantities and reconciled on completion of the work by the Contractor. On completion of work all surplus/excess materials supplied by the contractor shall be taken over back by the contractor and payment shall be made /adjusted finally only for erected materials. Hence contractor/s are advised to supply the materials as per approved drawings/ designs only after through study of site conditions.

1.4.7 Released Material: The contractor shall return to the purchaser all the released materials from the existing system at the first available opportunity but not later than a week at the purchaser's stores. If the contractor fails to return the released material in specified time, the cost of released material will be recovered from the progress bill before releasing any payment.

1.4.8 EXPLANATORY NOTES

Note: In the case of wires, conductors etc, the prices for erection shall include any assembly work to be done in the contractor's depot prior to erection at site, such as fabrication of droppers etc to shapes and sizes required.

1.4.8.1 Sub – Section -1 (General)

Item no. 1 – Fabrication , development and supply of sectioning diagram, schematic and TSWR board for all stations- Fabrication and supply of pre compressed particle laminated boards white in colour with aluminum beadings 1/2"x1/2" on all around the board and an arrangement of fixing/ hanging on wall of adequate strength on top boards as required.

The price shall cover supply of sectioning diagram, schematic & TSWR and erection of TSWR board with supply of fixing material (Clamp, back flat strip & fasteners).

Item no. 2 – Fabrication, development and supply of sectioning diagram, schematic and TSWR board for all stations- Developing the sectioning diagram, schematic diagram & TSWR diagram with computerized digital printing on adhesive vinyle of adequate size as required and necessary correction in existing TSWR..

The price shall cover supply of sectioning diagram, schematic & TSWR and erection of TSWR board with supply of fixing material (Clamp, back flat strip & fasteners).

Item no. 3 – Supply without insulator and erection of 25 kV Post Insulator.

The price is applicable to the provision of a 25 kV Post Insulator to support copper or aluminum jumper/busbars. The price shall cover supply of all components and fittings/angle iron (outrigger) to support the jumpers but excluding post insulator and small parts steel works with bolts and nuts etc., if any. The price shall cover erection of all components required for the assembly, including post insulator, but excluding small parts steel work with bolts and nuts etc. if any.

Item no. 4 – Supply without insulator and erection of a suspension (9 ton) Insulator.

The price is applicable to the provision of 9 ton suspension insulator assembly for suspension of an All-Aluminum 2x25 kV feeder, 288 sq.mm or any overhead equipment conductor or any other similar type of suspension. The price shall cover supply of all components, required for the suspension assembly including the appropriate suspension clamp but excluding 9 ton insulator assembly and small parts steel work with bolts nuts etc. if any. The price shall cover erection of all provision of heat shrinkable PVC tube for structure bond under track circuited rail. This would also cover connection or earthing terminals of equipments like L.T. Transformers with structure and then to rails as per relevant drawings. The price shall cover provision of buried rail to running rail as per RDSO drawing No.ETI/OHE/G/05306, with latest mod and shall include supply, fabrication and erection of all connections (including drilling at both ends) and refilling of buried rail pit. The digging up of 1 m deep pit for the purpose of buried rail shall be done by the Railways.

Item no. 5 – Adjustment on bracket assemblies for lowering/raising the height of contact & catenary wire where encumbrance is changed.
The price shall cover supply & replacement of all required components of bracket assembly for changing the encumbrance at a cantilever location to lower/raise the height of contact and catenary wire and adjustment of droppers on adjacent spans. The price shall also include all necessary adjustment on the bracket assembly and the adjacent spans on both sides to suit the required profile of OHE. The price shall cover temporary off loading and reloading of OHE from/on the cantilever, whichever required.
Item no. 6 – Extra on erections under power block @100% for item no 3.
The price under this Item covers extra charges over and above, the erection rates of item no 3 for the work in the vicinity of energized OHE and feeders, which call for a power block (shut-off of traction power). The price payable under this Item shall be extra over the erection rates of the Items referred to above, provided such work is not called for on account of non-compliance with specification approved drawings instructions given by the purchaser. Extra erection rates under this Item will not be payable if power block is given for a total duration of 4 hours or more in a day. Where the prices under this Item are applicable, the contractor shall finalize the quantities to be done under a power block jointly with the purchaser's engineer prior to taking work in hand.
Item no. 7 – Turnout adjustment
The price shall cover turnout adjustment while raising/restoring of OHE or for any modification work in OHE and to make it normal/fit at turnout locations by pantograph checking.
Item no. 8 – 100% Extra for turnout adjustment
The price under this item cover extra charges over and above erection rate of items as per (view detail) of schedule for erection of equipment in the vicinity of energized overhead equipment and feeders or erection of equipment with joints in equipment energized or on energized equipment which calls for a power block (shut off of traction power). The price payable under this item shall be 100% extra over the erection rate of the items referred to above, provided such work is not called for on account of non -compliance with specifications, approved drawings and instructions given by the purchaser from time to time.
The extra erection rate under this item will not be payable, if power block is given for a total duration of 4 hrs. or more in a day. Where the prices under this item are applicable, the contractor shall finalize the quantities of various items of work to be done under a power block, jointly with the purchaser's Engineer prior to taking the work in hand.

1.4.8.2 Sub Section – 2 (Ferrrous)

Item no. 1 – Supply & Erection of Fabricated and Galvanised Steel other than Portal & Traction masts (SPS)
The price shall cover the cost of supply of all fabricated Small parts of steel work excluding fasteners which are required to be supplied by the contractor. The quantity of steel work shall also be included under this item as per the schedule. For standard fabricated steel works for which RDSO's approved drawing are available, the weight of steel.
Item no. 2 – Supply & Erection of Structure bond.
The price shall cover supply of all materials including mild steel flat (50x6) required to provide a structure bond connecting a traction mast or structures to the nearest non-track circuited rail, or earth electrode, including all fasteners at both ends. The price shall include shaping and drilling of the bond as well as rail and erection of all materials including the bond. The price shall also include provision of heat shrinkable PVC tube for structure bond under track circuited rail. This would also cover connection or earthing terminals of equipments like L.T. Transformers with structure and then to rails as per relevant drawings. The price shall cover provision of buried rail to running rail as per RDSO drawing No.ETI/OHE/G/05306, with latest mod and shall include supply, fabrication and erection of all connections (including drilling at both ends) and refilling of buried rail pit. The digging up of 1 m deep pit for the purpose of buried rail shall be done by the Railways.
Item no. 3 – Supply & Erection of Single Earth Electrode.
The price shall cover supply and erection of an earthing station with a single pipe embedded into the ground by driving or otherwise complete with protective concrete box and lugs suitable for directly connecting two mild steel flats of minimum size 50 mm x 6 mm.
Item no. 4 – Supply & Erection of material for earthing of each mast as per DFCCIL drawing & specification.
The price shall cover the supply of all materials including 17.2 mm dia, 4 meter long,250 micron thick copper clad steel rod. The price shall also cover erection of copper earth electrode & connection to structure bonds.

1.4.8.3 Sub – Section -3 (Non Ferrous)

Item no. 1 – Supply & Erection of 25KV Lightweight Section Insulator assembly with suspension (A s per DFCCIL drawing & specification enclosed)
This is an imported item. The price shall cover supply of all components required for a standard section insulator

assembly (serving both the overhead equipment conductors) including special droppers for supporting the equipment and all terminal fittings for conductors and the section insulator assembly. The price shall cover erection and adjustment of all components including light weight section insulator assembly, insulating rod on the catenary and droppers.

Item no. 2 – Supply without insulator & Erection of 25 KV 1600 Amp Single pole isolator (manually operated) without earth contact assembly

The prices shall cover supply and erection of Isolator switches of approved make, complete with arcing horns, operating rods, operating rod guides, mounting base including cost of 25 KV Solid Core Post and Operating rod insulator (Cost of insulator will be paid in Schedule for insulator Section-4).The price shall also cover supply and erection of a number plate of approved design for each isolator. The price shall not include supply and erection of small parts steel work complete with bolts and nuts etc. for support of isolators and for support of operating rods on gantries/ masts, and insulator to support jumper and jumper connectors.

Item no. 3 – Extra for supply & Erection of an earth contact assembly in an insulator

The price shall be payable as extra for erection of an earth contact assembly in any isolator The price shall cover the cost of supply and erection of 3x25 mm copper connections between the earth contact assembly and the structures.

Item no. 4 – Supply & Erection of large copper jumper wire (160 sq. mm) between copper bus bar and OHE, croos feeder to OHE etc. with associate fittings.

The price shall cover the supply of 160 sq. mm flexible copper jumper wire made of annealed stranded 100% pure copper conductor as per RDSO's spec No. ETI/OHE/3 (2/94) with A & C Slip No.1 or latest, all components and fittings required for providing a flexible copper jumper 160 sq. mm and connection between aluminium bus/OHE & copper cross feeder including terminal connector 19 mm multiple hole bolted type (1009), parallel clamp (1050-3) aluminium-copper bimetallic strips fasteners etc.

This jumper shall be provided between aluminium/copper busbar and OHE and the copper cross feeder at SSP, SP and FP OR for connecting OHE/bus bar with 1600A isolators. The price shall also cover the erection of the complete jumper assembly including jumper wire, connectors and fasteners etc.

Item no. 5 – Supply & Erection of solid copper bus bar 18mm

The price shall cover supply and erection of solid copper busbar 18mm including bending and shaping including all fasteners and accessories.

Item no. 6 – Supply & erection of solid copper bus bar connectors: Bus terminal (6310)

The price shall cover supply and erection of solid copper bus-bar junctions and connectors of various types specified, including bolts, nuts, etc, required at junctions or terminations of solid copper bus-bars.

1.4.8.4 Sub Section -4 (Insulator)

Item no. 1 – Supply of 25 kV post insulator

The price shall cover only supply of 25 kV Post insulator to be supplied at site for execution of work.

Item no. 2 – Supply of 25 kV 9 tonne porcelain insulators (CD-1600)

The price shall cover only supply of any of the following 9 tonne insulator assembly to be supplied at site for execution of work.

Item no. 3 – Supply of 25 kV operating rod insulator & post insulator for 25 KV single pole isolator.

1.4.8.5 Sub- Section -5 (100 % Extra on erection rate for work done under power block) Item no. 1 to 6 –

The price under this item shall cover extra charges over and above erection rates of various items (specified in the tender schedule) in the vicinity of energized overhead equipment, feeders or erection of equipment which joints equipment already energized or on energized equipment which calls for a power block (Shut off traction power). Contractor shall provide sufficient trained staff for discharging and earthing of relevant section as directed by purchaser during power block (Discharge rod shall be arranged by contractor).

Where the price under this item is applicable, the contractor shall finalize the quantities of various items of work to be done under a power block jointly with the purchaser's engineer prior to taking the work in hand.

Note: The extra erection rate under this item will not be payable, if power block is given for a total duration of 4 hrs. or more in a day.

1.4.8.6 Sub-Section-6 (Transportation of material)

Item no. 1 – Handling /Loading, unloading and transportation of DFC supply/Released OHE/PSI/GPS/Material such as Mast, Bus-Bar, AT, Brackets. Fittings, contact / catenary wire from IMD/IMSD to site & release material from site to IMD/IMSD.

PART-II

CHAPTER-I

OVERHEAD EQUIPMENT BASIC DETAILS

2.1.7 Track Gauge & Track Centers:

(a) The track gauge is 1676 mm in multiple track Zones. The normal distance between track centers shall be generally more than 6000 mm.

(b) **Speed:** The overhead electrification is designed with clearances as provided in the Standard Schedule of Dimension for Dedicated Freight Corridor Jan. 2013 for maximum speed of 120 kmph and shall permit raising of the tracks by 275 mm to allow ultimately axle loads to be increased to 32.5 tonnes in future.

(c) **Curves:** The minimum radius shall comply with the requirements as follows:
Minimum radius for the Main Line: 700 meters (2.5 degree curve)
Minimum radius for other than Main Lines 438 meters (4 degree curve)
Where degree of the curve is the angle subtended at the center by a chord of 30.5m (refer Para 401 of Indian Railway Permanent Way Manual).

(d) **Cant :** The curve speed and cant relationship shall be based on the following equations:
Actual Cant Ca = GV2 /127R
Where Ca: Actual cant [mm]
G: Dynamic Gauge in mm i.e. 1750 [mm]
V: Equilibrium Speed in km/hr i.e. 85 [km/hr]
R: Radius of the curve [m]
The standard speed for actual cant is defined by considering the maximum permissible speed (100 km /hr.), speed restriction, gradient and train operation plan. The equilibrium speed of actual cant setting for general section is 85 km/hr. The cant computed is rounded off nearest 5mm. The allowable applied cant shall not be over 140mm and the cant deficiency shall be limited to 75mm.
Cant transition shall be straight ramp. Cant excess shall be limited to 75mm.

(e) **Low Joints:** For low or loosely packed joints a difference of 10 mm in the opposite rail is taken as the basis for estimating the displacement of the Pantograph with respect to its normal position

(f) **Formation:** Generally sections with more than one track have common formation. In certain lengths, however, the formation for different track may be separate.

(g) **Displacement:** The general design of overhead equipment shall permit a displacement of ± 100mm of tracks without difficulty and any adjustment of the overhead equipment on this account shall be of such a nature as could be done conveniently without changing any component of the overhead equipment.

2.1.8 Sectioning:

(a) Insulated overlaps are provided for facility of isolator. Some of the overlaps may be provided with manually operated isolator switches.

(b) **Yard Supply:** The sectioning diagram/s also indicate the tracks in station yard and siding whose equipment is electrically independent from those of other tracks.
The overhead equipment in yards and sidings may be fed through isolator switch or interrupter in accordance with arrangement indicated in the sectioning diagram/s.

(c) **Section Insulators:** Section insulators shall be provided as indicated in the sectioning diagrams, or crossover between main tracks and to isolated sections of overhead equipment in yards and sidings.

(d) **Return Conductor:** Return conductor may be run on traction structures or masts. A single conductor shall be used for such return conductors.

(e) **Sectioning Diagram:** The provisional sectioning diagram/s of the sections to be electrified will be given to the successful tenderer.

2.1.9

(a)Pantographs: Motive Power Pantograph Characteristic

The Pantograph details, used DFCC rolling stock, are as follows:

a)	Overall width (Including Horns)	1800mm
b)	Number of collector strips	2
c)	Collector material	Metalized carbon strips
d)	Working width of the head	1040 mm
e)	Static contact force	7 ± 0.4 kg on OHE
f)	Working range (above rail level) (m)	4.58 to 7.55

2.1.10 Overhead Equipment:

(a) **Brief Description:** Essentially the traction overhead equipment shall consist of a standard catenary wire from which a grooved contact wire is suitably suspended by means of droppers. In order to cater for a speed of 120 Kmph the contact wire is given a pre-sag of about 0.8 mm per meter for 54 meter span and reduced suitably for other spans or as per latest guideline.

(b) **Catenary:** The Catenary Conductor shall be Hard Drawn Stranded Magnesium Copper (Cu-Mg) 125 mm2 (37/2.10) size. The catenary wire is conforming to RDSO Spec. No. TI/SPC/OHE/Cat (Mg-Cu)/0120 or DIN 48201 - T1 & T2, EN 50119, DIN 43138 and capable of withstanding minimum of 100^0C,

(c) **Contact wire:** The contact shall be conformed to EN 50149 and withstand minimum 100^0C continuously without affecting mechanical properties as per EN 50119 The Contact wire is 150 Sq. mm Cu-Sn 0.2 high conductivity wire and for yard it is 107 Sq. mm Cu- ETP contact wire.

(d) **Droppers:** Droppers shall be made of stranded conductor copper Bronze wire approximately 10 mm2 flexible, Dia. 4.5 mm.

(e) **Encumbrance:** As a general rule, the nominal "encumbrance", i.e., the center distance between the catenary and contact wire at the support shall be 1.40 m. Deviation from this figure will be permitted in special cases (e.g. spans near over bridges, structures with more than one cantilever etc.)

(f) **Jumpers:** All jumpers connected to OHE conductors shall be of copper only. The details may be referred in DFCCIL OHE- Jumper OHE connection arrangement drawings.

2.1.11 **Type of equipment:** The overhead equipment used shall normally be either of the regulated or unregulated type. Unregulated tramway type equipment (Contact wire only) may be adopted where specially indicated by the Purchaser.

(a)REGULATED: In the regulated type of overhead equipment, the tension of both the catenary and the contact wires shall be maintained at a constant value at all temperature by means of automatic tensioning devices to take up the variation in the length of overhead equipment due to temperature variation.

An anti- creep shall be provided at a point approximately midway between two tensioning devices and not more than 750 meter from any one of them. The general arrangement of an anti -creep is shown in a drawing listed in Annexure. The arrangement shall generally consist of the galvanized steel wire anchored on the masts adjacent to the anti-creep central mast in accordance with the relevant drawing. Alternatively, the arrangement may consist of catenary on either side of the boom of a portal with the contact wire running through and providing a jumper connection as per general arrangement shown in typical drawing listed in Annexure.

(b) Unregulated: The unregulated type of OHE has no provision for automatic regulation of tension of either the cat nary or the contact wire.

2.1.12 Plane of Contact:

(a) Regulated: The regulated overhead equipment shall be so erected that the contact wire has the designed sag.

(b)Un-regulated: The contract wire shall have no sag at an temperature of 35° C.

(c) Tramway type: In tramway type equipment, the contact wire will have its own natural sag when erected.

(d) Dropper: Dropper charts to be used for standard span of regulated and unregulated OHE would be supplied by purchaser. Dropper for non-standard spans, spans with section insulators and special locations shall be calculated by the Contractor in accordance with the method indicated by the Purchaser and submitted to the Purchaser for approval.

2.1.13 Tensions:

(a) Regulated:

(i) In regulated equipment the tension in the catenary shall be 1200 kgf and in the contact wire shall be 1200 kgf in each conductor.

2.1.14 Clearances:

(a) General: The distance between live parts and parts at earth potential (or part likely to be earthed) shall be as large as possible.

E&M Clearances

Item	Dimension
25kV Live metal to earth - Static - Dynamic (passing)	 250 200
25kV Live Metal to Vehicles -Static - Dynamic (passing)	 290 220
Phase Difference (47.6kV) - Static - Dynamic (passing)	 540 300
Between conductors of different electrical sections Gap at Insulated Overlap Gap at Uninsulated Overlap	 500 200

In all cases the values given in Standard Schedule of Dimensions of DFCCIL, 1676mm Gauge (2013 revised) shall be observed along with any other supplementary rules that may be issued by the Railway Board and advised to the Contractor.

(b) Over-bridges and Tunnels: The clearances which are to be made available at over bridges, signal, gantries and other over line structures shall be based on the above rules.

(c) Platform Sheds and Other Structures: In the course of checking the overhead equipment pegging plans, the Contractor shall prepare a list of platform sheds and other structures in the vicinity of track to be wired. The clearances to these structures shall be in accordance with those shown in the relevant drawings listed in Annexure. If these clearances are not available, the Contractor shall advise the Purchaser in time to enable the latter to take up necessary modification.

2.1.15 Height of Contact Wire:

(a)

Maximum height of the rolling stock with Double Stacked Container, above Rail level 7.10m. This height of

the Rolling Stock above rail level shall result in contact wire height above rail level as follows:

Normal at the support : 7.54 m
Minimum (anywhere in the span) : 7.47m
Minimum under Overline structure : 7.41 m

(b) Gradient of Contact wire: Any change in the height of the contact wire shall be made gradually and the maximum slope shall not normally exceed 3 mm per meter on main line and 10 mm per meter on sidings. The end spans of any section with a gradient of contact wire shall have a slope not greater than half the main slope.

2.1.16 Stagger: To ensure uniform wear of contact strips of pantographs, the contact wire shall normally be staggered in a manner which will be indicated by the Purchaser.

2.1.17 Termination:

(a) General: Traction overhead lines shall be terminated using components specified. The termination may be carried forward by one or two spans if anchoring facilities so required.

(b) Terminating wires shall be electrically connected to the conductors with which they are likely to approach closely or come into contact under normal conditions.

(c) Supplementary insulation: If a terminating wire passes a live conductor to which it should not be connected, i.e., in a different elementary section, the portion of the terminating wire close to the live conductor shall be separated by means of insulators. The insulators shall be located in such a manner as to clear the swept zone of the pantograph under the worst conditions and as far away as is possible from live conductors.

2.1.18 Type of structures:

(a) Cantilever: The overhead equipment of main tracks in case of multiple track sections shall be electrically and mechanically independent of one another by provision of independent cantilever masts to the maximum extent possible

(b) Head spans: Head span construction may be adopted with unregulated overhead equipment. A single head span shall not normally cover more than six tracks.

(c) Portals: In case where the tracks in a multiple tracks section do not permit location of independent masts and where automatic tensioning of overhead equipment is required, rigid portals may be used. Also in the vicinity of points and crossings, portals may be used, provided it is not possible to have prescribed setting with independent cantilever masts. These structures shall be equipped with standard bracket assemblies for supporting individual equipment of different tracks. The use of such structures is to be avoided as far as possible and for this purpose the Purchaser will arrange to slew the tracks, if practicable. A single portal shall normally not cover more than five tracks. Portal structures will also be employed at anti creep central locations and such portals will have necessary guy arrangement.

(d) Foundations: Foundations for all structures shall be designed in an economical manner by following the methods of design indicated by the Purchaser and observing the schedule furnished by him.

2.1.19 Cantilever assembly: The bracket assembly carrying overhead equipment shall be of the swiveling type. The assembly shall be such that the tubes adopted will permit easy adjustment of the whole equipment after erection to cater for displacement of the track during maintenance up to the extent of 100mm on either side except as otherwise relaxed by the Purchaser. In special locations, pull off arrangements may be used with the approval of the Purchaser with the approval of the Purchaser.

2.1.20 Overlaps: Overlaps shall be provided at suitable intervals such that neither the tension length exceeds 1,500 m nor the fixed anchor to balance weight anchor exceeds 750 meter.

(a) General: The two contact wires at the overlapping zone shall be parallel to each other in a place parallel to the track and run separated from each other

(b) Insulated: In the case of insulated overlaps the separation between the two contact and the two catenary wires shall be 0.5m

(c) Points and Crossings: Arrangements of overhead equipment of different type e.g. regulated, unregulated or tramway at points and crossings shall be in accordance with the standard drawings

2.1.21 Light weight Section Insulators:

(a) **Brief description:** The section insulators shall provide effective electrical isolation of two elementary electrical sections of overhead equipment and permit smooth passage of the pantograph in either direction at all speeds up to 120 Km/h. **The outline of a section insulator is shown in a drawing listed in Annexure for imported Item list.** The section insulators shall be of light weight section insulator type.

2.1.22 **Isolators:** Manually operated isolator single or double pole type with or without earth contact assembly may be required to bridge certain section insulator or insulated overlap. In certain large Yards, isolators controlling different lines may be grouped together on a gantry.

2.1.23 Other Conductors:.

The sizes of conductors for the main lines are furnished in the Table as below:

Conductor	Minimum Size	Material	Remarks
Catenary	125 sq. mm	Copper alloy	Material having temperature range minimum 100^0C as per EN 50119
Contact wire	150 sq. mm	Copper alloy	
25 kV Feeder	288 sq. mm	AAAC	Material having temperature range minimum 80^0C as per EN 50119
Aerial Earth Conductor	181.6 sq. mm	ACSR	
Buried Earth Conductor	20 MM Dia	GS	Material having temperature range minimum 80^0C shall be used

Conductors for the Yard Lines: The size of catenary and contact wires for yard lines shall be 107mm2 HDGC copper and 65 mm2catenary to RDSO's specifications and copper contact and catenary wires withstanding minimum 80^0C.

2.1.24 Bridges and tunnels over Bridges:

(a) **Over Bridge:** The complete overhead equipment (i.e., both the catenary and the contact wires) shall normally pass under overline structures. Additional intermediate suspension points shall be provided if necessary, to ensure the specified minimum height of contact wire being maintained. In general case the cat nary may be anchored on either side of the over line structure and the contact wire carried underneath.

(b) **Tunnels and Cuttings:** The arrangements proposed for the equipment in tunnels and cuttings shall take into account the special features of each location and shall be in accordance with general design specified.

(c) **Safety Screen:** On over bridges metallic protective screens shall be provided in order to prevent and person from coming into contact with the live overhead equipment. Such screens shall be properly earthed.

(d) Height Gauge at Level Crossing:

Height gauge is to be provide at all level crossing in accordance with the standard arrangement drawings.

2.1.25 Bonding and Earthing:

(a) Bonding and earthing shall be done in accordance with the approved DFCCIL earthing and bonding documents. Work shall be taken up according to the approved earthing and bonding management plan.

PART - II
CHAPTER – II

EQUIPMENT, COMPONENTS AND MATERIALS

2.4.1 General: This chapter deals with the details and specifications of the equipments, components and materials to be used for traction overhead equipment, switching stations, booster transformer stations and LT supply transformer stations.. In general based on the specifications issued by various bodies, such as Indian Standards Institution, British Standards Institution etc, specifications have been issued by the CORE.

2.4.2 Compliance of standard Specification

Tenderers offer equipment in accordance with the appropriate International/National standard specifications of the country of manufacture. But such offers will be treated as deviations and should be quoted clearly English rendering of the text and illustrations of the national standard specifications and explanatory notes on the specific deviation from IEC, British or Indian Standards in question, shall also be submitted in Form. In case of doubt, the Purchaser shall decide the clause and specification applicable and the contents of the specification and standard mentioned above shall guide such decisions.

2.4.3 Quality Assurance: The provision of Part I for quality assurance will apply, including facilities to be provided by the manufacturer.

2.4.4 Inspection and Test: These comprised inspection and tests conducted at the manufacturer's factory for ensuring quality of manufactured items as part of the Quality Assurance Programme.

2.4.4.1 All works connected with this contract shall be done in accordance with the standard established methods of inspections and shall comply with relevant Indian Electricity Rules, ISI code, RDSO /CORE Specification and Standards.

2.4.4.2 Normally the inspection of all the equipments, materials, fittings and components will be carried out by **DFCCIL/ Authorized agency** at the manufacturer's premises. In case of extreme emergency /exceptional circumstances, material may be inspected by authorized representative of DFCCIL at the manufacturer's premises before dispatch and no materials shall be dispatched from the manufacturer's premises until these are inspected and/or approved. Any unreasonable delay in inspection will be reasonable ground for extension of time for completion of the work.

2.4.4.3 All erection work will be subjected to inspection by the authorized representative of DFCCIL to ensure that the work is done in accordance with the specification and approved drawing. The decision of the authorized representative of DFCCIL shall be final in respect of acceptability or otherwise of any material, fitting, component or equipment required for the work.

2.4.4.4 The works which shall be rejected by the inspecting officer of the DFCCIL, the contractor shall replace such rejected equipments/assemblies of the work forthwith but in any event not later than a period of one week from the date of rejection. The contractor shall bear all the cost of such replacement including freight etc but without being entitled to any extra time on this account.

2.4.5 Test Certificates: Three copies of the test certificates of successful prototype tests carried out at the manufacturer's Factory on all equipments shall be furnished to the Purchaser within a month after completion of the proto type test. Three copies of the routine test carried out of each equipment shall also be furnished, after the equipment is passed by the Purchaser's representative for inspection.

2.4.6 INSPECTION:

2.4.6.1 The works shall be accepted after inspection by the DFCCIL particularly for the following aspects.

i.) Setting out of Electrical equipment.

ii.) Approval of quality of works.

iii.) Erection, testing & commissioning as per the approved drawings and the Indian Standard codes of practice.

iv.) Safety works to conform to Indian Electricity Rules. These aspects shall be checked during periodical inspections. Any defects, deficiencies noticed in the works will be recorded in the site order book so that the contractor acts upon it without loss of time.

2.4.6.2 The cost of the inspection will be on DFCCIL accounts subjects to any other provisions contained hereunder or elsewhere in contract. One week's notice must be given by the contractor to the Inspecting Officer

to take up the inspection.

2.4.6.3 The contractor shall provide without any extra cost to the DFCCIL all materials, equipments, machine, plant, tools and labour etc of every kind of which the DFCCIL inspecting officer may consider necessary for any test and examination to be made at site or elsewhere.

2.4.6.4 All the equipments and material shall be of best quality and will be tested/inspected by the Engineer or Engineer's representative at site of work and approved before they are installed/used in the works covered in the contract. If the contractor uses any equipment's materials without the prior approval of DFCCIL these are liable to be rejected.

The decision of the Inspecting Officer with regard to the acceptance or rejection of the equipment/work will be final and binding on the contractor

2.4.7 Bulk manufacture: Bulk manufacture may be undertaken only after specifications approved of the Purchaser or his representative has been obtained indicating that tests on the proto types are satisfactory. Where prototype has already been approved in connection with manufacturer may proceed after exemption from proto type tests is received from the purchaser in writing.

2.4.8 Interchangeability: All equipments, components and fittings shall be interchangeable and supplies shall be in accordance with the purchaser's design unless otherwise specifically approved by him. Components such as fuses, indication lamps etc should be replaceable with substitutes available indigenously as far as possible. Important components and fittings and their drawings have been listed in Schedule.

2.4.9 Technical specification: Following specifications (latest revision) will govern the supply and testing of important materials, components and equipments:

Structural Steel: IS 2062-1992 IS 800-1984
IS 808-1989

Tensile Testing: IS 1608 - 1972 for steel products etc.
IS 1731 - 1971
IS 2004 - 1991

Welding: IS 816 - 1969

Tin Bronze Castings: IS 306 - 1983
Aluminum Bronze Castings: IS 3091 - 1965
Malleable Iron Castings: IS 2108 - 1977
Grey Iron Castings: IS 210 - 1978
Aluminum Castings: IS 617 - 1975
Copper Strip for Formed Fittings: IS 1897-1983

Contact Wire: ETI/OHE/76(6/97) with A & C slip No 1,3,4,5,6,7,8 & 9

Annealed stranded copper Conductor for: ETI/OHE/3(2/94) with A&C jumper wire slip No.1 issued on 4(95)

Copper Bus-bar: RE/30/OHE/5(11/60) Steel Tubes: ETI/OHE/11(5/89)
Hot dip zinc galvanization of steel masts: ETI/OHE/13(4/84) with A&C (Rolled and fabricated) tubes and Fittings slip No.3 of (4/90)

Stainless steel wire rope: TI/SPC/OHE/WR/1060(06/06) with A&C slip 2 of (5/07)

Solid core Porcelain Insulator: TI/SPC/OHE/INS/0070(04/07) with A & C Slip No- 01 & 02 (10/16)

Silicone Composite Insulators: TI/SPC/OHE/INSCOM/1071, Rev-01 (12/16)

25 kV Single and Double pole Isolators: ETI/OHE/16(1/94) with A & C for RE slip No. 2 (03/04)
Bolts, Nuts and Washers: TI/SPC/OHE/FASTNERS/0120 with A&C slip No.5 of (03/13)

Aluminum Alloy section and tube for 25 kV: ETI/OHE/21(9/74)

Standard Drawings and Traction: ETI/OHE/53(6/88) with A&C slip No.5 of Overhead Equipment (11/06)

Light Weight Section Insulator: For Conventional IR OHE- Drawings no. EJG3430/102-21 and for Heavier OHE of WDFC Drawing no. Drawings no. EJG3430/202-31

Enameled Steel Plates: ETI/OHE/33(8/85)

Retro-Reflective Structure Number Plates: ETI/OHE/33A(12/97) with A &C Slip no. 8 (11/12)

Fittings for 25 kV, 50 HZ, AC: ETI/SPC/OHE/FITTINGS/0130 (10/13) with OHE A&C slip No.1 (10/13)

Cadmium Copper Conductor: ETI/OHE/50(6/97) with A/C slip no-1 to 5 for OHE traction (09/16)

Bimetallic (Al -Cu) Strip : ETI/OHE/55(4/90)

Specification for 3-pulley type regulating: TI/SPC/OHE/ATD/0060 Rev. 1 equipment (3:1 ratio) with A & C Slip No. 1 (09/16)

Technical Specifications for Fittings: ETI/SPC/OHE/FITTINGS/0130(10/13) for 25 KV AC OHE

Specification for discharge/earthing pole: ETI/OHE/51(9/87) Assembly for 25 kV ac Traction

Specification for continuous cast copper: ETI/OHE/65(8/87) with A & C wire rods Slip No. 1 to 4 (09/16)

Code of bonding and earthing for 25kV: ETI/OHE/71(11/90) (03/93) AC 50 Hz single phase traction system

Specification for 4 axle car for winding: ETI/OHE/72(11/91) and/or unwinding of contact wire and catenary wire

Gearless hand operated pulling and Lifting: TI/SPC/OHE/TOOLPL/1990 machines (TIRFOR) (11/99)
Ratchet lever Hoist (Pull - lifts): TI/SPC/OHE/TOOLPL/1990 (11/99)
Insulated Cadmium copper catenary: TI/SPC/OHE/INSCAT/0000 with 19/2.1mm. diameter for provision underA & C Slip No. 1 & 2 Over line structures in the 25 KV AC Electric traction

2.4.10 (a) Nomenclature and Marking: All components and fittings supplied by the contractors shall bear the respective identification number and a mark to identify the source of supply except in the case of galvanized tubes, bolts and nuts and/or any other fittings as may be agreed to by the purchaser.

(b) In case of insulators, galvanized steel tubes, stainless steel wire rope and conductors, name of manufacturer shall be specified in "As Erected" drawings for identification.

2.4.11 Steel Work and Protection against Rust:
(a) Galvanizing: All ferrous materials and fittings shall be hot dip galvanized according to the Specification ETI/OHE/13(4/84) with A & C slip No.1 of 5/86), 2 & 3 of (4/90).
(b) Painting: Some components or parts may, with the approval of the purchaser, be protected only by paint and parts as protected shall be given two coats of composite Aluminum primer and two coats of aluminum paints. The second coat of aluminum paint shall be applied after erection.

(c) Rectification at Site: In case of modifications, which would damage the protective coat, repairs to such damage would be allowed only in exceptional circumstances. The part damaged shall be protected in accordance with the method indicated in specification ETI/OHE/13/(4/84) with A&C slip 1 of 5/86 or any other method approved by the Purchaser. The contractor shall, in all such cases obtain prior permission from the purchaser before carrying out repairs.

2.4.12 Bracket for Unregulated Tramway type Equipment:
Unregulated equipment shall normally span two tracks and the contact wire carried on V- Type clamps suspended from a span wire. The span wire shall be provided with a turn buckle at only one end.

2.4.13 Droppers:

(a) General Designs: The droppers shall generally be designed as shown in standard drawings and made of copper wire about 5mm dia meter conforming to IS:282, and shall be attached to the cat nary wire by a copper dropper clip. The contact wire shall be held by a clip of aluminum bronze as shown in the standard drawings. The distribution of dropper shall be in accordance with standard design.

(b) Loading: The droppers shall be able to withstand a vertical load of 200 Kg. at the point of attachment to the contract wire and the clip shall not slide under horizontal load of 120 Kg.

(c) The permissible tolerance in the overall length of a dropper will be ± 5mm.

(d) Current carrying Dropper shall be made of stranded conductor of copper bronze approximately 10 mm2 flexible, Dia. 4.5 mm. Flexible dropper conforms to DIN 43138.

2.4.13 (a) Insulators: All solid core insulators shall conform to TI/SPC/OHE/INS/0070 (04/07) with A & C Slip no-01 & 02 (10/16) or TI/SPC/OHE/INSCOM/1071, Rev-01 (12/16) as the case may be.

(b) Interchangeability: For free inter changeability only the following types of insulators shall be used. While the shapes of the insulators may vary slightly from those shown in the drawings, the essential dimensions of the galvanized malleable cast iron caps as given in standard drawings shall be adopted.

(i) Stay- arm Insulators: These insulators will be used in conjunction with the tubular stay arm of all bracket assemblies.

(ii) Bracket Insulators: These will be used at the base of each bracket assembly in conjunction with bracket tubes.

(iii) 9 -Ton Insulators: These will be used at all places for cut in and terminal insulation including these in return conductors, but excluding those in earth wire.

(iv) Sold Core Post Insulators: These will be used at all places for supporting isolator mechanism, bus bars, jumpers etc of 25 KV.

2.4.14 Ending Fittings and Splices:

(a) General Designs: Terminating or ending fittings and splices on copper conductors shall be of the cone type clamping on both the inner and outer strands of conductors except for contact wire ending clamps which may be wedge type. The arrangements shall be easy to install and also be such as would apply the clamping pressure gradually without shock (See ETI/OHE/49(9/95) with A&C slip No.1 of 3(97).

For Aluminum Alloy/pure aluminum conductor, the end fittings shall be either cone type, strain clamp type or any other type as approved by the Purchaser.

(b) Loading: All the parts shall be capable of withstanding, without damage, a load greater than the ultimate strength of the wires to which they are fitted. In the case of threads, no damage shall occur when they are subjected to a load equal to two third of the ultimate strength of the wire.

(c) Restricted use of Splices: The use of splices shall generally be avoided and their use shall be restricted to the minimum necessary. Over main tracks, there shall be no splice in the contact wire on first erection. Elsewhere, not more than one splice be used in any tension length (i.e. anchor to anchor) for which prior approval shall be taken from the Purchaser. Additional splices may, however, be provided to enable retention of conductors which are found defective during and/or after erection. Splices may also be permitted for repair of damage due to theft or railway accidents.

(d) Strength of Assembled Fittings: The strength of fittings assembled with appropriate conductors or wires shall not be less than that of the conductors or wire itself.

(e) Additional Terminating Wires: Cadmium copper stranded wire of 65 sq.mm nominal section of 37/.2.1mm (as used in head span construction) may be used as addition al terminating wires for extending single and double conductors respectively, if termination at the nearest structure is not feasible.

2.4.15 Electrical Connections for OHE:

(a) General Designs: All electrical connections between conductors shall be made by parallel clamps. The general arrangements of connections are shown in the standard drawings, listed in Annexure.

(b) **Jumper:** The Drawing of OHE Jumper connection arrangement as approved by DFCCIL to be followed. The Drawing no. Copper jumpers is 5/OH/TD/1179:

(i) **Large Jumper** of annealed copper in accordance with specification ETI/OHE/3 (2/94) A and C Slip No.1 of April-1995.

(ii) **Small jumper** of annealed copper in accordance with the specification IS 434 Pt-I. Aluminum jumpers, wherever used, shall be of all aluminum stranded conductor 19/7/4 mm bare 3/4 H generally conforming to IS:8130:1984.

(iii) **160 sq. mm flexible copper jumper wire** made of annealed stranded 100% pure copper conductor as per

RDSO's spec No. ETI/OHE/3 (2/94) with A & C Slip No.1 or latest, all components and fittings required for providing a flexible copper jumper 160 sq. mm.

(c) **Bus Bars:** Bus bar or rigid jumpers in copper where used shall be of 18mm dia of copper rod in accordance with RE/30/OHE/5(11/60). Aluminum bus bars wherever used shall be of 36/30.4mm or 36/28mm tubing. Aluminum tubular bus bars shall be made of alloy to IS:5082-1981. The tolerance on diameter and thickness shall be as per class-I IS:2673-1979.

(d) **Feeders**: Feeders shall be of AAAC Conductor 31/3.15 mm 288 sq. mm IS 398 Part-IV

(f) **Earth wire** shall be of steel reinforced aluminum conductor 181.6 Sq.mm AL 30/2.5 mm + ST 7/2.5 mm conforming to EN 50182 & EN 60889.

2.4.16 Regulating Equipment:

(a) A general arrangement is shown in the standard drawings listed in Annexure. The regulating equipment should have a minimum adjustment range of 950mm. Stainless steel wire rope in accordance to TI/SPC/OHE/WR/1060 (06/06) with A & C slip no. 1 & 2 (05/07) shall be used in these equipments and these shall be sufficiently flexible for the purpose.

(b) Counter Weight: Counter weights and arrangements used shall be such that these could be accommodated within 330 mm (13 in) measured transverse to the track under the worst condition of wind. The vertical upward movement shall be listed with a fixed top.

(c) Reduction Ratio: Reduction ratio in the arrangement used shall be three in three pulley type.

(d) In DFCCIL 5 Pulley ATD is use for main line as per EN 50119.

2.4.17 Head-span Construction:

(a) Size and Factor of Safety: All span wires used in head span construction shall be stranded cadmium copper. All the wires shall be designed with a factor of safety of not less than 4 under the most unfavorable conditions.

(b) Turn Buckles: Each span wire shall be equipped with a turn buckle at each end of the span.

(c) Additional Insulators: Additional insulators shall be provided as necessary in head span, cross span and steady span, wires to ensure electrical independence between the equipment in different elementary electrical sections.

2.4.18 **Isolators**: 25 KV Isolator switches shall comply with specification as indicated in Para 2.4.9.

2.4.19 **Bus Bars**:

(a) No splicing will normally be allowed in the tubular bus bars unless the length of the bus bar exceeds 6m.

(b) General: The bus bar shall be clean, smooth, mechanically sound and free from surface and other defects. Provision shall be made where necessary to allow for expansion and contraction of bus bars caused by temperature variation. The open ends of bus bars shall be covered by suitable tubes cap, wherever the tubular bus bars are required to be bent, the radius of the bend shall be not less than 200mm.

(c) Joint: The joints in bus bars shall be mechanically technically and electrically sound so that the temperature rise under normal working conditions does not exceed 400 C for an ambient temperature of 650 C.

(e) All aluminum joints shall be thoroughly cleaned and smeared with suitable corrosion inhibiting joint compound before and after assembling the joint. Similar procedure shall be followed for connecting the equipment terminals to the aluminum bus bars with bimetallic connectors.

PART – II
CHAPTER -III
DESIGNS & DRAWINGS

2.5.1 General:

(a) This chapter deal with the procedure for approval of designs and drawings.

(b) The type designs shall be as few as possible to cover the largest field of application consistent with economic consideration.

(c) In all drawings, as far as possible only such symbols as are in international use, shall be used.

2.5.2 Contractor's Drawings:

(a) The Contractor shall submit to the Purchaser for approval except where otherwise specified below, all detailed designs and drawings which are necessary to ensure correct supply of equipments, components and materials and to enable correct and complete erection of overhead equipment, witching stations, booster transformer stations and LT supply transformer stations in an expeditious and economic manner.

(b) Responsibility: It is to be clearly understood that all original designs and drawings shall be based on a thorough study. General designs and dimensions shall be such that the Contractor is satisfied about the suitability of the designs for the purpose. The Purchaser's approval will be based on these considerations and notwithstanding the Purchaser's acceptance, the ultimate responsibility for the correct design and execution of the work shall rest with the Contractor.

2.5.3 Standards for Drawings: All designs, legends notes on drawings and schedules of materials shall be in English and shall be prepared in the metric system. All designs and drawings shall conform to specification RE/OHE/25(3/66).

2.5.4 Basic Designs:

(a) Standard Designs: Where the Contractor adopt designs and drawing conforming to standard designs, drawings and specifications of the Research, Designs and Standards Organization, Manak Nagar, Lucknow (RDSO) for basic arrangements, equipments, components and fittings of traction overhead equipment, switching stations booster transformer stations and LT supply transformer stations and adopts employment schedules furnished by the Purchaser, he shall verify such designs and drawings and employment schedules and satisfying himself that these are correct and the latest approved drawings, before use. Within two months of the issue of letter of Acceptance of Tender the Contractor shall indicate to the Purchaser, the list of standard basic arrangement, components and fittings, drawings and employment schedules, which he will adopt for the purpose of the work. The procedure outlined in specification shall be followed for approval of basic designs.

(b) Deviations: Normally deviation from the standard drawings of the Purchaser will not be accepted. However, in exceptional cases where the Contractor desires to suggest improvements as a results of his experience or other developments, he shall justify his proposals with supporting explanatory note.

2.5.5 Special Designs:

(a) In cases where standard designs, drawings or employment schedules do not cover requirement of special location or site conditions, the Contractor shall submit his own designs or drawings along with supporting calculations and notes for scrutiny and approval of the Purchaser.

(b) Such special designs shall generally be in conformity with basic designs furnished by the Purchaser and in accordance with the specifications. If the Contractor wishes to adopt special designs which do not conform to the general basic designs of the Purchaser, he shall submit alternative designs and drawings justifying his proposal.

2.5.6 Particular Designs and Working Drawings for OHE:

(a) Contractor's Pegging Plans: The Contractor shall carry out survey and prepare overhead equipment pegging plans. He shall submit such plans for approval after checking their feasibility at site.

(b) Principles of Layout: The Contractor shall in all cases ensure that the final pegging plans are in conformity with the latest "Principles of preparation and checking of OHE layout plans and sectioning diagram"

issued by RDSO.

(c) Provisional Layout Plans: The contractor shall prepare and submit overhead equipment layout plants incorporating the following information:

(i) The run of wires in different thickness or color in special cases and termination.

(ii) The run of wires for future wiring indicated to the contractor, in dotted lines.

(iii) Exact position of all cut- in- insulators, including section insulators.

(iv) Direction and value of stagger at each traction structure location.

(v) Clearance of live conductors to structures in the vicinity including bridges, signals gantries etc.

(vi) Layout of feeders.

(vii) Jumper connections and connection to switches and switching stations.

(viii) List of infringements.

(ix) Kilometer numbers and type of structures.

(x) Location and number of switches.

(xi) Schematic sectioning diagram drawn to a convenient scale showing section insulator, number of switches, elementary sections and connections to the switches and switching stations.

(xii) Table giving reference of approved profile drawings, feeder layout plans and other relevant drawings.

(d) OHE Profile Drawings: After completion of the overhead equipment layout plans, the Contractor shall prepare an overhead equipment profile drawing showing the actual height of the contact wire under each over line structure, the gradient and height of the contact wire on either side of the structure and the encumbrances at structure until normal height of contact wire and encumbrances are restored.

(e) Cross Section Drawing: While the layout plans are being finalized, the Contractor shall submit for approval, insofar as yard between outermost points and crossing are concerned, cross section drawings for each structure showing guy rods, if any, indicating the cross section of the formation, height and nature of the bank, whether new or old, nature of soil, type of foundation

block, structure proposed, reverse deflection of the structure and all necessary particulars for erection of the foundation and the structures. In the preparation of drawings, care shall be taken to show all obstructions such as Signal wires, points rods and their correct location in reference to track/tracks as well as underground obstructions like pipes, cables etc after collecting such information from the site.
In open line sections, cross-sections shall be submitted in the following Performa, separately for each Railway line. For special foundation drawings with all necessary details shall be submitted to the Purchaser. In case of side bearing foundation with extra depth, formation details at such location and necessary details of anchor foundation will be submitted.

Cross Section for the Open Route Section:

Km----------to----------
S.No. 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

Location No.

Chainage

Setting Distance in 'm'

Step Distance in 'm'

B.M. Code

Soil Type & Pressure

Foundation Type & Size

Mast Size & Length in 'm'

Mast Embedded Length in 'm'

Reverse Deflection Cm

Super Mast Length (m)

Cross Arm Length (m)

Any Obstruction

(f) Final Layout Plans: After all the cross- section drawings in a section covered by layout plan are finalized and foundations are casted, the Contractor shall revise the layout plans to take into account any modifications to the locations of structures during the process of casting of foundations.

(g) Structure Erection Drawings: The Contractor shall then submit structure erection drawings for each structure incorporating all the details included in the cross-section drawing for the structure and as erected at site and the details of the bracket assembly, mast extensions, isolator mounting frame and anchorage of overhead equipment, feeder return conductors proposed for each structure together with all particulars necessary for the correct erection of overhead equipment at the structure. For structures with isolators, the details of electrical connection shall also be incorporated. In open line sections the Contractor shall submit structure erection particular in the typical Performa as given below separately for each main line track in addition to particular details as indicated in the Performa for cross-section drawings. Modification to this Performa if found necessary will be finalized at the time of the structure erection drawings.

Sr. No. 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

Location No.

Chainage
---
1. Encumbrance
2. Contact wire height

3. Stagger
i) Cat nary
ii) Contact

4. Stay arm
i) (a) M
ii) CODE

5. Bracket
i) (b) M
ii) CODE

6. REGISTER

i) C/D(m)
ii) CODE

7. STD/BENT Code

8. Identification Mark: Other Reference/Codes for Misc. items line steel work for stay/bracket attachment Misc. single/double cat etc. will be indicated.

2.5.7 Schedule of Quantities:

(a) Within a month of the issue of Letter of Acceptance of tender, the contractor shall assess the quantities of various items of work including various components and fittings as covered in Schedules & sections along with the corresponding quantity of various fittings and components for approval of the Purchaser. Such an assessment shall be revised at suitable intervals after the first assessment is approved till the work is completed.

On receipt of approval of each & final layout plan from the purchaser, the following schedules of quantities relating to each layout plan shall be submitted within a fortnight.

(i) Schedules of number of masts, weight of different masts and total weight of masts.

(ii) Schedules of number of foundations, types volume of different foundations and total volume.

(iii) Schedule of quantities of various items of work other than masts and foundations under Schedule .

(iv) Schedule of net tension lengths of contact, cat nary and feeder wires and lengths required to be ordered.

(v) Schedule of length of other wires and conductors required to be ordered and

(vi) Schedules of small parts steel-work.

2.5.8 Submission of Drawing Schedules:

(a) The submission of designs and drawings for approval shall be done in the manner indicated below.

In case Contractor wish to deviate from standard drawings, he should submit to the Purchaser revised drawings with full details of deviation sought explaining the necessity of deviation, calculations and other supporting documents. The Purchaser, if satisfied about the necessity and adequacy of deviations, shall refer the matter to RDSO for necessary approval. In case of deviations on working drawings, decision shall be communicated by the Purchaser to the Contractor. The number of copies of drawings which shall be submitted are indicated in the following sub - pares. The Purchaser will return one copy of the drawing either with approval, subject to modification where necessary or with comments. The Purchaser shall endeavor to return this copy within a period of fifteen days from the date of receipt and shall normally return the copy within a month. Where drawings are returned with comments or approval subject to modifications, the Contractor hall submit to the Purchaser within fifteen days of receipt of such advice revised drawings for approval taking into account the comments or modifications. Also the Contractor shall as far as possible avoid correspondence on such comment and shall endeavor to settle any difference of opinion on the comment by discussions with the Purchaser's Engineers. No drawings shall be resubmitted without incorporating the modifications required by the comments of the Purchaser, unless the Purchaser has agreed to the deletion of such comments.

(b) Deviation from Standard: In case of deviations from standard designs and drawings, copies of correspondence and drawings shall be sent in duplicate to the CGM/JP or his successor/nominee. In the particular case of deviation in the design of fittings the drawings of deviation in the design of fittings the drawings submitted by the Contractor shall be actual manufacturing drawings complete with tolerances and full specifications of the materials used. In addition, four samples of the modified fittings shall also be submitted after the drawings are approved.

(c) Special Design: Special designs to meet the requirement of particular locations and local conditions shall be submitted in due time in duplicate for approval.

(d) Contractor's Pegging Plans: The contractor should survey and prepare pegging plans and submit three copies of such plans for approval.

(e) Cross Section Drawings: Cross-section drawings shall be submitted for approval in two copies for a

convenient section at a time separately for sections within station limits. Such drawings shall be submitted progressively and as for as possible without gap.

(f) OHE Layout Plans and Profile Drawings: Overhead equipment layout plan, provisional and final and profile drawings shall be submitted for approval in three copies.

(g) Structure Erection Drawings: Structure erection drawings shall be submitted for approval in two copies for a section at a time separately for section within station limits and sections outside station limits, progressively and without gaps.

(h) Schedule of Quantities: Schedules of quantities for each approved layout plan/switching station shall be submitted for approval in two copies.

(i) Distribution Copies: On receipt of Purchaser's qualified approval to the Contractor's drawings, Schedule of quantities, the Contractor, shall submit original tracings of those drawings and schedules for the signature of the Purchaser in token approval within seven days of the receipt of approval and the Purchaser shall as far as possible return the same to the contractor within 7 working days thereafter. On receipt of the tracing from the purchaser, the contractor shall submit copies for distributions to field officers and other department as indicated below within 7 days of receipt of approval tracings:

i.	Standard designs including fittings drawings:	8 copies.
ii.	Special designs:	8 copies.
iii.	Final pegging plans:	8 copies.
iv.	Structure cross- section drawings:	6 copies.
v.	OHE layout plans:	14 copies
vi.	OHE profile drawings:	8 copies
vii.	Structure erection drawings:	8 copies
viii.	Schedule of quantities:	6 copies

In all the above cases the Contractor has the option to supply only six copies of the approved drawings provided one of them is a transparent paper print.

2.5.9 Completion Drawings and Schedule: After completion of work, all drawings and designs submitted by the Contractor and approved by the purchaser shall be made up to date incorporating actual supply and erection particulars including the name of make of insulators, galvanized steel tube, stainless steel wire rope etc. The mark of conductors shall be specified in the "As erected" OHE Layout plans, SED and other relevant drawings for identification. Such drawings and schedules shall then be verified and corrected, if necessary, by the Contractor jointly with the Purchaser's representatives. The verified and corrected drawings shall be supplied in four sets, one of which shall be transparencies of linen or film reproduction or any other durable material approved by the Purchaser.

PART - II
CHAPTER -IV
ERECTION AND INSTALLATION OF EQUIPMENT

2.6.1 Scope: This chapter deals with the methods of erection and installation of traction equipment, including casting of foundations and erection of structures.

2.6.2 Methods of Erection: All work shall be done in accordance with methods of erection and installation of equipment approved by the purchaser. In the case of switching station, booster transformer stations, LT Supply transformer stations, standard methods adopted for erection and installation of electrical equipment shall be adopted.

2.6.3 Sectioning: The entire equipment shall be erected in accordance with the finally adopted sectioning diagram and in such a way so as to facilitate sectioning which may be required in future and which will be indicated by the purchaser.

2.6.4 Inspection: All erection and installation work shall be subject to inspection by the purchaser to ensure that the work is done in accordance with the specification, approved designs and drawings and is of the best quality suitable for the purpose.

2.6.5 Measurements: All measurements for location of structures and foundations shall be made with the aid of steel tapes. On curves, these measurements shall be taken on the outer rail of the middle track in the case of odd number of and on the inner Rail of the first outer tracks from the center of the formation in the case of an even number of tracks, structures on curves shall be located in the radial of set of the location as determined.

2.6.6 Bolts, Nuts etc: All bolts, nuts, locknuts, screws, locking plates and split cotter pins etc, hall be properly tightened and secured and the contractor shall carry out systematic inspection of this aspect of work after all adjustments to overhead equipment are completed and prior to offering completed section of equipments to the purchaser for inspection and testing.

2.6.7 Damage to Galvanizing Painting: In loading, transport and erection, all galvanized painted materials shall be handled with care to avoid damage to galvanizing/painting. If galvanizing/painting is damaged inspire of all care taken, the damaged parts of component shall be put up for inspection, to obtain permission from the purchaser to carry out repairs.

2.6.8 (a) Foundations: The contractor shall carry out soil pressure tests in accordance with methods approved by the purchaser to determine permissible bearing pressure of various representative types of soils in the presence of the purchaser's representative during the pegging out of site inspection. He shall adopt only those values as accepted by the purchaser for the design and foundations.

(b) Location: The location of each foundation or anchor block shall be set out correctly in accordance with approved structure cross- section drawings or foundations layout drawings, as the case may be, in the presence of the purchaser's representative.

(c) Method of Installation: The contractor shall adopt mechanized method (Concrete mixer) for installations of foundation in the station areas with five lines or more. The contractor may adopt either manual or mechanized method for installation of foundations in the other areas. He may erect traction mast or structures in the same operation as casting of foundations or erect them subsequently in cored holes left in foundation blocks and grout them separately. In any case, the method of casting of foundation blocks and erection of masts or structures shall be subject to the approval of the purchaser.

(d) Excavation: Normally, excavation of soil for foundations or anchor block along the tracks may be done up to length of 1 to 1.2 m and depth of 0.8 to 1 m without shoring, providing the excavated hole is concreted immediately and not left overnight. Shoring shall otherwise be done unless the hole is re-filled with soil and tempted. In case the length of excavation is 1 to 1.2 m and depth of excavation is 1 to 1.2 m and depth for foundations and anchor blocks alongside the tracks is more than 0.8 to 1 m, the excavation may be undertaken only after certification by the Purchaser's representative to be safe and concrete is cast on the same day. Shoring shall be done to the satisfaction of the purchaser's representative, if the excavated hole is left overnight. All water logged locations will come under the purview of this Para. In poor soil or ash banks, no excavation shall be done

without adequate shoring and piling. For large foundations and water logged locations shoring shall be done in accordance with drawings submitted/shuttering of the pits should be provided effectively to the satisfaction of the purchaser. Core hole covers should be provided promptly on casting of foundation (within 48 hours) and their edges cemented to the foundation block. Prior to doing so, water should be filled in the core hole so as to assist in curing. The date of casting should be inscribed on the foundation block. In case of platform areas and level crossings, the core should be filled with sand before provision of core hole covers so as to prevent any injury to rail users even if the core hole cover gets damaged or is displaced. The track ballast should be restored to its original form promptly after casting of the foundation block. The exceed earth should be removed well clear of the area so as to avoid any mixing up with the track ballast or any obstruction to the track drains. In case of cuttings, the earth should be thrown well away from the shoulders so that there is no risk of its flowing back to the drain during the rains.

(e) Concreting: All concreting or grouting shall be done in accordance with Para 2.2.4 with ballast graded for the purpose specified in Para 2.2.5. The concrete shall be poured and tamped properly in accordance with the method approved by the purchaser. The contractor shall arrange to provide concrete testing samples for tests once every week or as and when required by the purchaser, to determine crushing strength after 7 days or 28 days curing as required.

(f) Muffs: All anchor blocks and foundations of structures carrying overhead equipment shall be provided with concrete muffs. The top of these muffs shall be above the level of ground of the track formation and of adequate height of not less than 15 cm to afford reasonable protection during rainy weather. Muffs may be installed at the same time the masts are grouted or after the mast/structure is loaded with equipment. The foundations of structures for switching stations need not, however, be provided with muffs. The top of such foundations shall be given a slope of 1 in 50 towards the edge to ensure that water does not collect at the base of the structure of the frame work of the equipment.

(g) Suitable grooves or niches shall be provided in the foundation blocks, wherever required, at the time of casting, to enable embedment of earth strips etc. to avoid the necessary of chipping off concrete.

(h) Conduits for cables should be embedded in the foundation blocks, wherever required, to avoid subsequent chipping off and breaking of the foundation blocks.

2.6.9 (a) Masts and Structure Erection: In case traction masts or structures are erected in cored foundations, till such time they are grouted, they shall be properly wedged to prevent them leaning towards the track and endanger safety of moving vehicles.
In case traction masts or structures are erected simultaneously with the casting of the foundations, the contractor shall provide suitable temporary supports approved by the purchaser. The masts shall be embedded in the foundation blocks for the correct length specified in approved drawings.

NOTE: Masts/uprights should be grouted on the same day they are dropped in the foundations.

(b) Reverse Deflection: All traction masts and structures shall be erected with the correct reverse deflection so that they become reasonably vertical after they are loaded. The method of erection of masts with the correct reverse deflection shall be submitted to the purchaser for approval.

(c) Infringement to Standard Dimensions: In erection, care shall be taken to ensure that no part of the traction mast, structure or any fitting located on such mast or structure infringe the Schedule of Dimensions of DFCCIL.

(d) **Alignment of Masts at Gantries**: The main masts of gantries shall be carefully aligned to enable easy and good assembly of fabricated steel work.

2.6.10 Overhead Equipment:
(a) A suggested method for erection of OHE which would ensure good speed and quality erection is included in this chapter. The contractor may, however, follow other methods which they consider would speed up and ensure good quality work, subject to the approval of the purchaser. Any wiring method should take into consideration appreciable stretch of the catenary and contact wires in the initial days after they are strung and put under tension.

(b) Bracket Tubes: In the erection of bracket assemblies, it shall be ensured that the free length of the bracket tube beyond the cat nary suspension bracket is at least 200 mm to facilitate adjustment during maintenance.

(c) Stay Arms: The choice of stay arms shall be such that their adjuster are capable of adjustments of minimum of 90mm in either direction except as otherwise relaxed.

(d) Insulators: Before insulators are used in bracket assemblies or dispatched to work site for erection from the contractor's stores depot, they shall be tested as specified for routine mechanical test. No chipped or cracked insulators shall be installed. All insulators shall be cleaned before offering complete sections of equipment for inspection and testing.

(e) Stringing Catenary: Care shall be taken to avoid kinking or bride caging of the catenary wire in stringing and subsequent operations. While stringing, the wire shall be suspended from pulley blocks hung from the suspension clamp eye of bracket assemblies. The pulleys shall be fitted with ball bearing free movement in all directions to prevent damage to the strands of the wire. The design shall also be such that it will prevent slipping off of the wire. The design shall also be such that it will prevent slip of the wire during stringing operations. The designs of the pulley shall be submitted to the purchaser for approval. After initial stringing of the catenary, it shall be maintained of the 'No Load Tension' for a minimum duration of 48 hours before the pulley blocks are removed and the catenary is clamped to suspension clamps of bracket assemblies. Shorter periods may, however, be allowed by the purchaser.

(f) Stringing Contact Wire: Care shall be taken to avoid formation of kinks, twists and damage to contact wire in stringing and subsequent operations, while stringing the contact wire, it shall be suspended from pulleys hung from droppers fitted to the catenary in their final position. In curves, the contact wire shall be run in pulleys located at traction masts or supports, corresponding to the approximate final position of the wire.

(g) Location of Droppers: Droppers shall be correctly positioned in each span to ensure correct level of contact wire as per dropper chart applicable to the span.

(h) Clipping Droppers: The droppers shall be clipped on the contact wire only after a minimum duration of 48 hours from the time the automatic tensioning device is brought into action. Shorter periods may, however, be allowed by the purchaser.

(i) Auto Tensioning Device: The auto -tensioning device shall be erected with the correct height of the counter weight above rail level with corresponding distance between the pulleys of the device for a temperature of 35oC before it is connected to the overhead equipment and put into action. The installation of the device shall be such as to permit free, easy and unobstructed movement of counter-weight.

(j) Cut- in Insulators: All insulators in out of run shall be so positioned that they are away from the swept zone of the pantographs and will not foul with them. The live parts of these insulators shall also be so located that they are at least 2m away from structures other then these supporting traction overhead equipment.

(k) Section Insulators: All section insulators shall be so located that they are beyond the swept zone of the pantograph running on adjacent tracks and there is no unusual sag due to the same. Where section insulators are installed, the contact plane of the runners of the insulators as well as those of overhead equipment connected to it shall be parallel to the track plane.

(l) Anti-wind Clamp: Anti-wind clamp shall be provided as per requirement.

(m) Connections: All jumper connections including anti-theft jumpers shall be made properly with parallel clamps and finished neatly without any loose wire or cables. The length of flexible jumpers shall be adequate to avoid any disturbance to overhead equipment or restraint in the relative movement of conductors, but the jumpers should not be excessively long. The ends of jumpers shall be tinned, including the portion inside the first parallel clamp.

(n) Separation between OHE: In erection, the physical separation required between overhead equipments and bracket assemblies on the same structure at insulated overlaps shall be ensured.

(o) Gradient of Contact Wire: The gradient of the contact wire on either side of over line structures with restricted clearances shall be correctly adjusted and adequate clearance maintained between the over line structure and live equipment

(p) Adjustment at turnouts etc: Careful adjustment of equipment shall be made on equipments at turn-outs cross over, diamond crossings, overlaps and special locations for position of bracket assemblies, stay arms and height of contact wire to ensure that pantographs of electric rolling stock on the run will not foul with any parts of the bracket assemblies and changeover of the contact wire is affected smoothly.

(q) For wiring in large yards, the contractor shall prior to the execution of works, submit to the purchaser's Engineer for his approval the sequence of stringing of catenary and contact wires to arrange for proper crossing of wire. Endeavor will be made to arrange for traffic blocks to suit approved sequence of wiring.

2.6.11 Isolators: Isolator switches shall normally be so mounted that when the switches are operated, the operator faces the directions of the motion of trains. The operating handles and contact blades shall be correctly aligned for easy operation.

2.6.12 Bus-bars and Connections: Bus-bars and connections shall be neatly shaped and bent to give a good appearance.

2.6.13 Earthing: The copper earth strips of MS flat used for earthing shall be bent and shaped neatly before connection to the structure or frame work of equipment. The connection of MS flat to steel work shall be made at a height not exceeding 15 cm from the datum level of a switching station. Before making earth connections the ends shall be cleaned copper strips. All junctions shall be properly secured to void loose contact. Portions of copper earth strips which remain visible above the ground level should be painted with suitable paint to make them inconspicuous.

2.6.14 Tolerance: The permissible tolerance in dimensions for erection from those included in the appropriate drawings or schedules for different items are given below:

(a) Measurements: The span length shall not vary more than ± 50mm as measured along the appropriate rail.

The cumulative error of measurement of all spans in a kilometer shall be not more than 1000mm.
(b) Setting of Structures: The setting of structure shall be not less than that included in the appropriate cross-section drawings, especially those with the minimum setting of 2.36m. A tolerance of ±20mm will be permitted subject to minimum specified value, if the structure is not located in between tracks.
(c) Height of Contact Wire: ± 20mm will be permitted to the height of contact wire at point of supports as shown in the relevant structures erection drawing, except under over line structures where no tolerance will be permitted.

(d) Stagger: Generally ± 20 mm will be permitted for stagger.

(f) Dropper Lengths: ± 5mm will be permitted for dropper length.
(g) Dropper location: ± 100mm will be permitted for dropper locations.

2.6.15 Supplementary Instructions: Further working instructions will be issued if considered necessary by the purchaser, should be considered that the standard of work of the contractor requires to be improved.

PART - II

CHAPTER -V
INSPECTION AND TESTING

2.7.1 Scope: This chapter deals with the inspection and testing of completely erected overhead equipment, switching stations, booster transformer stations and LT supply transformer stations.

2.7.2 Overall Performance: The overall performance of the overhead equipment should be such as would permit collection of current by electric rolling stock with full load at speeds, up to and including the maximum specified for the design of overhead equipment, smoothly, without mechanical shocks or prejudicial sparks and without undue heating in the case of other equipments.

2.7.3 Responsibility: The general tests of overall performance stipulated below are only supplementary to other tests on structures, foundations, equipments, components and fittings as specified in Part -II,. Any testing and acceptance by the purchaser of overall performance shall be subject to the general terms and guarantee which shall continue to the valid as provided for in Part -I, Chapter- II.

2.7.4 Test on OHE:

(a) General: As soon as a section is ready for inspection and testing, the Contractor shall advise the Purchaser in writing. Tests to be carried out by the Purchaser will be done in the presence of the Contractor's representative and shall include the following apart from other reasonable tests that the purchaser may like to conduct with a view to ensure, himself of the soundness of the equipments and their erection in strict compliance with the specification.

(b) Insulation: The strength of the insulation and the di-electric strength of the entire equipment as installed shall be tested with a 2500V Megger.

(c) Continuity: The electrical continuity of the line and the existence of bad contacts, if any, will be tested with a Megger.

(d) Electrical Independence: The electrical independence of individual elementary sections in relation to one another shall also be tested with a merger.

(e) Switches: All isolators shall be tested for smooth and trouble free operation.

(f) Tension Device: All automatic tensioning devices installed shall be tested for sensitive functioning and adjustment.

(g) Stagger and Height: The stagger and height of contact wire over the entire section of completed overhead equipment and the clearance available shall be measured and the measurement shall be checked against approved drawings. These measurements shall be carried out at low speed with a vehicle or device to be arranged by the Purchaser, the movement of which will follow the track levels as closely as possible. Tolerances that will be permitted on the dimensions indicated in the approved drawings.
The actual position of the two contact wires, relative to each other, at overlaps and turnouts shall also be checked. Special attention shall be paid to a smooth movement of Pantographs over section insulators, particularly those which are likely to be frequently traversed.

(h) Mechanical Behavior: The mechanical behavior of the entire equipment shall be tested at various speeds under normal pantographs pressure without energizing the overhead equipment.

(i) Energizing: If the overhead equipment, after being subjected to the above tests in an unexercised condition, is found to be satisfactory, it will be energized with the normal 25 KV AC. supply.

(j) Power Collection: Tests shall then be conducted to check if the power collection performance of the overhead equipment is satisfactory after ensuring that the contact wire is adequately clean. For this purpose, an observation car shall be attached next to the electric locomotive. The behavior of the overhead equipment will be watched at various speeds. Power collection shall be considered unsatisfactory if a long blue flash is observed,

indicating that the contact between the contact wire and the pantograph is not continuous.

2.7.5 Inspection and Testing of Switching Stations Etc:

(a) Visual Inspection: Visual inspection which shall include check for satisfactory workmanship shall cover all connections, painting, plastering, cleanliness of all insulators etc. and compliance with INDIAN ELECTRICITY RULES.

(b) Operation Test: This test will be conducted on every individual item of equipment such as interrupters, isolators, relays etc. to ensure that the equipment as a whole is functioning properly and is mechanically sound, e.g. in the particular case of isolators the fixed contact and knife blade have been correctly aligned and operation does not cause undue strain on the equipment. The operation tests will be carried out with the high tension installation dis-connection from the supply, but by actuating power devices where such are provided. Continuity test of high tension connections after setting such interrupter and isolator in their respective positions shall also be conducted as part of the operation test.

(c) Insulation: The strength of insulation of the various items of equipment and of the entire installation as whole shall be tested with a 2500 V/500 V megger as required.

(d) Isolators: All isolators will be tested for smooth and trouble free operation.

2.7.6 Earthing:

(a) Earth wires will be checked for continuity and electrical isolation every 1000 m approx.

(b) Clearances between earth wires and out-run wires of overhead equipment and signals shall be checked.

(c) Earth resistance shall be measured separately for each earth electrode. In this case of interconnected earth electrodes, the net resistance of the interconnected electrodes shall also be measured.

2.7.7 Detailed Procedure for Tests: The detailed procedure for inspection and testing will be furnished to the Contractor. The contractor shall submit the result of tests in the Performa which will be furnished by the Purchaser, in quadruplicate.

PART-II
CHAPTER-VI
WIRING PROCEDURE

2.8.1 Wiring Procedure: This section deals with the wiring procedure which may be adopted for erection of normal overhead equipment.

The following procedure for erection of overhead equipment has been formulated with a view to ensure that:

(i) bracket assemblies (brackets) and regulating equipment are correctly installed in their final position.
(ii) the conductors are correctly tensioned, and
(iii) the need for final adjustments of overhead equipment immediately before energization and commissioning, is virtually eliminated.

2.8.2 General: In the case of regulated equipment when the regulating equipments are in action, the tension in the conductors should remain constant, irrespective of variations in the ambient temperature. As the regulating equipments are brought into action a few days after the stringing of conductors the equipment is unregulated in the intervening period. Any of the following two procedures may be followed for tensioning and clamping of conductors of regulated overhead equipment during stringing operations, i.e., before the regulating equipments are brought into action.

(i) The catenary in tension to 1200 Kgf, the stipulated tension at the mean temperature of 35° C, whatever may be the ambient temperature during the stringing operations. In this case, at the time of clamping the cat nary to the bracket, the bracket should be placed at angular positions corresponding to temperature at the time of clamping and the proportionate to their distance from the anti- creep.

(ii) The catenary is strained to a stringing tension corresponding to the ambient temperature for the equipment span of the tension length. In this case the brackets are placed in the mean position, i.e., at right angles to the track, when the catenary is clamped or the regulating equipment commissioned.

The advantage of the second method is that once the catenary is strung at the proper tension, there would be no necessity to adjust each bracket separately at the time of clamping the catenary or commissioning the regulating equipment. The erection work is, thus considerably simplified and the possibility of errors greatly reduced. This is also applicable to erection of unregulated overhead equipment.

2.8.3 Erection of Brackets: After the brackets are fabricated correctly in the contractor's depot, in accordance with the approved structure erection drawings, and provided with indelible labels or/painted marking indicating the intended locations for each bracket, they are removed to the site of work and erected on traction masts or supports. The brackets are swiveled to a position at right angles to the track and secured in that position by means of steel wires tied to similar brackets located on the opposite side of the track or other suitable means.

2.8.4 Anti-Creep: The anti-creep of the tension length is then installed in its final position.

2.8.5 Locking the Regulating Equipment: In the case of regulated overhead equipment, the regulating equipments are erected on the terminal masts or structures and their movement locked by suitable means in the middle position, with the distance between the pulleys of the regulating equipment corresponding to 35° C.

2.8.6 Temporary Arrangement: A pulley approximately 30 cm dia is attached to the overhead equipment end of the regulating equipment by means of temporary accommodation fittings at both ends of the tension length to be wired. Over this pulley a flexible stranded wire is passed over. At each of the wire two ending clamps, one for cat nary and one contact wire, are attached. The wire is also clipped in the middle by 'U' - clamp. The length of this temporary arrangement from the regulating equipment to the extremities of the stranded wire passing over the temporary pulley shall be a little longer than the distance between the regulating equipment and the ends of the cat nary and contact wires in their final position, to permit easy clamping of terminal fittings during the final termination of the wire.

2.8.7 Stringing Catenary: The catenary is initially terminated in the ending clamp of the temporary arrangement at one end of the tension length. The catenary is thus paid out from the reel of the wiring train and

run on pulley blocks hung from the suspension clamp eyes of brackets until the terminating point at the other end of the tension length is reached.

2**.8.8 Tensioning of Catenary:** The catenary is strained up to the 'stringing tension' corresponding to the 'equivalent' span of the tension length and the ambient temperature at the time of stringing with the aid of a dynamometers, end terminated at the tension. For this purpose, the ambient temperature shall be deemed to be the temperature registered by a thermometer tied to a length of catenary wire 3 to 4 meters long, laid flat on the top platform, on one of the wagons of the wiring train. Subsequently the tension in the wire is checked by measurement a sag with the help of leveling lathe attached to suspension points and to the catenary at mid span by a ladder working party. The sag shall be measured in two spans, each preferably greater than 54 meters, and situated on either side of anti- creep approximately midway between the anti- creep and the termination points. The value of sag measured by this method should be within ± 5% of the theoretical value for the corresponding stringing tension, and the temperature at the time of this measurement. In case of discrepancy is noted, the tension should be adjusted again and sag re-checked as above. After the sag is checked, the catenary is terminated at the ending fitting of the temporary arrangement at the terminating point.
In order to restrict the duration of traffic blocks to the minimum, in the first block, the catenary is strained to the stringing tension with the aid of dynamometers and the catenary is terminated. In a subsequent block, the sag is checked and the Tension readjusted with ladders, if necessary.

2.8.9 Clamping the Catenary: The catenary is clamped on the brackets placed at right angles to the track.

2.8.10 Droppering: Droppers are fitted to the catenary at the correct locations. At the contact wire ends these droppers May be provided with small pulleys or hooks to act as temporary supports when the contact wire is strung. Hooks made of scrap contact wire, suspended from the catenary wire, may also be used as temporary supports.

2.8.11 Stringing Contact Wire: The contact wire is initially terminated in the contact wire ending clamp of the temporary arrangement at one end of the tension length. The wire is then paid out from the reel wagon of the wiring train and supported on the pulleys hung from droppers or on hooks until the terminating points at the either end of the tension, length is reached. In curves, the contact wire shall be registered on pulleys located at traction masts or supports corresponding to the approximate final position of the wire. The axes of these pulleys should be more or less vertical.

2.8.12 Tensioning Of Contact Wire: The contact wire is strained to a tension on approximately
1.2 times the tension corresponding to the ambient temperature and terminated in the ending clamp of the temporary arrangement.

2.8.13 Regulating Equipment in Action: The regulating equipment is put into action with the counter weight at the correct height above rail level with distance between pulley or the regulating equipment corresponding to a temperature of 35°C. The regulating equipment is then released and brought into action. The 'U' clamp connecting the flexible stranded wire passing round the temporary pulley is also removed.

2.8.14 Final Adjustment: The entire installation is left in this condition as long as it is possible, preferably for a period not less than 15 days. The temporary pulleys are removed and the conductors terminated in the permanent ending fittings, compensating plates, insulators and turnbuckles. The equalizer plate is kept vertical or at a vertical or at a slightly inclined position (by 2 or 3 cm the contact wire being shorter than the catenary) and the position of the regulating equipment is checked in relation to, the temperature at the time. The contact wire is clipped on to droppers (in the vertical position) and on the steady arms. Contact wire height at the bracket is adjusted as also the stagger and register arm clearance.

2.8.15 Concluding Remarks: If the above method is followed with care, no further adjustment may be needed.

NOTE:
(1) It should be ensured that sagging is done carefully and accurately. The adjustment of tension in the catenary after checking of sag, if required, would be easy if a temporary turnbuckle is inserted in the temporary termination.
The use of leveling lathes is recommended for the following reasons:
(i) The accuracy of adjustment is greater than that with dynamometers.
(ii) No traffic block is required for this operation.

(iii) It obviates the necessary of initial tensioning of the catenary accurately thus permitting a reduction in the period of traffic block required for the wiring train.

(2) If feasible, without any hindrance to progress of works, the catenary may be maintained at stringing tension for a period of 48 hours before checking sag and clamping it to the brackets. This would ensure equalization of tension in the different spans. Before clamping the catenary to the brackets, the sag should however, be checked in two spans as indicated.

(3) If it is difficult to obtain separate traffic block for stringing contact wire, the wire may be paid out at the same time, as the catenary, with the following precautions:
(i) The contact wire is run and suspended from independent pulleys hooked on the brackets, separately from the catenary pulleys, to avoid twisting together of the two conductors.
(ii) The contact wire should not be suspended from the catenary until the later is clamped on the brackets.
(iii) The tension in the contact wire before termination should be about 1,200 Kgf. This will ensure that sag is not excessive.
(iv) The adjustment of tension and checking of sag of the catenary wire is carried out as if the contact wire had not been strung. Only after adjustment of tension and checking of sag is completed, the contact wire is transferred to the pulleys attached to the droppers or to hooks suspended from the cat nary and the tension is adjusted.

(4) When the contact wire is under tension creep takes place which results in an increase in the length of wire and, consequently, the droppers and the equalizer plates would become oblique. Though creep may continue for a long time, about a year, the bulk of it would occur during the days following stringing. If sufficient period of time is allowed, the contact wire may be clipped to the droppers and the equalizer plates, all in the vertical position and the necessity for any further adjustments before energization and commissioning of the OHE may be reduced to a great extent. If this precaution is not taken at the time of energization of the OHE, the droppers may not all be vertical and staff would have to be deputed for shifting the dropper clips with risk of damage to the contact wire.

(5) Before the temporary arrangement is removed, a reference mark should be made on each conductor. After final termination of the conductors, it should be ensured that two marks are in the same relative longitudinal position as they were before the removal of the temporary arrangement.

PART-II CHAPTER -VII

SPECIFICATION OF IMPORTED ITEMS

2.9.1 Scope- Specification covered in this chapter are for imported items to be used in this work. These specifications are indicative, details if required by the Contractor will be provided by DFCCIL. ***Any specification of material not covered in this chapter will be provided by DFCCIL. Note: Most of the component, fittings & fixtures used in REJN-KSGN section are imported.***

A List of Imported Item used in DFCCIL Jaipur unit is as under:

Sr. NO.	Item	Make	Country
1	Auto Fault Locator- All type of cards	Tsuda Electric	Japan
2	120sq.mm Jumper	Lamifil & Lafarga	Belgium & Spain
3	Modular Cantilever Assembly	Richard Bergner	Germany
4	10 sq.mm Dropper Complete	Richard Bergner	Germany
5	50 sq.mm Jumper	Lamifil	Belgium
6	Contact Wire - 150sq.mm	Sumitomo	Japan
7	Catenary Wire - 125sq.mm	Fujikura	China
8	End Fittings - 150sq.mm Contact Wire	Arruti	Spain
9	End Fittings - 125sq.mm Catenary Wire	Arruti	Spain
10	End Fittings - 288sq.mm Feeder Wire	Arruti	Spain
11	End Fittings - 181sq.mm Aerial Earth Wire	Arruti	Spain
12	Suspension Fittings – 288sq.mm Feeder Wire	Arruti	Spain
13	Suspension Fittings – 181sq.mm Aerial Earth Wire	Arruti	Spain
14	Double Suspension Clamp	Arruti	Spain
15	5 Pulley ATD	Arruti	Spain
16	Bent Steady Arm	Arruti	Spain
17	Copper Claded Earth Electrode	Duval Messien	China
18	LWSI – 125sq.mm MW & 150sq.mm CW	Galland	France
19	LWSI – 65sq.mm MW & 107sq.mm CW	Galland	France
20	PTFE Neutral Section	Arthur Flurry	Switzerland
21	Swiveling OHE	Furrer + Frey	Switzerland

22	Scott Transformer – Imported components	Toshiba	Japan
23	Auto Transformer - Imported components	Meidensha	Japan

Light Wight Section Insulator:

The approximate quantity Light Wight Section Insulator to be required in work is as under:

Sr. no.	Item	Quantity	Remarks
1	Light Weight Section Insulator suitable for 150 sq. mm Contact & 125 Sq. mm Catenary wire	06	**Drawing, ITP, GTP, Test report Attached (Page-**
2	Light Weight Section Insulator suitable for 107 sq. mm Contact & 65 Sq. mm Catenary wire	16	**Drawing, ITP, GTP, Test report Attached (Page-**

ANNEXURE-01

(Guaranteed Technical Particulars)

galland
CATENARY EXPERTISE SINCE 1946

DESIGN I DEVELOP I MANUFACTURE
IMPROVE I INNOVATE

Date: 05.07.2019

To
LARSEN & TOUBRO Ltd, Construction

Ref.: Guaranteed Technical Particulars for Section Insulator Assembly EJG3430

Dear Sir,
We, GALLAND S.A.S, a Qualified Equipment Manufacturer for Overhead Catenary products and solutions, duly organized under the laws of French Industrial Sector and having its principal place of business at 255 Zone Industrielle de l'illot, 33240 La Lande de Fronsac in France, do hereby confirm the following Guaranteed Technical Particulars for Section Insulator Assembly EJG3430:

Light Weight Section Insulator (LWSI) - Guaranteed Technical Particulars (Models: EJG3430/202-31 and EJG3430/102-21)

SN	Technical Particulars	UOM	Values	
			150 Contact & 125 Catenary	107 Contact & 65 Catenary
	A) Assembly			
1	Speed potential	Km/hr	200	
2	Total Length	Mtr	1,509	
3	Air Gap	Mtr	0,330	
4	Total Weight	Kg	15.1 Kg	15.1 Kg
5	Safe working load			
	i) Contact Wire side	Kgf	2,651 Kgf (26 kN)	
	ii) Catenary Wire side	Kgf	5,608 Kgf (55 kN)	
	iii) Assembly	Kgf	2,651 Kgf (26 kN)	
6	Whether suitable for faively AM 12 pantograph with silico- manganese steel strips lubricated with graphite grease	Yes/ No	Yes	
7	Whether suitable for erection symmetrically on either side of support	Yes/ No	Yes	
8	Permissible stagger at support for erection	mm	Recommended stagger is 50 mm however a maximum of 100mm is possible	
9	Minimum radius of curvature of track on which the assembly can be erected	Mtr	Installation in curved is not recommended however a minimum 700m radius of curvature is possible	
10	Maximum gradient of track on which the assembly can be erected		No Impact since the assembly can be adjusted according to the track gradient	

NOMD FOR TECHNICAL DESIGN
Date : 03.09.19
Signature : M. Pat

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DESIGN I DEVELOP I MANUFACTURE
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B) Insulator (Contact wire side)			
1	Material of core and specification with grade		Fiber glass & Epoxy resin
2	Material of covering and specification with grade		Silicon
3	Material of end fittings and specification with grade		AlSi7Mg0.6
4	Type of coupling of end fittings with core	Crimped/ bolted/ others	Glued & Pinned
5	Specified mechanical load	Kgf	8,157 Kgf (80 kN)
6	Routine test load	Kgf	4,078 Kgf (40 kN)
7	Tensile failing load	Kgf	8,157 Kgf (80 kN)
8	1.2/50 micro sec Dry lightning impulse withstand voltages	-	-
	+ Ve Polarity	kVp	Over 250 kV for the insulated part
	- Ve Polarity	kVp	Over 260 kV for the insulated part
9	Wet one minute power frequency withstand voltage	kV (rms)	Over 125 kV for the insulated part
10	Creepage path	mm	1,600 mm
11	Safe working load	Kgf	2,651 Kgf (26 kN)
C) Insulator (Catenary conductor side)			
1	Material of core and specification with grade		Fiber glass & Epoxy resin
2	Material of covering and specification with grade		Silicon
3	Material of end fittings and specification with grade		Forged Steel (Hot- dip Galvanized)
4	Type of coupling of end fittings with core	Crimped/ bolted/ others	Crimped
5	Specified mechanical load	Kgf	11,217 Kgf (110 kN)
6	Routine test load	Kgf	5,608 Kgf (55 kN)
7	Tensile failing load	Kgf	11,217 Kgf (110 kN)
8	1.2/50 micro sec Dry lightning impulse withstand voltages	-	-
	+ Ve Polarity	kVp	350 kV
	- Ve Polarity	kVp	350 kV
9	Wet one minute power frequency withstand voltage	kV (rms)	125 kV
10	Creepage path	mm	2,300 mm
11	Safe working load	Kgf	5,608 Kgf (55 kN)

AGM FOR TECHNICAL DESIGN
Date : 08.09.19
Signature :

galland
CATENARY EXPERTISE SINCE 1946

DESIGN I DEVELOP I MANUFACTURE
IMPROVE I INNOVATE

D) Fittings - Castings				
1	Type of Casting (Sand cast/ die cast/ pressure die cast)		Die Cast	
2	Material with specification and grade of each casting (name the castings also)		AlSi7Mg0.6	
E) End fittings				
1	Failing load- Contact wire side	Kgf	8,158 Kgf (80 kN)	8,158 Kgf (80 kN)
2	Failing load- Catenary conductor side	Kgf	8,158 Kgf (80 kN)	6,118 Kgf (60 kN)
F) Others				
1	Availability of Inter- changeability	Yes/ No	Yes	
2	Suitability of assembly in Indian environment	Yes/ No	Yes	
3	Provision of identification marking	-	-	
	a) Insulators	Yes/ No	Yes	
	b) Fittings and components (name the fittings and components)	Yes/ No	Yes	

Yours Faithfully,

03.09.19

Authorized Signatory
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ANNEXURE-02

(Inspection & Test Plan)

SOJITZ - L&T CONSORTIUM

ELECTRICAL & MECHANICAL PACKAGE - 4

REWARI - MAKARPURA (VADODARA) SECTION

डेडीकेटेड फ्रेट कोरीडोर

INSPECTION AND TEST PLAN - LIGHT WEIGHT SECTION INSULATOR ASSEMBLY (LWSI)

Project	Design, Supply, Installation, Testing and Commissioning of 2X25kv Traction Power Supply System, TSS, Auxiliary Stations, Switching Stations, Auto Transformers Stations and SCADA System on Design build Lump Sum Price basis for Rewari - Makarpura (Vadodara) Section of WDFC (ICB No. EM P-4)
Employer	Dedicated Freight Corridor Corporation of India Limited
Engineer	Nippon Koei Consortium
Contractor	SOJITZ - L&T Consortium

Ref	Main Activity	Test method	Specification and other reference documents	Acceptance criteria	Inspection by. Contractor's representative	Inspection by. Engineer's representative	Frequency	Verifying documents / Format of records	Remarks
A	**Type Test on Fittings and Insulators**								
A.1	Material Verification	As per clause 8.2.1.2	EN 50119: 2009+A1: 2013	Verification of material by inspecting, purchase documents / Manufacturer test certificate / certificates of conformity or other quality documentation. Material shall be as per the approved drawings.	R	R	For Proto unit of Type Test only	Material Certificates	At Manufacturer's Laboratory.
A.2	Mechanical test on end clamps: a) Contact wire end fitting b) Catenary wire end clamp	As per clause 8.2.1.5.2		The clamps shall be assembled with intended conductors & inserted in the testing machine using suitable clamping parts. The tensile force shall be increased to 1.33 times the permissible operating force $F_{perm.op}$ and held for the duration of one minute, slippage shall not occur at this stage. Marks shall be applied at the exit of the conductor from the test specimen for observing possible slippage. The force shall be increased constantly with load change of 5 N/mm2 per second to 10 N/mm2 per second (related to the conductor cross section) until a break occurs. **The break and slippage shall not occur before breaking load of the conductors.** **(As per Clause 8.2.1.5.2 of EN 50119: 2009+A1: 2013)** End Clamps: Conductors / Operational Load / 1.33 times of Operational Load / Breaking Load 150 Sqmm Contact: 11.76 kN / 15.64 kN / 61.1 kN 107 Sqmm Contact: 9.80 kN / 13.03 kN / 37.4 kN 125 Sqmm Catenary: 11.76 kN / 15.64 kN / 75.45 kN 65 Sqmm Catenary: 9.80 kN / 13.03 kN / 38.74 kN	R	W R	Three Single proto units.	Test Reports	Reports shall be submitted for review along with complete test reports.
A.3	Lightning impulse withstand test and Power Frequency Withstand test (Wet and dry both) on **Catenary Insulator.**	As per clause 11.1 and table-3	IEC 61109: 2008	Insulators shall withstand below mentioned minimum values of Lighting impulse and Wet & Dry power frequencies in accordance with IEC 61109: 2008 Insulator Type: 2300 CD insulator of Catenary wire side; Dry Lighting impulse withstand voltage: 250 kV; Dry Power frequency withstand voltage: 125 kV; Wet power frequency withstand voltage: 125 kV	R	R	Single proto unit		Report is available and being submitted. Deleted as report approved
A.4	Lightning impulse withstand test and Power Frequency Withstand test (Wet and dry both) on **Contact Insulator.**	As per clause 11.1 and table-3	IEC 61109: 2008	Insulators shall withstand below mentioned minimum values of Lighting impulse and Wet & Dry power frequencies in accordance with IEC 61109: 2008 Insulator Type: 1600 CD insulator of conatct wire side; Dry Lighting impulse withstand voltage: 250 kV; Dry Power frequency withstand voltage: 125 kV; Wet power frequency withstand voltage: 125 kV	H	W	On Single or multiple Proto Unit as per laboratory practice		Test will be conducted at recoganized laboratary in India since Manufacturer doesn't have the facilities for these electrical tests and DMRC has also conducted in India only.
B	**Type Test on Sectioning Device Assembly**								
B.1	Verification of dimensions and weight	Physical verification	EN 50119: 2009+A1: 2013	Shall be as per approved drawings. **(As per clause 8.11.3 of EN 50119: 2009+A1: 2013)**	H	W	On one Sectioning Device	Test report from testing agency	-
B.2	Functional Test on Clamps and fittings	As per clause 8.2.1.4		Samples shall be assembled according to the approved drawings, using all necessary connecting parts. Bolts shall be tightened to 1.1 times the tightening torque stated in Table 20. The relevant functional dimensions shall be checked. No permanent deformation shall be permitted. **(As per Clause 8.2.1.4 and Table 20 of EN - 50119: 2009+A1: 2013)**					
B.3	Mechanical Load Test	As per clause 8.11.1.2		The sectioning device shall be fixed in a tensile testing machine and loaded to the specified operational tensile load of the contact wire; the device shall be adjusted so that the runners are in their operational condition. The load shall be increased at a rate of 1 kN/s up to 1,33 times the operational tensile load of the contact wire and held for 1 min. The load shall then be reduced to the operational tensile load of the contact wire. No permanent deformation may occur. The tension load shall then be increased at a rate of change of 1 kN/s until a break occurs. **The break and slippage at sectioning device shall not occur before the breaking load of contact wire.** As per testing facilities, Contact Wire or a distinct arrangement may be used to apply load on assembly. Required and approved loads of contact wires are tabulated below:- Sectioning Device: Contact Wire Size / Operational Load / 1.33 times of Operational Load / Breaking Load 150 Sqmm: 11.76 kN / 15.64 kN / 61.1 kN 107 Sqmm: 9.80 kN / 13.03 kN / 37.4 kN					

CONSTRUCTION TECHNICAL DEPARTMENT Date: 03.09.19 Signature:

SOJITZ - L&T CONSORTIUM

Ref	Main Activity	Test method	Specification and other reference documents	Acceptance criteria	Inspection by.		Frequency	Verifying documents / Format of records	Remarks
					Contractor's representative	Engineer's representative			
B.4	Lightning impulse test	As per Clauses: a. 8.11.1.3 of EN - 50119: 2009+A1: 2013 b. 11.1 of IEC 61109: 2008 c. 5 -a of EN/IEC 60383-2: 1993 d. 7.3.1.2 of IEC 60060-1: 2010	EN 50119: 2009+A1: 2013	Sectioning Device shall withstand lightning impulse of voltage 170 kV (15 +ve and 15 -ve pulses) applied between two terminals of sectioning device. **(Values are derived as per Table A.2 of EN 50124-1:2001+A2:2005 & as per EN 62621:2016 and finally interpolated for assembly as per RDSO witnessed Type Test report (No. 107879-614511A dt. 09.12.2011) of RDSO approved design.)**	H	W	On Single or multiple Proto Unit as per laboratory practice	Test report from testing agency	Test will be conducted at recoganized laboratary in India since Manufacturer doesn't have the facilities for these electrical tests and DMRC has also conducted in India only.
B.5	Power frequency withstand voltage tests in wet & dry conditions	As per Clauses: a. 8.11.1.3 of EN - 50119: 2009+A1: 2013 b. 11.1 of IEC 61109: 2008 c. 5 -a of EN/IEC 60383-2: 1993 d. 7.3.1.2 of IEC 60060-1: 2010		Sectioning Device shall withstand 80kV for 1 min under dry condition. Sectioning Device shall withstand 61 kV for 1 min under wet condition. **(Values are derived as per Table B.1 of EN 50124-1:2001+A2:2005 & as per EN 62621:2016 and finally interpolated for assembly as per RDSO witnessed Type Test report (No. 107879-614511A dt. 09.12.2011) of RDSO approved design.)**					
B.6	Arcing test	As per clause 8.11.1.3		The flashover occurred at maximum operational current of 360A shall not affect the mechanical integrity of the section insulator & it shall be extinguished. **(As per Table 5.1-1 of Volume III of Contract Agreement.)** Test voltage shall be between 7kV to 10kV. **(As per Annexure-C of IEC 61467 for insulators of system voltage U<72.5kV)**					
B.7	Short-circuit test			The effects of the short-circuit current of 12kA for duraion of 0.1 sec. shall not affect the mechanical integrity of the section insulator. **(As per Table 3 of IEC 61467: 2008)**					
C	**Factory Acceptance Test on Components and Assembly**								
C.1	Material Verification	As per clause 8.2.1.2	EN 50119: 2009+A1: 2013	Verification of material by inspecting purchase documents / Manufacturer test certificate / certificates of conformity or other quality documentation. Material shall be as per the approved drawings.	R	R	For one Sectioning Device	Material Certificates	-
C.2	Visual inspection	Physical verification		No visible damage shall be presented.	H	W	2% of the lot offered for inspection Or 3 Assemblies whichever is Maximum (As per clause 8.11.3 of EN - 50119: 2009+A1: 2013)	Checklist - SLT4/F/FAT-LWTSI/000268 (Rev-02)	-
C.3	Verification of dimensions and weight			Shall be as per approved drawings. **(As per clause 8.11.3 of EN 50119: 2009+A1: 2013)**					-
C.4	Interchangeability of components			Below components of sampled assembiles shall be interchangeable with each other: i. Catenary Wire Insulator ii. Anchoring clamp for Catenary Wire iii. Suspension collar of Catenary Wire iv. Anchoring clamp of Contact Wire v. Spacing Claw vi. Suspension fitting vii. Suspension brace viii. Clevis stiffeners					
C.5	Functional Test on Clamps and fittings	As per clause 8.2.1.4		Samples shall be assembled according to the approved drawings, using a'l necessary connecting parts. Bolts shall be tightened to 1.1 times the tightening torque stated in Table 20. The relevant functional dimensions shall be checked. No permanent deformation shall be permitted. **(As per Clause 8.2.1.4 and Table 20 of EN - 50119: 2009+A1: 2013)**					-
C.6	Mechanical Load Test	As per clause 8.11.1.2		The sectioning device shall be fixed in a tensile testing machine and loaded to the specified operational tensile load of the contact wire; the device shall be adjusted so that the runners are in their operational condition. The load shall be increased at a rate of 1 kN/s up to 1,33 times the operational tensile load of the contact wire and held for 1 min. The load shall then be reduced to the operational tensile load of the contact wire. No permanent deformation may occur. As per testing facilities, Contact Wire or a distinct arrangement may be used to apply load on assembly. Required and approved loads of contact wires are tabulated below:-					-

Contact Wire Size	Sectioning Device	
	Operational Load	1.33 times of Operational Load
150 Sqmm	11.76 kN	15.64 kN
107 Sqmm	9.80 kN	13.03 kN

D	**Inspection of after receipt at site**								
D.1	Review of documents from factory acceptance test	Document review	Clause 5.3 of vol. II of Employer's requirement	Clause 5.3 of vol. II of Employer's requirement	H	W/R	Once for every lot inspected at factory	Checklist - SLT4/F/RMI-LWTSI/000267	-
D.2	Quantity measurement	Physical verification	As per dispatch records	Shall be as mentioned in dispatch records			100 % quantity measurement of received material		-

Legend : W - Witness inspection Point ; H - Mandatory Hold Point for inspection ; R - Document Review ; S- Surveillance

SLT4/F/ITP/LWTSI/000123 (Rev-02)

03.09.19

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ELECTRICAL MECHANICAL PACKAGE - 4
REWARI - MAKARPURA SECTION

CHECKLIST FOR FACTORY ACCEPTANCE TEST - LIGHT WEIGHT SECTION INSULATOR ASSEMBLY (LWSI)

Details of the unit under inspection

Manufacturer's Name & Address	

S.No	Test / observation	Acceptance criteria	Observation
1	Material Verification	Verification of material by inspecting purchase documents / Manufacturer test certificate / certificates of conformity or other quality documentation. Material shall be as per the approved drawings.	
2	Visual Inspection	No visible damage shall be presented.	
3	Verification of dimensions and weight	Shall be as per approved drawings. (As per clause 8.11.3 of EN 50119: 2009+A1: 2013)	
4	Interchangeability of components	Below components of sampled assembiles shall be interchangeable with each other: i. Catenary Wire Insulator ii. Anchoring clamp for Catenary Wire iii. Suspension collar of Catenary Wire iv. Anchoring clamp of Contact Wire v. Spacing Claw vi. Suspension fitting vii. Suspension brace viii. Clevis stiffeners	
5	Functional Test on Clamps and fittings	Samples shall be assembled according to the approved drawings, using all necessary connecting parts. Bolts shall be tightened to 1.1 times the tightening torque stated in Table 20. The relevant functional dimensions shall be checked. No permanent deformation shall be permitted. (As per Clause 8.2.1.4 and Table 20 of EN - 50119: 2009+A1: 2013)	
6	Mechanical Load Test	The sectioning device shall be fixed in a tensile testing machine and loaded to the specified operational tensile load of the contact wire; the device shall be adjusted so that the runners are in their operational condition. The load shall be increased at a rate of 1 kN/s up to 1,33 times the operational tensile load of the contact wire and held for 1 min. The load shall then be reduced to the operational tensile load of the contact wire. No permanent deformation may occur. As per testing facilities, Contact Wire or a distinct arrangement may be used to apply load on assembly. Required and approved loads of contact wires are tabulated below:-	

Contact Wire Size	Sectioning Device	
	Operational Load	1.33 times of Operational Load
150 Sqmm	11.76 kN	15.64 kN
107 Sqmm	9.80 kN	13.03 kN

	Manufacturer's representative	Contractor's representative	Third Party representative	Engineer's representative
Signature :				
Name :				
Place :				
Date :				

SLT4/F/ITP/LWTSI/000268 (Rev-2)

IM/D FOR TECHNICAL DESIGN
Date : 03.09.19
Signature :

SOJITZ L&T CONSORTIUM

sojitz L&T	SOJITZ - L & T CONSORTIUM WDFC - ELECTRICAL & MECHANICAL PACKAGE - 4 REWARI - MAKARPURA (VADODARA SECTION)	डेडीकेटेड फ्रेट कोरीडोर

Manufacture and Supply Verification at Site - LIGHT WEIGHT SECTION INSULATOR ASSEMBLY (LWSI)

RFI. Reference:

Date of Inspection(dd/mm/yy) : **Location:**

Material description :

Material type (Check below in the applicable box)

Architectural ☐ **Electrical** ☐ **Civil/Structure** ☐ **Mechanical** ☐ **Other** ☐

Material Receipt Details

Name of the supplier :

Delivery challan ref. **Date :**

Manufacture test/ factory acceptcance test certificate no. **Date :**

Quantity Measurement

S. No.	Item Description	Quantity (in nos)**

FAT document review

(i) FAT report with Engineer's sign or FAT report approval letter	: Yes	☐	No	☐
(ii)Quantity available** (as per mentioned measurement)	: Yes	☐	No	☐
(iii) Mark of identification available. (If applicable)	: Yes	☐	No	☐

** Any material visibly not usable at site is already excluded from above quantity measurement

ATTACHMENTS

☐ FAT report with Engineer's sign or FAT report approval letter ☐ Delivery note /challan

Remarks (If any)

Contractor's representative	Engineer's representative
Signature	Signature
Name	Name
Date :(dd/mm/yy)	Date:(dd/mm/yy)

SLT4/F/RMI-LWTSI/000267

ISSUED FOR TECHNICAL DESIGN
Date : 03.09.19
Signature :

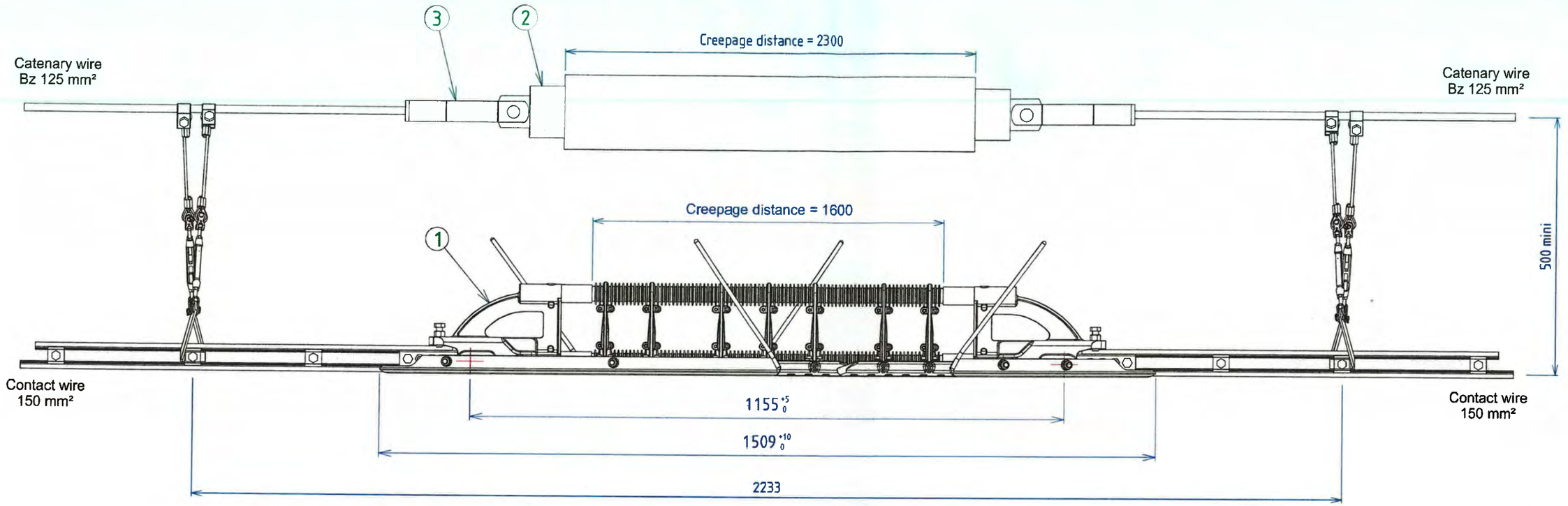
SOJITZ - L&T * CONSORTIUM *

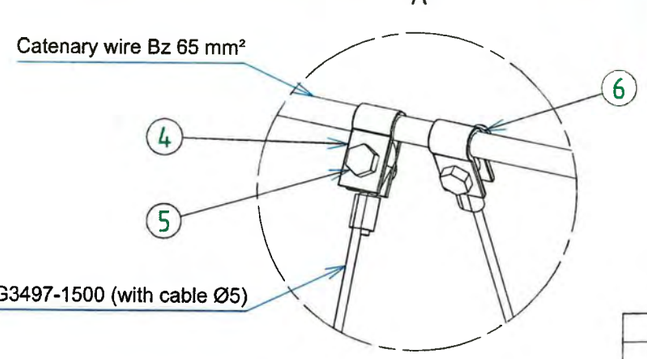
Signature of Tenderer

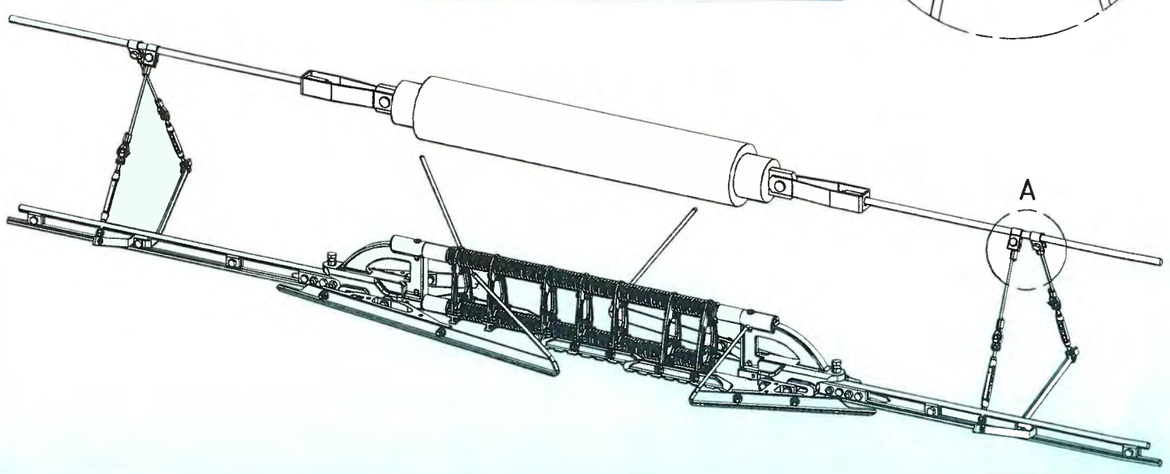
ANNEXURE-03

(Drawings)

Drawings of LWSI 'EJG3430/202-31' suitable for 150 mm^2 Contact Wire & 125 mm^2 Catenary Wire







03.09.19

ITEM	Qty.	NAME	Part Number	MATERIAL	COMMENT
6	4	HFR nut M10 with CL washer	971462	X5CrNiMo17.12.2	-
5	4	Screw H M10 x 35/35	900485	X5CrNiMo17.12.2	-
4	4	Suspension collar for cable Ø13,5 à 15	5439 ind E	Cu/A1	-
3	2	Anchoring clamp dor cable Bz 125 mm²	N85010/GA125	-	-
2	1	Messenger wire insulator 25 kV	N51101	Fiber glass and epoxy resin + silicon coating	-
1	1	Section insulator with suspensions - 25 kV	JG3430/202 ind A	-	-

Section Insulator Assembly

A3 Date : 31/01/2019

Scale : 1:8

Index	Date	Modification
-	-	-
-	-	-
-	-	-
-	-	-

Section insulator assembly
25 kV

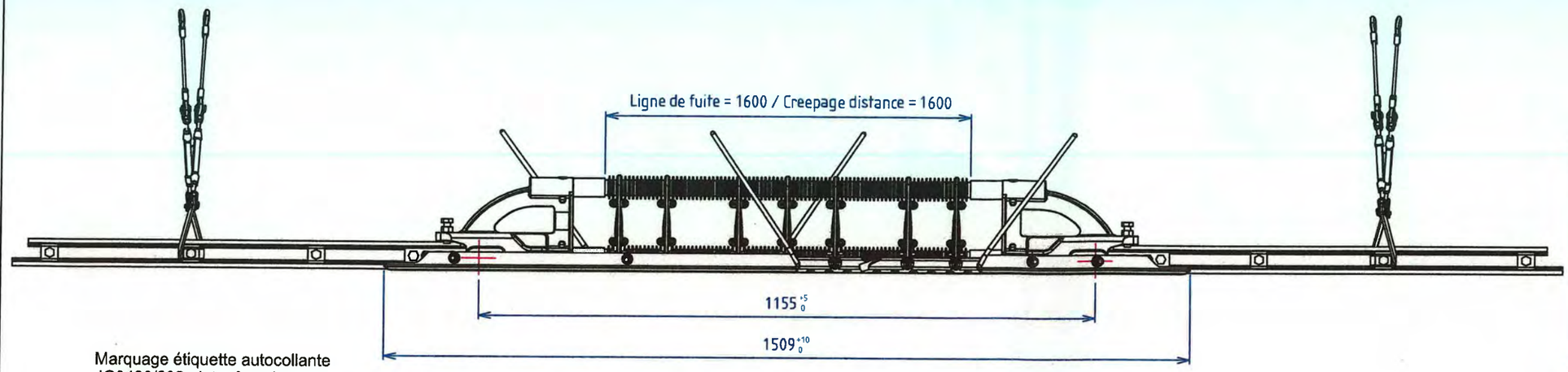
galland
CATENARY EXPERTISE SINCE 1946
www.galland-sas.com

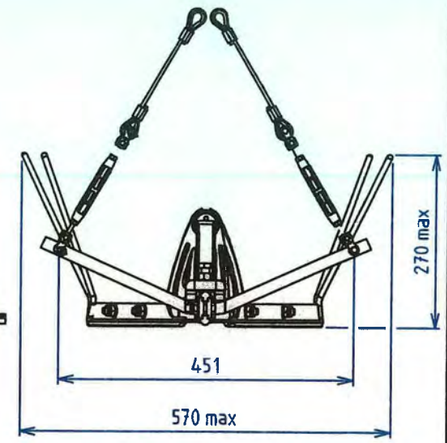
Author : Haritiana Andriambelo

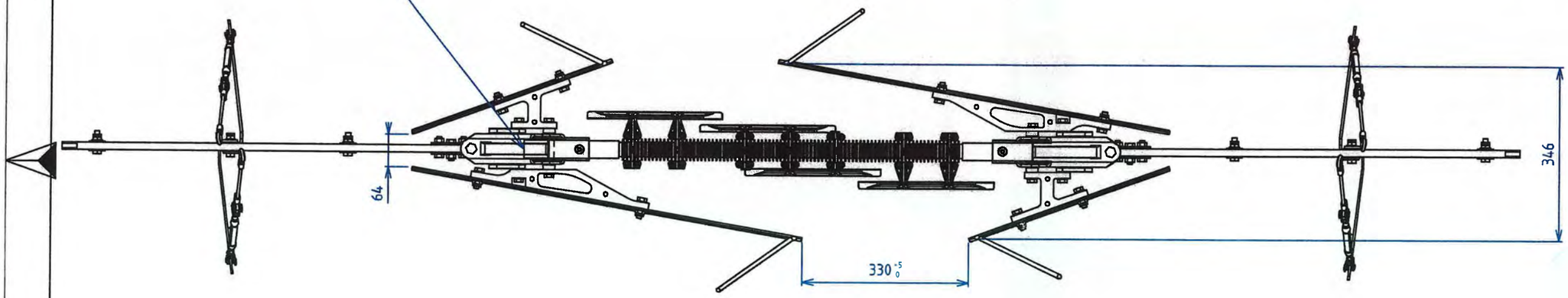
Page : 1/1

EJG3430/202-31

Signature of Tenderer







Caractéristiques mécaniques / Mechanicals characteristics :

- Charge nominale / Working load :	26 kN
- Charge de rupture / Breaking load :	80 kN

Caractéristiques électriques / Electricals characteristics :

- Tension de tenue à la fréquence industrielle - 1 mn à sec / Power-frequency withstand voltage - 1 mn dry :	110 kV
- Tension de tenue à la fréquence industrielle - 1 mn sous pluie / Power-frequency withstand voltage - 1 mn wet :	82 kV

Isolateur de Section Section Insulator	Ce plan est la propriété exclusive de la Société GALLAND This drawing is the exclusive property of GALLAND	galland CATENARY EXPERTISE SINCE 1945 www.galland-sas.com
Poids / Weight : 24 kg	Isolateur de section - 1 Fc 25 kV 25 kV Section insulator - 1 Cw	Auteur / Author : Benoit Aymard Page : 1/1
A3 Date : 17/01/2019		JG3430/202
Ech. / Scale : 1:9		

Indice Item	Date	Modification
A	10/2015	-
-	-	-
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TECHNICAL DE
DATE : 03.09.19
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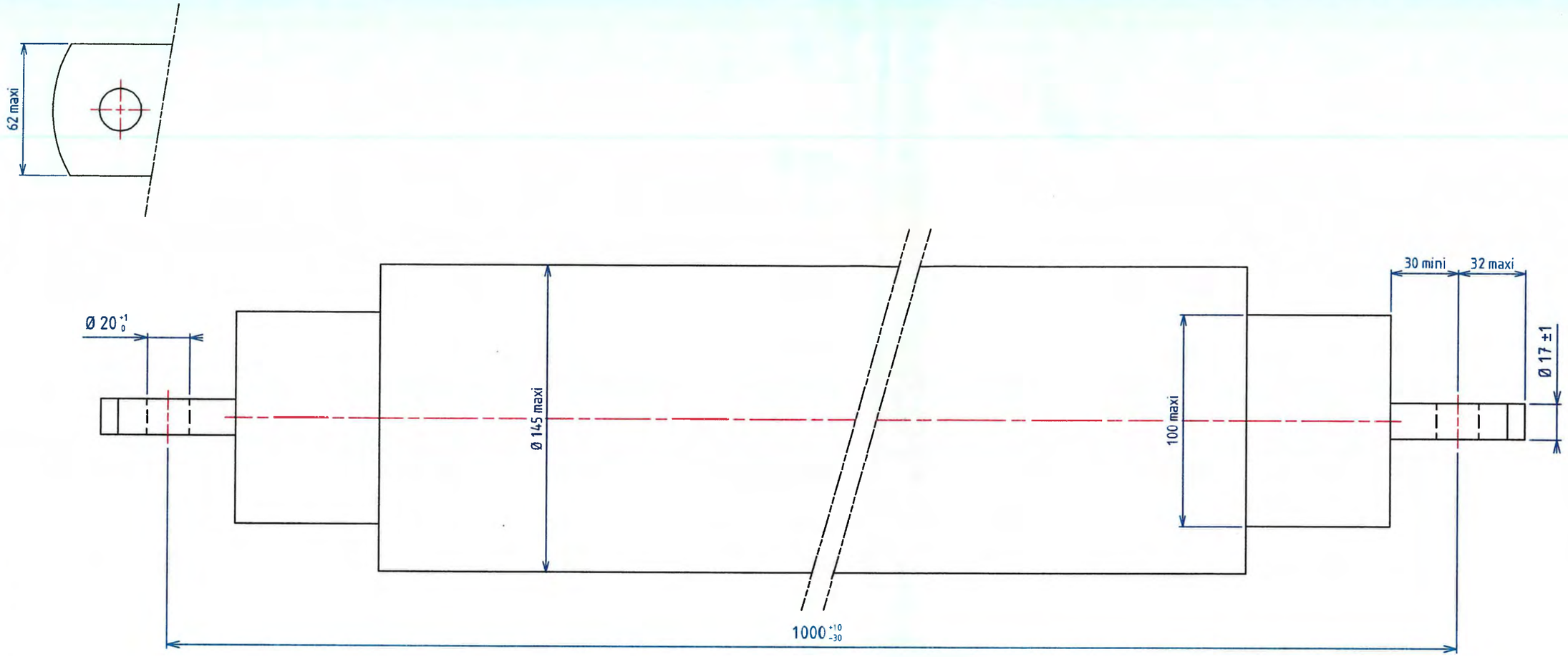

DIMENSIONS / DIMENSIONS :
- Ligne d'arc mini. / Mini. arcing distance : 780 mm
- Ligne de fuite mini. / Mini. creepage distance : 2300 mm

CARACTERISTIQUES ELECTRIQUES / ELECTRICALS PERFORMANCES (IEC 60383) - (IEC 60060) :
- Tension de tenue 1 mn à sec/sous pluie / Dry/wet 1 mn withstand voltage : > 125 kV
- Résistance au choc / Lightning impulse withstand voltage : > 270 kV

CARACTERISTIQUES MECANIQUES / MECHANICALS CHARACTERISTICS :
- Charge mécanique spécifiée / Specified mechanical load : 110 kN
- Charge d'essai de routine / Routine test load : 55 kN

COMPOSANT / COMPONENT PART :
- Revêtement ailettes / Weathersheds : Silicone

03.09.19

Isolateur Insulator		Ce plan est la propriété exclusive de la Société GALLAND This drawing is the exclusive property of GALLAND	galland CATENARY EXPERTISE SINCE 1945 www.galland-sas.com
A3	Date : 17/01/2019	Isolateur de porteur 25 kV Messenger insulator 25 kV	Auteur / Author : Benoit Aymard Page : 1/1
Ech. / Scale : 1:2			N51101

Indice Item	Date	Modification
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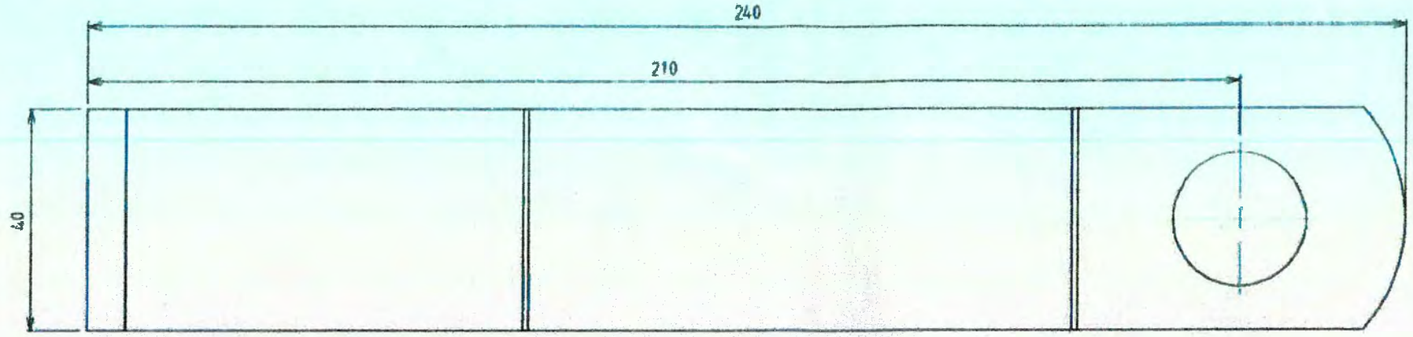
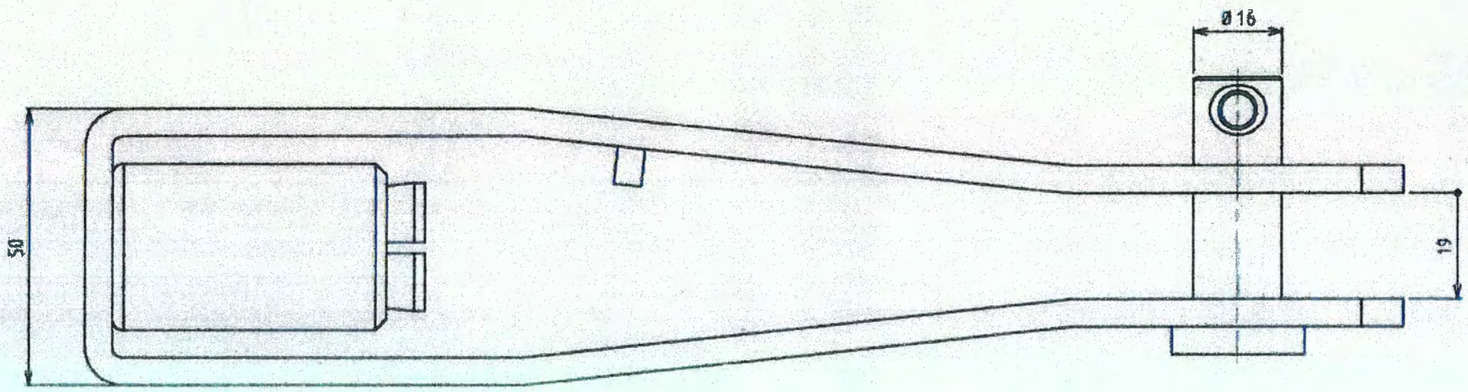
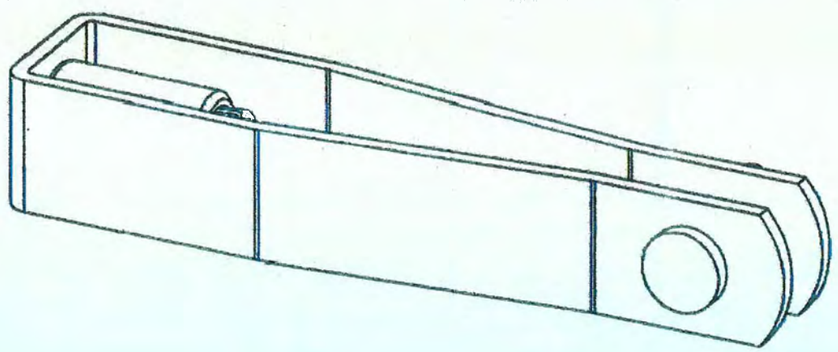
Signature of Tenderer







Mechanical characteristics :
- Max. working load : 35 kN
- Min. breaking load : 80 kN

General tolerance according to NF F 00-037
Material according to ST SNCF 21400
All dimensions are in millimeter

OKAY FOR TECHNICAL DESIGN
Date : 03.09.19
Signature :

Materials : X5CrNiMo17.12.2 + CuAl10Fe3		This drawing is the exclusive property of GALLAND
Weight : 1.3 kg		
A3	Date : 13/05/2019	Anchoring clamp for Bz 125 mm² cable
Scale : 1:1		

Index	Date	Modification
-	-	-
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-	-	-
-	-	-

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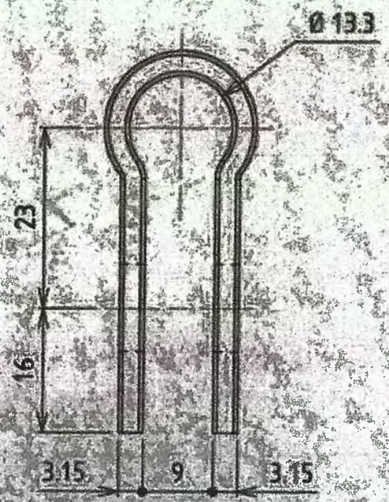
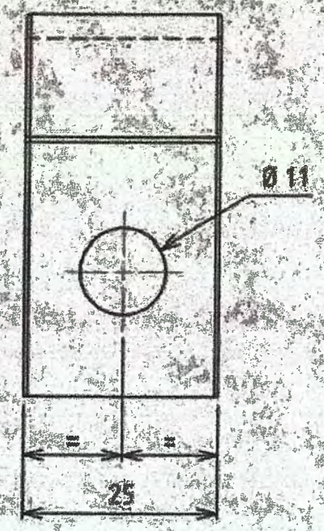
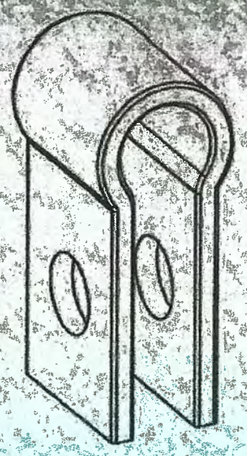
Author : Benoit Aymard	Page : 1/1

N85010/GA125







03.09.19

General tolerance according to NF F 00-037
Material according to ST SNCF 21400

Material :	Cu-ETP-R200	
Weight :	0.06 kg	
A4	Date : 13/05/2019	
Scale : 1:1		

Index	Date	Modification
E	07/2001	-
-	-	-
-	-	-
-	-	-

Suspension collar for cable or rod Ø13.5 à 15

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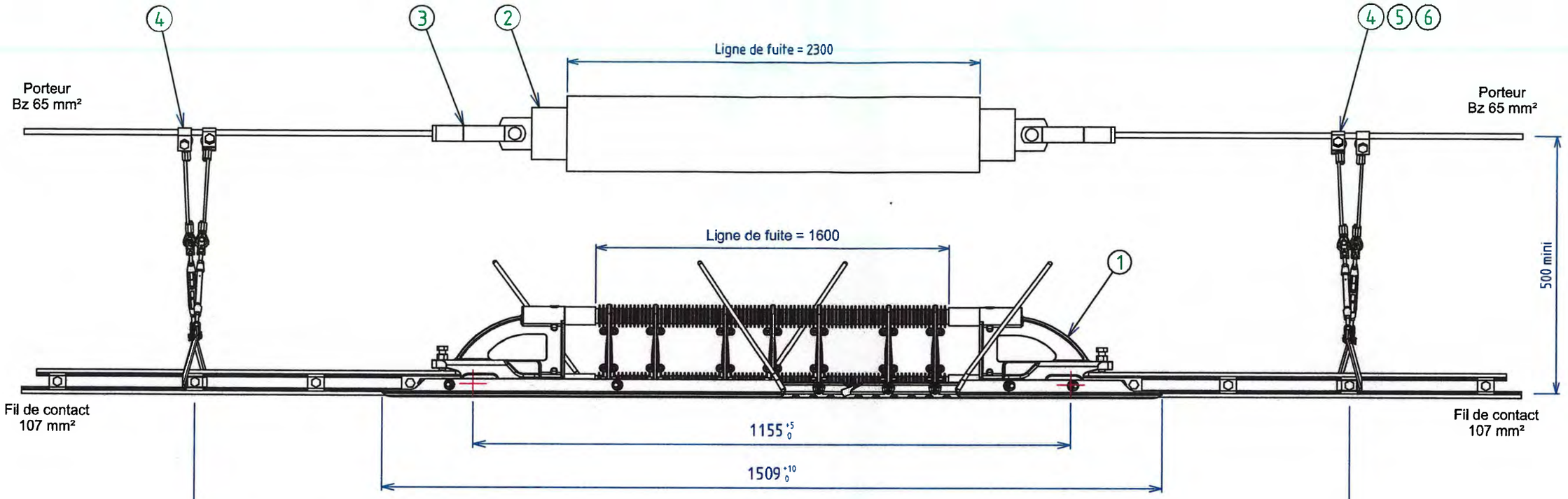
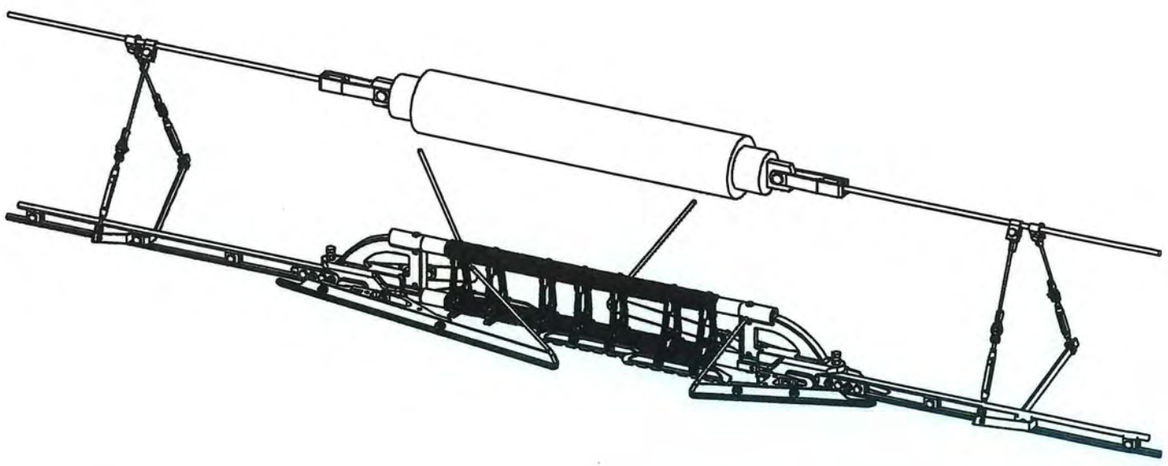
www.galland-sas.fr

Author :	Page :
Benoit Aymard	1/1

5439

Drawings of LWSI 'EJG3430/102-21' suitable for 107 mm^2 Contact Wire & 65 mm^2 Catenary Wire





03.09.19

REPERE	NB.	DESIGNATION	Réf	MATIERE	OBSERVATION
6	4	Ecrou HFR M10 avec rondelle CL	971462	X5CrNiMo17.12.2	-
5	4	Vis H M10 x 35/35	900485	X5CrNiMo17.12.2	-
4	4	Cavalier pour câble Bz 65.4 mm²	234517 ind H	Cu-ETP-R200	-
3	2	Manchon d'extrémité pour Bz 65 mm²	N85010/GA-Bz65	-	-
2	1	Isolateur de porteur 25 kV	N51101	Fibre de verre et résine époxy + revêtement silicone	-
1	1	Isolateur de section avec suspensions - 25 kV	JG3430/102 ind A	-	-

Montage Isolateur de Section

A3 | Date : 23/01/2017

Ech : 1:8

Indice	Date	Modification
-	-	-
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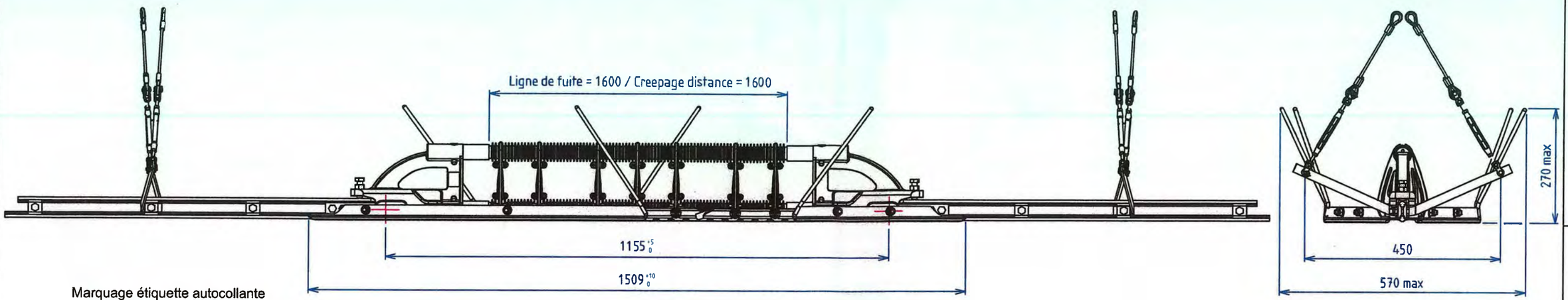
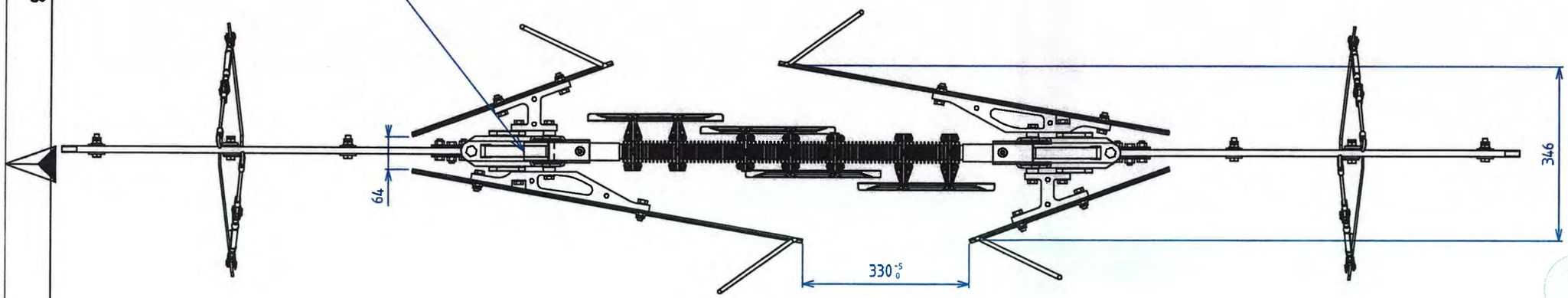
Ensemble
Isolateur de section
25 kV

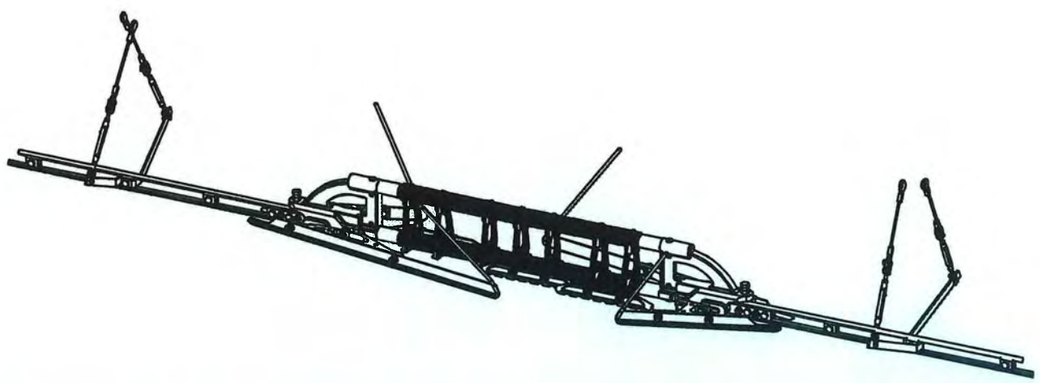
GALLAND
33240 La Lande de Fronsac
Tel : 33(0)5.57.94.07.20
www.galland-sas.fr

Auteur : Haritiana Andriambelo | Page : 1/1

EJG3430/102-21







Caractéristiques mécaniques / Mechanicals characteristics :

- Charge nominale / Working load :	26 kN
- Charge de rupture / Breaking load :	80 kN

Caractéristiques électriques / Electricals characteristics :

- Tension de tenue à la fréquence industrielle - 1 mn à sec / Power-frequency withstand voltage - 1 mn dry :	110 kV
- Tension de tenue à la fréquence industrielle - 1 mn sous pluie / Power-frequency withstand voltage - 1 mn wet :	82 kV

Isolateur de Section Section Insulator	Ce plan est la propriété exclusive de la Société GALLAND This drawing is the exclusive property of GALLAND	GALLAND 33240 La Lande de Fronsac Tel : 33(0)5.57.94.07.20 www.galland-sas.com
Poids / Weight : 23 kg	Isolateur de section - 1 Fc 25 kV 25 kV Section insulator - 1 Cw	Auteur / Author : Michael Delage Page : 1/1
A3 Date : 01/12/2015		JG3430/102
Ech. / Scale : 1:9		

Indice Item	Date	Modification
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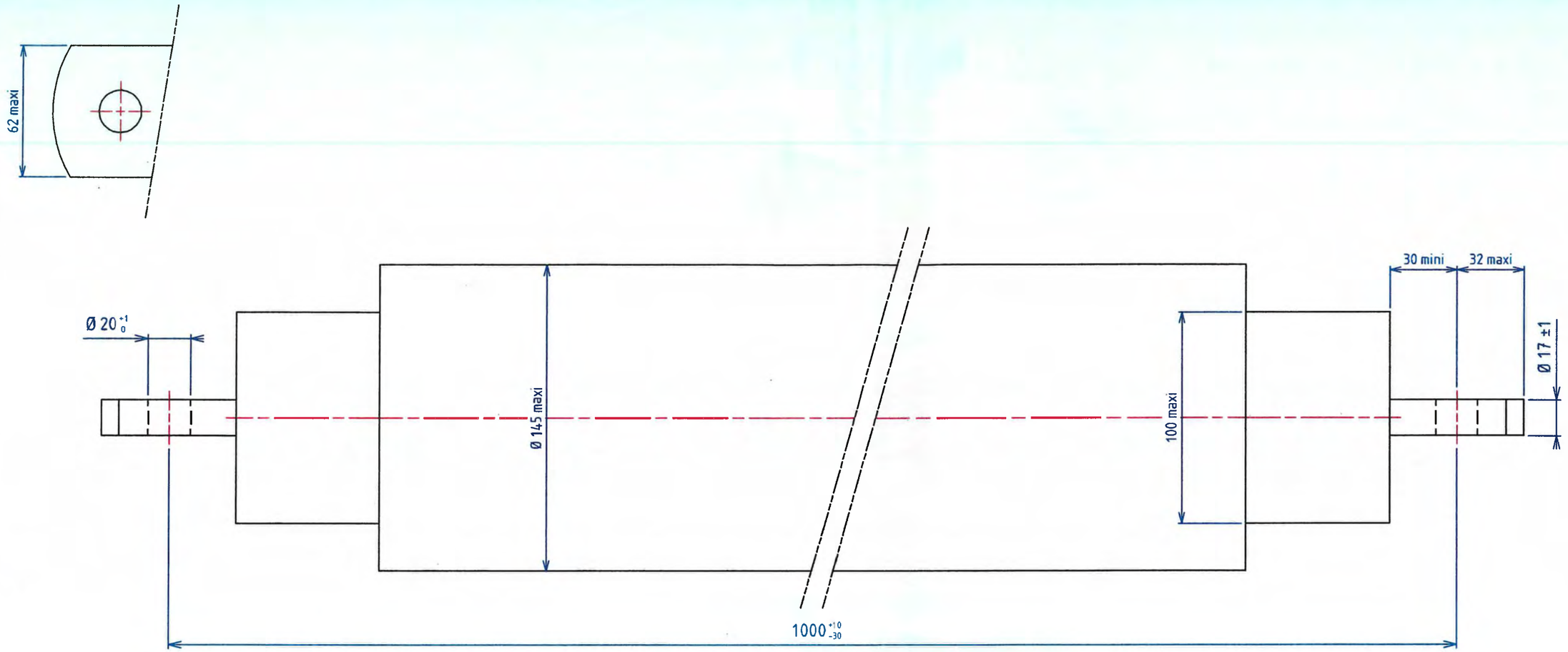
03.09.19



DIMENSIONS / DIMENSIONS :
- Ligne d'arc mini. / Mini. arcing distance : 780 mm
- Ligne de fuite mini. / Mini. creepage distance : 2300 mm

CARACTERISTIQUES ELECTRIQUES / ELECTRICALS PERFORMANCES (IEC 60383) - (IEC 60060) :
- Tension de tenue 1 mn à sec/sous pluie / Dry/wet 1 mn withstand voltage : > 125 kV
- Résistance au choc / Lightning impulse withstand voltage : > 270 kV

CARACTERISTIQUES MECANIQUES / MECHANICALS CHARACTERISTICS :
- Charge mécanique spécifiée / Specified mechanical load : 110 kN
- Charge d'essai de routine / Routine test load : 55 kN

COMPOSANT / COMPONENT PART :
- Revêtement ailettes / Weathersheds : Silicone

03.09.19

Isolateur Insulator		Ce plan est la propriété exclusive de la Société GALLAND This drawing is the exclusive property of GALLAND	galland CATENARY EXPERTISE SINCE 1946 www.galland-sas.com
A3	Date : 17/01/2019	Isolateur de porteur 25 kV Messenger insulator 25 kV	Auteur / Author : Benoit Aymard Page : 1/1
Ech. / Scale : 1:2			N51101

Indice Item	Date	Modification
-	-	-
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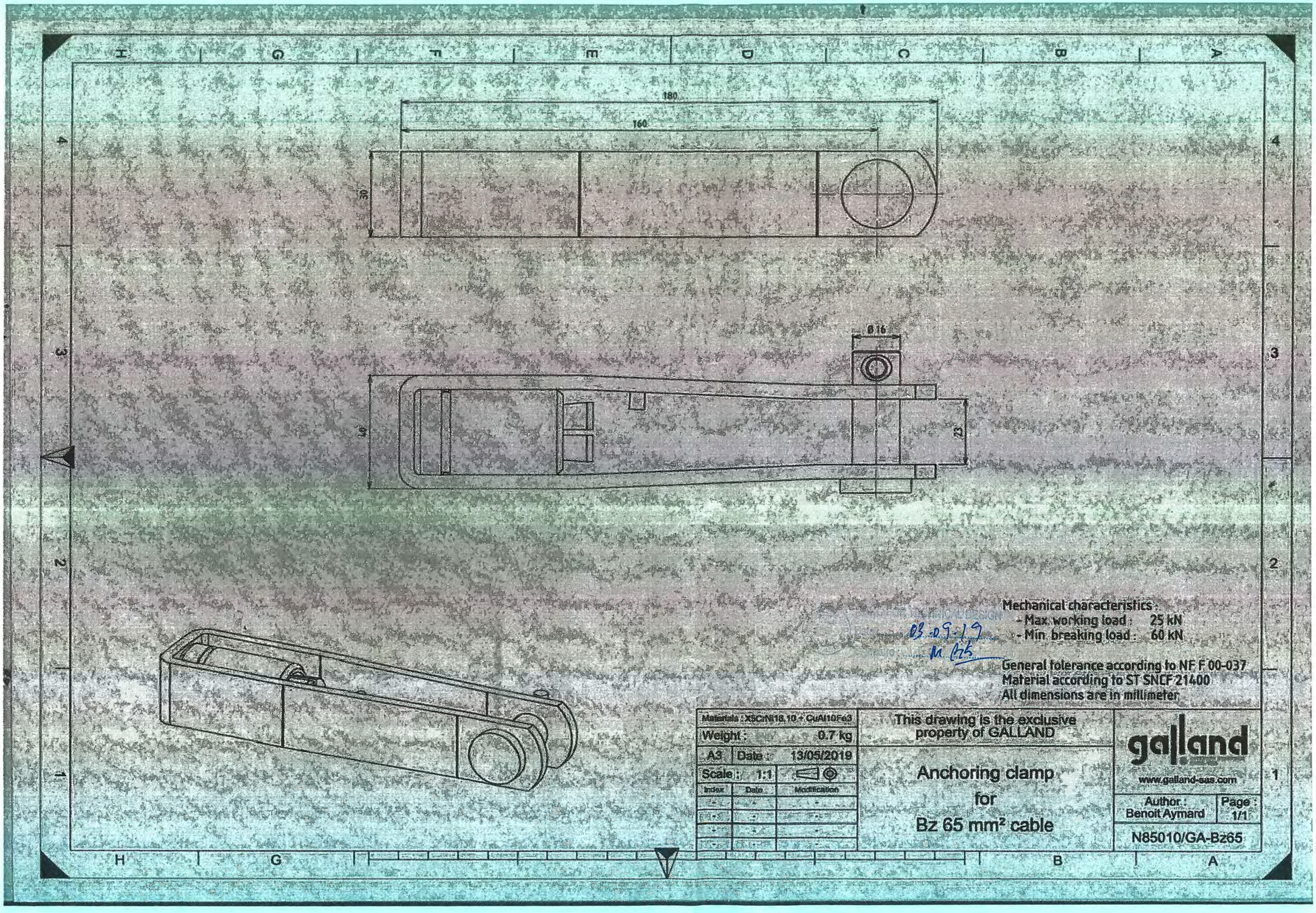
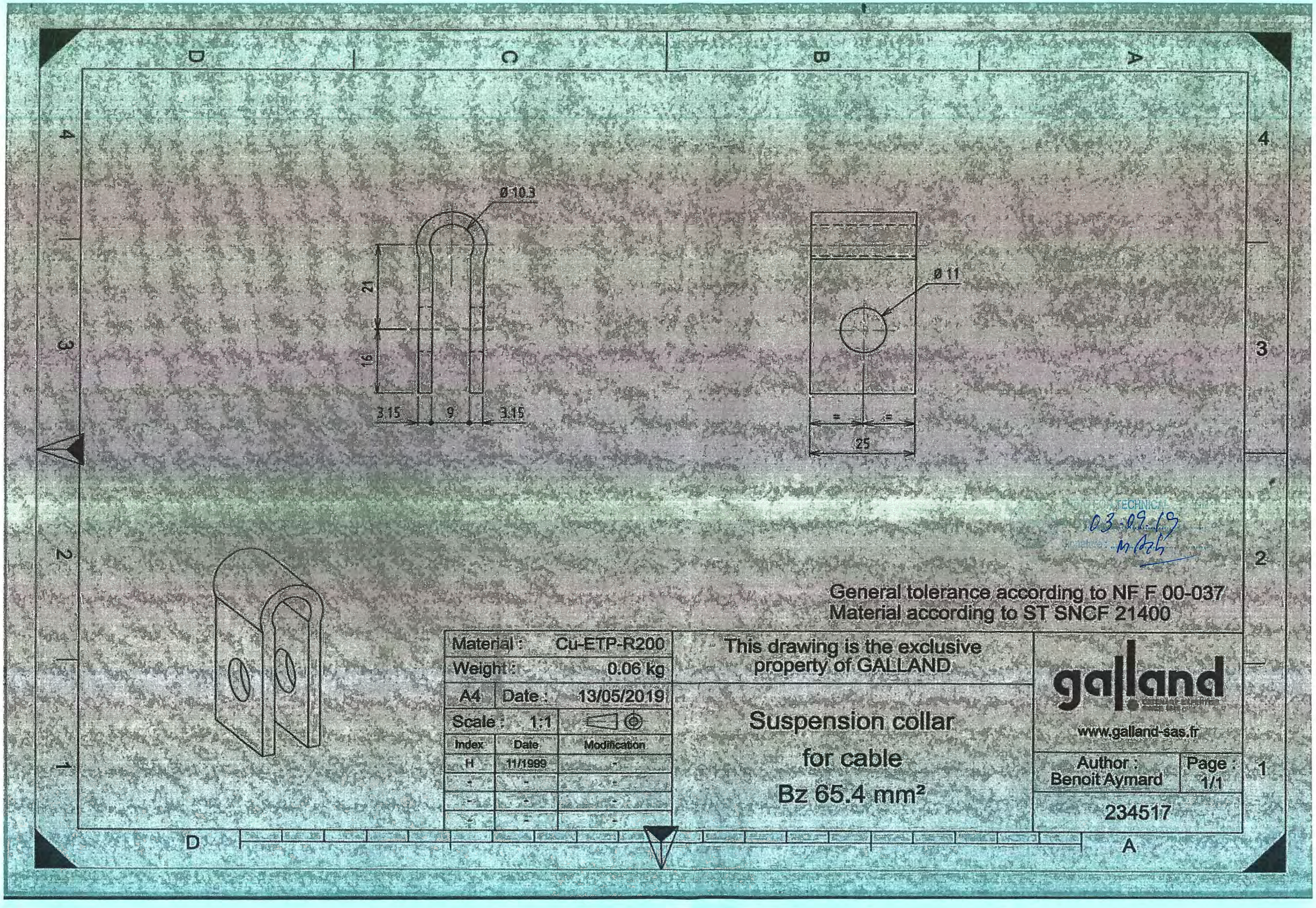
-	-	-


180
160
Ø16
23
Mechanical characteristics :
- Max. working load : 25 kN
- Min. breaking load : 60 kN
03-09-19
General tolerance according to NF F 00-037
Material according to ST SNCF 21400
All dimensions are in millimeter
Materials : X5CrNi18.10 + CuAl10Fe3
Weight : 0.7 kg
A3 Date : 13/05/2019
Scale : 1:1
Index Date Modification
This drawing is the exclusive property of GALLAND
Anchoring clamp for Bz 65 mm² cable
galland
www.galland-sas.com
Author : Benoit Aymard
Page : 1/1
N85010/GA-Bz65


Ø 10.3
21
16
3.15
9
3.15
Ø 11
=
=
25
D
C
B
A
4
3
2
1
TECHNICAL
03.09.19
Material : Cu-ETP-R200
Weight : 0.06 kg
A4
Date : 13/05/2019
Scale : 1:1
Index
Date
Modification
H
11/1999
-
This drawing is the exclusive property of GALLAND
Suspension collar
for cable
Bz 65.4 mm²
galland
www.galland-sas.fr
Author : Benoit Aymard
Page : 1/1
234517
General tolerance according to NF F 00-037
Material according to ST SNCF 21400

ANNEXURE-04

(Type Test report of Catenary Insulator "N51101")

TEST REPORT

N° 119013-637555 B

English version – Original in French

ISSUED TO : **Société GALLAND**
ZI de l'Illot
33240 LA LANDE DE FRONSAC

SUBJECT : **DIELECTRIC TESTS ON THREE INSULATOR ref. N51101 MANUFACTURED BY GALLAND.**

Dates of testing : January 31th and 1st February, 2013

This document includes 8 pages

Person present :
- Monsieur Ranjan Srivastava (R.D.S.O)
- Monsieur Girraj Kishore (R.D.S.O)
- Monsieur Jérôme Anselme (GALLAND S.A.S)
- Monsieur Benoit Aymard (GALLAND S.A.S)

Fontenay-aux-Roses, February 06, 2013

The Technical Manager,

Alain POSLUSZNY

LABORATOIRE CENTRAL DES INDUSTRIES ELECTRIQUES
S.A.S au capital de 15.745.984 €
RCS Nanterre B 408 363 174
33 avenue du Général Leclerc
F - 92266 FONTENAY AUX ROSES

Original in French signed by Alain POSLUSZNY

on February 06, 2013

LCIE
Laboratoire Central
des Industries Electriques
Une société de Bureau Veritas

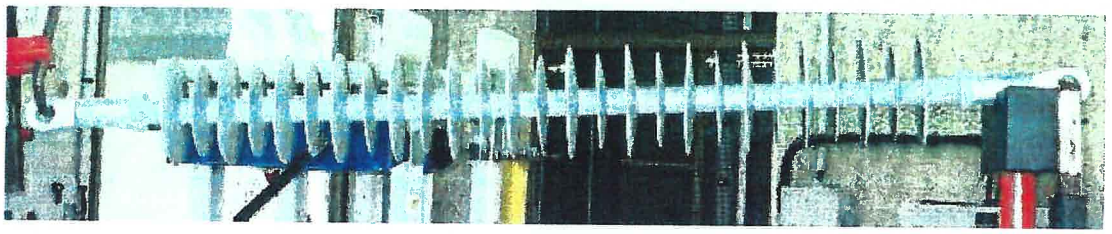
33, av. du Général Leclerc
BP 8
92266 Fontenay-aux-Roses cedex
France

Tél : +33 1 40 95 60 60
Fax : +33 1 40 95 86 56
contact@lcie.fr
www.lcie.fr

Société par Actions Simplifiée
au capital de 15 745 984 €
RCS Nanterre B 408 363 174

1 – TESTED ITEM

The tested item was a section insulator ref.N51101 (see document page 8) manufactured by GALLAND (following photograph) :



2 – TEST PROGRAM

The following tests were required according to IEC 60060-1 E2 (1989) and according to the instructions from the GALLAND company responsible :

- Test with lightning impulse voltage,
- Power frequency dry and wet test voltage.

3 – PLACE AND DATES OF TEST PERFORMANCE

Test will be conducted at LCIE the 01th February 2013 (Dry tests) and at CATU Company in BAGNEUX the 31st January 2013 (Wet tests) .

4 – TEST CONDITIONS AND RESULTS

During the tests, the atmospheric conditions (temperature, pressure and relative humidity) were noted and these values led to the application of a correction factor on the applied voltage.

4.1 – Test with lightning impulse voltage

The lightning shock wave generator was set to deliver a wave shaped 1,2/50 µs, in conformity with the recommendations of IEC 60060-1 E2 of 1989.

15 lightning shock waves of each polarity were applied between the two terminals of the insulator.

The time lapse between two shock waves was one minute.

In these conditions waves in positive and negative polarity were applied.

During this test, the atmospheric conditions were the following :

- Ambient temperature : 23.8 °C
- Atmospheric pressure : 98.4 kPa
- Relative humidity of the air : 29.9 %
- Wave shape obtained : (+) 1,36 / 46.8 µs
- Wave shape obtained : (-) 1,47 / 47.1 µs

Test sample	Voltage applied (kV)	Number of impulses and polarity	Remarks
N°1	350 350	15 (+) 15 (-)	no anomaly no anomaly
N°2	357.9 358	15 (+) 15 (-)	no anomaly no anomaly
N°3	357.1 355.9	15 (+) 15 (-)	no anomaly no anomaly

4.2 – Dry and wet power-frequency withstand voltage

A sine shaped 50 Hz AC test voltage was applied in the same conditions as for the previous test.

This voltage was applied for 60 seconds.

4.2.1 – Dry power-frequency withstand voltage

During this test, the atmospheric conditions were the following :

- Ambient temperature : 24,8 °C
- Atmospheric pressure : 98,2 kPa
- Relative humidity of the air : 30,2 %

Test sample	Withstand voltage kV (r. m. s.)	Remarks
N°1	150	No anomaly Duration : 60 seconds No disruptive discharge.
N°2	150	No anomaly Duration : 60 seconds No disruptive discharge.
N°3	150	No anomaly Duration : 60 seconds No disruptive discharge.

4.2.2 – Dry power frequency flashover voltage

Test sample	Withstand voltage (kV) (r. m. s.)	Remarks
N°1	>150	Limitation of the stand = 150 kV
N°2	>150	Limitation of the stand = 150 kV
N°3	>150	Limitation of the stand = 150 kV

4.2.3 – Wet power frequency flashover withstand voltage (Realised at CATU)

Tested item was in horizontal position (following photograph) :

The rain was applied according to the recommendations of IEC 60060-1 E2 standard of 1989 :

- Vertical component : 1,6 mm/min
- Horizontal component : 1,6 mm/min
- Water temperature : 18,2 °C ± 1°C
- Water conductivity : 100 µS/cm
- Room temperature : 21,7°C ± 2°C

4.2.3.1 – Withstand voltage test applied in rain

Test sample	Withstand voltage kV (r.m.s.)	Duration (min)	Remarks
N°1	149	1	Barometric pressure : 99.7 kPa No anomaly No disruptive discharge No perforation
N°2	149.5	1	Barometric pressure : 99.7 kPa No anomaly No disruptive discharge No perforation
N°3	149.4	1	Barometric pressure : 99.7 kPa No anomaly No disruptive discharge No perforation

4.2.3.2 – Wet power frequency flashover voltage

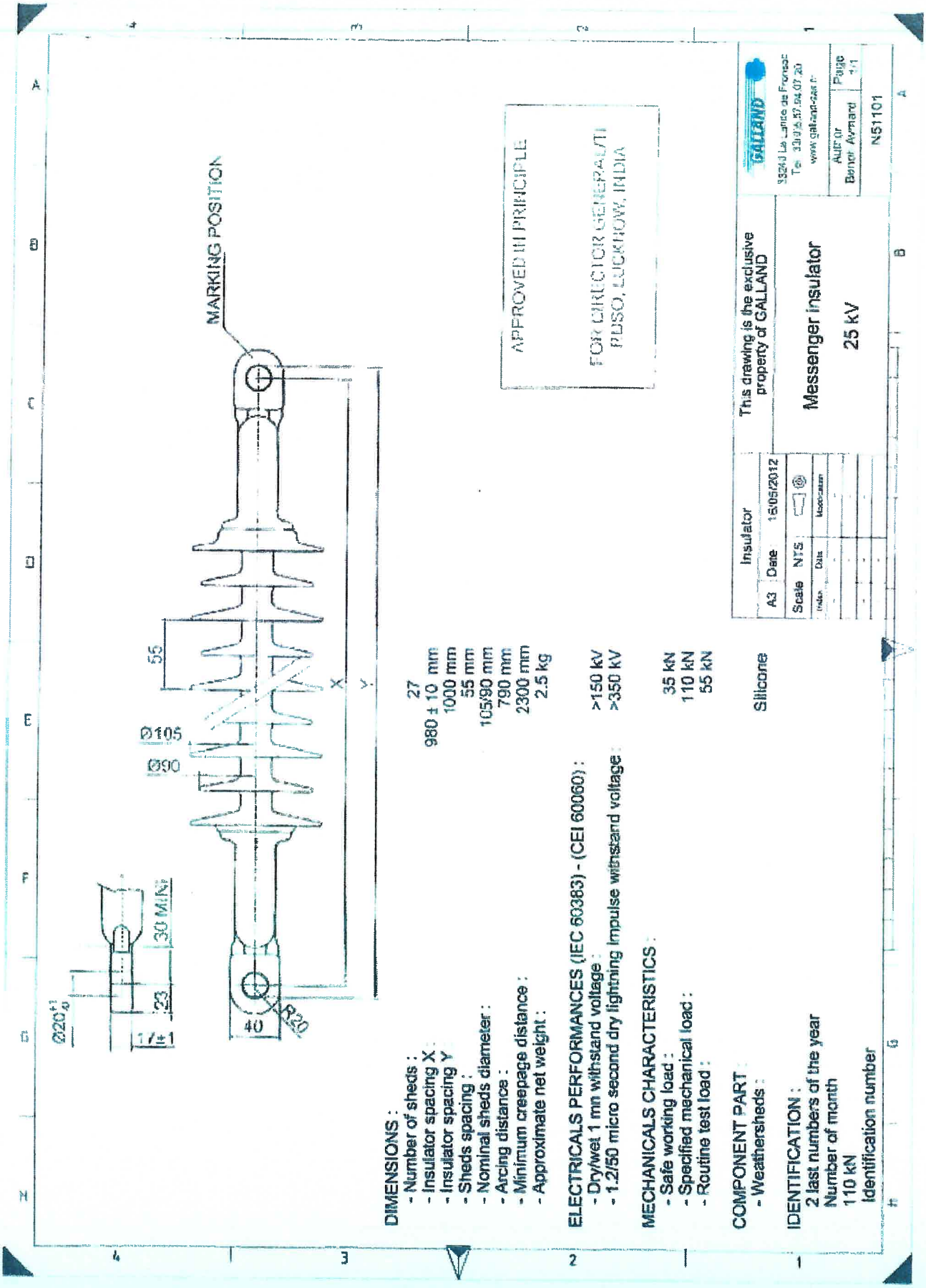
Test sample	Flashover voltage kV (r.m.s.)	Remarks
N°1	>150	Limitation of the stand = 150 kV
N°2	>150	Limitation of the stand = 150 kV
N°3	>150	Limitation of the stand = 150 kV

INDUSTRIAL EQUIPMENT TESTS : Transformers - HVA cubicles
MAXIMUM UNCERTAINTIES CHART

This chart shows the maximum uncertainty values according to tests that may be related in this document

Type of test	Method reference	Measurement uncertainty (ek = 2)
Voltage ratio measurement	IEC 60076-1	± 0,1 %
Cold resistances measurement	IEC 60076-1 HN 52-S-20 HN 52-S-24	± 0,25 %
No-load losses measurement - Current - Voltage - Power	IEC 60076-1 HN 52-S-20 HN 52-S-24	 ± 0,1 % ± 0,1 % ± 1 %
Load losses measurement - Current - Voltage - Power	IEC 60076-1 HN 52-S-20 HN 52-S-24	 ± 0,5 % ± 0,5 % ± 1 %
Temperature rise test under rated conditions - Winding temperature rise - Oil temperature rise	IEC 60076-2 HN 52-S-20 HN 52-S-24	 ± 1 K ± 0,5 K
Determination of maximal over-pressure which may occur with temperature rise	IEC 60076-2 HN 52-S-20 HN 52-S-24	± 2,5 mbar
Temperature rise test under overload conditions	HN 52-S-24	± 1,5 K
Power-frequency withstand voltage test - Test voltage - Peak voltage - Test duration	IEC 60076-3 IEC 60694 HN 52-S-20 HN 52-S-24	 ± 1 % ± 1,6 % ± 3,5 %
Induced AC withstand voltage test - Test voltage - Test duration	IEC 60076-3 HN 52-S-20 HN 52-S-24	 ± 1 % ± 3,5 %
Lightning impulse-voltage test - Impulse amplitude - Rising and falling time - Impulse tail duration	IEC 60076-3 IEC 60694 HN 52-S-24	 ± 2 % ± 7 % ± 5 %
Partial discharges (stated in pC)	IEC 60076-3 HN 52-S-20 HN 52-S-24	± 15 % or ± 1,5 pC

K = coverage factor


MARKING POSITION
55
Ø105
Ø90
X
Y
Ø220±1
30 MIN
23
17±1
40
R20
APPROVED IN PRINCIPLE
FOR DIRECTOR GENERAL/TI
RDSO, LUCKNOW, INDIA
GALLAND
This drawing is the exclusive property of GALLAND
Insulator
A3
Date 16/05/2012
Scale NTS
Messenger insulator
25 kV
N51101
DIMENSIONS :
- Number of sheds : 27
- Insulator spacing X : 980 ± 10 mm
- Insulator spacing Y : 1000 mm
- Sheds spacing : 55 mm
- Nominal sheds diameter : 105/90 mm
- Arcing distance : 790 mm
- Minimum creepage distance : 2300 mm
- Approximate net weight : 2.5 kg
ELECTRICALS PERFORMANCES (IEC 60383) - (CEI 60060) :
- Dry/wet 1 mn withstand voltage : >150 kV
- 1.2/50 micro second dry lightning impulse withstand voltage : >350 kV
MECHANICALS CHARACTERISTICS :
- Safe working load : 35 kN
- Specified mechanical load : 110 kN
- Routine test load : 55 kN
COMPONENT PART :
- Weathersheds : Silicone
IDENTIFICATION :
2 last numbers of the year
Number of month
110 kN
Identification number

PART - III

LIST OF STANDARD DRAWINGS AND SPECIFICATIONS OTHER THAN IMPORTED ITEMS

This Annexure contains reference to drawing number, charts, schedule specifications and may be referred for item other than imported items.

All references to drawings, charts, schedules or specifications given in this annexure shall be taken to be the version available as on date of issue of LOA of such drawings, charts and schedule of specifications as issued by the Purchaser.

Sl No.	Brief Description	Drawing		Mod No.
		Series	Number	
1.	Extra allowance for setting of structures on curves (1676 mm Broad gauge)	ETI/OHE/G	00111 Sh-1	B
2.	Standard setting of structures in the vicinity of signals (broad gauge)	-do-	00112 C	C
3.	Typical design of bearing foundation	-do-	00131	-
4.	Deleted-			
5.	Typical design of cantilever mast	RE/33/G	00141 Sh.3	-
6.	Standard drilling schedule of OHE masts 9.5 m long RSJ and BFB respectively	ETI/OHE/G	00144 Sh.3	C
7.	Span and stagger chart for (conventional OHE, Cad-Cu Catenary & Cu Contact Wire) wind pressure 75,112.5 & 150 kgf /sq. meter	ETI/OHE/G	00202 -	-
8.	Employment schedule for Cantilever mast regulated OHE cat.65/Cu and Cont 107/Cu, WP 112.5 kgf/Sq m without Ex & without RC	ETI/OHE/G	00153 Sh.1 E	E
9.	Employment schedule for Cantilever mast regulated OHE cat.65/Cu and Cont 107/Cu, WP 112.5 kgf/sq m without Ex & without RC	ETI/OHE/G	00153 Sh.2 E	E
10.	Employment schedule for Cantilever mast regulated OHE cat.65/Cu and Cont 107/Cu, WP 112.5 kgf/sq m without Ex & with RC.	ETI/OHE/G	00153 Sh.3 E	E
11.	Employment schedule for Cantilever mast regulated OHE cat.65/Cu and Cont 107/Cu, WP 112.5 kgf/sq m without Ex & without RC.	ETI/OHE/G	00153 Sh.4 D	D
12.	Employment schedule for Cantilever mast regulated OHE cat.65/Cu and Cont 107/Cu, WP 112.5 kgf/sq m at 35 XC & 28 kgf/Sq m at 4xC without (E x & RC)	ETI/OHE/G	00154 D	D
13.	Employment schedule of bracket tubes regulated pressure Conventional OHE (Cd Cu catenary & Cu contact wire 1000 kgf tension Each).	ETI/OHE/G	00158 Sh.1 (for -	-
		-do-	Sh.2(for wind pressure 112.5 Kgf/sq m	

		-do-	Sh.3(for wind pressure 150	
14.	Dropper schedule for – un-insulated Overlap spans.	-do-	00169	A
15.	Dropper schedule for – insulated Overlap spans.	-do-	00170	A
16.	Dropper schedule for conventional regulated OHE. With Zero pressure (1400/1400).	-do-	00177	A
17.	Adjustment chart of Regulating equipment 3-pulley Type 3:1 ratio.	-do-	00195	A
18.	Schematic arrangement of regulated OHE	-do-	02101	A
19.	Schematic arrangement of un-insulated overlap(3&4 span overlaps)	-do-	02121 Sh.4	A
20.	Schematic arrangement of insulated overlap.	ETI/OHE/G	02131 Sh.3	A
21.	Termination arrangement of OHE with 3 pulley type regulating equipment (3:1 ratio).	ETI/OHE/G	04212	B
22.	General distribution of droppers.	ETI/OHE/G	00161	-
23.	Outline of Pantograph (Broad gauge and meter gauge)	RE/33/G	00181	A
24.	General formation of single track Embankments and cutting (Broad gauge)	RE/33/G Sh.1	01101	A
25.	General formation of double track in Embankments and cutting (Broad gauge)	-do-	01102 Sh.1	A
26.	General formation of multiple tracks (1675mm. Gauge).	-do-	01103 Sh.1	A
27.	Standard anchor arrangement	-do-	01401	E
28.	Anchor arrangement with dwarf mast.	ETI/OHE/G	01402	B
29.	Schedule of anchor block for BG track	-do-	01403 Sh.1	D
30.	Double guy rod arrangement with anchor block for BG track..	-do-	01403 Sh.2	C
31.	Schedule of anchor block for BG track (Black cotton soil).	-do-	01403 Sh.3	B
32.	Standard guide tube arrangement on a mast and structures.	ETI/OHE/G	01505	-
33.	Trapezoidal counter weight arrangement on OHE structures.	-do-	01502	-
34.	Arrangement of 3 KV & 25 KV Pedestal insulator supports on OHE masts and portals.	-do-	01601	-
35.	Standard arrangement for mounting of number plate on OHE structure.	ETI/OHE/G	01701	A
36.	Schematic arrangement of regulated overhead equipment.	-do-	02101	A
37.	Typical arrangements of OHE on cantilever masts for double track section.	-do-	02102	-
38.	Typical arrangement for fixing of bracket assembly on 9.5 m mast and structure to suit raising of tracks(in future)	-do-	02102 Sh.3	-
39.	Mast on platforms (1676mm. Gauge)	ETI/OHE/G	02104 Sh.2	A
40.	Details of bracket arrangement on tangent and Curved tracks	-do-	02106 Sh.1	A
41.	Details of bracket arrangement for OHE (High speed).	-do-	02106 Sh.3	C

42.	Single bracket assembly on structures and dropped arms.	RE/33/G	02107	D
43.	Box type cantilever arrangement.	ETI/OHE/G	02108	A
44.	Arrangement at anti-creep.	-do-	02111	A
45.	Standard cantilever arrangement for boom anchor anti-creep location.	-do-	02113	-
46.	Schematic arrangement of un-insulated over Lap (type-I) 3 & 4 span overlaps.	RE/33/G	02121 Sh.1	F
47.	Schematic arrangement of insulated overlap.	ETI/OHE/G	02131 Sh.1	
48.	General arrangement of regulated OHE at turnout (overlap & crossed type).	-do-	02141	C
49.	General arrangement of regulated OHE at cross over (overlap & crossed type).	-do-	02151	
50.	Arrangement of neutral section	-do-	02161 Sh.1 of	C
51.	Arrangement of neutral section assembly (PTFE Type) at SWS	-do-	02162	-
52.	Arrangement of short neutral section.	-do-	02161 Sh.2 of	-
53.	Schematic arrangement of unregulated overhead equipment.	-do-	03101	-
54.	Standard termination of OHE (Regulated & un-regulated)	ETI/OHE/G	03121	D
55.	General arrangement of unregulated OHE at turnout (overlap and crossed type).	-do-	03151	-
56.	General arrangement of unregulated OHE crossovers and diamond crossings (overlap and crossed type).	-do-	03152 Sh.1	-
57.	General arrangement of unregulated OHE crossovers and diamond crossings.	-do-	03152 Sh.2	-
58.	General arrangement of head span.	-do-	03301	-
59.	General arrangement of pull off.	-do-	03201	A
60.	In span jumper connection between cat nary & contact wire.	-do-	05101	-
61.	Continuity jumper connection at un-insulated overlap.	-do-	05102	C
62.	Arrangement of anti-theft jumper.	-do-	05107	A
63.	Connection at turnouts.	-do-	05103	B
64.	Potential equalizer connection at insulated overlap and neutral section.	-do-	05104	-
65.	Connections at diamond crossing.	-do-	05106	A
66.	General arrangement of connections to OHE by copper cross feeder (150)	-do-	05121 Sh.1	C
67.	General arrangement of connections at switching station on double track section by copper cross feeder (150)	ETI/OHE/G	05122 Sh.1	C
68.	General arrangement of connections at switching station on multiple track section by copper cross feeder (150)	ETI/OHE/G	05123 Sh.1	C
69.	Suspension of 25kv feeder (spider) on OHE masts.	-do-	05143	B
70.	Termination of feeder, return conductor and return feeder (copper & aluminum).	RE/33/G	05145-1	

71.	Arrangement of suspension of double spider 25 KV feeder and return feeder between sub- station and feeding station.	-do-	05152	C
72.	Assembly of section insulators.		051181	C
73.	General arrangement of earth wire on OHE mast.	ETI/OHE/G	05201	A
74.	General arrangement of earth wire on OHE mast.	ETI/OHE/G	05201-1	-
75.	Arrangement of transverse bonds	ETI/OHE/G	05251	A
76.	Connection of return conductor to track.	-do-	05306	F
77.	Suspension arrangement of aluminum return conductor (spider) on traction structures.	-do-	05306	B
78.	Suspension of return conductor (spider) from boom of structures (with clevis type disc insulators).	-do-	05312	A
79.	Connections between OHE and aluminum return conductor at booster stations.	ETI/OHE/G	05413	B
80.	Mounting of 25kv isolators on OHE structures (General arrangement).	-do-	05513 Sh.1	A
81.	Details of small part steel work for supporting 25kv isolator on new T.C.C. boom.	-do-	05513 Sh.2	A
82.	Connection from isolator to OHE	-do-	05516	A
83.	Characteristics of conductors/bus bar for 25kv AC traction	-do-	05600	A
84.	Arrangement of mounting 25 KV/240,10 KVA LT supply transformer.	ETI/OHE/G	05522	-
85.	Employment schedule for cantilever mast regulated OHE Caty.65 Cu.Cont.107/CU (WP 75 kgf/sq. m.)	ETI/C	0702(OHE only)(Sh.1)	A
		ETI/C	(OHE+EW) (S h.2)	A
86.	Employment schedule for Tramway type regulated OHE (WP 75 kgf/sq. m.) without EW& without RC.	ETI/C	0704	A
87.	Employment schedule for 8”x8”35 lbs BFB (9.5 M. long) (WP 112.5 kgf/sq. m. Cat.65/CU & Cont.107/Cu. cantilever mast regulated OHE Caty.65 Cu.Cont.107/CU.	ETI/C	0702(OHE only)(Sh.1)	A
88.	Employment Schedule for OHE mast overlap central location with 3.0 m implantation. Cat. 65/Cu & Cont. 107/Cu. WP 75 kgf/sq. m.	-do-	0709	A
89.	Employment Schedule for OHE mast overlap central location with 3.0 m implantation. Cat. 65/Cu & Cont. 107/Cu. WP 112.5 kgf/sq. m.	-do-	0710	A
90.	Employment Schedule for OHE mast (9.5m) overlap central location with 3.0 m implantation. Cat. 65/Cu & Cont. 107/Cu. WP 75 kgf/sq.m.	-do-	0711	A
91.	Employment Schedule for OHE mast overlap central location with 3.0 m implantation. Cat. 65/Cu & Cont. 107/Cu. WP 112.5 kgf/sq. m.	-do-	0712	A

92.	Employment Schedule for (9.5m) long 200x200x49.9 kgf.OHE mast overlap inter location with 3.0 m implantation. Cat. 65/Cu & Cont. 107/Cu. WP 75 kgf/sq. m.	-do-	0713	A
93.	Employment Schedule for 9.5 m. long 200x200x49.9 kg mast Cat. 65/Cu & Cont. 107/Cu. WP 112.5 kgf/sq. m.	-do-	0714	A
94.	Employment Schedule for OHE mast (9.5 m) overlap Anchor location with 3.0 m implantation. Cat. 65/Cu & Cont. 107/Cu. WP 75 kgf/sq. m.	-do-	0715	A
95.	Employment Schedule for OHE mast overlap anchor location with 3.0 m implantation. Cat. 65/Cu & Cont. 107/Cu. WP 112.5 kgf/sq. m.	-do-	0716	A
96.	Employment schedule 0721 for regulated OHE mast (9.5 m) wind pressure 75 kgf/sq. m. for composite OHE (1000&1000)kgf. tension.	ETI/C	0721 (OHE	
		-do-	(OHE+EW)(Sh2	
		-do-	(OHE+RC) (Sh.3)	
		-do-	(OHE+EW+RC)(Sh.4)	
97.	Employment Schedule for regulated OHE mast (9.5m) wind pressure 75 kgf/sq. m. for composite OHE with extra setting distance Overlap Anchor location.	-do-	0722	-
98.	Employment Schedule for regulated OHE mast (9.5m) wind pressure 75 kgf/sq. m. for composite OHE with extra setting distance Overlap center location.	-do-	0723	-
99.	Employment Schedule for regulated OHE mast (9.5m) wind pressure 75 kgf/sq. m. for composite OHE with extra setting distance Anchor location.	-do-	0724	-
100.	Employment Schedule for pre-stressed concrete mast (PC-42) 9.5 m long, for conventional OHE, Normal Location (WP 150,112.5 and 75 kgf/sq. m.) regulated OHE mast (9.5m) wind pressure 75 kgf/sq. m.	-do-	0725	-
101.	Standard portal (N.O,P,R,G & Double BFB type)	ETI/C	0064	
102.	Volume chart and equivalent chart of foundation.	-do-	0058 Sh.1	E
103.	-do- new pure gravity	-do-	0058 Sh.2A	C
104.	-do- Dry black cotton soil (NBC type)A	-do-	0058 Sh.3A	-
105.	-do- new pure gravity(500m,exposed)	-do-	0058 Sh.4	A
106.	-do- Dry black cotton soil (NBC type)2.5m depth.	-do-	0058 Sh.5	A
107.	-do- (for a direct load of 4000 Kg).	-do-	0058 Sh.6	A
108.	Special BFB portal for 5 tracks(general C arrangement)	ETI/C	0026 Sh.1	C
109.	Protective screen at foot over bridge and road over bridge.	-do-	008	F

110.	Chart for portal foundation	-do-	005/68	
111.	Muff for OHE structures	-do-	007/68	D
112.	Structure muff for sand core foundations.	-do-	0012/69	D
113.	9.5 m standard traction mast (fabricated 'K' series)	-do-	0018-2	D
114.	Remote control cubicle at switching station, foundation, RCC slab Building plan & steel door.	-do-	0067	B
115.	9.5 m standard traction mast (fabricated with bottom plates 'B' series)	ETI/C	0071	E
116.	Details of OHE foundation in soft rock (bearing capacity 45,000 Kgf/sq. m.	-do-	0059	A
117.	Details of foundation for fencing upright	-do-	0032	A
118.	Employment schedule for switching and booster station main masts	ETI/C	0185	B
119.	Drilling schedule for S-1 mast	ETI/C	0030	F
120.	-do- S-2 mast	-do-	0031	D
121.	-do- S-3 mast (length 11.4m).	-do-	0180	C
122.	Drilling schedule for 8"x6"x35 lbs RSJ mast 8.0 m long for booster transformer station Type S-4	-do-	0036	E
123.	Drilling schedule for S-5 mast (11.4m long)	-do-	0042	E
124.	-do- S-6 mast (length 12.4m)	-do-	0181	C
125.	-do- S-7 –do-	-do-	0182	C
126.	-do- S-8 -do-	-do-	0182	C
127.	-do- S-9 mast (length 9.4m)	-do-	0184	C
128.	General arrangement & details of fencing panels & gate for switching station.	-do-	0186 Sh.1	E
129.	Details of fencing upright and anti-climbing device for switching station	-do-	0186 Sh.2	E
130.	S-100 fabricated mast for mounting LT supply transformer and drop out fuse switch at switching station.	-do-	0043	B
131.	S-101 details of mast for supporting isolator inside switching station.	ETI/C	0044	A
132.	Details of anchor beam or SP, SSP, & FP.	-do-	0033	D
133.	Details of small part steel for switching station.	ETI/C	0034 Sh.1	K
134.	Details of bracing for switching & B.T. masts.	ETI/C	0034 Sh.2	B
135.	Details of small parts steel of out rigger for switching stations and booster transformer stations.		0037	C
136.	Details of small parts for booster transformer stations.	ETI/C	0040	E
137.	Details of pre-cast cable trench for switching station.	-do-	0038	E
138.	Standard 'R' type portal rod laced general arrangement.	-do-	0011/69 Sh.1	C
139.	Standard 'G' type portal special upright and end piece.	-do-	0056	C
140.	Short bored pile foundation for traction mast(permissible BM & volume)	-do-	0062	C

141.	Chart for portal foundations in dry black cotton soil safe bearing capacity 16500 Kg/sq.mm.	-do-	0063	B
142.	Dwarf mast foundation on wet & dry black cotton soil.	RE/ALD/OHE/SK/C	02	-
143.	Typical design of new pure gravity foundation.	ETI/SK/C	131	-
144.	Typical design of side gravity foundation	-do-	142	-
145.	Rock Anchor for BG Track.	ETI/SK/C	208	-
146.	Bracket fitting for PSC Masts capacity- 4.200 kg. m.	ETI/SK/C	214 Sh.1	E
147.	SPS details of earth wire clamp of PSC mast.	ETI/SK/C	214 Sh.1 of 2	-
148.	Special arrangement of OHE under over line structure.	ETI/OHE/SK	529	D
149.	Ear thing and bonding of PSC mast	ETI/OHE/SK	537 Sh.2 of 2	D
150.	Typical Ear thing arrangement in SPUN D PSC Mast with 18mm. dia rod.	-do-	537 Sh.2	B
151.	Arrangement of antitheft jumper at overlap.	ETI/OHE/SK	566	-
152.	Cat nary dropper assembly	ETI/OHE/P	1190	B
153.	Parallel clamp (20/20)	ETI/OHE/P	1550	E
154.	Standard guide tube assembly.	ETI/OHE/P	5060-2	C
155.	Standard anti-wind clamp.	-do-	2550-1/2	L
156.	Multiple cantilever cross arm assembly.	RE/33/P	3120	H
157.	Anchor fitting assembly on rolled sections.	ETI/OHE/P	3230	C
158.	Anchor fitting assembly on ‘K’ series, TCC masts and ‘P’ type portal upright.	-do-	3240	D
159.	Anchor assembly on ‘N’ and ‘O’ type portal upright.	-do-	3250	D
160.	Structure bonds	-do-	7000	E
161.	Ear thing station	-do-	7020	B
162.	Longitudinal rail bond	-do-	7030	F
163.	Short super mast assembly.	ETI/C/P	8010	G
164.	Long super mast assembly	-do-	8020	C
165.	Bracket attachment assembly on portal upright (N,O,R,P,G & BFB Type).	-do-	8030	B
166.	Super mast assembly on portals.	-do-	8050	C
167.	Medium super mast assembly.	ETI/OHE/P	8060	C
168.	Compensating plate.	-do-	5191-1/2	D
169.	Suspension clamp.	RE/33/P	1160	J
170.	Double suspension clamp.	-do-	1170	K
171.	Double suspension lock plate.	-do-	1172	C
172.	Cat nary splice (65)	ETI/OHE/P	1090	-
173.	Typical location & schematic connection diagram for a three interrupter switching station.	ETI/PSI	003	E
174.	Typical general arrangement of a three interrupter switching station.	-do-	004	E
175.	Typical location plan & general arrangement for sectioning & paralleling station.	-do	005	E
176.	Typical location plan & arrangement for A feeding station	-do	006	E
177.	Typical general arrangement at a Booster transformer station (with 4 cross feeder) type- III.	-do	013	B

178.	Typical general arrangement of 280 KVA Booster transformer station (with 4 cross feeder type-III.	-do-	018	A
179.	Typical general arrangement at a booster transformer station. (Without cross feeder type-I.	-do-	011	C
180.	Typical number plate for auxiliary transformer.	ETI/PSI/P	7525	-
181.	Typical fencing and anti-climbing arrangement at switching station.	ETI/PSI	104	E
182.	Typical ear thing layout of sub-sectioning and paralleling station.	-do-	201	B
183.	Typical ear thing layout of a sectioning and paralleling station.	-do-	202	B
184.	Typical ear thing layout of a feeding station.	-do-	203	B
185.	Ear thing details for interrupter LT supply transformer 25 KV lightning arrestors PT Type-I (S-100 masts, S-101 mast, fencing upright and n masts).	-do-	204	A
186.	Typical ear thing layout at a booster transformer stations (without cross feeder) for Type-I & II.	-do-	211-1	A
187.	Typical cable run layout of a sub-sectioning & paralleling station.	-do-	301	C
188.	Typical cable run layout of a sectioning and paralleling station.	-do-	302	C
189.	Typical cable run layout of a feeding station.	-do-	303	B
190.	Typical ear thing layout at a booster transformer station (with 4 cross feeder for Type-III,IV and V.	ETI/PSI	212	B
191.	Typical drawing for a terminal board.	-do-	501	C
192.	36mm. Aluminum Bus terminal	ETI/PSI/P	6480	C
193.	-do- Splices.	-do-	6490	B
194.	-do- Tee connector.	-do-	6500	C
195.	36mm. Aluminum terminal.	-do-	6510	D
196.	36/15 Tap connector.	-do-	6520	B
197.	36mm. Aluminum flexible bus splice.	-do-	6550	B
198.	36mm. Alu. Bus splice cum tee connector.	-do-	6560	B
199.	Typical number plate for interrupter and double pole isolator.	-do-	7520	B
200.	Typical number plate for potential transformer type.	-do-	7521	B
201.	Typical number plate for booster transformer.	-do-	7522	B
202.	Standard plan Remote Control cubicle at switching station.	RECivil/ BS-11/95		
203.	Typical details of pressed steel door window and ventilator.	RE/Civil/S-115/95	R1	-
204.	Bolted base connection for portals located drains	ETI/ C	0010	C
205.	Details of base plate for mast on drains in station yards.	-do-	6002/68	A

LIST OF STANDARD DRAWINGS FOR COMPOSITE OHE (REGULATED):

206.	Employment schedule for OHE masts unregulated OHE without RC & EW (WP=150 kgf/m2 at 10 deg.C).	ETI/OHE/G	00150	D
207.	Employment schedule of bracket tube regulated conventional OHE (Cd-Cu catenary and Cu-contact wire (1000 kgs tension each)) for wind pressure 150 kgf/m2 at 10 deg C.	ETI/OHE/G	00158 Sh.3	-
208.	Employment schedule of bracket tubes un regulated conventional OHE (Cd-Cu catenary and Cu-contact wire)	ETI/OHE/G	00159 Sheet-3	-
209.	Schematic arrangement of un-insulated overlap (Al. Alloy) catenary and copper contact wire.	ETI/OHE/G	02121 Sh.3	-
210.	Schematic arrangement of insulated overlap for (Al. Alloy) catenary & Cu Contact wire.	ETI/OHE/G	02131 Sh.2	-
211.	General arrangement of regulated composite OHE at turnouts (overlap and crossed type)	ETI/OHE/G	02141 Sh.2	-
212.	Standard termination of Regulated composite OHE.	-do-	03121 Sh.2	B
213.	In span jumper connection between Alu. Alloy cat nary & copper contact wire.	-do-	05101 Sh.2	B
214.	Continuity jumper connection at un-insulated overlap(Al. Alloy cat nary and copper contact wire).	-do-	05102 Sh.2	-
215.	Connections at turnouts for composite OHE.	-do-	05103 Sh.2	-
216.	Potential equalizer connection at insulated overlap& neutral section (Al. Alloy cat nary & copper contact wire).	-do-	05104 Sh.2	-
217.	Connection at diamond crossing for composite OHE.	-do-	05106 Sh.2	C
218.	General arrangement of connection to composite OHE by cross feeder (SPIDER)	-do-	05124 Sh.2	C
219.	General arrangement of connection at switching station on double track section for composite OHE.	-do-	05125 Sh.2	C
220.	General arrangement of connection at switching station on multiple track sec.(with composite OHE and spider cross feeder).	-do-	05126 Sh.2	C
221.	Assembly of section insulator (with Al. Alloy cat nary and copper contact wire).	-do-	05181 Sh.2	
222.	Std. Arrangement of supporting cantilevers on Boom of portals and TTC (to avoid Bird's nesting).	ETI/C	0076	C
	Employment schedule for OHE mast (9.5 M) wind pressure 112.5 kg/f sq. m. for composite OHE (1000+ 1000) Kgf Tension.			
223.	OHE only.	ETI/C/0717	Sh.1	-
224.	-do- OHE + EW		Sh.2	-
225.	-do- OHE + RC	ETI/C/0717	Sh.3	-

226.	-do- OHE+EW+RC		Sh.4	-
	Employment schedule for OHE Mast (9.5 M) wind pressure 112.5 kgf/sq.m. with 3.0 m implantation composite OHE (1000+1000) KGF Tension.			
227.	-do- Overlap anchor location.	ETI/C/0718		-
228.	-do- Overlap Central location	ETI/C/0719		-
229.	-do- Overlap inter location	ETI/C/0720		-
230.	Employment schedule for OHE mast (9.5m) for wind pressure 150 kgf/m2 copper OHE	ETI/C	0726 Sheet-1	-
231.	Employment schedule for OHE mast (9.5m) for wind pressure 150 kgf/m2 copper OHE & EW.	ETI/C	0726 Sheet-2	-
232.	Employment schedule for OHE mast (9.5m) for wind pressure 150 kgf/m2 copper OHE & RC.	ETI/C	0726 Sheet-3	-
233.	Employment schedule for OHE mast (9.5m) for wind pressure 150 kgf/m2 copper OHE, RC & EW.	ETI/C	0726 Sheet-4	-
234.	Employment schedule for OHE mast (9.5m) for wind pressure 150 kgf/m2 copper OHE with higher implantation overlap anchor location.	-do-	0727	-
235.	Employment schedule for OHE mast (9.5m) for wind pressure 150 kgf/m2 copper OHE with higher implantation overlap central location.	-do-	0728	-
236.	Employment schedule for OHE mast (9.5m) for wind pressure 150 kgf/m2 copper OHE with higher implantation overlap inter location.	-do-	0729	-
237.	Employment schedule for Tramway type regulated OHE WP 150 kgf/m2 without RC & EW.	-do-	0706	A
238.	Aluminum Alloy cat nary suspension clamp (MCI)	ETI/OHE/ S K	176	D
239.	Double suspension lock body (Galvanized MCI)	-do-	205	B
240.	Parallel grove clamp (14/9).	-do-	123	D
241.	Parallel grove clamp (18/14)	-do-	231	D
242.	Cat nary dropper clip assembly with bimetallic washer.	-do-	333	D
243.	Envelope type end fitting assembly for all Al. Alloy standard Cat. Wire (size 19/2.79mm).	-do-	436	B
244.	Crimp type repair sleeve for AAA standard cat nary wire.	-do-	285	C
245.	Catnary splice (cone type) AL. Alloy cat nary.	-do-	134	D
246.	Aluminum cat nary suspension clamp assembly (MCI)	-do-	468	A
247.	Double suspension clamp assembly (MCI for Al. Alloy. Cat nary).	-do-	469	A

248.	Span and stagger chart for composite OHE	-do-	375	A
249.	Double suspension clamp body for Al. Alloy. Cat nary.	-do-	1171-1	A

LIST OF STANDARD SPECIFICATIONS:

S. NO.	TITLE OF SPECIFICATION	SPECIFICATION NO.
1	2	3
1.	Annealed standard copper conductor for jumper wire.	ETI/OHE/3(2/94) with A&C slip No.1 of 4/95.
2.	Copper bus bar	RE/30/OHE/5(11/60)
3.	Structural steel tubes.	ETI/OHE/11(5/89)
4.	Hot dip zinc galvanization of steel mast (Rolled and Fabricated) tube and fittings used on 25 kV AC OHE.	ETI/OHE/13(4/84) with A&C slip No.1 of 5/86, 2 of 4/90 and 3 of 4/90.
5.	Stainless steel wire rope.	TI/SPC/OHE/WR/1060(06/06) with A&C slip No. 2 of 05/07
6.	Solid core porcelain insulators for 25 kV, 50 Hz Single phase overhead traction lines.	TI/SPC/OHE/INS/0070(04/07) with A & C Slip No. 1 & 2 (10/16)
7.	25 KV single and double pole isolators.	ETI/OHE/16(1/94) with A & C slip No. 1 & 2 (03/04)
8.	Steel Fasteners and Stainless Steel Fasteners for 25 kV AC Traction Steel Overhead Equipment	TI/SPC/OHE/FASTENERS/0120 with A & C slip No. 5 (03/13)
9.	Aluminum alloy section and tubes.	ETI/OHE/21(9/74).
10.	Principles for OHE Layout Plans and Sectioning Diagrams for 25 kV AC Traction	ETI/OHE/53 (6/88) with A & C slip no. 5 (11/06)
11.	Section insulators assembly.	TI/SPC/OHE/LWTSI/0060 (Rev. 1) with A & C slip no. 1 (07/16)
12.	Enameled steel plates	ETI/OHE/33(08/85).
13.	Retro-reflective Structure Number Plates	ETI/OHE/33A(12/97) with A & C Slip No. 1 to 8 (11/12)
14.	Galvanized steel wire Rope	ETI/OHE/36(12/73) with A&C slip No.1 of (5/98).
15.	Regulating equipment (a) winch type (5:1)	ETI/OHE/48(7/84), with A&C slip No.3 (12/04).
	(b) 3 pulley type (3:1)	TI/SPC/OHE/ATD/0060 Rev. 1 with A&C slip No. 1 (09/16)
16.	Fittings for 25 kV, 50 HZ, AC Overhead Traction equipment.	ETI/SPC/OHE/FITTINGS/0130 with A&C slip No.1 (10/13)
17.	Cadmium copper conductors for overhead Rly Traction	ETI/OHE/50(6/97) with A&C slip No. 1 to 5 (09/16)
18.	All Alu. Alloy, Stranded catenary wire 19/2.79 mm.	ETI/OHE/54 (2/85) with A&C slip No.2 (10/92)
19.	Bimetallic (AL/Cu) strip for 25 KV traction OHE.	ETI/OHE/55(4/90)
20.	Short neutral section assembly (phase Break).	TISPC/OHESNS/0000 (Rev. 1) with A&C slip No. 1 (01/16).
21.	Code for bonding and earthing for 25 kV, single phase, 50 Hz, AC Traction system.	ETI/OHE/71(11/90) with A&C slip No.2 (3/93)
22.	Insulated cadmium copper catenary 19/2.10 mm dia for provision under overline structures in the	TI/SPC/OHE/INSCAT/0000 with A & C slip No. 1 & 2 (09/16).

NOTE:

1) Above specifications can be purchased from RDSO/office of CAO/CORE/ALD on payment of their cost.

2) For structural steel (standard quantity) please refer IS: 2062 – 1992.

3) Any amendment in specification and drawings subsequent to LOA, if required to be carried out shall need approval of DFCCIL duly considering the financial implication of the same either in upward or downward direction.

ANNEXURES

ANNEXURE-I

Performa for Experience Certificate. {on the letter head of the issuing department}

M/s……..... has executed the following work to this department and has completed the work successfully. The details are as under:

1. Name of work:

2. Agreement/contract number:

3. Date of start of work:

4. Date of completion of work:

5. Total value of work during the contract period (if completed):

6. In case of on-going work, please indicate the annual payment for
   a) F.Y. 2020-21
   b) F.Y. 2019 -20
   c) F.Y.2018-19

(Name and Signature of the officer with seal of the department and phone no.)

ANNEXURE-II

Performa for Affidavit. {on the letterhead of the bidder}

I _____ Proprietor/Director/Partner of the firm M/s._____ do hereby solemnly affirm that the firm M/s._____ has never been black listed/debarred by any organization/office and there has not been any work cancelled against them for poor performance in the last three years reckoned from the date of invitation of Tender.

Signature of
Proprietor/Director/Partner

Annexure-III

CERTIFICATION OF FAMILIARISATION

A. I/We hereby solemnly declare that I/We have visited the site of work and have familiarized myself/ourselves of the working conditions there in all respects and in particular, the following:

a) Topography of the Area.
b) Climatic condition and law and order situation in project area.

B. I/We have kept myself/ourselves fully informed of the provisions of this tender document comprising Instructions to the Tenderers, General Conditions of the Contract, Special Conditions, special terms and conditions apart from information conveyed to me/us through various other provisions in this tender document.

C. I/We have quoted my / our rates as "Percentage above / below / at par" of costs as per Schedule of items Rates **in Offer Sheet,** taking into account all the factors given above.

(Signature of Tenderer/s)

ANNEXURE – IV

SUPPLEMENTARY AGREEMENT

Articles of Agreement made on this …… in the year ……. and between DFCCIL acting through the Chief General Manager hereinafter called as one party and …….. of the second part.

Where the party hereto of the second part executed an agreement with the party hereto of the first part being agreement No. ……. dated ……. for the performance of ……. herein called the principal agreement.

And whereas it was agreed by and between the parties hereto that the works would be completed by the party hereto of the second part on …… "date last extended" and whereas the party hereto of the second part has executed the work to the entire satisfaction of the party hereto of the first part and whereas the party hereto of the first part already made payments to the party hereto of the second part diverse sums from time to time aggregating to **Rs.** …….. including the final bill bearing voucher No.……dated……. (the receipt of which is here by acknowledged by the party here to of the second part) in full and final settlement of all his claim under the principal agreement.

Now it is hereby agreed by and between the parties in the consideration of sums already paid by the party hereto of the first part to the party hereto of the second part against all outstanding dues and claims for all works done under the aforesaid principal agreement including / excluding security deposit, the party hereto of the second part have no further dues / claims against the party hereto of the first part under the said principal agreement.

It is further agreed by and between the parties that they party hereto of the second part has accepted the said sums mentioned above in full and final satisfaction of all its dues and claims under the said principal agreement.

It is further agreed and understood by and between the party that in consideration of the payment already made under the agreement the said principle agreement shall finally discharged and rescinded all the terms and conditions including the arbitration clause.

It is further agreed and understood by and between the parties that the arbitration clause contained in the said principal agreement shall cease to have any effect and / or shall seems to be nonexistent for all purposes.

Signature of the Tenderer/s

For and on behalf of

Witness of the signatures

Witness ……..
……

1.

2.

ANNEXURE-V

AFFIDAVIT

FORMAT FOR AFFIDAVIT TO BE UPLOADED BY TENDERER ALONGWITH THE TENDER DOCUMENTS

(*To be executed in presence of Public notary on non-judicial* ***stamp paper of the value of Rs. 100/-.*** *The stamp paper has to be in the name of the tenderer*) **

I…….. .....(*Name and designation*)** appointed as the attorney/authorized signatory of the tenderer (including its constituents),M/s……(hereinafter called the tenderer) for the purpose of the Tender documents for the work of ……as per the **E- Tender No.: ------ Date----------** of (DFCCIL), do hereby solemnly affirm and state on the behalf of the tenderer including its constituents as under:

1) I/we the tenderer (s), am/are signing this document after carefully reading the contents.
2) I/We the tenderer(s) also accept all the conditions of the tender and have signed all the pages in confirmation thereof.
3) I/we hereby declare that I/we have downloaded the tender documents from Indian Railway website www.ireps.gov.in . I/we have verified the content of the document from the website and there is no addition, no deletion or no alteration to the content of the tender document. In case of any discrepancy noticed at any stage i.e. evaluation of tenders, execution of work or final payment of the contract, the master copy available with the DFCCIL shall be final and binding upon me/us.
4) I/we declare and certify that I/we have not made any misleading or false representation in the forms, statements and attachments in proof of the qualification requirements.
5) **I/ We also understand that my/our offer will be evaluated based on the documents/credentials submitted along with the offer and same shall be binding upon me/us.**
6) **I/We declare that the information and documents submitted along with the tender by me/us are correct and I/we are fully responsible for the correctness of the information and documents, submitted by us.**
7) I/we undersigned that if the certificates regarding eligibility criteria submitted by us are found to be forged/false or incorrect at any time during process for evaluation of tenders, it shall lead to forfeiture of the tender EMD besides banning of business for five year on entire IR. Further, I/we (*insert name of the tenderer*)**……..and all my/our constituents understand that my/our offer shall be summarily rejected.
8) I/we also understand that if the certificates submitted by us are found to be false/forged or incorrect at any time after the award of the contract, it will lead to termination of the contract, along with forfeiture of EMD/SD and Performance guarantee besides any other action provided in the contract including banning of business for five year on entire IR.

DEPONENT
SEAL AND SIGNATURE
OF THE TENDERER

VERIFICATION

I/We above named tenderer do hereby solemnly affirm and verify that the contents of my/our above affidavit are true and correct. Nothing has been concealed and no part of it is false.

DEPONENT

SEAL AND SIGNATURE
OF THE TENDERER

Place:
Dated:

**The contents in Italics are only for guidance purpose. Details as appropriate, are to be filled in suitably by tenderer. Attestation before Magistrate/Notary Public .

ANNEXURE-VI

(Guarantee –Bond offered by bank to DFCC in connection with the execution of Contracts) (SD)
GUARANTEE BOND FORMAT
(To be used by approved Schedule Banks)

1. In consideration of the Employer DFCCIL (herewith called " The Employer") having agreed to exempt_____(hereinafter called "The said Contractor(s)") from the demand, under the terms and conditions of an Agreement No……. dated _____made between _____and _____for_____(hereinafter called the "The Said Agreement") of **security deposit** for the due fulfillment by the said contractor(s) of the terms and conditions contained in the said Agreement,onproductionofaBankGuaranteeforRs._____(Rupees_____only), we, _____(indicate the name of the bank) (hereinafter referred to as " The Bank") at the request of contractor(s) do hereby undertake to pay to the Employer an amount not exceeding Rs._____against any loss or damage caused to or suffered or would be caused to or suffered by the Employer by reason of any breach by the said contractor(s) of any of the terms and conditions contained in the said Agreement.

2. We_____(indicate the name of the Bank) do hereby undertake to pay the amounts due and payable under this Guarantee without any demur merely on a demand from the DFCCIL stating that the amount claimed is due by way of loss or damages caused to or would be caused to or suffered by the DFCCIL by reason of any breach by the said Contractor(s)of any of the terms or conditions contained in the said Agreement or by reason of the Contractor(s) failure to perform the said Agreement. Any such demand made on the Bank shall be conclusive as regards the amount due and payable by the Bank under this Guarantee. However, our liability under this Guarantee shall be restricted to an amount not exceeding Rs. _____.

3. We undertake to pay to the Employer any money so demanded not withstanding any dispute or disputes raised by the Contractor(s)/ Supplier(s) in any suit or proceeding pending before any Court or Tribunal relating thereto our liability under this present is being absolute and unequivocal. The payment so made by us under this Bond shall be valid discharges of our liability for payment hereunder the Contractor(S)/Supplier(s) shall have no claim against us for making such payment.

4. We _____(indicate the name of Bank) further agree that the guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of the said Agreement and that it shall continue to be enforceable till all the dues of the Employer under or by virtue of the said Agreement have been fully paid and its claims satisfied

or discharged or till _____the Employer/DFCCIL certify that terms and conditions of the said Agreement have been fully and properly carried out by the said Contractor(s) and accordingly discharges the Guarantee. Unless a demand or claim under this Guarantee is made on us in writing on or before the _____, we shall be discharged from all liability under this Guarantee thereafter.

5. At any time during the period in which this guarantee is valid the Employer may request for its extension and the Bank will extend this guarantee under the same condition for the required time at the cost of the Contractor.

6. We_____(indicate the name of Bank) further agree with the DFCC that the DFCC shall have the fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the said Agreement or to extent time of performance by the said Contractor(s) from time to time any of the powers exercisable by the DFCCIL against the said Contractor(s) and to forbear or enforce any of terms and conditions relating to the said Agreement and we shall not be relieved from our liability by reason of any such variation or extension being granted to the said Contractor(s) or for any forbearance, act or omission on the part of the DFCCIL or any indulgence by the DFCCIL to the said Contractor(s) or by any such matter or thing whatsoever which under the law relating to sureties for the said reservation would relieve us from the liability.

7. This Guarantee will not be discharged due to the change in the constitution of the Bank or the contractor(s)/Supplier(s).

8. We_____, (indicate the name of Bank) lastly undertake not to revoke this Bank Guarantee during its currency except with the previous consent of the DFCCIL in writing.

IN WITNESS WHEREOF we of the Bank have signed and stamped this guarantee on this day of…….. being herewith duly authorized.

Bank Seal Signature of Bank Authorize Official with Seal

Name: ----------
Designation: ----------
Address:

Witness:

1. Name:……..
   Designation:……..
   Address:

2. Name:…….
   Designation:…….
   Address:……

ANNEXURE-VII

Format of Bank Guarantee for Performance Security

Bank Guarantee No. :…… Dated :……

To,

Dedicated Freight Corridor Corporation of India Limited, Metro Station Building Complex 5th Floor, Pragati Maidan, New Delhi

Acting through Chief General Manager JP DFCCIL, CGM/JP, DFCCIL, C-16, Khushi Vihar, Patrakar Colony, Mansarovar, Jaipur – 302020.

Reference: - Contract No. ----------, Awarded on ----------

This deed of guarantee made this day of _____ Between_____ (Name of Bank) having registered office at _____ (hereinafter referred to as "Bank") of the one part, and Dedicated Freight Corridor Corporation of India Limited (hereinafter called the "Client") of the other part.

Whereas Dedicated Freight Corridor Corporation of India Limited has awarded the contract no. _____ for _____ (hereinafter called "the Contract") to _____ (Name of the Firm/ Consultant) having its registered office at_____ (hereinafter called the Firm/ Consultant).

AND WHEREAS the Firm/ Consultant is bound by the said Contract to submit to the Client an irrevocable performance security guarantee bond for a total amount of Rs. _____(Rupees Amount in words).

Now, we the undersigned (name of the Bank official), of the Bank being fully authorized to sign and to incur obligations for and on behalf of the Bank hereby declare that the said Bank will guarantee the Employer the full amount of Rs.---------- ----------(Rs. In words) as stated above.

After the Contractor has signed the aforesaid contract with the Employer, the Bank further agrees and promise to pay the amount due and payable under this guarantee without any demure merely on a demand from the Employer stating that the amount claimed is due by way of loss or damage cause to or would be caused or suffered by the Employer by reason of any breach by the said contractor of any of the terms or conditions contained in the said agreement or by reason of the contractor failure to perform the said agreement. Any such demand made on the Bank shall be conclusive as regards the amount due and payable by the Bank under this guarantee. However our liability under this guarantee shall be restricted to an amount not exceeding Rs. --------- (in words) only.

We ----------(indicate the name of Bank), further undertake to pay to the Employer any money so demanded not withstanding any dispute or dispute raised by the contractor in any suit or proceeding pending before any court or Tribunal relating to liability under this present being absolute and unequivocal.

The Payment so made by us (name of Bank) under this bond shall be a valid discharges of our liability for payment there under and the Contractor shall have no claim against us for making such payment.

We----------(indicate the name of bank), to further agree that the guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of the said agreement and that it shall continue to be enforceable till at all the dues of the Employer under or by virtue of the said agreement have been fully paid and its claims satisfied or discharged by ------ (Designation and address of contract signing authority) on behalf of Employer certify that the terms and conditions of the said agreement have been fully and properly carried out by the said contractor and accordingly discharges this guarantee.

Not with standing anything to the contrary contained herein the liability of the bank under this guarantee will remain in force and effect until such time as this guarantee is discharged in writing by the Employer or until (date of validity/extended validity) whichever is earlier and no claim shall be valid under the guarantee unless notice in writing , thereof is given by the Employer within validity/extended validity period of guarantee from the date aforesaid.

Provided always that we …….(name of bank) un conditionally undertakes to renew this guarantee or to extend the period of guarantee from year to year before the expiry of the period or the extended period of guarantee, as the case may be on being called upon to do so by the Employer. If the guarantee is not renewed or the period extended on demand, we ------ (name of bank) shall pay the Employer the full amount of the guarantee on demand without demur.

We----------(indicate the name of Bank), to further agree with the Employer that the Employer shall have the fullest liberty without our consent and without effecting in any manner out of obligation hereunder to vary any of the terms and conditions of the said contract from time to time or to postpone for any time or from time to time any to power exercisable by the Employer against the said contractor and to forbear or enforce any of the terms and conditions of the said agreement and we shall not be relieved from our liabilities by reason of such variation, or extension being granted to the said contractor for any forbearance act or omission on the part of the Employer or any indulgence by the Employer to the said contractor or by any such matter or thing whatsoever which under the law relating to sureties for the said reservation would relieve us from the liability.

The Guarantee hereinbefore contained shall not be affected by any change in the constitution of Bank or of the Contractor.

The expression “The Employer”, “The Bank” and “The Contractor” hereinbefore used shall include their respective successors and assigns.

We---------- (name of the bank lastly undertake not to revoke this guarantee during its currency except with the previous consent of the Employer in writing. Notwithstanding anything to the contrary contained hereinbefore:

i) Our liability under this Bank Guarantee shall not exceed and restricted to Rs. ---------- ---- (in words).

ii) This Bank Guarantee shall be valid up to ----------, unless extended on demand by Employer.

iii) The Bank is liable to pay the Guaranteed amount or any part thereof under this Bank Guarantee only if Employer serve a written claim or demand on or before----------

IN WITNESS WHEREOF we of the Bank have signed and stamped this guarantee on this day of ---------- being herewith duly authorized.

Bank Seal

Signature of Bank Authorize Official with Seal

Name :----------
Designation:----------
Address :

Witness:

1. Name :……..
   Designation :……..
   Address :

2. Name :…….
   Designation:…….Addr
   ess :……

ANNEXURE-VIII

FORM OF AGREEMENT

(To be executed on requisite value of stamp Papers)

AGREEMENT

THIS AGREEMENT made on _____ day of _____ (Month/year) between, DFCCIL , _____ (*address*). (Hereinafter called "the Employer")of the one part and _____ (name and address of the Contractor) (hereinafter called "the Contractor") of the other part.

WHEREAS the Employer is desirous that certain works should be executed by the Contractor viz. **Contract No._____ _____** (hereinafter called "the works, and has accepted a Bid by the Contractor for the execution and completion of such works and the remedying of any defects therein.

NOW THIS AGREEMENT WITNESSETH as follows:

1.0 In this Agreement, words and expressions shall have the same meaning as are respectively assigned to them in the Conditions of Contract hereinafter referred to.

2.0 The following documents shall be deemed to form and be read and construed as part of this Agreement: -

i) The Contract Agreement.
ii) Letter of Acceptance.
iii) Tender Form
iv) General Information
v) Notice Inviting Tender (with Annexes)
vi) Instructions to Tenderers
vii) Special Conditions of Contract
viii) Annexures
ix) Bill of Quantities (BOQ)/Schedule of Rates
x) General Terms and Conditions of Contract

3.0 In consideration of the payments to be made by the Employer to the Contractor as hereinafter mentioned, the Contractor hereby covenants with the Employer to execute and complete the works and remedy any defects therein in conformity in all respects with the provisions of the Contract.

4.0 The Employer hereby covenants to pay the Contractor in consideration of the execution and completion of the works and the remedying of defects therein the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

IN WITNESS whereof the parties hereto have caused this Agreement executed the day and year first before written.

(Name, Designation and address of the authorized signatory)	(Name, Designation and address of the authorized signatory)
Signed for and on behalf of the Contractor in the presence of:	Signed for and on behalf of the Employer in the presence of:
Witness:	*Witness:*
1.	1.
2.	2.

ANNEXURE -IX

PRE CONTRACT INTEGRITY PACT

General

This pre-bid pre-contract Agreement (hereinafter called the Integrity Pact) is made on------ ----------day of the month of---------- 20xx, between, on one hand, the DFCCIL acting through Shri ---------- Designation of the officer, (hereinafter
called the CLIENT, which expression shall mean and include, unless the context otherwise requires, his successors in office and assigns) of the First Part and M/s----------
-------- represented by Shri ----------Chief Executive Officer (hereinafter called the "BIDDER/SELLER" which expression shall mean and include, unless the context otherwise requires, his successors and permitted assigns) of the Second part.

WHEREAS the CLIENT proposes to procure (Name of the Stores/Equipment/Item, Name of the Consultancy Service, Name of Works Contract, Name of Services) and the [A] is willing to Offer/has offered for stores or works.

WHEREAS the [A] is a private company/ public company/ Government undertaking/ partnership/ registered export agency, constituted in accordance with the relevant law in the matter and the CLIENT is a PSU performing its functions or behalf of the President of India.

NOW, THEREFOR,

To avoid all forms of corruption by following a system that is fair, transparent and free from any influence/prejudiced dealings prior to, during and subsequent to the currency of the contract to be entered into with a view to:-

Enabling the CLIENT to obtain the desired said (Name of the Stores/Equipment/Item, Name of the Consultancy Service, Name of Works Contract, Name of Services) at a competitive price in conformity with the defined specifications by avoiding the high cost and the distortionary impact of corruption on public procurement, and

Enabling BIDDERs to abstain from bribing or indulging in any corrupt practice in order to secure [B] by providing assurance to them that their competitors will also abstain from bribing and other corrupt practices and the CLIENT will commit to prevent corruption, in any form, by its Officials by following transparent procedures.

The parties hereto hereby agree to enter into this Integrity Pact and agree as follows:

Commitments of the CLIENT

1.1 The CLIENT undertakes that no official of the CLIENT, connected directly or indirectly with the [B], will demand, take a promise for or accept, directly or through intermediaries, any bribe, consideration, gift, reward, favour or any material or immaterial benefit or any other advantage from the [A] either for themselves or for any person, organization or third party related to the [B], in exchange for an advantage in the bidding process, bid evaluation, contracting or implementation process related to the [B].

1.2 The CLIENT will, during the pre-contract stage, treat all BIDDERs alike, and will provide to all BIDDERs the same information and will not provide any such information to any particular BIDDER which could afford an advantage to that particular [A] in comparison to other BIDDERs.

1.3 All the officials of the CLIENT will report to the appropriate Government office any attempted or completed breaches of the above commitments as well as any substantial suspicion of such a breach.

2. In case any such preceding misconduct on the part of such official(s) in reported by the [A] to the CLIENT with full, and verifiable facts and the same is prima facie found to be correct by the CLIENT, necessary disciplinary proceedings, or any other action as deemed fit, including criminal proceedings may be initiated by the CLIENT and such a person shall be debarred from further dealings related to the [B] process. In such a case while an enquiry is being conducted by the CLIENT the proceedings under the [B] would not be stalled.

Commitments of BIDDERS

3. The [A] commits itself to take all measures necessary to prevent corrupt practices, unfair means and illegal activities during any stage of its bid or during any pre-contract or post-contract stage) in order to secure the [B] contract or in furtherance to secure it and in particular committee itself to the following:-

3.1 The [A] will not offer, directly or through intermediaries, any bribe, gift, consideration, reward, favour, any material or immaterial benefit or other advantage, commission fees, brokerage or inducement to any official of the CLIENT, connected directly or indirectly with the bidding process, or to any person, organization or third party related to the (B] in exchange for any advantage in the bidding, evaluation, contracting and implementation of the [B].

3.2 The (A] further undertakes that it has not given, offered or promised to give, directly or indirectly any bribe, gift, consideration, reward, favour, any Material or immaterial benefit or other advantage, commission, fees, brokerage or inducement to any official of the CLIENT or otherwise in procuring the Contract or forbearing to do or having done any act in relation to the obtaining or execution of the [B] or any other [B] with the Government for showing or forbearing to show favour or disfavor to any person in relation to the [B] or any other [B] with the Government.

3.3 * [A] shall disclose the name and address of agents and representatives and Indian [A] shall disclose their foreign principals or associates.

3.4 * [A] shall disclose the payments to be made by them to agents/brokers or any other intermediary, in connection with this bid/contract.

3.5 The [A] further confirms and declares to the CLIENT that the [A] is the original manufacturer/integrator/authorized government sponsored export entity of the defense stores and has not engaged any individual or firm or company whether Indian or foreign to intercede, facilitate or in any way to recommend to the CLIENT or any of its functionaries, whether officially or unofficially to the award of the [B] to the [A] nor has any amount been paid, promised or intended to be paid to any such individual, firm or company in respect of any such intercession, facilitation or recommendation.

3.6 The [A] either while presenting the bid or during pre-contract negotiations or before signing the [B] shall disclose any payments he has made, is committed to or intends to make to officials of the CLIENT or their family members, agents, brokers or any other intermediaries in connection with the [B] and the details of services agreed upon for such payments.

3.7 The [A] will not collude with other parties interested in the [B] to impair the transparency, fairness and progress of the bidding process, bid evaluation, contracting and implementation of the [B].

3.8 The [A] will not accept any advantage in exchange for any corrupt practice, unfair means and illegal activities.

3.9 The [A] shall not use improperly, for purposes of competition or personal gain, or pass on to others, any information provided by the CLIENT as part of the business relationship, regarding plans, technical proposals and business details, including information contained in

any electronic data carrier. The [A] also undertakes to exercise due and adequate care lest any such information is divulged.

3.10 The [A] commits to refrain from giving any complaint directly or through any other manner without supporting it with full and verifiable facts.

3.11 The [A] shall not instigate or cause to instigate any third person to commit any of the actions mentioned above.

3.12 If the, [A] or any employee of the [A] or any person acting on behalf of the [A], either directly or Indirectly, is a relative of any of the officers of the CLIENT, or alternatively, if any relative of an officer of the CLIENT has financial. Interest/stake in the Bidder's firm, the same shall be disclosed by the [A] at the time of filling of tender.

The term "relative" for this purpose would be as defined in section 6 of the companies act 1956.

3.13 The [A] shall not lend to or borrow any money from or enter into any monetary dealings or transactions, directly or indirectly, with any employee of the CLIENT.

4. Previous Transaction

4.1 The [A] declares that no previous transgression occurred in the last three years immediately before signing of this integrity Pact, with any other company in any country in respect of any corrupt practices envisage hereunder or with any public sector enterprise in India or any Government department in India that could justify BIDDER"s from the tender process.

4.2 The [A] agrees that if it makes incorrect statement on this subject, [A] can be disqualified from the ender process or the contact, if already awarded, can be terminated for such reason.

5. Earnest Money (Security Deposit)

5.1 While submitting commercial bid, the [A] shall deposit an amount __ (to be specified in RFP) as Earnest Money/Security Deposit, with the CLIENT through any of the following instruments:-

i. Bank draft or a pay order in favor of _____.

ii. A confirmed guarantee by an Indian nationalized bank, promising payment of the guaranteed sum to the CLIENT on demand within three working days without any demur whatsoever and without seeking any reasons whatsoever. The demand for payment by the CLIENT shall be treated as conclusive proof or payment.

iii. Any other mode or through any other instrument (to be specified in the RFP).

5.2 The earnest money/Security deposit shall be valid up to a period of five years or the contractual obligations to the complete satisfaction of both the BIDDER and the CLIENT, including warranty period, whichever is later.

5.3 In case of the successful [A] a clause would also be incorporated in the article pertaining to performance Guarantee in the [B] that the provisions of sanctions for violation shall be applicable for forfeiture of performance bond in case of a decision by client to forfeit the same without assigning any reason for imposing sanction for violation of this pact.

5.4 No interest shall be payable by CLIENT to the [A] on earnest Money/Security Deposit for the period of its currency.

6. Sanctions for Violations

6.1 Any breach of the aforesaid provisions by the [A] or any one employed by it or acting on its behalf (whether with or without the knowledge of the [A] shall entitle the CLIENT to take all or any one of the following actions, wherever required :-

(i) To immediately call off the pre-contract negotiations without assigning any reason or giving any compensation to the [A]. However, the proceedings with the other BIDDER(s) would continue.

(ii) The earnest money deposit (in pre-contract stage) and/or security Deposit/performance Bond (after the [B] is signed) shall stand forfeited fully and the CLIENT shall not be required to assign any reason therefore.

(iii) To immediately cancel the [B], if already signed, without giving any compensation to the [A].

(iv) To recover all sums already paid by the CLIENT, and in case of an Indian [A] with interest thereon at 2% higher that the prevailing prime lending rate of state bank of India, while in case of a [A] from the country other that India with interest thereon at 2% higher than the LIBOR. If any outstanding payment is due to [A] from the CLIENT in connection with any other [B], such outstanding payment could also be utilized to recover the aforesaid sum and interest.

(v) To encash the advance bank guarantee and performance bond, if furnished by the [A], in order to recover the payments, already made by CLIENT, along with interest.

(vi) To cancel all or any other contracts with the [A]. The [A] shall be liable to pay compensation for any loss or damage to the Client resulting from such cancellation/rescission and the client shall be entitled to deduct the amount so payable from the money(s) due to the [A].

(vii) To debar the [A] from participating in future bidding processes of the Government of India for a minimum period of five years, which may be further extended at the discretion of the CLIENT.

(viii) To recover all sums paid in violation of this pact by [A]) to any middleman or agent or broker with a view a view to securing [B] the contract.

(ix) In cases where irrevocable letters of credit have been received in respect of any [B] signed by the client with the [A], the shall not be opened.

(x) Forfeiture of Performance Bond in case of a decision by the client to forfeit the same without assigning any reason for imposing sanction for violation of this pact.

6.2 The client will entitled to take all or any of the actions mentioned at para 6.1(i) to (x) of this pact also on the commission by the [A] or any one employed by it or acting on its behalf (whether with or without the knowledge of the [A], of an offence as defined in chapter IX of the Indian penal code, 1860 or prevention of Corruption Act, 1988 or any other statute enacted for prevention of corruption.

6.3 The decision of the CLIENT to the effect that a breach of the provisions of this pact has been committed by the [A] shall be final and conclusive on the [A]. However, the [A] can approach the Independent Monitor(s) appointed for the purposes of this Pact.

7. Fall Clause

7.1 The [A] undertakes that it has not supplied/is not supplying similar product/systems or subsystems at a price lower than that offered in the present bid in respect of any other Ministry/Department of the Government of India or PSU and if it is found at any stage that similar product/system or sub systems way supplied by [A] to any other Ministry/Department of the Government of India or a PSU at a lower price, then that very price, with due allowance for elapsed time, will be applicable to the present case and the difference in the cost would be refunded by the [A] to the CLIENT, if the [B] has already been concluded

8. Independent Monitors

8.1 The CLIENT has appointed Independent Monitors (hereinafter referred to as Monitors) for this pact in consultant with the central vigilance commission (Names and addresses of the Monitors to be given)

8.2 The task of the Monitors shall be to review independently and objectively, whether and to what extent the parties comply with the obligations under this pact.

8.3 The monitors shall not be subject to instructions by the representatives of the parties and perform their functions neutrally and independently.

8.4 Both the parties accept that the Monitors have the right to access all the documents relating to the project/procurement, including minutes of meetings.

8.5 As soon as the Monitor notices, or has reason to believe, a violation of this Pact, he will so inform the Authority designated by the CLIENT.

8.6 The BIDDER(s) accepts that the Monitor has the right to access without restriction to all Project documentation of the CLIENT including that provided by the BIDDER. The [A] will also grant the Monitor, upon his request and demonstration of a valid Interest, unrestricted and unconditional access to his project documentation. The same is applicable to Subcontractors. The Monitor shall be und contractual obligation to treat the information and documents of the [A] with confidentiality.

8.7 The client will provide to the Monitor sufficient information about all meetings among the parties related to the Project provided such meetings could have an impact on the contractual relations between the parties. The parties will offer to the Monitor the option to participate in such meetings.

8.8 The monitor will submit a written report to the MD/DFCCIL within 8 to 10 weeks from the date of reference or intimation to him by the CLIENT/BIDDER and, should the occasion arise, submit proposal for correcting problematic situations.

9. Facilitation of Investigation

In case of any allegation of violation of any provisions of this Pact or payment of commission, the CLIENT or its agencies shall be entitled to examine all the documents including the Books of Accounts of the [A] and the [A] shall provide necessary information and documents in English and shall exte4nd all possible help for the purpose of such examination.

10. Law and Place of Jurisdiction

This pact is subject to Indian law. The place of performance and jurisdiction is the seat of the CLIENT.

11. **Other Legal Actions**

The actions stipulated in this integrity pact are without prejudice to any other legal action that may follow in accordance with the provisions of the extant law in force relating to any civil or criminal proceedings.

12. **Validity**

12.1 The validity of this integrity pact shall be from date of its signing and extend upto 5 years or the complete execution of the [B] to the satisfaction of both the CLIENT and the [A] including warranty period, whichever is later. In case [A] is unsuccessful, this integrity pact shall expire after six months from the date of the signing of the [B].

12.2 Should one or several provisions of this pact turn out to be invalid; the remainder of this pact shall remain valid. In this case, the parties will strive to come to an agreement to their original intentions.

13. The parties hereby sign this integrity pact at …….. on …….

CLIENT	BIDDER
Name of the officer Designation Deptt./Ministry/PSU	CHIEF EXEUCTIVE OFFICER

Witness

1……..

Note:

[A]- To be replaced by BIDDER/Seller/Consultant/Consultancy firm/Service provider as the case was may be

[B]- To be replaced by contract/supply contract/consultancy contract/works contract as the case was may be.

Annexure-X

Deleted

Annexure-XI

ANTI-PROFITEERING DECLARATION

TO WHOMSOEVER IT MAY CONCERN

I ……., age ……, years, Son/Daughter of ……., resident of …….. do solemnly affirm and state as under:

1) That I am the _____ <Designation of the authorized signatory>of ……. and I am duly authorized to furnish this undertaking/declaration on behalf of …… (Name of the company).

2) That …… (Name of the company) has been awarded the work …… (Name of Work) vide Letter of Award number …….. dated ……. by M/s Dedicated Freight Corridor Corporation of India Limited.

3) That the Company is fully aware of the anti-profiteering provision under the Goods & Services Tax ("GST") Law(s),

4) That the Company …….. has passed the benefit of input tax credit available on the ……. …….. (good/services) having HSN …… …. supplied to M/s Dedicated Freight Corridor Corporation of India Limited which it is getting on account of reduced tax liability and input tax credit because of enactment of GST Laws after introduction of Goods and Service Tax w.e.f. 1s1 July, 2017. The details and amounts being passed on to DFCCIL are provided in Annexure …….. of this document and are as per applicable GST Laws. These are true and correct to the best of my knowledge, information and belief.

5) Further, it is to confirm also that in case …….. (name of the organization) will receive any further benefit in future after 1st July, 2017 by way of availment of input tax credits which were not allowed to be availed before 1sl July, 2017 or reduction in tax rates or in any other manner which results in reduction of cost of the goods/services supplied to M/s Dedicated Freight Corridor Corporation of India Limited, then Company will pass that benefit to M/s Dedicated Freight Corridor Corporation of India Limited also.

6) That I declare that the foregoing is true and correct and the same is a legal obligation and failure to fulfil it could result in penalties under the law.

7) 1 confirm that I am aware of the implication of the above undertaking and our liability on account of incorrect/misleading declaration under the GST Laws.

Signature of the Authorized signatory/ person

Name and Designation of the Auth. Sign/person of the person

Name of the Organization and Seal

Executed on a non-judicial stamp paper of Rs. 100/- duly notarized by notary public

SCHEDULE OF RATES									
DETAIL ESTIMATE FOR OHE WORK IN CONNECTION WITH ISOLATION OF LOOP LINES AT VARIOUS STATIONS OF NEW Rewari - NEW KISHANGARH SECTION OF DFCCIL									
SN	**ITEM NO**	**DESCRIPTION OF ITEM**	**UNIT**	**TOTAL QTY**	**UNIT RATE**		**TOTAL AMOUNT**		**TOTAL AMOUNT (8+9)**
					SUPPLY	**ERECTION**	**SUPPLY**	**ERECTION**	
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
		Sub-Section -1 (General)							
1	1	Fabrication , development and supply of sectioning diagram, schematic and TSWR board for all stations- Fabrication and supply of pre compressed particle laminated boards white in colour with aluminum beadings 1/2"x1/2" on all around the board and an arrangement of fixing/ hanging on wall of adequate strength on top boards as required.	Square foot	180	79.34	0	14281.2	0	14281.2
2	2	Fabrication , development and supply of sectioning diagram, schematic and TSWR board for all stations- Developing the sectioning diagram, schematic diagram & TSWR diagram with computerized digital printing on adhesive vinyle of adequate size as required and necessary correction in existing TSWR.	Square foot	180	535.57	0	96402.6	0	96402.6
3	3	Supply without insulator and erection of 25KV Post Insulator	Each	90	1114.75	251.85	100327.5	22666.5	122994
4	4	Supply without insulator and erection of a suspension (9 ton) Insulator	Each	24	1543.33	377.77	37039.92	9066.48	46106.4
5	5	Adjustment on bracket assemblies for lowering/raising the height of contact & catenary wire where encumbrance is changed.	Each	50	0	2122.05	0	106102.5	106102.5
6	6	Extra on erection under power block @100% for item no 3	Each	50	0	2122.05	0	106102.5	106102.5
7	7	Turnout adjustment	Each	25	0	2006.62	0	50165.5	50165.5
8	8	100% Extra for turnout adjustment	Each	25	0	2006.62	0	50165.5	50165.5
TOTAL (Sub - section-1)									**592320.2**
		Sub-Section-2 (Ferrous)							

9	1	Supply & Erection of Fabricated and Galvanised Steel other than Portal & Traction masts (SPS)	MT	2	120341.79	10384.98	240683.58	20769.96	261453.54
10	2	Supply & Erection of Structure bond.	Each	10	1233.6	316.21	12336	3162.1	15498.1
11	3	Supply & Erection of Single Earth Electrode	Each	10	2782.6	1202.07	27826	12020.7	39846.7
12	4	Supply & Erection of material for earthing of each mast as per DFCCIL drawing & specification.	Each	10	3562.8	178.14	35628	1781.4	37409.4
TOTAL (Sub - section-2)									**354207.74**
		Sub-Section-3 (Non- Ferrous)							
13	1	Supply & Erection of 25KV Lightweight Section Insulator assembly with suspension (as per DFCCIL drawing & specification) (Imported item)	Each	22	336300	3836.38	7398600	84400.36	7483000.36
14	2	Supply without insulator & Erection of 25 KV 1600 Amp Single pole isolator (manually operated) without earth contact assembly	Each	9	38634	2981	347706	26829	374535
15	3	Extra for supply & Erection of an earth contact assembly in an insulator	Each	9	12857.35	343.43	115716.15	3090.87	118807.02
16	4	Supply & Erection of large copper jumper wire (160 sq mm) between copper bus bar and OHE, croos feeder to OHE etc. with associate fittings	Each	25	10744	461	268600	11525	280125
17	5	Supply & Erection of solid copper bus bar 18mm	Meter	150	1875.78	100.73	281367	15109.5	296476.5
18	6	Supply & erection of solid copper bus bar connectors : Bus terminal (6310)	Each	18	1895	43.5	34110	783	34893
TOTAL (Sub - section-3)									**8587836.88**
		Sub-Section-4 (Insulator)							
19	1	Supply of 25 kV post insulator	Each	100	9669.66	0	966966	0	966966
20	2	Supply of 25 kV 9 tonne porcelain insulators (CD-1600)	Each	24	4793.42	0	115042.08	0	115042.08
21	3	Supply of 25 kV operating rod insulator & post insulator for 25 KV single pole isolator.	set	10	25138.04	0	251380.4	0	251380.4
TOTAL (Sub - section-4)									**1333388.48**
		Section -5 - 100 % EXTRA ON ERECTION RATE FOR WORK DONE UNDER POWER BLOCK							

22	1	Extra on erection of Special Fabricated and Galvanised Steel Structure (SPS)other than Portal & Traction masts etc. under power block	MT	2	0	10384.98	0	20769.96	20769.96
23	2	Extra on erection of 25KV Light weight Section Insulator assembly with suspension under power block	Each	22	0	3836.38	0	84400.36	84400.36
24	3	Extra on erection of 25KV single pole Isolator with out earth contact assembly under power block.	Each	10	0	2981	0	29810	29810
25	4	Supply & Erection of large copper jumper wire (160 sq. mm) between copper bus bar and OHE, cross feeder to OHE etc. with associate fittings	Each	25		461	0	11525	11525
26	5	Extra on Erection of solid copper bus bar 18mm.	meter	150	0	100.73	0	15109.5	15109.5
27	6	Extra on Erection of solid copper bus bar connectors: Bus terminal (6310) under power block.	Each	14	0	43.5	0	609	609
TOTAL (Sub - section-5)									**162223.82**
		Sub-Section 6 (TRANSPORTATION OF MATERIAL)							
30	1	Handling /Loading , unloading and transportation of DFC supply/Released OHE/PSI/GPS/Material such as mast, Bus bar,AT,Brackets, Fittings, contact / catenary wire from IMD/IMSD to site & release material from site to IMD/IMSD.	MT	20	0	3366.3	0	67326	67326
TOTAL (Sub - section-6)									**67326**
Grand Total									**11097303.12**
SAY									**11097303**
Total estimated amount Rs. 1,10,97,303.00 (Rs. One Crore Ten Lakh Ninety Seven Thousand Three Hundred and Three only.)									

Note: The dia. Of contact wire is 150 sq.mm and dia. of catenary wire is 125 sq.mm.

OFFER SHEET						
Offer to be filled up by Tenderer(s) in below table						
SNo	**Scope of work**	**Estimated cost**	**Below/Above/At par**	**% quoted by bidder**	**% quoted by bidder in words**	**Total cost**
Colum 1	Colum-2	Colum -3	Colum-4	Colum-5	Colum -6	Colum-7
1	Sub- section -1 General)	592320.20				
2	Sub-section -2 (Ferrous)	354207.74				
3	Sub-section -3 (Non Ferrous)	8587836.88				
4	Sub-section -4 (Insulator)	1333388.48				
5	Sub- section -5 (work under power block)	162223.82				
6	Sub- section -6 (Transportation of material)	67326.00				

Quoting of rates

1. The above price are inclusive of GST.
2. Tenderer is to quote for individual section(s).
3. Tenderer should offer rate in above table in % below, above and at par in figures as well as in words.
4. Tenderer must sign the following certificate.

I/We offer and agree to execute the above work at rate uploaded online at www.ireps.gov.in through digital Signature.

Signature of tenderer with seal

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