

CENTRAL RAILWAY



Tender No: BSL-LC-TENDER-11-2026

For

Design, manufacture, supply of associated equipments, erection, testing & commissioning of 1 No. 132kV/55kV (2×25kV System) Scott Connected transformer TSS & Bay modification work at Pachora TSS, along with 2 No. of Sectioning & Paralleling Post (SP) and 4 No. of Sub-sectioning & Paralleling Post (SSP) In Connection With Gauge Conversion Work From Pachora-Jamner in Bhusawal division of Central Railway.

Tender issued by:

**Dy.Chief Electrical Engineer (Const)
Central Railway, Bhusawal.**

QUANTITY	As per Schedule
Approximate Cost of Work	Rs.81,60,31,908.26/-
EARNEST MONEY DEPOSIT	Rs.1,63,20,600.00/-
TENDER BOOK COST	NIL
Pre - Bid Meeting Date & Time(Tentative)	25/06/2026 & 12:00 PM
TENDER CLOSING DATE	28/07/2026
Tender Closing Time	15:00 hrs.

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SPECIAL INSTRUCTIONS & GUIDELINES FOR SUBMITTING e-TENDERS
(Revised As Per GCC April 2022 Circulated Vide Letter No. EW/187/R/465/JV-II dated
10/06/2022 Issued By Dy.CE(C)/Works, CAO(C)'s Office CSMT)(with correction slip 1
to 11 to GCC April 2022)

Tenderer/s are advised to read instructions given below & strictly ensure that all the compulsory & important documents as mentioned herein, are uploaded before submitting their tender.

1. Submission of tenders shall be **ONLY** through e-tendering on the website **www.ireps.gov.in**.
2. The tenderer shall clearly specify whether the tender is submitted on his own (Proprietary Firm) or on behalf of a Partnership Firm z/ Company / Joint Venture (JV) / Registered Society / Registered Trust / Hindu Undivided Family (HUF)/ Limited Liability Partnership (LLP) etc. The tenderer(s) shall enclose the attested copies of the constitution of their concern, and copy of PAN Card along with their tender. Tender Documents in such cases are to be signed by such persons as may be legally competent to sign them on behalf of the firm, company, association, trust or society, as the case may be.

If it is NOT mentioned in the submitted tender that tender is being submitted on behalf of a Sole Proprietorship firm / Partnership Firm / Joint Venture (JV) / Registered Company etc., then the tender shall be treated as having been submitted by the individual who has signed the tender.

The tenderer whether sole proprietor / a company or a partnership firm / joint venture (JV) / registered society / registered trust / HUF/LLP etc. if they want to act through agent or individual partner(s), should submit along with the tender, a copy of power of attorney duly stamped and authenticated by a Notary Public or by Magistrate in favour of the specific person whether he/they be partner(s) of the firm or any other person specifically authorizing him/them to sign the tender, submit the tender, and further to deal with the Tender/Contract up to the stage of signing the agreement except in case where such specific person is authorized for above purposes through a provision made in the partnership deed/Memorandum of Understanding / Article of Association/Board Resolution, failing which tender **shall be summarily rejected**.

A separate power of attorney dully stamped and authenticated by a Notary Public or by Magistrate in favour of the specific person whether he / they be partner(s) of the firm or any other person, shall be submitted after award of work, specifically authorizing him/them to deal with all other contractual activities subsequent to signing of agreement, if required.

***Note:** A Power of Attorney executed and issued overseas, the document will also have to be legalized by the Indian Embassy and notarized in the jurisdiction where the Power of Attorney is being issued. However, the Power of Attorney provided by Bidders from countries that have signed The Hague Legislation Convention 1961 are not required to be legalized by the Indian Embassy if it carries a conforming Apostille certificate.*

(Ref: Clause 14(i), 14(iii) & 15 of TENDER FORM (Second Sheet) at Page Nos.17 & 19 of GCC April 2022)(Page-103 to 105 of Booklet).

3. The tender must be accompanied by a Bid Security as mentioned in Para 5 of Part-1, Instruction to Tenderers (ITT) at Page 4-6 of GCC April 2022(Page 90-92 of tender document), Para 6 (a), 17.5 & 18.6 of TENDER FORM (Second Sheet) along with Annexure-VIA at Page No. 11, 21, 26 & 37-39 of GCC April 2022(Page 92,107,111&123-124 of tender document), failing which the tender shall be summarily rejected.
4. Following documents mentioned at (a) to (h) below, should be furnished along with tender and should be submitted online at the time of tender bidding. **Tenders not accompanied by these documents will be summarily rejected.** No post tender communication, in any form will be made or entertained, after opening of tenders, in this regard. Railways may however call for the originals of the credentials for verification or any clarifications/confirmations on the contents of the documents submitted:
 - (a) TENDER FORM (First Sheet) (Ref:Page Nos.9 & 10of GCC APRIL 2022)(Page-95 of tender document).
 - (b) Work(s) completion certificate(s) as per the requirement of Technical eligibility criteria (Ref:Clause 10.1 & and for tenderer participating as JV firm Clause 17.15.1 of TENDER FORM (Second Sheet) at Page Nos.12-14 & 24 of GCC APRIL 2022)(Page 98-100&110 of tender document).
 - (c) Documents as per the requirement of financial eligibility criteria (Ref:Clause 10.2 and for tenderer participating as JV firm Clause 17.15.2 of TENDER FORM (Second Sheet) along with Annexure-VIB at Page Nos. 14, 24-25 & 40 of GCC APRIL 2022)(100,110& 126 of tender document).
 - (d) Documents for evaluating the Bid Capacity for tenders having advertised value more than Rs. 20.00 Crore (Ref:Clause 10.3 and for tenderer participating as JV firm Clause 17.15.3 of TENDER FORM (Second Sheet) along with Annexure-VI at Page Nos. 14, 25 & 35-36 of GCC APRIL 2022)(100,110,121oftender document).
 - (e) Certificates, stating that the tenderer/s are not liable to be disqualified and all their statements / documents submitted along with bid are true and factual, as per Annexure-V (Ref: Para 6.1 of Part-I, Instruction to Tenderers (ITT) at page 7 & 33-34 of GCC APRIL 2022))(93&123-124 of this booklet). In addition to Annexure-V, in case of other than company/proprietary firm, Annexure-V(A)(Pg. no 120 of this booklet) shall also be submitted by the each member of a partnership firm / Joint venture(JV)/ Hindu Undivided Family(HUF)/ Limited Liability Partnership(LLP) etc. as per Advance correction slip no.2 to GCC issued vide Railway board letter no. 2022/CE-I/CT/GCC-2022/Policy, dtd. 13.12.2022.
 - (f) In case the tenderer is **other than Joint Venture (JV) firm**, tenderer has to submit all the documents as mentioned below (Ref:Clause 14 (ii) (a) to (c), (e) to (g), (iv) and 18.10 of TENDER FORM (Second Sheet) at Page Nos.17-18 & 26-27 of GCC APRIL 2022))(103-104& 112 of this booklet):

Type of Firm	Documents to be submitted
(a) Sole Proprietorship Firm:	All documents in terms of Para 10 of the Tender Form (Second Sheet) at Page 12-16 of GCC APRIL 2022)(98-102 of tender document)
HUF:	<p>(i) A copy of notarized affidavit on Stamp Paper declaring that he who is submitting the tender on behalf of HUF is in the position of 'Karta' of Hindu Undivided Family (HUF) and he has the authority, power and consent given by other members to act on behalf of HUF.</p> <p>(ii) All documents in terms of Para 10 of the Tender Form (Second Sheet) at Page 12-16 of GCC APRIL 2022)(98-102 of tender document)</p>
Partnership Firm:	<p>(i) A notarized copy of partnership deed of orcopy of the partnership deed registered with the registrar.</p> <p>(ii) A notarized or registered copy of Power of Attorney in favour of the individual to tender for the work, sign the agreement etc. and create liability against the firm.</p> <p>(iii) An undertaking by all partners of the partnership firm that they are not blacklisted or debarred by Railways or any other Ministry / Department of the Govt. of India from participation in tenders / contracts as on the date of submission of bids, either in their individual capacity or in any firm/ LLP in which they were / are partners/members. Any concealment / wrong information in regard to above shall make the bid ineligible or the contract shall be determined under Clause 62 of the Standard General Conditions of Contract.</p> <p>(NOTE: THIS DOCUMENT SHOULD BE SIGNED BY ALL THE PARTNERS OF THE FIRM).</p> <p>(iv) All documents in terms of Para 10 of the Tender Form (Second Sheet) at Page 12-16 of GCC APRIL 2022. (98-102 of tender document)</p>
Company registered under Companies Act-2013:	<p>(i) The copies of MOA (Memorandum of Association) / AOA (Articles of Association) of the company.</p> <p>(ii) A copy of Certificate of Incorporation.</p> <p>(iii) A copy of Authorization/Power of Attorney issued by the Company (backed by the resolution of Board of Directors) in favour of the individual to sign the tender on the behalf of the company and create liability against the company.</p> <p>(iv) All other documents in terms of Para 10 of the Tender Form (Second Sheet) at Page 12-16 of GCC APRIL 2022. (98-102 of tender document)</p>
LLP (Limited Liability Partnership)registered under LLP Act-2008:	<p>(i) A copy of LLP Agreement.</p> <p>(ii) A copy of Certificate of Incorporation.</p> <p>(iii) A copy of Power of Attorney/Authorization issued by the LLP in favour of the individual to sign the tender on</p>

Type of Firm	Documents to be submitted
	<p>behalf of the LLP and create liability against the LLP.</p> <p>(iv) An undertaking that by all partners of the LLP that they are not blacklisted or debarred by Railways or any other Ministry / Department of Govt. of India from participation in tenders / contracts as on the date of submission of bids, either in their individual capacity or in any firm/LLP or JV in which they were / are partners/members. Concealment / wrong information in regard to above shall make the contract liable for determination under Clause 62 of the standard General Conditions of Contract.</p> <p>(NOTE: THIS DOCUMENT SHOULD BE SIGNED BY ALL THE PARTNERS OF THE FIRM)</p> <p>(v) All documents in terms of Para 10 of the Tender Form (Second Sheet) at Page 12-16 of GCC APRIL 2022(98-102 of tender document).</p>
Registered Society & Registered Trust:	<p>(i) A copy of the Certificate of Registration.</p> <p>(ii) A copy of Memorandum of Association of Society / Trust Deed.</p> <p>(iii) A copy of Power of Attorney in favour of the individual to sign the tender documents and create liability against the Society/Trust.</p> <p>(iv) A copy of Rules & Regulations of the Society.</p> <p>(v) All other documents in terms of Para 10 of the Tender Form (Second Sheet) at Page 12-16 of GCC APRIL 2022(98-102 of tender document).</p>

After opening of the tender, any document pertaining to the constitution of Sole Proprietorship Firm / Partnership Firm / Registered Company/ Registered Trust / Registered Society / HUF / LLP etc. shall be neither asked nor considered, if submitted. Further, no suo-moto cognizance of any document available in public domain (i.e., on internet etc.) or in Railway's record/office files etc. will be taken for consideration of the tender, if no such mention is available in tender offer submitted.

- (g) In case the tenderer is a **Joint Venture (JV) firm**, tenderer has to submit all the documents as mentioned below:
- (i) Copy of Memorandum of Understanding (**MoU**) duly executed by the JV members on a stamp paper, shall be submitted by the JV along with the tender. The complete details of the members of the JV, their share and responsibility in the JV etc. particularly with reference to financial, technical and other obligations shall be furnished in the MoU. (**Ref: Clause 17.6 of TENDER FORM (Second Sheet) at Page Nos. 21 of GCC APRIL 2022 (pg.no 107 of tender document) & Appendix-VIII of the Tender Document (pg.no 17 of tender document).**)

(ii) **Documents of JV Members:**

(**Ref:** Clause 17.14 of TENDER FORM (Second Sheet) at Page Nos.22-24 of GCC APRIL 2022) (pg.no 108-109 of this booklet):

In case one or more of the members of the JV is / are:

Type of Firm	Documents to be submitted
Partnership Firm:	<ul style="list-style-type: none"> (i) A notarized copy of Partnership Deed or a copy of the Partnership deed registered with the Registrar. (ii) A copy of consent of all the partners or individual authorized by partnership firm, to enter into the Joint Venture Agreement on a stamp paper. (ii) A notarized or registered copy of Power of Attorney in favour of the individual to sign the MOU/JV Agreement on behalf of the partnership firm and create liability against the firm. (iv) An undertaking that by all partners of the Partnership firm that they are not blacklisted or debarred by Railways or any other Ministry / Department of Govt. of India from participation in tenders / contracts as on the date of submission of bids, either in their individual capacity or in any firm/LLP in which they were / are partners/members. Any Concealment / wrong information in regard to above shall make the bid ineligible or the contract shall be determined under Clause 62 of the Standard General Conditions of Contract. <p>(NOTE: THIS DOCUMENT SHOULD BE SIGNED BY ALL THE PARTNERS OF THE FIRM).</p>
Proprietary Firm or HUF:	A copy of notarized affidavit on Stamp Paper declaring that his concern is a proprietary concern and he is sole proprietor of the concern OR he who is signing the affidavit on behalf of HUF is in the position of 'Karta' of Hindu Undivided Family (HUF) and he has the authority, power and consent given by other members to act on behalf of HUF.
Companies	<ul style="list-style-type: none"> (i) A copy of resolutions of the Directors of the Company, permitting the company to enter into a JV agreement; (ii) The copies of MOA (Memorandum of Association) / AOA (Articles of Association) of the company; (iii) A copy of Certificate of Incorporation; and (iv) A copy of Authorization / copy of Power of Attorney issued by the Company (backed by the resolution of Board of Directors) in favour of the individual to sign the tender, sign MOU / JV Agreement on behalf of the company and create liability against the company.
LLP firms/s	<ul style="list-style-type: none"> (i) A copy of LLP Agreement. (ii) A copy of Certificate of Incorporation of LLP.

Type of Firm	Documents to be submitted
	<p>(iii) A copy of resolution passed by partners of LLP firm, permitting the Firm to enter into a JV agreement.</p> <p>(iv) A copy of Authorization/ copy of Power of Attorney issued by the LLP firm (backed by resolution passed by the partners) in favour of the individual, to sign the tender and / or sign the MOU/JV agreement on behalf of the LLP and create liability against the LLP.</p> <p>(iv) An undertaking that by all partners of the LLP that they are not blacklisted or debarred by Railways or any other Ministry / Department of Govt. of India from participation in tenders / contracts as on the date of submission of bids, either in individual capacity or in any firm/LLP or JV in which they were / are partners/members. Any concealment / wrong information in regard to above shall make the contract liable for determination under Clause 62 of the Standard General Conditions of Contract.</p> <p>(NOTE: THIS DOCUMENT SHOULD BE SIGNED BY ALL THE PARTNERS OF THE FIRM).</p>
Society/s or Trust/s	<p>(i) A copy of the Certificate of Registration.</p> <p>(ii) A copy of Memorandum of Association of Society / Trust Deed.</p> <p>(iii) A copy of Rules & Regulations of the Society.</p> <p>(iv) A copy of Power of Attorney in favour of the individual to sign the tender documents and create liability against the Society/Trust.</p>

(iii) All documents in terms of **Para 10 of the Tender Form (Second Sheet) at Page 12-16 of GCC APRIL 2022 (pg.no 98-102 of tender document).**

(h) Copy of **Ballast Test Report**, if applicable to the tender - Not applicable.

5. Compliance of **Employment / Partnership etc. of Retired Railway Employees** as per **Clause 16 of TENDER FORM (Second Sheet)** at Page Nos.19-20 of **GCC APRIL 2022 (pg.no 105-106 of tender document)**, failing which contract is liable to be dealt in accordance with provision of **Clause 62 of Standard General Condition**, at Page Nos.92-95 of **GCC APRIL 2022 (pg.no 175-176 of tender document)** (**Note: Information / Certification should be given as per 'Appendix-IV' of the Tender / Technical Bid Document**) (pg.no 13 of tender document).
6. Tenderers shall note that the submission of other following supporting documents, *is important and they shall ensure the same at the time of online bidding of tender.* However Railways may seek clarifications / details / documents in this regard:
 - (a) Copy of **Vendor Mandate Form** as per **Appendix-VII** of the Tender Document. All Payments to the agency [Including the refund of the Earnest Money (EMD) of

the unsuccessful bidder] will be remitted through NEFT. The Tenderer is required to declare Bank details and A/C No. etc. in Vendor Mandate Form. (**tender document page No.16**)

- (b) Copy of the **complete details of the firm** as per **Appendix-I** of the Tender / Technical Bid Document, to which all correspondences shall be made by the Railway. (**Tender document page No.10**)
 - (c) Copy of **Goods and Services Tax (GST) Registration Certificate** containing **GST Registration Number**.
 - (d) Copy of certificate by tenderer for **site visit & familiarization** as per **Appendix-VI** of the Tender / Technical Bid Document. (**Tender document page No.15**)
 - (e) Copy of the **list of the Personnel / Organization of the tenderer on hand and proposed to be engaged for this tender** as per **Appendix-IV** of the Tender / Technical Bid Document (**Ref: CP/23/24**)(**pg.no 13 of tender document**).
 - (f) Copy of **list of the plants & machinery of tenderer available on hand and proposed to be inducted & hired for this tender** as per **Appendix-V** of the Tender/ Technical Bid Document (**Ref: CP:23/24**) (**pg.no 14 of tender document**).
7. **The Railway 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, make available all such information, evidence and documents as maybe necessary for such verification. Any such verification or lack of such verification, by the railway shall not relieve the bidder of its obligations or liabilities hereunder nor will it affect any rights of the railway there under.**

e-Tender Notice No.:

Name of Work:

PARTICULARS OF TENDER(S)

1. Full name of Contractor / Construction firm	
2. Year of establishment of Firm	
3. Registered Head Office Address, Telephone no, Fax no, E-mail address.	
4. Branch office Address, Telephone no, Fax no, E-mail address	
5. Details of Constitution of firm, names of Partners/Executive/Power of Attorney holders, etc.	
6. Particulars of Registration with Government/Semi-Govt. Organisation, Public Sector Undertaking & Local Bodies etc.	

e-Tender Notice No.:

Name of Work:

**LIST OF WORKS COMPLETED in last 07 (Seven) years, ending last day of month
previous to the one in which tender is invited**

Sr. No.	Name of Work	Name of organization for whom executed and contract awarding authority	Contract agreement No and date of Award	Approx. value of contract		Date of Commencement	
				Agreement value	Final value	Scheduled	Actual
1	2	3	4	5	6	7	8

Date of Finish		Period of completion		Main features of the work	Remarks
Scheduled	Actual	Scheduled	Actual		
9	10	11	12	13	14

Note:

(i) Supporting documents/certificates (duly attested) from the organizations with whom worked/are working should be enclosed.

(ii) Certificate from private individuals for whom such works are executed/being executed shall not be accepted.

e-Tender Notice No.:

Name of Work:

**LIST OF WORKS ON HAND: DETAILS OF EXISTING COMMITMENTS,
BALANCE AMOUNT OF ONGOING WORKS AND WORKS AWARDED NOT YET
STARTED**

All works in progress and also the works which are awarded to tenderer but yet not started up to the date of opening of tender. In case of no works in hand, a 'NIL' statement should be furnished. This statement should be submitted duly verified by Chartered Accountant.

Sr. No.	Name of Work	Name of Organization for whom executed and Contract awarding authority	Contract agreement No and date of Award	Approx. Value of Contract			Date of Commencement	
				Agreement Value	Payment received	Approx. balance to be received	Scheduled	Actual
1	2	3	4	5	6	7	8	9

Date of Finish		Period of completion		% age progress		Reasons for Delay, if any	Main features of the work	Remarks
Scheduled	Expected	Scheduled	Expected	Physical	Financial			
10	11	12	13	14	15	16	17	18

Note:

(i) Supporting documents/certificates (duly attested) from the organizations with whom worked/are working should be enclosed.

(ii) Certificate from private individuals for whom such works are executed/being executed shall not be accepted.

e-Tender Notice No.:

Name of Work:

**LIST OF PERSONNEL/ORGANISATION AVAILABLE ON HAND AND PROPOSED TO BE
ENGAGED FOR THE SUBJECT WORK**

Sr. No.	Name & Designation	Qualification	Professional Experience	Remarks

Note- Supporting documents should be attached.

I hereby certify that no retired Engineer/Gazetted Officer of the Railways who has retired within 1 year of date of submission of tender and has not obtained permission of competent authority has been engaged by me/our firm. I also certify that none of my relative is engaged in Engineering Department in Central Railway.

Signature of Tenderer(s)

Appendix-V

e-Tender Notice No.:

Name of Work:

**A. LIST OF PLANT & MACHINERY (OWNED) AVAILABLE ON HAND AND
PROPOSED TO BE INDUCTED ON THE SUBJECT WORK**

Sr. No.	Particulars of equipments	No. of units	Kind/Make	Capacity	Age & condition	Remarks

B. LIST OF PLANT & MACHINERY PROPOSED TO BE HIRED FOR THE WORK

Sr.No.	Particulars of equipments	No. of Units	Capacity	Remarks

e-Tender Notice No.:

Name of Work:

DECLARATION FOR SITE VISIT

I/We hereby solemnly declare that I/We visited the sites of work personally and have made myself/ourselves fully conversant of the conditions therein and in particular the following:

- (i) Topography of the area.
- (ii) Soil strata at site of work.
- (iii) Sources and availability of construction materials.
- (iv) Rates for construction materials, water, electricity including all local taxes, royalties, octroi etc
- (v) Availability of local labour (both skilled and unskilled) and relevant labour rates and labour laws.
- (vi) Existing roads, approaches, pathways to site of work.
- (vii) Space for stacking of materials, stores, office etc.
- (viii) Availability and rates of private land etc required for various purposes
- (ix) Trees, shrubs, bushes, debris etc. required to be removed for site clearance
- (x) Need of dewatering/pumping etc.
- (xi) Climatic conditions and availability of working days and working hours
- (xii) Frequency/pattern of rail traffic, electrified tracks, road traffic etc.
- (xiii) Availability of rail/road traffic block.
- (xiv) Law and order situation.
- (xv) Any other conditions, which may affects rates.

I/We have quoted my/our rates for various items in the tender schedule taking into account all the above factors likely to be encountered during execution of work. I/We shall not entitled for any claim against Railway on account of the above factors.

I/We hereby declared that no such retired engineer or Gazetted officer (as defined in clause 17.1 of this tender document) retired from government service within one year prior to opening of this tender is working or associated with us.

Signature of Tenderer(s)

e-Tender Notice No.:

Name of Work:

MANDATE FORM FOR PAYMENT THROUGH ECS/NEFT

Firm's name	
Firm's address / Tel. No. / Fax No. / Email. ID	
Name of the bank	
Bank Branch Name Address / Tel. No. / Fax No. / Email. ID	
Account No. (as per Core Banking)	
Type of Account	Saving / Current / Others (Please Specify)
MICR Code & IFSC Code	

IMPORTANT NOTE:

Tenderer's should ensure that they attach a copy of this '**Mandate Form**', **duly verified & signed by the Bank officials** along with the EMD instruments, in order to enable Railway to release the EMD amount quickly to the unsuccessful tenderers through ECS/NEFT.

Signature of the Tenderer/s

MEMORANDUM OF UNDERSTANDING
FOR JOINT VENTURE AGREEMENT

1. This Memorandum of understanding executed this _____ day of _____ 20 _____ between _____ (Name of Co.) _____ a company registered under the Companies Act 1956 having its registered office at _____ represented through its Director / Authorised Representative _____ (herein after referred to as _____ which expression shall unless repugnant to the context thereof includes its successors) of the **FIRST PART**.

OR

M/s. _____ a partnership firm registered under the Indian Partnership Act 1932, having its registered office at _____ Represented through its Partner Shri _____ / Authorised Representative _____ (hereinafter referred to as _____ Which expression shall unless repugnant to the context thereof includes its successors) of the **FIRST PART**

AND

2. M/s. _____ (Name of Co.) _____ a company registered under the Companies Act 1956 having its registered office at _____ represented through its Director or Authorised Representative _____ (hereinafter referred to as _____ which expression shall unless repugnant to the context thereof includes its successors) of the **SECOND PART**.

OR

M/s _____ a partnership firm registered under the Indian Partnership Act 1932, having its registered office at _____ (hereinafter referred to as _____ which expression shall unless repugnant to the context thereof includes its successors) of the **SECOND PART**

AND

3. This Memorandum of understanding executed this _____ day of _____ 20 _____ between _____ (Name of Co.) _____ a company registered under the companies Act 1956 having its registered office _____ through its Director or Authorised Representative _____ (hereinafter referred to as _____ Which expression shall unless repugnant to the context thereof includes its successors) to the **THIRD PART**

M/s. _____ a partnership firm registered under the Indian Partnership Act 1932, having its registered office at _____ through its partnership or Authorized Representative _____ (hereinafter referred to as _____ Which expression shall unless repugnant to the context thereof includes its successors) of the **THIRD PART**.

4. This Memorandum of Understanding executed this _____ day of _____
 200 _____ between _____ (Name of Co.) _____ a company registered under the Companies Act 1956 having its registered office _____ through its Director or Authorized Representative _____ (hereinafter referred to as _____ which expression shall unless repugnant to the context thereof includes its successors) of the **FOURTH PART**.

OR

M/s. _____ a partnership firm registered under the Indian Partnership Act 1932, having its registered office _____ through its Partner or Authorized Representative _____ (hereinafter referred to as _____ Which expression shall unless repugnant to the context thereof includes its successors) of the **FOURTH PART**.

5. This Memorandum of Understanding executed this _____ day of _____ 20 _____ between (Name of Co.) _____ a company registered under the Companies Act 1956 having its registered office _____ through its Director or Authorized Representative _____ (hereinafter referred to as _____ which expression shall unless repugnant to the context thereof Includes its successors) of the **FIFTH PART**.

OR

M/s. _____ a partnership firm registered under the Indian Partnership Act 1932, having its registered office at _____ through its Partner or Authorized Representative _____ (hereinafter referred to as _____ which expression shall repugnant to the context thereof includes its successors) of the **FIFTH PART**.

Whereas, Central Railway, Mumbai CST hereinafter referred to as Owner/Customer has invited Tender No/s. _____ hereinafter referred to as the CR Tender for the work of _____ hereinafter referred to as the said work.

Whereas, the party of the first part i.e. M/s. _____ (details to be supplied of the expertise in their field).

Whereas, the party of the second part, M/s. _____ (details to be supplied of the expertise in their field).

Whereas, the party of the third part, M/s. _____ (details to be supplied of the expertise in their field).

Whereas, the party of the fourth part, M/s. _____ (details to be supplied of the expertise in their field).

Whereas, the party of the fifth part, M/s. _____ (details to be supplied of the expertise in their field).

AND whereas parties to this MOU, have agreed to co-operate with each other to associate jointly and to form a Joint Venture Firm to participate in the CR Tender of Indian Railways.

Now, therefore, in consideration of the premises and mutual promises and of the understanding contained herein, it is hereby agreed as follows:-

1. The purpose of MOU –

M/s. _____ and _____ agree to co-operate with each other for the purpose of joint participation in the CR Tender and in the event, the contract is awarded, to jointly execute the contract. The board interfaces and scope of work of each party is set forth below:-

2. The name of the Jt. Venture firm shall be _____

3. The parties, hereto, represent that:

- a) They are in possession of all approvals and valid authorization for the purpose of execution of this MOU.
- b) They have not entered into any agreement/MOU of equal or similar nature with any third party for the CR Tender.

That each of the parties of the JV, agrees and undertake to place at the disposal of the JV, benefits of its individual experience, technical knowledge and skill and shall in all respects bear its share of the responsibility, including the provision of information advice and other assistance required in connection with works. The share and the participation of the partners in the JV shall broadly be follows:

M/s. _____ %

M/s. _____ %

M/s. _____ %

M/s. _____ %

M/s. _____ %

Lead Member:

That one of the member of the JV shall be its lead member who shall have a majority (at least 51%) share of interest in the JV. The other members shall have a share of not less than 20% each in case of JV with upto three members and not less than 10% each in case of JV with more than three members. In case of JV with foreign member(s), the Lead Member has to be an Indian firm/company with a minimum share of 51%.

And all rights, interest, liabilities, obligations, work experience and risks (net profits or net losses) arising out of the contract shall be shared or borne by the Parties in proportionate to these shares. Each of the parties shall bound by guarantees, sureties required for the work as well as its proportionate share in working capital and other financial requirements.

4. The parties to this MOU undertake:

- a) That after submission of the tender, the MOU shall not be modified / altered / terminated during the validity of the tender except when modification becomes inevitable due to succession laws etc, provided further that there is no change in qualification of minimum eligibility criteria by JV after change of composition. The parties to this MOU further agree that, the Lead Member shall continue to be the Lead Member of the JV.
- b) That after the contract is awarded the constitution of the J.V. firm shall not be altered during the currency of contract except when modification becomes inevitable due to Succession Law etc. but in no case the minimum eligibility criteria should get vitiated.

5. **JOINT & SEVERAL LIABILITY:**

In respect of the CR Tender, all terms shall be complied by each party on back-to-back basis as per specifications of the CR Tender or any other mutually agreed terms with the Owner/Customer. The Parties hereto shall, if awarded the contract for the project for which the Joint Venture is formed, be jointly and severally liable to the Indian Railways for execution of the project in accordance with the contract. The Parties hereto also undertake to be liable jointly and severally for the loss, damages caused to the Indian Railways in course of execution or due non-execution of the contract or part thereof or arising out of the contract.

6. Shri _____ shall be authorized partner/person on behalf of the Joint Venture to deal with tender, to sign the agreement or enter into contract in respect of the said tender, to receive payment, to witness joint measurement of work done, to sign measurement books, and similar such action in respect of CR tender/Contract. All notices/ correspondence with respect to the contracts would be sent only to this authorized member of the JV Firm.
7. Notwithstanding anything contained herein, in respect of the CR Tender with regard to the internal relationship, the inter se liabilities between the parties shall be in proportion to their respective scope of work and shall be subject to the provisions of this MOU.
8. The parties agree that with respect of the CR Tender neither Party, nor any subsidiary company of either party, nor any joint venture company or any other entity, in which the Party/ies, is or are in any way interested, shall complete together with or through any third party, nor shall the Parties advise, consult for, engage in or otherwise assist in any way any person or entity or any affiliate thereof in respect of any orders or contracts related to the CR Tender.

9. **Responsibility**

Each party shall assume and accept full responsibility for its Scope of Work and the obligations imposed in the Contract and in this MOU as if it was, with regard to its Scope of Work, an independent partner contracting individually with the Customer. In the event of any defect and damage or any claim arising from the Customer under the Contract or any third party in relation to or as a consequence of any failure to meet the performance

specification the Party, within whose Scope of Work the claim arises, shall be entirely responsible for the claim and shall indemnify and hold harmless the other party from any liability, demand, claim burden cost, expense attorney's fees and costs and arising from thereof.

10. Assignability

No Party to the Joint Venture has right to assign or transfer the interest, right or liability in the Contract without the written consent of the other party and that of the Railway.

11. Use of Machinery, Instruments, Labour Force etc.

The Parties hereto undertake that whatever the machinery, instruments, labour force (including unskilled, skilled, inspectors, Engineers etc) they possess at the time of entering into Joint Venture Agreement or which subsequently shall come in their possession and if such machinery, instruments, labour force is required for the speedy and efficient execution of the work, the Party/Parties having the control over the said machinery, instrument, labour force etc. without having any regard to their share of profit and loss agreed to between the Parties in Joint Venture Agreement shall hand over the same at the disposal of the other party who is actually executing the work for purpose of execution of the contract without any hindrances and obstacle.

12. Duration of MOU

It shall be valid during entire currency of contract including the period of extension, if any and also till the maintenance period is over or till all the contractual liabilities including warranty/guarantee obligations are discharged completely.

13. Applicable Law

This MOU and any arrangement/agreements regarding the performance shall be construed and interpreted in accordance with and governed by the Laws of Indian and shall be subject to the exclusive jurisdiction of the courts at MUMBAI.

14. Settlement of Disputes

In the event of disputes arising from this MOU, the Parties to the MOU undertake to endeavour to settle the said disputes amongst them amicably. However, if the parties fail to resolve the disputes amongst them amicably, the said disputes arising out of or in connection with the present MOU shall be resolved through Arbitration as per the provisions enshrined under the Arbitration and Conciliation Act, 1996 or/and amendments thereof.

15. All communications or notices provided for herein shall be in English languages and be delivered, mailed, or tele-faxed to the Parties addresses as indicated below:-

M/s. _____

M/s. _____

All correspondence and notices to the Joint Venture shall be addressed to the Lead Member, i.e. M/s. _____ /Shri _____ at

the

address stated herein below:-

M/s. _____

Such communication or notices shall be deemed to have been duly given when so delivered or, if mailed, when received at destination.

16. Each part shall have full and sole responsibility to bear the expense of and effect the payment of any taxes, duties, special insurance, fees or assessments of any nature whatsoever (including personal income taxes level or imposed on any of its employees or personnel or any its sub-contractor's employees or personnel) including penalties and interest, if any, levied in connection with the execution of this MOU.

17. The parties to this MOU declare and certify that they have not been black listed or debarred by Railways or any other Ministry/Department of the Govt. of India/State Govt. from participation in tenders/contract on or before the date of opening of bids either in their individual capacity or the JV firm or partnership firm in which they were member/partners.

In witness whereof, the Parties have caused this MOU to be executed by their respective authorized representative on the date and year mentioned herein above.

Signature:-

Signature:-

Signature:-

Shri _____ of Shri _____ of Shri _____
 of
 M/s. _____ M/s. _____
 M/s. _____

Signature:-

Signature:-

Shri _____ of Shri _____ of
 M/s. _____ M/s. _____

Witnesses:-

1) Name :

Address:-

2) Name :

Address:-

E-TENDER NOTICE NO: BSL-LC-TENDER-11-2026, dt. 11/06/2026

Dy.Chief Electrical Engineer (Construction), Central Railway, Bhusawal - 425201 for and on behalf of the President of India invites open tenders in sealed cover on the Prescribed Form from the reputed contractors for the following work:

Name of Work	Design, manufacture, supply of associated equipments, erection, testing & commissioning of 1 No. 132kV/55kV (2×25kV System) Scott Connected transformer TSS & Bay modification work at Pachora TSS, along with 2 No. of Sectioning & Paralleling Post (SP) and 4 No. of Sub-sectioning & Paralleling Post (SSP) In Connection With Gauge Conversion Work From Pachora-Jamner in Bhusawal division of Central Railway. (Two Packet System)
Approx. cost in Rs.	Rs.81,60,31,908.26/-
Earnest Money Deposit in Rs.	Rs.1,63,20,600.00/-
Pre - Bid Meeting Date& Time	25/06/2026& 12:00 PM (Online in Google meet.meet.google.com/oxq-jrwu-hdz)
Railway response to Pre-bid queries latest by	06/07/2026 (Tentative)
Completion Period.	12 (Twelve) Months including monsoon.
Validity of Offer	90 days
Sale of tender forms	NIL
Cost of Tender forms	NIL
Web Address	Tender Notice & tender document can be down loaded from the web site www.ireps.gov.in
Eligibility Criteria	<p>10.1. Technical Eligibility Criteria: As regard of similar Nature of work:“- “Execution of traction substation of 110KV or higher voltage levelorExecution of HT Substation/HT switchyard of 110KV or higher voltage level.”, as under :The work must have been carried out in any of the following organization:- a) Central Government department or State Government department b) Central Government PSUs or State Government PSUs.</p> <p>The tenderer must have successfully completed or substantially completed any one of the following categories of work(s) during last 07 (seven) years, ending last day of month previous to the one in which tender is invited: Three similar works each costing not less than the amount equal to 30% of advertised value of the tender, or Two similarworks each costing not less than the amount equal to 40% of advertised value of the tender, or One similar work costing not less than the amount equal to 60% of advertised value of the tender.</p> <p>10.2. Financial Eligibility Criteria:The tenderer must have minimum average annual contractual turnover of V/N or V whichever is less; where V= Advertised value of the tender in crores of Rupees N= Number of years prescribed for completion of work for which bids have been invited.</p> <p>The average annual contractual turnover shall be calculated as an average of “total contractual payments” in the previous three financial years, as per the audited balance sheet. However, in case balance sheet of the previous year is yet to be prepared/ audited, the audited balance sheet of the fourth previous year shall be considered for calculating average annual contractual turnover.</p> <p>The tenderers shall submit requisite information as per Annexure-VIB, along with copies of Audited Balance Sheets duly certified by the Chartered Accountant/ Certificate from Chartered Accountant duly supported by Audited Balance Sheet.</p>
Date and time of Closing.	28/07/2026 Up to 15.00 Hrs.
Note: Details of Tender Notice, Tender document & corrigendum issued from time to time along with eligibility criteria are available on this website www.ireps.gov.in .Necessary changes if required, would be posted on this website at least 15 days prior to opening of tender .	

PREAMBLE AND SCOPE OF WORK

TENDER NO: BSL-LC-TENDER-11-2026,dt. 11/06/2026

1. NAME OF WORK: This tender paper relates to the work of “Design, manufacture, supply of associated equipments, erection, testing & commissioning of 1 No. 132kV/55kV (2×25kV System) Scott Connected transformer TSS & Bay modification work at Pachora TSS, along with 2 No. of Sectioning & Paralleling Post (SP) and 4 No. of Sub-sectioning & Paralleling Post (SSP) In Connection With Gauge Conversion Work From Pachora-Jamner in Bhusawal division of Central Railway.”

2.0 SCOPE OF WORK.

The work involves Design, manufacture, supply of associated equipments, erection, testing & commissioning of 1 No. 132kV/55kV (2×25kV System) Scott Connected transformer TSS & Bay modification work at Pachora TSS, along with 2 No. of Sectioning & Paralleling Post (SP) and 4 No. of Sub-sectioning & Paralleling Post (SSP) In Connection with Gauge Conversion Work From Pachora-Jamner in Bhusawal division of Central Railway.

3.0 Deleted**4.0 FOREIGN EXCHANGE:**

No foreign exchange and/or import license shall be released / provided to the Contractor in connection with this contract.

5.0 ALTERNATE PROPOSAL:

Deleted

6.0 SPECIAL FEATURES OF THE PROPOSED OHE:

Regulated OHE with 65 sq.mm catenary and 107 sq.mm contact wire and 1000 kg tension in each catenary & contact wire as per standard, latest RDSO / CORE specifications/drawings.

All galvanization of structures, tubes, SPS etc. shall be for non-polluted zone as per RDSO's relevant latest specification. **“All insulators to be Porcelain use”**

All insulators shall be for non-polluted / polluted zone, as per RDSO's relevant latest specification / as per latest guidelines issued from time to time.

The purchaser will not provide any crane special or wiring train. Successful tenderer has to make his own arrangements for erection / dismantling of portal boom, TT Boom and for manual OHE wiring. For erection / dismantling of portals, TTC, masts etc the contractor may arrange his own road crane / Hydra along with fuel, coal, water & other things for crane; shall also arrange staff to safe guard / protect the crane special while out of use, duly following all safety precautions.

7.0 DESIGNED SPEED:

The OHE shall be suitable for the maximum speed of 160 kmph. PSI work to be in 2x25kV system.

8.0 PURCHASER SUPPLY ITEMS:

Annexure enclosed in price bid enlists the items that shall be supplied by the purchaser. Any other materials, not mentioned in above, required for execution of work shall have to be supplied by the Tenderer.

9.0 ADDRESSES:

Relevant addresses for specified purposes in connection with the tender are given below:

- 9.1 For Policy matter, Tender, Design & approval of Drawing –
Chief Electrical Engineer (Construction), Central Railway, 3rd Floor,
New Administrative Building, D. N. Road, Mumbai CST, Pin 400 001.
- 9.2 For contract execution
Dy.Chief Electrical Engineer (Construction)
Central Railway, Bhusawal.
- 9.3 For Security Deposit& Bill payment
Dy.FA&CAO (Construction), Central Railway, Bhusawal.

TENDER OFFERLETTER

To,
The President of India,
 Acting through the

Dy.Chief Electrical Engineer (Construction)
 Central Railway, Bhusawal.

1. I/We M/s.....

Have read the various conditions to tender attached hereto and hereby agree to abide by the said conditions. I/We also agree to keep this Tender open for acceptance for a period of **90** days from the date fixed for opening the same and in default thereof I/We will be liable for forfeiture of full amount of my/our "Earnest Money". I/We offer to do the work for **Design, manufacture, supply of associated equipments, erection, testing & commissioning of 1 No. 132kV/55kV (2×25kV System) Scott Connected transformer TSS & Bay modification work at Pachora TSS, along with 2 No. of Sectioning & Paralleling Post (SP) and 4 No. of Sub-sectioning & Paralleling Post (SSP) In Connection With Gauge Conversion Work From Pachora-Jamner in Bhusawal division of Central Railway.**and hereby bind myself/ourselves to complete the work in **12(Twelve)** months including monsoon from the date of issue of letter of acceptance of the tender. I/We also hereby agree to abide by Condition of contract and General condition of contract (latest) and to carry out the work according to the specifications laid down by the Railway for the present contract.

- A sum of **Rs.1,63,20,600.00/-**herewith forwarded as Bid Security money. The full value of the Bid security money shall stand forfeited without prejudice to any other rights or remedies if:
- I/We do not execute the contract documents within seven days after receipt of notice issued by the Railway that such documents are ready.
- I/We do not commence the work within ten days after receipt to order of that effect.
- 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 any/our offer for this work.

I/We have submitted this tender for the work of "**Design, manufacture, supply of associated equipments, erection, testing & commissioning of 1 No. 132kV/55kV (2×25kV System) Scott Connected transformer TSS & Bay modification work at Pachora TSS, along with 2 No. of Sectioning & Paralleling Post (SP) and 4 No. of Sub-sectioning & Paralleling Post (SSP) In Connection With Gauge Conversion Work From Pachora-Jamner in Bhusawal division of Central Railway.**"on the strength of an **earnest money of Rs.1,63,20,600.00/-**deposited by me / us, **on line.**

I/We agree to pay the Railway an amount equal to the earnest money prescribed for this tender, if I/We withdraw the said tender within prescribed period mentioned above vide Para 1.

I/We also agree that in the event of my/our failure to execute the contract document as hereinbefore provided or commence the work within the prescribed period after issue of letter of acceptance of the tender, the Railway may be entitled to determine that I/We have abandoned the contract and thereupon my/our tender and acceptance thereof may be treated as cancelled and the Railway shall be entitled to forfeit the full amount of earnest money and recover the damages for such default.

Date.....

Contractor's address:

.....

.....

Signature of Contractor(s)

Date.....

Signature of Witnesses

1).....

2).....

* * * * *

PART – I

CHAPTER – I
INSTRUCTIONS TO TENDERERS &
CONDITIONS OF TENDERING

PART-I**CHAPTER-I****INSTRUCTIONS TO TENDERERS AND CONDITIONS OF TENDERING**

Para No		Subject
1.1.1.0	Tender papers
1.1.2.0	Interpretations
1.1.3.0	Singular / Plural
1.1.4.0	Regulation for tender
1.1.5.0	Discrepancies / Omissions
1.1.6.0	Contractor's credentials & supporting documentation
1.1.6.1	Contact eligibility criteria & Credential
1.1.6.2	Supporting documentation
1.1.6.3	Tenderer's special conditions
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1.1.6.6	Tender forms
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1.1.11.0	Quoting of tender
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PART - I

CHAPTER-I

INSTRUCTIONS TO TENDERERS AND CONDITIONS OF TENDERING**1.1.1.0 TENDER PAPERS:**

The instructions to Tenderers and conditions of Tendering conditions of contract, prices and payment and explanatory notes, specifications, forms of tender, preamble shall hereafter be collectively referred to as the “Tender Papers”.

The intending tenderers are advised to study the tender papers carefully. The tenderer shall also acquaint himself with the local conditions, means of access to the site of work, nature of work and all other matters pertaining thereto.

The submission of tender shall be, deemed to have been done, after careful study and examination of the tender papers with a full understanding of the implications thereof.

1.1.2.0 INTERPRETATIONS:

The following terms wherever occurring in the tender papers and wherever used throughout the execution of the work, shall unless excluded by or repugnant to the context, have the meaning attributed thereto as follows:

- (a) “Contract” means the successful Tender, i.e. the Tenderer whose Tender has been accepted either in whole or in part.
- (b) “Contractor” shall mean the person, firm or company whether incorporated or not who enters into the contract with the Railway and shall include their executors, administrators, Successors and permitted assigns.
- (c) “Contractor’s Agent” shall mean the person or persons authorized under a duly executed Power of Attorney to take all actions relating to the work, as could be taken by the Contractor himself. In the case of a firm of Contractors, the Agent shall have the same powers as that of the managing Director of the firm.
- (d) “Contractor’s Representative” shall mean a person in supervisory capacity who shall be so declared by the Contractor and who shall be authorized under a duly executed power of Attorney to receive materials issued by the Purchaser to the Contractor for the works. He shall be responsible for proper execution of work at each or all places and shall take orders from Purchaser’s Engineers and carry out the same.
- (e) “Tenderer” shall mean the persons, the firm or company who tenders for the work with a view to execute the works on contract with the Railway and shall include their personal representatives, successors and permitted assigns.
- (f) “Work” or “Works” means all or any of the items of the work for which the Tenderer /Contractor has tendered/contracted according to the specifications, drawings and Annexures hereto Annexed, or to be implied there from or incidental thereto or to be, hereafter specified or required in such explanatory instructions and drawings, being in conformity with the said original specifications, drawings, annexures and schedules, and also such instructions and drawings additional to the above mentioned as may

from time to time to be issued by the Purchaser's Engineers during the progress of the contracted work..

- (g) "Equipment" means all or any equipment considered necessary by the Purchaser's Engineers for the satisfactory operation, as a whole, of the installations, including structures, foundations etc.
- (h) "Month" means any consecutive period of thirty days.
- (i) "Purchaser" means the President of India acting through his accredited Officers of any one of them. The Dy.Chief Electrical Engineer (Const.), Bhusawal-425201 shall be deemed to be one of such accredited officers.
- (j) "Purchaser's Engineers" means the SSE(TDC) Bhusawal who will decide all matters relating to design, manufacture, installation and commissioning of the OHE, plant and equipment at site.
- (k) "Sub-Contractor" means an individual or a firm of Contractors or a company registered under Indian Company Act or approved suppliers of Materials to whom the Contractor sublets portions of the contract after obtaining specific prior approval of the Purchaser in writing to such subletting of contract.
- (l) "Site" means the areas to be taken up by the Permanent works together with any other area or areas as shall be determined by the Purchaser's Engineers, which may be placed at the disposal of the Contractor for the purpose of the contract and also such area or areas used for store yards, work yards, or workshop in proximity to the works as the Purchaser's Engineers may have authorized as an extension of the site, irrespective of the terms and conditions under which they are occupied by the Contractor.
- (m) "Specifications" shall mean the specifications as defined by RDSO/RE organization / CEE Central Railway for Materials & Works, issued under the authority of the Chief Electrical Engineer or as amplified, added to or superseded by special specifications, if any, appended to the Tender Forms.

1.1.3.0 SINGULAR / PLURAL

Words imparting the singular number shall also include the plural and vice versa where the context requires.

1.1.4.0 REGULATIONS FOR TENDER

These Regulations for Tender and Contract shall be read in conjunction with the Conditions of Contract which are referred to herein and shall be subject to modifications, addition or super session by special conditions of contract and/or special specifications, if any, annexed to the Tender Forms.

1.1.5.0 DISCREPANCIES/OMISSIONS

The tenderers shall not take any advantage of any misinterpretation of the conditions due to typing or any other error/omission and if any doubt, shall bring it to the notice of the Engineer without delay in case any contradictions, only the printed rules and books should be followed and no claim for the misinterpretation shall be entertained.

Should a tenderer find discrepancies in, or omissions from the drawings or any of the Tender Forms or should he be in doubt as to their meaning, he should at once notify

the authority inviting tenders who may send a written instruction to all tenderers. It shall be understood that every endeavor has been made to avoid any error which can materially affect the basis of the tender and the successful Tenderer shall take upon himself and provide for the risk of any error which may subsequently be discovered and shall make no subsequent claim on account thereof.

1.1.6.0 CONTRACTOR'S CREDENTIALS & SUPPORTING DOCUMENTATION:

1.1.6.1 Eligibility & Suitability Conditions for Works Contracts:.(Eligibility & suitability conditions for the contracts valuing above Rs.50 lakhs.)

Technical Eligibility Criteria: As per para of GCC 10.1 of April 2022 :-

As regard of similar Nature of work: : “-“Execution of traction substation of 110KV or higher voltage level.**OR**Execution of HT Substation/HT switchyard of 110KV or higher voltage level.”, as under.:-The work much have been carried out in any of the following organization:- a) Central Government department or State Government department b) Central Government PSUs or State Government PSUs.

The tenderer must have successfully completed or substantially completed any one of the following categories of work (s) during last 07 (seven) years, ending last day of month previous to the one in which tender is invited:

Three similar works each costing not less than the amount equal to 30% of advertised value of the tender, or

Two similar works each costing not less than the amount equal to 40% of advertised value of the tender, or

One similar work costing not less than the amount equal to 60% of advertised value of the tender.

1.1.6.1A: Financial Eligibility Criteria: As per para of GCC 10.2 of April 2022.

The tenderer must have minimum average annual contractual turnover of V/N or V whichever is less; where

V= Advertised value of the tender in crores of Rupees

N= Number of years prescribed for completion of work for which bids have been invited.

The average annual contractual turnover shall be calculated as an average of “total contractual payments” in the previous three financial years, as per the audited balance sheet. However, in case balance sheet of the previous year is yet to be prepared/ audited, the audited balance sheet of the fourth previous year shall be considered for calculating average annual contractual turnover.

The tenderers shall submit requisite information as per **Annexure-VIB**, along with copies of Audited Balance Sheets duly certified by the Chartered Accountant/ Certificate from Chartered Accountant duly supported by Audited Balance Sheet.

b). Tenderers Credentials & Evaluation criteria for ascertaining suitability of Tenderers:

The tenderer must have successfully completed or substantially completed any one of the following categories of work (s) during last 07 (seven) years, ending last day of month previous to the one in which tender is invited:

As regard of similar work:--“**Execution of traction substation of 110KV or higher voltage level or Execution of HT Substation/HT switchyard of 110KV or higher voltage level.**”, as under:-**The work must have been carried out in any of the following organization:- a) Central Government department or State Government department b) Central Government PSUs or State Government PSUs.**

Three similar works each costing not less than the amount equal to 30% of advertised value of the tender, **or**

Two similar works each costing not less than the amount equal to 40% of advertised value of the tender, **or**

One similar work costing not less than the amount equal to 60% of advertised value of the tender”.

c.1 “**The tenderers shall submit a notarized affidavit on non –judicial stamp paper stating that they are not liable to be disqualified and all their statement / 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. In addition to Annexure-V, in case of other than company/proprietary firm, Annexure-V(A) shall also be submitted by the each member of a partnership firm / Joint venture(JV)/ Hindu Undivided Family(HUF)/ Limited Liability Partnership(LLP) etc.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 tenderers documents by the Railway may be dispensed with.

Note: 1 Works executed for Central / State Government / Semi Government Organizations / Authorities, PSUs and Government of India Undertakings, will be considered for assessing the suitability of tenderers. Authentic Certificates from the concerned Government Authorities shall be produced by the tenderer(s) to this effect, along with the Tender Offer.

Note:2 Such of the Contractors, who are engaged directly by the Concessionaires / SPVs, for the works awarded by Central / State Government / Semi Government Organizations / Authorities, PSUs and Other Government Undertakings to the Concessionaires / SPVs will be considered eligible for assessing their suitability. Also, Sub-contractors employed by the Contractors of the Concessionaires / SPVs will be considered eligible for assessing their suitability. This will be subject to submission of authentic certificates for the same, by the tenderer(s), from the concerned Government Authorities, along with the Tender Offer.

Note:3 **Total value of similar nature of work completed during the qualifying period, and not the payments received within the qualifying period along, shall be considered.**

In case, final bill of the similar single work has not been passed and final measurements have not been recorded, the paid amount including statutory deductions will be considered. If the final measurements have been recorded and work has been completed with negative variation, then also the paid amount including statutory deductions will be considered. However, if

final measurements have been recorded and work has been completed with positive variation but variation has not been sanctioned, original agreement value or last sanctioned agreement value, whichever is lower shall be considered for judging eligibility.

Value of a completed work done by a member in all earlier Partnership firm or a JV firm shall be reckoned only to the extent of the concerned member's share in that Partnership firm/JV firm for the purpose of satisfying his compliance of the above mentioned condition, in the tender under consideration.

Note:4.- Tenderer should submit documentary proof in regard to fulfilling the above eligibility criteria along with their offer. Each document should be signed by the tenderer in token of authentication of the document submitted. The offer of tenderers who do not meet the eligibility criteria as mentioned (a) & (b) above shall not be considered. The Tenderers who fail to submit documentary proof along with their offer will not be considered.

1.1.6.2 Submission of documents: -

The tenderer is required to submit the following documents along with the tender:

- (i) Earnest Money Deposit: Tenderers are allowed to make payments against this tender towards tender document cost and earnest money only through online payment modes available ON IREPS portal like net banking, debit card, credit card etc. Manual payments through Demand draft, Banker cheque, Deposit receipts, FDR etc are not allowed.
- (ii) Power of Attorney
- (iii) Tender Documents duly signed, stamped and completed.
- (iv) Programme for execution of work in scheduled time.
- (v) Partnership deed / association deed and Power of Attorney duly notarized /registered.
- (vi) Statement of payments received by the firm for contractual works during the last 3 years (year wise) certified by the Govt. Departments or Annual Reports of the firm for the last three years showing annual turnover duly audited by Chartered Accountants.
- (vii) Certificate from the controlling authorities of Govt./ Semi Govt. organization indicating of work of similar nature carried out by the firm during the last three years in value support of Para 1.1.6.1(b)
- (viii) Formats- I to II as indicated in this chapter, and Annexure-P.
- (ix) Any other documents the tenderer/s may like to submit in support of his /scheme.

1.1.6.3 Tenderers Special Conditions

The tenderer should normally not stipulate any special conditions while submitting his tender. In such an eventuality, Railway reserves the right to summarily reject such tenders without assigning any reasons whatsoever. The tenderer should normally submit his tender in full conformity with the tender conditions.

1.1.6.4 Performance record:

Performance record for the last 5 years showing the following may be submitted.

- a) Was denied credit bond or Bank Guarantee.
- b) Was incapable of performance of contract, resulting in rescinding of the same at firm's risk and cost.
- (c) Was unable to complete awarded work.
- (d) Was penalized for failure to adhere to completion date.
- (e) Earned bonus for early completion.
- (f) Took recourse to arbitration for settlement for disputes.

Partnership deeds, Power of Attorney and Credential certificates/ ITCC/Solvency Certificates, etc must be submitted either in original or certified true copies **duly attested by a Gazetted Officer.**

If, the tenderer fails to abide by these conditions and fails to submit as above, the tender is liable to be rejected straight away.

1.1.6.4 Tenderer's aspect of consideration: -

Tenderers should quote their offer taking all aspects into consideration. The offer with special condition stands to be summarily rejected.

1.1.6.6 Tender form:

The following documents form part of contract: -

- a. Tender offers letter.
- b. Preamble
- c. Instructions to tenderers and conditions of tendering
- d. Conditions of contract
- e. Prices and Payments
- f. Explanatory Notes
- g. Technical Specifications

1.1.6.7 Central Railway's General Conditions of Contract (G.C.C.) April 2022 with Advance correction slip No.1 &2 , as amended or latest at the time of acceptance of the tender and at the time of execution of the agreement mentioned in clause 18 under Regulations and Conditions of Tender. This is applicable but not attached with this tender form.

1.1.6.8 Schedule of Quantities and Rates

1.1.6.9 Forms of the Tender.

1.1.7.0 INSTRUCTIONS FOR TENDER SUBMISSION:

The tender must be accompanied by a sum of **Rs.1,63,20,600.00/-** as earnest money deposited ~~in cash or~~ in any forms mentioned in the tender notice failing which the tender will be summarily rejected.

The tenderer shall hold the offer open till such date as may be specified in the tender. It is understood that the tender documents have been sold/issued to the tenderer and the tenderer is being permitted to tender in consideration of the stipulation on his part that after submitting his tender, he will not rescile from his offer or modify the terms and conditions thereof in a manner not acceptable to the Dy.Chief Electrical Engineer (Const.), Bhusawal. Should the tenderer fail to observe or comply with the foregoing stipulation, the amount deposited as security for the due performance of the above stipulation shall be forfeited to the Railway. If the tender is accepted, the amount of earnest money will be held as security deposit for the due and faithful fulfillment of the Contract in terms of Clause 16 of General Conditions of Contract. The earnest money of the unsuccessful tenderer will as therein before provided be returned to the unsuccessful tenderers but the Railway shall not be responsible for any loss or depreciation that may happen to the security for the due performance of the stipulation to keep the offer open for the period specified in the tender documents or to the earnest money while in their possession, nor be liable to pay interest thereon.

1.1.8.0 INSPECTION OF SITE BEFORE TENDERING:

Before submitting a tender, the 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.

1.1.9.0 SIGNING OF TENDER:

When work is tendered for by a firm or company of contractors, the tender shall be signed by the individual legally authorized to enter into commitments on their behalf. The Railways will not be bound by any Power of Attorney granted by the tenderer or by changes in the composition of the firm made subsequent to the execution of the contract. It may, however recognize such Power of Attorney and changes after obtaining proper legal advice, the cost of which will be charged to the Contractor.

1.1.10.0. MONEY AND SECURITY DEPOSIT:

1.1.10.1 Earnest Money:

- 1 (a) The tenderer shall be required to deposit Earnest Money with the tender for the due performance with the stipulation to keep the offer open till such date as specified in the tender, under the conditions of tender. **Earnest Money Deposit: Tenderers are allowed to make payments against this tender towards tender document cost and earnest money only through online payment modes available ON IREPS portal like net banking, debit card, credit card etc. Manual payments through Demand draft, Banker cheque, Deposit receipts, FDR etc are not allowed.**

The Earnest Money to be submitted with tender shall be as follows and as indicated in the tender notice :-

Value of the work(Tender Value)	EMD
For all works.	2 % of the estimated cost of the work.

The earnest Money shall be rounded to the nearest Rs.100/-. This Earnest Money shall be applicable for all modes of tendering.

Accordingly, this tender must be accompanied by a sum of **Rs.1,63,20,600.00/-as Bid Security.**

- (b) It shall be understood that the tender documents have been sold / issued to the tenderer and the tenderer is permitted to tender in consideration of stipulation on his part, that after submitting his tender he will not rescale from his offer or modify the terms and conditions thereof in a manner not acceptable to the Engineer. Should the tenderer fail to observe or comply with the foregoing stipulation, the amount deposited as security for the due performance of the above stipulation shall be forfeited to the Railway.
- (c) If the tender is accepted, the amount of earnest money will be held as security deposit for the due and faithful fulfillment of the Contract in terms of Clause 16 of General Conditions of Contract. The earnest money of the unsuccessful tenderer will as therein before provided be returned to the unsuccessful tenderer but the Railway shall not be responsible for any loss or depreciation that may happen to the security for the due performance of the stipulation to keep the offer open for the period specified in the tender documents or to the earnest money while in their possession, nor be liable to pay interest thereon.
- (d) The Bid Security shall be deposited either in cash through e-payment gateway or submitted as Bank Guarantee bond from a scheduled commercial bank of India or as mentioned in tender documents. The Bank Guarantee bond shall be as per **Annexure-VIA** and shall be valid for a period of **90days** beyond the bid validity period.

In case, submission of Bid Security in the form of Bank Guarantee, following shall be ensured:

- i. A scanned copy of the Bank Guarantee shall be uploaded on e-Procurement Portal (IREPS) while applying to the tender.
- ii. The original Bank Guarantee should be delivered in person to the official nominated as indicated in the tender document **before closing date for submission of bids (i.e excluding the last date for submission of bids).**
- iii. Non submission of scanned copy of Bank Guarantee with the bid on e-tendering portal (IREPS) and/or non submission of original Bank Guarantee within the specified period shall lead to summary rejection of bid.
- iv. The Tender Security shall remain valid for a period of **90 days** beyond the validity period for the Tender.
- v. The details of the BG, physically submitted should match with the details available in the scanned copy and the data entered during bid submission time, failing which the bid will be rejected
- vi. The Bank Guarantee shall be placed in an envelope, which shall be sealed. The envelope shall clearly bear the identification **“Bid for the ***** Project”** and shall clearly indicate the name and address of the Bidder. In addition, the Bid Due Date should be indicated on the right hand top corner of the envelope.
- vii. The envelope shall be addressed to the officer and address as mentioned in the tender document.

- viii. If the envelope is not sealed and marked as instructed above, the Authority assumes no responsibility for the misplacement or premature opening of the contents of the Bid submitted and consequent losses, if any, suffered by the Bidder.

1.1.10.2 Security Deposit:

As per clause 16(1) to 16(3) of GCC.

1.1.10.3 Performance Guarantee (PG) :-

As per clause 16(4) of GCC.

1.1.11.0 QUOTING OF RATES:

The Tenderer shall quote his rates in percentage above / below / at par with respect to estimated cost given in the tender and **fill up the form given in the tender's schedule of quantities and rates.**(As per online tender notice given).
(Percentage rates to be quoted both in figures & words)

1.1.12.0 ERASURE AND ALTERATION:

Tenders containing erasure and alterations of the tender documents are liable to be rejected. Any correction made by the Tenderer in his entries must be attested by him.

1.1.13.0 OBLIGATION TO ACCEPT / REJECT:

It shall not be obligatory on the said authority to accept the lowest tender and no tenderer shall demand any explanation for the cause of rejection of his tender.

1.1.14.0 DELIBERATION:

If the tenderer deliberately gives wrong information in his tender or creates circumstance for the acceptance of his tender, the Railway reserves the right to reject such tender at any stage

1.1.15.0 RETAINING OF CHARACTER OF FIRM:

If a tenderer expires after the submission of his tender or after the acceptance of his tender, the Railway shall deem such tender as cancelled. If a partner of a firm expires after the submission of their tender or after the acceptance of their tender, the Railway shall deem such tender as cancelled unless the firm retains its character.

1.1.16.0 NON COMPLIANCE:

Non-compliance with any of the conditions set forth herein above is liable to result in the tender being rejected.

1.1.17.0 AUTHORITY TO ACCEPT TENDER:

The authority for the acceptance of the tender will rest with the Chief Administrative Officer (construction) / Chief Electrical Engineer (Const.)/ Deputy Chief Electrical Engineer (Const)/ Divisional Electrical Engineer (Const) who does not bind himself to accept the lowest or any other tender nor does he undertake to assign reasons for declining to consider any particular tender or tenders.

1.1.18.0 EXECUTION OF CONTRACT AGREEMENT:

- (a) The successful Tenderer shall be required to execute an Agreement with the President of India acting through the Divisional Electrical Engineer(Const.) Bhusawal /Deputy Chief Electrical Engineer (Const.) Bhusawal for carrying out the work according to the Preamble, Conditions of contract, Instructions to the tenderers General Conditions of Contract, Specifications given in the tender papers and as laid by RDSO/RE/Central Railway for Works and Materials.
- (b) The Railway reserves the right of not to invite tenders for any work or works, or to invite open or limited tenders, and when tenders are called, to accept a tender in whole or in part or reject any tender or all tenders without assigning reason for any such action.
- (c) The Tenderer whose tender is accepted shall be required to appear at the office of the Dy.Chief Electrical Engineer(Const.) Bhusawal as the case may be in person, or if a firm or corporation, a duly authorized representative, and execute the contract documents within **thirty** days after notice that the contract has been awarded to him. Failure to do so shall constitute a breach of the agreement effected by the acceptance of the Tender in which case the full value of the earnest money (or equivalent amount from standing earnest money) accompanying the tender, shall stand forfeited without prejudice to any other rights or remedies.
- (d) In the event of any tenderer whose tender is accepted, refuses to execute the contract documents as herein before provided, the Railway may determine that such tenderer has abandoned the contract and thereupon his tender and the acceptance thereof shall be treated as cancelled and the Railway shall be entitled to forfeit the full amount of the earnest money and to recover the liquidated damage for such default.
- (e) Every contract shall be complete in respect of the documents it shall constitute. Not less than 5 copies of the contract documents shall be signed by the competent authority and the contractor and one copy given to the contractor.
- f) The earnest money deposited by the successful tenderer shall be forfeited if the contractor fails to execute the Agreement or fails to start the work within a reasonable time (to be determined by the Engineer after notification of the acceptance of his tender).

1.1.19.0 Completion:

The works are required to be completed within a period of **12 (Twelve) months** including monsoon from the date of issue of acceptance letter.

The sequence in which works are programmed to be carried out shall be represented by a network chart to be prepared by the Contractor and approved by the Engineer before commencement of the work.

The network chart shall be maintained on a personal computer. The PERT chart shall be reviewed every month.

1.1.20.0 INCOME TAX CLEARANCE CERTIFICATE:

Deleted.

1.1.21.0 PARTNERSHIP DEEDS, POWER OF ATTORNEYS ETC:

- (a) The tenderer/s shall clearly specify whether the tender is submitted on his behalf or on behalf of the partnership concern. If the tender is submitted on behalf of partnership concern, he should submit the certified copy of partnership deed along with the tender and authorization to sign the tender documents on behalf of partnership concern. If these documents are not enclosed alongwith tender documents, the tender will be treated as having been submitted by individual signing the tender documents. The

Railway will not be bound by any power of attorney granted by the tenderer or by changes in the composition of the firm made subsequent to the execution of the contract. It may, however, recognize such power of attorney and changes after obtaining proper legal advice the cost of which will be chargeable to the contractor. The charges have been fixed at Rs.200/- payable by the tenderer at the time of submitting the power of attorney for scrutiny and advice.

- (b) If the power of attorney is not accepted, otherwise than for legal defect, the charges will be refunded. If the Power of Attorney is returned on account of legal defect for correction, separate charges of Rs.50/- for scrutiny of corrected power of attorney will be payable by the tenderer while resubmitting power of attorney. The same charges shall be recoverable for scrutiny of all documents.
- (c) No power of attorney in favour of an individual person will be accepted if it is irrevocable.
- (d) In case, where the power of attorney/partnership deed has not been executed in English, the true and authenticated copies of the translation of the same by Advocate, authorized translator of courts and licensed petition writers should be supplied by the contractor/s while tendering for the work.
- (e) Cancellation or creation or correction of any documents, such as Power of Attorney, Partnership Deed, etc. which may have a bearing on the tender/contract should be communicated forthwith by the tenderer / Contractor in writing, failing which Central Railway Mumbai, shall not have responsibility or liability for any action taken on the strength of the said documents.

1.1.22.0 EMPLOYMENT OF RETIRED RAILWAY EMPLOYEE ETC:

- (a) Should a tenderer be retired Engineer of the Gazetted rank or any other Gazetted officer working before his retirement, whether in the Executive or administrative capacity, or whether holding a personable post or not, in the Engineering Department of any of the Railway owned and administered by the President of India for the time being, or should a tenderer being partnership firm have as one of its partners a retired Engineer or a retired Gazetted officer as aforesaid, or should a tenderer being as incorporated company have any such retired Engineer or retired Officer as one of its directors, or should a tenderer have in his employment any retired Engineer, or retired gazetted Officer as aforesaid the full information as to the date of retirement of such Engineer or gazetted officer from the said service and in cases where such Engineer or Officer has not retired from Government service at least two years prior to the date of the submission of the tender as to whether permission for taking work with such contractor, if the contractor be a partnership firm or an incorporated company, to become a partner or director as the case may be, or to take employment under the contractor has been obtained by the tenderer or the engineer or the officer as the case may be from the President of India or any officer duly authorised by him in this behalf shall be clearly stated in written at the time of submitting the tender. Tenders without the information above referred to or a statement to the effect that no such retired engineer or retired gazetted officer is so associated with tenderer, as the case may be, shall be rejected.
- (b) Should a Tenderer be an individual on the list of approved Contractors, have a relative employed in gazetted capacity in the Railways or, in the case of a partnership firm or company incorporated under the India Company Law should a partner or a relative or the partner or a shareholder or a relative of a shareholder be employed in

gazetted capacity in the Railways, the authority inviting tenders shall be informed of the fact at the time of submission of tenders, failing which the tenders may be rejected, or if such fact subsequently comes to light, the contract may be rescinded in accordance with the provisions in Clause 62 of the General Conditions of Contract.

1.1.23.0 BINDING OF ORIGINAL OFFER IN CASE OF NEGOTIATIONS:-

Should the Railway decide to negotiate with a view to bring down the rates, the original offer will still be binding in case nothing materializes out of the negotiations.

1.1.24.0 SUBMISSION OF TENDER:-To be submitted only through online payment mode

Name of Tender:

[illegible]

Details of work in hand and other works tendered for as on the submission of the tender.

Name of Tender:

S.N.	Name of project and address of it's controlling authority	Location	Name of work	Cost of work	Date of Letter of Acceptance with Completion period	Progress of woks till today with financial payment received in last 3 years Rs.	Remarks
1	2	3	4	5	6	7	8

Annexure 'P'

1. (a) List of Tools, Plants & Machinery available:-
- (b) List of plant & Machinery proposed to be hired.
2. Particulars of personnel to be employed on this work:

Name	Designation	Qualification	Previous experience	Remarks

Note:- Since the work under this project has to be planned and carried out very meticulously as running traffic condition involved, it is necessary that the firm is equipped with important M&P items required for day to day work such as sufficient number of Tirfors, lift, Bamboo Ladders, Ladder Trolley, Height Gauge, Come along Clamps, Slings shackles, workshop item like Tensometer, measuring tools, jigs & arrangement for manual wiring etc. along with transportation and communication facilities apart from supervisor having design background and skilled and experienced staff who have carried out similar jobs.

The contractor may require extra man power during block period. Lighting arrangement during night working has to be provided by the contractor.

* * * * *

PART - I

CHAPTER - II

CONDITIONS OF CONTRACT

PART - I
CHAPTER - II
CONDITIONS OF CONTRACT

Para No.		Subject
1.2.1.	...	Scope
1.2.2	...	Conditions of contract
1.2.3	...	Purchaser's Representative
1.2.4	...	Contractor's Representative
1.2.5	...	Contractor's Office & Address
1.2.6	...	Purchaser's Address
1.2.7	...	Deleted
1.2.8	...	Income Tax
1.2.9	...	Bribery
1.2.10	...	Railway Pass
1.2.11	...	Laws of India
1.2.12	...	Force Majeure
1.2.13	...	Notice under Local News
1.2.14	...	Determination of Contract, Insolvency, Liquidation, Breach of Contract
1.2.15	...	Loss in Transit
1.2.16	...	Agreement
1.2.17	...	Security Deposit & Performance Guarantee
1.2.18	...	Scheme of Work
1.2.19	...	Quality Assurance Programme in Supply & Erection
1.2.20	...	Specified Railway Stores such as Equipments, Components, Fittings and Other Materials.
1.2.21	...	Other Railway Stores
1.2.22	...	Contractor's Organisation
1.2.23	...	Contractor's Drawings, etc.
1.2.24	...	Sub-contractors
1.2.25	...	Quality Assurance
1.2.26	...	Crane special
1.2.27	...	Wiring train
1.2.28	...	Traffic block
1.2.29	...	Default and Delay
1.2.30	...	Loss Sustained due to Default and Delay

1.2.31	...	Correctness of Work and Materials.
1.2.32	...	Contractor's Responsibility for Discrepancy
1.2.33	...	Additions and Alterations to Erected Equipment
1.2.34	...	Quantum of Work and Materials
1.2.35	...	Competent Supervisors
1.2.36	...	Training of Purchaser's Staff
1.2.37	...	Work by Other Agencies
1.2.38	...	Access to Work Site
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1.2.40	...	Insurance
1.2.41	...	Accidents
1.2.42	...	Contractor's Liability for Costs and Damages.
1.2.43	...	Safety Measures
1.2.44	...	Recovery for Delay in Completion
1.2.45	...	Extension Time
1.2.46	...	Provisional Acceptance
1.2.47	...	Defective Equipment's to be Changed
1.2.48	...	Use of Rejected Equipment's
1.2.49	...	Guarantee
1.2.50	...	Final Acceptance
1.2.51	...	Payment
1.2.52	...	Site Clearance
1.2.53	...	Equipment's, Components & Materials Received for Work.
1.2.54	...	Settlement of dispute and demand for arbitration
1.2.55	...	Deleted
1.2.56	...	Release of SD & Performance Guarantee
1.2.57	...	Issue of identity cards to contractor's labors
1.2.58	...	Drafting of contractors vehicle & machinery during accidents.
1.2.59	...	Joint procedure
1.2.60	...	Special condition for drawing.
1.2.61	...	Employment of Staff

PART - I CHAPTER - II

CONDITIONS OF CONTRACT

1.2.1. SCOPE:

This chapter deals with the conditions of Contract under which the various works coming under the purview of this contract are to be executed by the Contractor. This should be read in conjunction with **General condition of contract, April 2022** of Engineering department or latest as amended from time to time.

CONDITIONS OF CONTRACT:

If the Tender submitted by a Tenderer is accepted and the contract awarded to the Tenderer, the various works coming under the purview of the contract shall be governed by the terms and conditions included in the Tender papers covering the following:

- i) System of tendering
- ii) Preamble and scope of work to the Tender Papers.
- iii) Instructions to Tenderers and conditions of Tendering, as included in Part - I, Chapter - I.
- iv) Conditions of contract, as included in this chapter.
- v) **Central Railway's General Conditions of Contract (G.C.C.) of April 2022 of Engineering department or latest as amended from time to time.**
- vi) Prices and Payments, as included Price Bid.
- vii) Explanatory notes of Schedule and Schedule of prices and quantities.
- viii) Annexures under Part-III and as modified or amended by the letter of acceptance of the tender.

1.2.3. PURCHASER'S REPRESENTATIVE:

Subject to as otherwise provided in this contract, all notices to be given on behalf of the Purchaser and all other action to be taken on his behalf may be given or taken, as the case may be, on his behalf by the General Manager or his successor.

1.2.4. CONTRACTOR'S REPRESENTATIVE:

The Contractor's Representative shall be a person as defined in Part-I, Chapter-I.

1.2.5. CONTRACTOR'S OFFICE & ADDRESS:

The Contractor shall within a month of issue of letter of acceptance of Tender, establish an office at a convenient place for progressing designs and drawings and field works, expeditiously, in consultation and with approval of the Purchaser. He shall intimate the Purchaser the address thereof in which all correspondence shall be sent. Any communication sent to the Contractor by post at his said address shall be deemed to have reached the Contractor duly and in time. Important documents shall be sent by Registered post.

1.2.6. PURCHASER'S ADDRESS:

The list of addresses to which correspondence and documents relating to the contract to be made are as under:

For Tender, Policy matter, Design & approval of Drawing –
Chief Electrical Engineer (Construction), Central Railway, 3rd Floor,
New Administrative Building, Mumbai CST.

For contract execution
Dy.ChiefElectrical Engineer(Construction)
Central Railway, Bhusawal

For Security Deposit
DY. FA & CAO (Construction), Central Railway Bhusawal office.

For Bill payment: - DY. FA & CAO (Construction), Central Railway Bhusawal.

1.2.7 DELETED**1.2.8. INCOME TAXES:**

- (a) The Contractor and all personnel employed by him shall pay such taxes like income tax as are payable under statutory laws of India and the Purchaser will not accept any liability for the same.
- (b) Deduction of income tax at source as per provision of finance act and income tax act in force may be made from the Contractor/sub-Contractor and the amount so deducted may be credited to the Central Government.

1.2.9. BRIBERY:

Any bribe, commission, gift or advance given, promised or offered by the Contractor, or his partner, agent or servant or any one on his or their behalf to any officer, servant, representative or the agent of the Purchaser or any person on his or their behalf in relation to the obtaining or the execution of this or any other Contract with the Purchaser, shall in addition to the criminal liability he may incur under the prevention of corruption act, subject the Contractor to the cancellation of this and all other contracts, and also to payment of any loss resulting from any such cancellation to the like extent as is provided in case of cancellation due to other causes, and the Purchaser shall be entitled to deduct the amounts so payable from any money otherwise due to the Contractors under this or any other Contract as envisaged under Para 1.2.42. Any question or dispute as to the commission of any offence under the present clause shall be decided by the Purchaser, in such manner and on such evidence or information as may be thought fit and sufficient and his decision shall be final and conclusive in the matter.

1.2.10 RAILWAY PASS:

No Railway pass for the conveyance of the Contractor or his agents or his labour and/or stores will be granted. The Contractor may, however, carry free of charge but at his own risk such labour, supervisory staff and stores as far as necessary for the execution of work by work trains between the Contractor's depot and site of work if provided by the purchaser.

1.2.11 LAWS OF INDIA:

This contract shall be governed by the laws for the time being in force in the Republic of India.

1.2.12 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 the public enemy, civil commotion, sabotage, fires, floods, earthquakes, explosions, epidemics, quarantine restrictions, strikes, lock-outs, any Statute, Statutory Rules, regulations, orders or requisitions issued by any Government Department or competent authority or acts of God (hereinafter referred to as “event”) then, provided notice of the happening of any such event is given by either party to the other within twenty one 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 or delay in performance and the obligations under the contract shall be resumed as soon as practicable after such event has come to an end or ceased to exist PROVIDED FURTHER that if the performance in whole or part of any obligation under this contract is prevented or delayed by reason of any such event beyond a period as mutually agreed to by the Purchaser and the Contractor after any event or 60 days in the absence of such an agreement whichever is more, either party may at its option terminate the contract, provided also that if the contract is so terminated under this clause, the Purchaser will at the time of such termination take over from the Contractor, at prices as provided for in the contract, all erected equipment or equipments under erection as also all and any portion of unused, undamaged and acceptable equipments, whether in storage or in the course of manufacture, at Schedule rates or at prices mutually agreed to, where Schedule rates are not available.

1.2.13. NOTICE UNDER LOCAL LAWS:

The Purchaser shall, throughout the continuance of the Contract, and in respect of all matters arising out of the Contract, serve all notices and obtain all consents and way leaves, approvals and permissions required to be taken by the Purchaser under any regulations and by-laws of the local or other authority, which shall be applicable to the works.

1.2.14 DETERMINATION OF CONTRACT:

- (a) Notwithstanding the provisions under Para 1.2.12 the Purchaser may, at any time, by a notice in writing, summarily determine the contract without liability to pay any compensation to the contractor in respect thereof in any of the following events.

(i) **insolvency:**

If the Contractor being an individual, or if a firm, any partner in the Contractor’s firm, shall at any time be adjudged insolvent or shall have a receiving order or orders for administration of his estate made against him or shall take any proceedings or liquidation or compensation under any law relating to insolvency for the time being in force or make any conveyance or assignment of his assets or enter into any

arrangement or composition with his creditors or suspend payment, or if the firm be dissolved under the partnership Act,

OR

(ii) **liquidation:**

If the Contractor being a company shall pass a resolution or the court shall make an order for the liquidation of its affairs or a receiver or manager on behalf of the debenture holders shall be appointed or circumstances shall have arisen which entitled the court or debenture holders to appoint a receiver or Manager.

OR

(iii) **breach of contract:**

If the contractor commits any breach of this contract not herein specifically provided for, provided always that such determination shall not prejudice any right of action or remedy which shall have occurred or shall accrue thereafter to the Purchaser and provided also that the Contractor shall be liable to pay the Purchaser any extra expenditure which the Purchaser is thereby put to, but shall not be entitled to any gain or repurchase. In the event of such determination, without prejudice to the other rights and remedies of the Purchaser including the rights of forfeiting the security Deposits, the Purchaser shall be entitled to have the work of remainder thereof performed, executed and / or carried out by any other agency at the cost and the risk of the Contractor and hold the Contractor liable for reimbursement in the event of any loss on this account.

OR

(iv) If, at any time after the submission of the Tender, the Tenderer/Contractor being a partnership firm admits as one of his partners or employees under it, or being an incorporated company, elects or nominates or allows to act as one of its Directors or employees 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, whether holding any pension able post or not, in any Department of any of the Railways for the time being owned and administered by the President of India, before the expiry of two years 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 authorised by him in this behalf to become a partner or a Director or to take employment under the Contractor, as the case may be,

OR

(v) If the Contractor fails 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 an incorporated company, correct information as to whether, any of the Directors was such a retired engineer or retired officer, or

(vi) If the Contractor having such a retired engineer or retired officer suppresses and not discloses at the time of submitting the said Tender the fact of his being such a retired engineer or a retired officer, or makes 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 to seek employment under the Contract.

- (b) **Exceptions:** Termination of contract will not arise in case of voluntary liquidation meant for amalgamation or re-organisation, provided the newly formed company takes over the full responsibilities and liabilities of the liquidated firm and it is acceptable to the Purchaser.
- (c) Termination of Contract under this Para and 1.2.29 will not arise in case of breaches or defects of a minor nature. The General Manager or his successor shall be the sole authority to decide whether breaches and defects are of minor nature.
- (d) (i) **Right of Railway to determine contract:**
The purchaser shall be entitled to determine and terminate the contract at any time should in the purchaser'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 rates specified in the contract. Notice in writing from the purchaser of such determination and the reason there for shall be conclusive evidence thereof.

(ii) **Payment on determination of contract:** Should the contract be determined under sub-clause (i) above and the contractor claims payment for expenditure incurred by him in the expectation of completing the whole of the work, the purchaser shall admit and consider such claims as are deemed reasonable and are supported by vouchers to the satisfaction for compensation or otherwise whatsoever 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 the contract. The Railways decision on the necessity and propriety of such expenditure shall be final and conclusive.

1.2.15 LOSS IN TRANSIT

If loss or damage occurs to the stores or any part thereof during transit by rail, the Contractor shall have only such remedy as is available to the public against the carrier under the Indian Railways (Amendment) Act 1961, No.39 of 1961 and amended from time to time.

1.2.16 AGREEMENT

- (a) The successful Tenderer shall, within **30** days on receipt of Letter of Acceptance, be bound to execute an agreement based on accepted rates and conditions, in such forms as the Purchaser may prescribe and lodge the same with the Purchaser together with the conditions of contract, specifications and Schedule of prices referred to therein duly completed. The form for agreement is included as annexure IV in Part I-Chapter –II A. If a work is transferred from the jurisdiction of one Railway to another Railway or to a project authority or vice versa while the contract is in subsistence the contract shall be binding on the Contractor and successor Railway/Project in the same manner and take effect in all respects as if the Contractor and the successor Railway/Project were parties thereto from the inspection and the corresponding officers 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.
- b) If for administrative or other reasons the Contract is transferred to the successor Railway/Project the contract shall, notwithstanding anything contained herein contrary thereto, be binding on the Contractor and the successor Railway/Project in the same manner and take effect in all respects as if the Contractor and the successor

Railway/Project had been parties thereto from the date of this contract.

- c) Until a formal agreement is prepared and executed, acceptance of this letter shall constitute a binding Contract between us for this work.

1.2.17 SECURITY DEPOSIT & PERFORMANCE GUARANTEE:

1.2.17.1 As per clause No. 16(1) to 16(3) of GCC.

**1.2.17.2 PERFORMANCE GUARANTEE:
As per clause No. 16(4) of GCC.**

1.2.18 SCHEME OF WORK:

- (a) Within a period of 15 days beginning from the date of issue of Letter of Acceptance of Tender, the Contractor shall submit to the Dy.Chief Electrical Engineer (Construction) Bhusawal the following documents.
 - (i) Detailed time schedule for design and submission of various documents are enumerated in Part-II Chapter-IV. The comprehensive schedule shall be planned in a manner such that the entire basic designs and drawings for the group/s is/are accepted by the Purchaser within a period not exceeding one third of the total period allowed for and working drawings, within a period not exceeding two third of the total period allowed for completing the work. This period shall be reckoned from the date of issue of the letter of Acceptance of Tender. The schedule shall take into account the time required for study by the Purchaser who reserves for this purpose 30 days for verifying the designs and drawings.
 - (ii) A detailed time schedule shall be in form of a PERT network consisting of adequate numbers of activities covering key phases of work for each section. The network shall indicate the interface facilities and materials to be supplied by the Purchaser and dates by which those are required. The planning for each stage of work shall be done in the order of priority as given by the Purchaser and should be such as to complete the entire work within the stipulated period.
- (b) Works to be done as Approved:
The planning shall be finalised in consultation with the Purchaser and approved by the latter in writing before commencement of the work and the Contractor shall be held responsible for the execution of the work in full compliance with approved design and drawings. Designs and drawings modified at site by the Purchaser's Engineers shall be treated as approved. However, such modifications shall be incorporated in the designs and drawings and resubmitted for formal approval.
- (c) Monthly Progress Report:
The contractor shall furnish to the Dy.Chief Electrical Engineer(Construction) Bhusawal or his successor / nominee during the first week of every calendar month, a progress report showing progress of finalisation of designs and drawings, materials and equipment received at site and the works carried out during the preceding month and up-to-date progress of these items along with the total quantum of designs and drawings, materials and equipments and the works required for the contract.
- (d) For finalising the scheme of work out-lined in above sub-paras, the Contractor shall make use of the latest network analysis techniques like CPM technique, PERT chart etc.

1.2.19 QUALITY ASSURANCE PROGRAMME IN SUPPLY AND ERECTION:

- (a) All materials used in the work shall be of the best quality and of the class most suited for the purpose specified and procured from the sources approved by Research, Design and Standards Organisation/ CORE / CEE C.Rly. It is essential that the manufacturer from whom supply is arranged should be on approved list of RDSO/CORE/CEE C.Rly. and have long experience of design and manufacture of equipments, components, materials and fittings. The requisite facilities for testing prototypes supplied against this contract should be available with the manufacturer. In the case of those equipments, components or fittings for which the requisite facilities for testing of prototypes are not available with the manufacturer, the manufacturer shall arrange to carry out the prototype tests at his own cost in a Testing Laboratory approved by the Purchaser. Only tested quality steel shall be used. The contractor shall ensure that the Purchaser's prescribed Quality Assurance Standards are rigidly followed in the manufacture and erection/installation of all the materials / components and fittings / equipments required for the work.
- (b) **Quality of Materials and Erections:**
All erection work carried out shall also be of the best quality acceptable to the Purchaser.

1.2.20 SPECIFIED RAILWAY STORES:

The various materials which will be supplied to the contractor by the Purchaser are indicated in Annexure enclosed with tender booklet. The prices in Schedule of Prices (SOR) shall be exclusive of the cost of supply of these items. For the purpose of final reconciliation, the procedure laid down will be followed. The shortage, if any, shall be recovered from the contractor by the Purchaser at the prices specified in note at the end of para 1.2.21.

1.2.21 OTHER RAILWAY STORES:

If any material is supplied by the purchaser either at the Contractor's request or suo-moto in order to prevent any possible delay in the execution of the works likely to occur due to the Contractor's inability to make adequate arrangements for supply thereof or otherwise recovery will be made from contractor's bill at the book rate or the market rate, prevailing at the time of supply whichever is higher plus **5%** on account of initial freight and **2%** on account of incidental charges together with supervision charges at **12 ½** of the total cost inclusive of material, freight and incidental charges or Schedule-3 (on account) rate, whichever is higher. Freight between the purchaser's source of supply and the contractor's depot or rail head shall be to the contractors account. If, however, the material required by the contractor is not available in Purchaser's stock or the purchaser decides not to supply the same that for whatever reason, the purchaser shall not be bound to arrange for the supply at cost quoted above or at any other cost not will this fact be accepted as on excuse for delay in execution of works.

If railway material is returned back by contractor within 2 months period after issue of material by purchaser then above mentioned percent [5, 2 and 12.5 %] charges shall be not be deducted from bill of contractor.

Note:

Contractor shall also submit **Indemnity Bond** for full cost of material as well as take insurance policy as per clause No.1.2.40. Immediately after issue of Letter of Acceptance, the contractor shall obtain the details of cost of various Railway supply

materials from the purchaser to enable them to furnish the **Indemnity Bond** and take insurance policy(s) before taking over the materials in their custody.

1.2.22 CONTRACTOR'S ORGANISATION:

In addition to the establishment of an office as per Para 1.2.5, the Contractor shall set up at least one main depot for receiving and storing steel work and other materials and establish a workshop for small fabrication and assembly work, if considered necessary by the Contractor. If he and the Purchaser deem it necessary, sub-depots may be set up to ease operation of work trains and distribution of materials. The location of Contractor's depot and sub-depots will be mutually agreed up on by the Purchaser and the Contractor. For the main and sub-depots, the Purchaser shall offer open space reasonably level and workable and suitable for storage of materials free of charge, inside Railway premises which will be convenient from the point of view of operation. The depot/s shall be as far as possible be located such as to be accessible by road. The contractor will be responsible for proper upkeep/cleanliness of depot area and after completion of the contract will return back to Railways the depot area to the satisfaction of the purchaser as per Para 1.2.52.

NOTE:

- i) The Contractor will be responsible for transfer of materials from source of supply to the main or sub-depots, between depot / s and workshops except where otherwise stated. If wagons are required, the Purchaser will use his good offices for expeditious allotment. The Contractor will be responsible for all loss and/or damage in the transfer of materials and for demurrage or Wharf age he may incur, and no loss / damage or expenses incurred on this account will be reimbursed by the Purchaser.
- (ii) The Contractor shall arrange at his own cost all tools, plants and facilities as necessary for erection and testing of the equipments, in compliance with the Specification. Water and electricity shall be arranged by the contractor at his own expense and approach. No conservancy cess charges will be recovered from the Contractor. The tenderer should take note of this while quoting rates.

1.2.23. CONTRACTOR'S DRAWINGS ETC:

Any calculations, designs, drawings, schedules, information, data, progress charts etc. required by the Purchaser's Engineer in connection with the contract shall be furnished by the Contractor at his own expenses. The Contractor will not be required to furnish drawings, designs and calculations etc. for basic designs and employment schedules provided by the Purchaser in case no modification/deviation is required for a particular basic design/employment schedule. In case of new developments in designs, comments on Research Designs and Standards Organization (hereinafter called R.D.S.O.)'s basic drawings/designs/employment schedules will be submitted by the contractor to the Purchaser. If the RDSO's drawings/designs/employment schedule is not revised, Contractor need not submit drawings/designs/employment schedules to the purchaser. In the event of Contractor suggesting any alteration/deviation in standard drawings, he shall submit the retraced drawings with full calculations and justification of the change to the Purchaser. The Purchaser if convinced of the need of the alteration shall approach RDSO for necessary approval.

1.2.24. SUB-CONTRACTORS:

- (a) The Contractor may sub-let a part of the works under this contract and enter into

- contract with suppliers for supply of materials.
- (b) The names of all Sub-Contractors proposed to be employed for execution of work or any part thereof including manufacture of components and fittings shall be submitted by the Contractor to the Purchaser and got approved by him before the Contractor enters into an agreement with the Sub-Contractor and item suppliers for the purpose.
 - (c) The Contractor shall arrange for effective supervision of Sub-Contractor's work and remain solely responsible for materials supplied and for works carried out on his behalf by the sub-contractor/s.

1.2.25 QUALITY ASSURANCE MATERIALS:

All the equipments, materials, fittings and components will be subject to quality control programme of the manufacturer, being part of the quality Assurance programme of the Contractor. The materials may also be inspected by the Purchaser or his representative [RITES etc] either at the manufacturer's works or at the Contractor's depot. The Purchaser or his representative (RITES etc.) shall have the right to be present during all the stages of manufacture and shall be accorded free of charge all reasonable facilities for inspection and testing as well as to examine the stage inspection report of the manufacturer in addition to the quality audit which the Contractor may institute as a part of his programme so as to satisfy himself that the materials are in accordance with specifications, approved drawings and designs and Purchaser's prescribed quality Assurance Standards. Charges for the RITES inspection shall be borne by the Railway.

- (b) **Erection:**
All erection work will also be subjected to the Quality Assurance Programme including inspection by the Purchaser or his representative to ensure that the work is done in accordance with the specifications and approved drawings and designs and Purchaser's prescribed Quality Assurance Standards.
- (c) **Expenses of Purchaser's Representative:** All the expenses of Purchaser's representative shall be borne by the Purchaser whether the inspected material is finally utilized in work or not.
- (d) The decision of the General Manager or his successor shall be final in respect of acceptability or otherwise of any material, fittings, components or equipments required for the work.]

1.2.25 Quality Assurance Programme:

For proper control of quality and to ensure that the materials, equipments and fittings are manufactured according to specification and the erection is according to approved instructions, drawings, specifications, the Contractor shall adopt a suitable quality assurance programme to ensure quality at all necessary points, whether at manufacturer's works, or in his depot or at work site as well as during erection. Such quality assurance programme shall also meet the requirement of the Purchaser's Prescribed Quality Assurance Standards. This programme of the Contractor shall generally cover the following:

1. The organisation to manage and implement the Quality Assurance Programme.
2. The documentation control system:
 - (i) Basic control system.
 - (ii) Adopted at manufacturer's works.

- (iii) Adopted at the Contractor's Depot and work site.
- 3. Procedure adopted for:
 - (i) Source Inspection.
 - (ii) Incoming raw material inspection.
 - (iii) Verification of materials purchased.
 - (iv) Fabrication controls.
 - (v) Site erection controls.
- 4. Inspection and Test Procedure for:
 - (i) Manufacture and quality control procedure.
 - (ii) Field activities.
- 5. System of handling and storage.
- 6. System of quality audit.

1.2.29 DEFAULT AND DELAY:

If the contractor should: -

- (i) become bankrupt or insolvent or
- (ii) 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
- (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 programme 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, or
- (xi) fail to afford the Engineer or Engineer's representative proper facilities for inspecting the works or any part thereof as required under clause 28 of the conditions, or
- (xii) promise, offer or given any bribe, commission, gift or advantage either himself or through his partner, agent or servant to any officer or employee of the Railway or to any person on his or on their behalf in relation to the execution of this or any other contract with this Railway.

- (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 employ under it or being an incorporated company elect or nominate or allow to act as one of its directors or employ 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 Engineering Department of the Railways for the time being owned and administrated by the President of India before the expiry of two years 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

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 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.

Then and in any of the said cases, the Engineer on behalf of the railway may serve the Contractor with a notice in writing to that effect and if the Contractor does not within 7 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 to 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 and adopt either or both of the following courses:- to carry out the whole or part of the work from which the Contractor has been removed by the employment of the required labour and materials, the cost of which shall include lead, lift, freight, supervision and all incidental charges.

to measure up the whole or part of the work from which the Contractor has been removed and to 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:- and in both the case (a) and (b) mentioned above, the Railway shall be entitled (i) to forfeit

the whole or such portion of the security deposit as it may consider fit and (ii) to recover from the Contractor the cost of carrying out the work in excess of the sum which would have been payable according to the certificate to the Engineer to the Contractor if the works had been carried out by the Contractor under the terms of the contract, such certificate being final and binding upon the Contractor, provided, however, that such recovery shall be made only when the cost incurred in excess is more than the security deposit proposed to be forfeited and shall be limited to the amount by which the cost incurred in excess exceeds the security deposit proposed to be forfeited. The amounts thus to be forfeited or recovered may be deducted from any moneys then due or which at any time thereafter may become due to the Contractor by the Railway under this or any of other contract or otherwise. Provided always that in any case in which any powers conferred upon the Railway by sub-clause (1) of Clause 62 of General Condition of Contract of 1999 hereof shall have become exercisable and the same shall not be exercised, the non-exercise thereof shall not constitute a waiver of any of the conditions thereof and such powers shall notwithstanding be exercisable in the event of any true case of default by the Contractor for which his liability for past and future shall remain unaffected.

1.2.30 LOSS SUSTAINED DUE TO DEFAULT AND DELAY:

- (a) In the event of any loss to the Purchaser on account of execution and/or completion of the work or any part thereof by agencies other than the contractor, in terms of Para 1.2.29, the contractor shall be liable to reimburse the loss to the Purchaser without prejudice to the other rights and remedies of the Purchaser, and the reimbursement in full or in part as the case may be, shall 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 contractor by the Purchaser on any account whatsoever,
 - (ii) The Contractor's Security Deposit in the hands of the Purchaser as far as available; and
 - (iii) Any other assets whatsoever of the Contractor.
 - (b) In the event of reimbursement from out of sources.
 - (i) and/or (ii) above-mentioned the Purchaser shall have the right of appropriation suo motto.
- NOTE: The above Para should be read in conjunction with Para 1.2.42.

1.2.31 CORRECTNESS OF WORK AND MATERIALS:

- (a) The Contractor shall be solely responsible for the correctness of the position, levels and dimensions of the works according to approved drawings, notwithstanding that he may have been assisted by the Purchaser or his men in setting out the same.
- (b) If any dimension figured upon a drawing differs from that obtained by scaling the drawing, the figured dimension should be normally taken as correct, unless it is prima facie mistake. But all such cases shall be brought to the notice of the Purchaser's Engineers and the discrepancy set right before execution.

1.2.32 CONTRACTOR'S RESPONSIBILITY FOR DISCREPANCY:

- (a) All designs and drawings submitted by the contractor shall be based on a 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 the approval communicated by the Purchaser, during the progress of the contract for designs and drawings, prototype samples of components, materials and equipment

after inspection of materials, after erection and adjustments to installations, the ultimate responsibility for correct design and execution of work shall rest with the contractor unless the Purchaser insists on adoption of his own designs in spite of the contractor not being agreeable to it.

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

1.2.33 ADDITIONS AND ALTERATIONS TO ERECTED EQUIPMENT:

The Purchaser may require additional installations or modifications to be carried out on the works he deems necessary, either during the execution or after a part or whole of the installations coming within the purview of the contract has been put into commercial service. Further it may be necessary and expedient to energize overhead equipment, which has been completed and finally adjusted in portions in yards. This will necessitate erection of new equipment in the vicinity or joining energized equipment. In case the prices for such additional works or modifications are not covered by the schedule of prices and are such that either party considers additional prices for such works justified, such additional works or modifications shall be carried out only after the additional prices proposed by the Contractor are accepted by the Purchaser. In case additional installations or modifications are required to be carried out under this Para, the Purchaser shall grant a reasonable extension of time, should it be necessary.

1.2.34 QUANTUM OF WORK AND MATERIALS:

Variation in Quantity

Quantities of item / items shown in the schedule of rates are for guidance of the Contractor / Contractors. The procedure as detailed below shall be adopted for dealing with variation in quantities during execution of workscontract:-**As per GCC:April.2022 of Para No42.(2)(i):-**

42.(2) (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.

(ii) 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.

(iii) In case an increase in quantity of an individual item by more than 25% of the agreement quantity is considered unavoidable, then same shall be executed at following rates

- (a) 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;
- (b) 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 tender;
- (c) Variation in quantities of individual items beyond 150% will be avoided and would be permitted only in exceptional unavoidable circumstances and shall be paid at 96% of the rate awarded for that item in that particular tender.
- (d) Variation to quantities of Minor Value Item:

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.

d.(i) Quantities operated upto and including 100% of the agreement quantity of the concerned minor value item, shall be paid at the rate awarded for that item in that particular tender;

d.(ii) Quantities operated in excess of 100% but upto 200% of the agreement quantity of the concerned minor value item, shall be paid at 98% of the rate awarded for that item in that particular tender;

d.(iii) Variation in quantities of individual minor value item beyond 200% will be avoided and would be permitted only in exceptional unavoidable circumstances and shall be paid at 96% of the rate awarded for that item in that particular tender.

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

(v) 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.

(vi) 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).

1.2.35 COMPETENT SUPERVISORS:

- (a) The erections of all equipment according to the specifications will be done by the Contractor at his cost. For this purpose, the Contractor shall employ competent representatives to supervise the erections of the equipment and the carrying out of the works at all stages. The said representatives shall be present at site during working hours and any written orders or instructions which the Purchaser's Engineers may give to the said representative of the Contractor shall be deemed to have been duly given or communicated to the Contractor.
- (b) The Contractor or his representative will accompany the Purchaser's Engineers on Inspection or proceed to their offices whenever called upon to do so. The Contractor's representative shall give the necessary direction to his workmen and ensure that they execute their work in sound and proper manner. He shall employ only such supervisors, workmen and labour for the execution of any of the works as are careful and skilled in their respective trades and callings. If and whenever required by the Purchaser's Engineer the Contractor shall submit a correct return showing the names of all personnel employed by him for the contract. In the event of the Purchaser's Engineer being of the opinion that the Contractor is not employing a sufficient number of the competent staff as is necessary for the proper execution of the works within the time prescribed, the Contractor shall forthwith on receiving intimation to this effect take on the additional number of staff as advised by the Purchaser's Engineer.

1.2.36 TRAINING OF PURCHASER'S STAFF:

Deleted

1.2.37 WORK BY OTHER AGENCIES:

- (a) Any other works undertaken at the same time by the Purchaser or the Railway direct

or through some other agencies at the same time or section where the Contractor is carrying out his work will not entitle the Contractor to prefer any claim regarding any delays or hindrances he may have to face on this account but the Purchaser shall grant a reasonable extension of time to the Contractor. The Contractor shall comply with any instruction which may be given to him by the Purchaser in order to permit simultaneous execution of his own works and those undertaken by other Contractors or the Railway without being entitled on this account to any extra charge.

- (b) The Contractor shall not be entitled to any extra payment due to hindrance resulting from normal Railway operations, such as delay on account of adequate number of and duration of blocks not being granted, operational delay in movement of work trains etc. but the Purchaser shall grant a reasonable extension of time to the Contractor.
- (c) The Contractor shall take note that owing to works being carried out by the Purchaser and others, there may be breaks in the continuity of the locations for work owing to works such as track remodeling being undertaken. But the Contractor shall not be entitled to claim any extra payment on account of such breaks. However, such breaks in the continuity of work would be reasonable ground for extension of completion date/s for the work.
- (d) If the Purchaser is unable to supply materials to the Contractor as specified in the contract, in time, the Contractor shall not be entitled to any extra payment on account of such delay in supply. However, such delays in supply will be reasonable ground for extension of completion date/s for the work.
- (e) In cases where the lines to be electrified are not in their final position, the Purchaser will furnish the remodeling plans for such lines to the Contractor and/or peg out the altered or remodeled position of the tracks to be electrified to enable preparation of designs and assessment of quantities of components required for the work. However, the Contractor may not undertake fieldwork on such track till they are in final position. The Contractor shall not be entitled to any compensation in case of delay in such remodeling work, but the Purchaser will grant a reasonable extension of the time for completion.
- (f) In course of checking the overhead equipment layout plans, the Contractor shall prepare a list of infringements, if any exist, and advise the Purchaser in time. The Purchaser will arrange for removal of these infringements. The works which will be carried out by the Purchaser are detailed below:
 - (i) Alterations of slewing of tracks to accommodate traction structures of overhead equipment or to suit the Railways requirement.
 - (ii) Alterations to over-bridge, tunnels, foot-over bridges and irrigation troughs, raising of bridges or troughs, or lowering of track to give sufficient clearance for overhead equipment.
 - (iii) Protection at over bridges to prevent accidental or malicious interference with overhead equipment.
 - (iv) In cuttings, any work necessary to provide clearance for traction structures.
 - (v) At viaducts and bridges, any alterations required to enable traction structure to be accommodated.

- (vi) Alterations to station buildings, signal gantries, signal cabins and other similar constructions, which may be required for erection of overhead equipment, with requisite electrical clearances.
 - (vii) DELETED.
 - (viii) Removal of signal, telegraph, power lines and guys to enable overhead equipment to be erected, with requisite electrical clearances.
 - (ix) Any blasting work required for excavation in rock other than for foundations.
 - (x) Any rail strapping or other similar work/s necessary for the installation of track structures and overhead equipment on bridges and over-bridges.
 - (xi) Any special steel work and fittings for attachment for masts/portals on steel girder or other bridges, or for attachment to other non-traction structures of the Railway for carrying or anchoring overhead equipment conductors.
 - (xii) Dismantling and drilling of piers of bridges and walls, supply and grouting of dowel pins or holding down bolts, in the piers of bridges or walls.
 - (xiii) Clearing the way and removing all infringements for erection of 25KV feeder lines from grid sub-stations.
- Note:** Chopping/trimming of tree branches required for erection of overhead equipment shall be done by the contractor. At least half a meter clearance should be available between the nearest OHE structure/component and tree branches. No extra cost will be payable for this work to the contractor.
- (g) In the course of checking layout plans and general arrangement drawings for switching and/or booster stations, the contractor shall prepare a list of infringements if any exist, and advise the Purchaser in time. The purchaser will arrange for removal of these infringements at his own cost.

1.2.38 ACCESS TO WORK SITE

- (a) Access to the site for the purpose of this contract shall be accorded to the contractor by the purchaser at all times. In the execution of the work no person other than the contractor or his duly appointed representative or approved sub-contractor and bonafide workmen shall have access to the site. Access to the site of work at all times shall be allowed by the contractor to Officials or approved representatives of the purchaser or to Railway staff for purpose of maintenance.
- (b) The Purchaser or his authorized representative shall have the right to refuse admission to the work site of any person employed by the contractor whom the purchaser or his engineer may consider undesirable.
- (c) The purchaser or his Engineer shall be at liberty to object to the employment of any person as Contractor's Agent/Representative, approved sub-contractor's supervisors, workmen or labourer for execution of this contract on the ground of misconduct, incompetence or negligence. The contractor on receipt of notice of such objection in writing from the purchaser or his engineer shall forthwith remove the person so objected to and provide in his place any other competent person and shall not allow the persons so objected to, to enter the site of work subsequently or remain in the execution of the contract. The purchaser will not be liable to pay any cost or damage on this account.

1.2.39 INFRINGEMENT OF PATENTS

- (a) The contractor is forbidden to use any patents or registered drawings, processes or patterns in fulfilling his contract without the previous consent in writing of the owner of such patents, drawings, patterns or trade marks, except where these are specified by the purchaser himself. Royalties where payable for the use of such patented processes, registered drawings or patterns shall be borne exclusively by the contractor. The contractor shall advise the purchaser of any proprietary rights that may exist on such processes, drawings or patterns which he may use of his own accord.
- (b) In the case of patents taken out by the contractor of the drawings or patterns registered by him, or of those patents, drawings or patterns for which he holds a license, the signing of the contract automatically gives the purchaser the right to repair by himself the purchased articles covered by the patent or by any person or body chosen by him and to obtain from any sources he desires the component parts required by him in carrying out the repair work. In the event of infringement of any patent rights due to above action of the Purchaser, he shall be entitled to claim damages from the Contractor on the grounds of any loss of any nature which he may suffer e.g., in the case of attachment because of counterfeiting.

(c) **Indemnification by Contractor:**

In the event of any claim or demand being made or action being brought against the Purchaser for infringement of letters patent in respect of any equipment, machine, plant, work or thing used or supplied by the Contractor under this contract or in respect of any method of using or working by the Purchaser of such equipment, machine, plant, work or thing, the Contractor shall indemnify the Purchaser and keep him indemnified and harmless against all claims, costs, charges and expenses arising from or incurred by reason of such claim provided that the Purchaser shall notify the Contractor immediately after any claim is made and that the Contractor shall be at liberty, if he so desires with the assistance of the Purchaser if required but at the Contractor's expense, to conduct all negotiations for the settlement of the same or any litigations that may arise there from and PROVIDED THAT no such equipment, machine, plant, work or thing shall be used by the Purchaser for any purpose or in any manner other than that for which they have been supplied by the Contractor and specified under this contract.

d) INSURANCE:

- (a) 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 statute in respect of accidents to persons who shall be employed by the Contractor in or about the site of the Contractor's Offices 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 be to the approval of the Purchaser and if he so requires in his name.

(b) Insurance of Materials and Installations:

The Contractor shall take out and keep in force a policy or policies of insurance in favour of purchaser for all materials including Railway materials in Contractor's custody and contractor's supply items in Railway's custody in storage and traction installations excluding foundations under erection and/or erected until such materials

and installations are provisionally handed over to the Purchaser. For this purpose, the traction installations in a section (see Para 1.2.46) shall be deemed to have been provisionally handed over, when a Provisional Acceptance Certificate is issued for the section or the traction installations in the section are commissioned or on the expiry of three months after installations are given ready in all respect for handing over as per para 1.2.46(a), whichever is earlier, for commercial use. The Contractor shall not be liable for losses, damages to equipments erected in the course of erection or in store at the Contractor's depot, in consequence of mutiny or other similar cause over which the Contractor has no control and which cannot be insured. Such losses or damages shall be the liability of the Purchaser and if required by the Purchaser, be made good by the Contractor, at the cost of Purchaser.

Note: It may be noted that the beneficiary of the insurance policy should be Railways or the policies should be pledged in favour of Railways. The Contractor shall keep the policy/policies current till the installations are provisionally handed over to the purchaser. It may also be noted that in the event of contractor's failure to keep the policy current and alive, renewal of the policy will be done by the Purchaser, for which the cost of the premium will be recovered from the contractor.

- (c) The Contractor should, however, insure the stores brought to site, against risks in consequence of war and invasion, as required under the Emergency Risk (goods) Insurance Act in force from time to time.

NOTE: DELETED.

- (d) The Contractor shall take out all insurance covers in connection with this contract with the General Insurance Corporation of India.
- (e) DELETED.
- (f) For purpose of enabling the Contractor to take the insurance cover in connection with this contract, the Purchaser will advise the approximate price of all the Railway supply materials two months before the same are handed over to the Contractor at his depot. However, the recovery in case of shortages of such materials will be made in accordance with prevailing rules.
- (g) The contractor will not be liable for the insurance coverage for the existing installations after charging of existing voltage and made fit for the traffic and whereas he is fully liable at the time of working (i.e. including additional modification of existing system) for that particular tension length in which he is working up to charging of existing voltage and made fit for the traffic.

1.2.41. ACCIDENTS:

- (a) The Contractor shall, in respect of all staff engaged by him or by his sub-contractor, indemnify and keep the purchaser at all times indemnified and protected against all claims made and liabilities incurred under Workmen's Compensations Act, the Factories Act and the Payment of Wages Act and rules made there under from time to time or under any other labour and Industrial legislation made from time to time.
- (b) The Contractor shall indemnify and keep the Purchaser indemnified and harmless against all actions, suits, claims, demands, costs, charges or expenses arising in connection with any death or injury sustained by any person or persons within the Railway premises and any loss or damage to Railway property sustained due to the acts or omission of the Contractor, his sub-contractors, his agents or his staff during the execution of this contract irrespective of whether such liability arises under the Workmen's Compensation Act, or Fatal Accident Act or any other statute in force for the time being.

(c) The Contractor's liability to meet third party claims of the type outlined above will be applicable only in cases where accidents have been caused by bad design, workmanship, material or negligence on the part of the Contractor and further the liability of the Contractor will be limited to Rs. 25 lakhs for any one accident.

(d) The Contractor shall be responsible for all repairs and rectification of damages to traction installations erected or under erection due to railway accidents, thefts, pilferage or any other cause, without delay to minimize or to avoid traffic detentions, in a section until the installations are provisionally handed over to the Purchaser (See Para 1.2.46).

(e) **Clearing Damaged Installations:**

The Contractor shall at his cost arrange for expeditious clearing of the railway track/s of traction installations obstructing or fouling the track/s when they are damaged as a result of railway accident, theft or any other cause, upon the oral/telephonic/written instructions from the Purchaser's representative, until installations are provisionally handed over to the Purchaser. If the Contractor fails to clear the tracks expeditiously and within reasonable time, the Purchaser will arrange to clear the track/s or the damaged installations and recover the expenses incurred from the Contractor, if during such clearance operations further damage is caused to the installations, the Purchaser is not liable to reimburse the Contractor the cost of such further damage in the installations.

(f) The Contractor at his own expenditure shall arrange for temporary slewing of overhead equipment for crane operation for derailment of rolling stock due to accidents for which the Contractor is not responsible, if required by the Railway or the Purchaser, until the installations are provisionally handed over to the Purchaser. If the Contractor fails to slew the overhead equipment within reasonable time the Purchaser will arrange to slew the equipment and recover the extra expenses, if any incurred from the Contractor. After the crane operations are completed, the Contractor shall restore the overhead equipment to its normal positions.

Note: for sub-Para (d) & (e)

For the works mentioned in (d) and (e) above the contractor will be granted blocks and work train/s will be made available to him as per the severity of incident.

1.2.42 CONTRACTOR'S LIABILITY FOR COSTS AND DAMAGES

(a) **Withholding and lien in respect of sums claimed**

Whenever any claim or claims for payment of a sum of money arises out or under the Contract against the contractor, the purchaser shall be entitled to withhold and also have 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 purchaser shall be entitled to withhold the said cash security deposit or the security if any, furnished as the case may be and also have 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 purchaser shall be entitled to withhold and have lien to retain to the extent of such claim amount or amounts referred to supra, from any sum or sums found payable or which at anytime thereafter may become payable to the contractor under the same contract or any other 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 money so withheld or retained under the lien referred to by the purchaser till the claim arising out of or under the contract is determined by the Arbitrator (if the contract is 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. If the Contractor is a partnership firm or a limited company, the Purchaser shall be entitled to withhold and also have 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.

(b) Lien in respect of other Contracts:

Any sum or sums 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 purchaser against any claim of this or any other Department of the Central Government in respect of payment of a sum of money arising out of or under any other contract made by the contractor with this or any other Railway or any other department of the Central Government. (c) It is an agreed term of the contract that the sum of money so withheld or retained under this clause by the purchaser will be kept withheld or retained as such by the purchaser till the claim arising out of or under any other contract is either mutually settled or determined by the Arbitrator, if the other contract is Governed by the Arbitration clause or by the competent Court as the case may be, and that the contractor shall have no claim for interest or damages whatsoever on this account or any other grounds in respect of any sum of money withheld or retained under this clause and duly notified to the contractor.

1.2.43 SAFETY MEASURES

- (a) The contractor shall take all precautionary measures in order to ensure the protection of his own personnel moving or working on the Railway premises, but shall then confirm to the rules and regulations of the Railway. If and when, in the course of the work there is likely to be any danger to persons in the employment of the contractor due to running traffic while working in the Railway siding and premises, the contractor shall provide necessary protection i.e. Flagmen, Flag etc. required in block working. Competency for the above shall, however be given by the Railway authorities. The purchaser shall remain indemnified by the contractor in the event of any accident occurring in the normal course of work, arising out of the failure of the contractor or his men to exercise reasonable precaution at all places of work.
- (b) Blasting of rock for foundation work shall be done only after due notice is given to the purchaser and time/s and date/s for blasting operations agreed to by the purchaser. Blasting, if required to be done in the vicinity of the track, shall not be undertaken until the purchaser's flagmen on duty take necessary steps to protect trains and the track is adequately protected by the contractor against damage by blasted rock. The contractor shall follow detailed instructions which will be issued to him regarding blasting operations in the vicinity of tracks. The flagmen for protection of trains and the Track in such cases will be appointed by the Purchaser and no expenses on this account will be charged from the contractor.
- (c) During stringing operations every care shall be taken to prevent conductors hanging low over tracks on which traffic block has not been given. All conductors shall be pulled out before traffic block is cleared so that such conductors do not infringe with moving traffic.
- (d) Ladder trolleys shall be used with caution. They shall not be put on tracks until the flagmen are on duty to protect the trolleys and the purchaser's representative authorizes in writing for the trolleys to be put on the tracks. Ladder trolleys shall be promptly removed

on instructions from the purchaser's representative and well in advance of trains. No claims shall rest on the purchaser in the event of a ladder trolley being run over by train. The flagmen for the above job will be provided by the contractor.

- (e) The contractor shall abide by all Railway regulations in force for the time being and ensure that the same are followed by his representatives, agents or sub-contractors or workmen. He shall give due notice to his employees and workers about provision of the Para.
- (f) While working within station limits, specially on passenger platforms, the contractor shall ensure that at all times sufficient space is left for free movement of passenger traffic. He must cover and/or barricade the excavations carried out in such areas and continue to maintain these till the work is completed, with a view to avoid any accident to public or to Railway staff.
- (g) The work must be carried out most carefully without any infringement of the Indian Railway Act or the General and Subsidiary Rules in force on the Railway in such a way that they do not hinder Railway Operation or affect the proper functioning or damage any Railway equipment, structure or rolling stock except as agreed to by the purchaser, provided that all damage and disfiguration caused by the contractor to any Railway property must be made good by the contractor at his own cost failing which cost of such repairs shall be recovered from the contractor.
- (h) If safety of track or track drainage etc. is affected as a consequence of works undertaken by the contractor, the contractor shall take immediate steps to restore normal conditions. In case of delay, the purchaser shall, after giving due notice to the contractor in writing, take necessary steps and recover the costs from the contractor.
- (i) Moreover, if any time the works to be carried out directly concern the safety of trains, the contractor's staff must comply fully with Railway regulations given to him by the authorized Railway staff. The contractor's employees and workers may for no reason operate an installation concerning train safety or train movement. They shall notify the authorized representative of the purchaser who will take all necessary steps in this regard.
- (j) The contractor shall be responsible for safe custody of all equipments till provisional acceptance.
- (k) The contractor's liability to meet third party claims of the type outlined above will be applicable only in cases where accidents have been caused by bad design, workmanship, material or negligence on the part of the contractor and further the liability of the contractor will be limited to Rs.25 lakhs for any one accident.
- (l) The contractor shall ensure that un-authorized, careless or inadvertent operation of switch gear, which may result in accident to staff and/or damage to equipment, does not occur.
- (m) The contractor shall abide by all instructions issued by the purchaser from time to time in connection with protection/safety of track/Railway installations/personnel as well as quality control. The contractor should not leave the excavated pits unfilled overnight. Due to any reason if it became necessary to leave the pit unfilled overnight, it should be filled back effectively with sand bags to the satisfaction of the purchaser's representative.

1.2.44 RECOVERY FOR DELAY IN COMPLETION

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 work must be completed not 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 1.2.12 the Railway may, if satisfied that the works can be completed by the contractor within reasonable short time thereafter, allow the contractor for further extension of time as the Engineer may decide. On such extension the Railway 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 $\frac{1}{2}$ 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 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 5% of the balance.

Provided further, that if the Railway 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 Railway 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 1.2.29 of these conditions, whether or not actual damage is caused by such default. The 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 case.

1.2.45 EXTENSION OF TIME:

If such a failure as aforesaid shall have arisen from any cause which the purchaser may admit as being a reasonable ground for extension of time, the Railway Administration / Deputy Chief Electrical Engineer(Const) Bhusawal/ Divisional Electrical Engineer (Const) C.Rlys BSL his successor(s)/nominee shall allow such additional time as he may in his absolute discretion consider to be reasonably justified by the circumstances of the case. Such extension shall be granted by the Purchaser. The Contractor will apply for extension at least two months before the expiry of the period of completion.

1.2.46 PROVISIONAL ACCEPTANCE:

- (a) Immediately after completion of work in a section of overhead equipment between two consecutive switching stations hereinafter referred to as a sub-group, the Contractor shall certify and advise the Purchaser in writing that the section /stations are (i) Complete (ii) ready for satisfactory commercial service and (iii) ready to be handed over. He will also place at the disposal of the Purchaser the required staff for checking it and putting it into operations.
- (b) The test or tests as stipulated in Part-II, Chapter VI of the specification excluding power collection tests which would be carried out subsequently in connection with the taking over by the Purchaser of the equipment and installations shall be carried out jointly by the Purchaser and the Contractor within a month after the receipt of the Contractor's notifications, as stated in sub-Para above.
- (c) After inspection and satisfactory conclusion of tests and when the Purchaser is

satisfied with the satisfactory working of the installations he will issue a Provisional Acceptance Certificate' which would be signed by both the parties. The Provisional Acceptance Certificate will not be withheld for any minor defects.

- (d) Should the result/s of inspection and the test/s be not satisfactory, an extension of one month will be granted to the Contractor to make good the defects and deficiencies pointed out by the Purchaser. Fresh inspection and tests will then be carried out after the Contractor has attended to the defects and deficiencies. If these tests are also not satisfactory, the Purchaser may proceed at the Contractor's expenses by all means deemed expedient, to have the installation made satisfactory until they comply with the specifications and approved drawings and designs.
- (e) In such a case, or in case of delay in completing the work under this Contract within the time limit, the Purchaser reserves the right if he deems it possible to use in a reasonable manner any section or any part of the section even if some installations of the sections are not completely erected. The Purchaser will give to the Contractor for this purpose seven days notice. The Contractor shall then take at his own expenses all necessary steps to complete the works in accordance with the provisions of the contract.

NOTE:

- (1) Provisional Acceptance Certificate for each section will be issued immediately after all tests (excluding power collection tests) are completed to the satisfaction of the Purchaser. Should the Purchaser be unable to complete the tests and energization of the line with 2 x 25 KV AC within a reasonable time which shall not exceed 1 month from the date of Contractor's notification, the issue of Provisional Acceptance Certificate shall not be delayed and shall be issued within a maximum time of 3 months after notification under Para 1.2.46(a) has been given. The power collection tests shall normally be carried out for the entire group/s within three months of the date of energisation of the last section in the group/s.
- (2) The issue of Provisional Acceptance Certificate shall not be withheld for rectification of minor defects which may reasonably be considered not essential for energisation and operation of installation. In such cases, only the value of materials and cost of rectification of minor defects shall be withheld from the payments of Provisional Acceptance until rectification is completed.

1.2.47 DEFECTIVE EQUIPMENTS TO BE CHANGED:

- (a) Notwithstanding the issue of Provisional Acceptance Certificate and partial or full use of any equipment, if the completed equipment or any portion thereof before it finally taken over at the end of the guarantee period be found to be or to have become defective in course of usage by the Railway due to faulty material, design or workmanship, or otherwise fails to fulfill the requirement of the contract and/or its purpose, the purchaser shall normally give the contractor prompt notice setting forth the particulars of each defects or failure and the contractor shall forthwith make the defects good or modify or replace the equipment, as may be directed by the purchaser's Engineer, at his own cost in all respects to make comply satisfactorily with the said requirements. Should the contractor fail to do within a reasonable time the service of the said notice upon him or should time not permit of service of such notice, the purchaser may repair or reject and replace the whole or part of such defective equipment as the case may be, at the cost of the contractor. The contractor's full liability under this clause shall be satisfied by the payment to the purchaser of the extra total cost, if any, of such replacement delivered and erected as provided for in

the original contract, such extra cost being the ascertained difference between the price paid by the purchaser under the provisions above mentioned for such replacement and the contractor's price for the plant so replaced, plus the sum, if any, paid by the purchaser to the contractor in respect of such defective equipment. Should the purchaser not so replace the rejected equipment within a reasonable time, the contractor's liability under this clause shall be satisfied by the repayment by the contractor of all money paid by the purchaser to him in respect of such rejected equipment. Rejected/defective materials shall be returned to the contractor to the extent possible.

- (b) Provisions of this Para will apply only in respect of the equipments and components supplied by the contractor or his sub-contractor.

1.2.48 USE OR REJECTED EQUIPMENT:

In the event of such rejection as aforesaid, the purchaser shall, without prejudice to his other rights and remedies and, in particular, without prejudice to his right under the clause just preceding, be entitled to the use of the rejected equipment for a time reasonably sufficient to enable him to obtain other replacement equipment. During such period, if the rejected equipment is used commercially, the contractor shall not be entitled to the payment on energization (1.2.14) until such rejected equipment is rectified and/or replaced, but the purchaser shall not be entitled to claim any damages arising out of rejected equipment in respect of such period.

1.2.49 GUARANTEE:

- (a) The contractor shall guarantee satisfactory working of the installations erected by him for a period of **18 (Eighteen)** months from the date of commercial operation or from the date of Provisional Acceptance of each section (1.2.46) by the purchaser whichever is earlier. The guarantee for spares should be coincident with the guarantee for erected equipment.
- (b) During the period of guarantee the contractor shall keep available an experienced engineer and necessary equipment to attend to any defective installations resulting from defective erection and/or defects in the equipment supplied by the contractor. This engineer shall not attend to rectification of defects which arise out of normal wear and tear and come within the purview of routine maintenance work. The contractor shall bear the cost of modifications, additions or subtractions that may be considered necessary due to faulty materials, design or workmanship for the satisfactory working of the equipment. The final decision shall rest with General Manager / Chief Administrative Officer (Const)/ Chief Electrical Engineer (Const) or his successor(s)/nominee.
- (c) During the period of guarantee, the contractor shall be liable for the replacement at site of any parts which may be found defective in the equipment whether such equipment be of his own manufacture or those of his sub-contractor, whether arising from faulty design, materials, workmanship or negligence in any manner on the part of the contractor provided always that such defective parts as are not repairable at site are promptly returned to the contractor if so required by him at his (contractor's) own expenses. In case of type defects in contractor's equipment and components detected during guarantee period, contractor should replace all such items irrespective of the fact whether all such items have failed or not. The contractor shall bear the cost of repairs carried out on his behalf by the purchaser at site. In such a case, the contractor

shall be informed in advance of the works proposed to be carried out by the purchaser.

- (d) If it becomes necessary for the contractor to replace or renew any defective portion of the equipment under the Para aforesaid then the provisions of the said Para shall also apply to the portions of the equipment so replaced or renewed until the expiration of six months from the date of such replacement or renewal or until the end of the above mentioned period (see sub-Para 1.2.49(a)) whichever is later. Such extension shall not apply in case of defects of a minor nature, the decision of the General Manager or his successor/nominee being final in the matter. If any defect be not remedied within a reasonable time during the aforesaid period the purchaser may proceed to do work at the contractor's risk and expenses, but without prejudice to any other rights and remedies which the purchaser may have against the contractor in respect of such defects or faults.
- (e) The repaired or renewed parts shall be delivered and erected on site free of charge to the purchaser.
- (f) Any materials, fittings, components or equipments supplied under 1.2.34 shall also be covered by the provisions of this paragraph. The liability of the contractor under the guarantee will be limited to re-supply of equipments, components and fittings made under 1.2.34. Such re-supply shall be effected at the contractor's depot or, in the event of closure of the depot, at the stores depot of the Engineer-in-charge of maintenance of overhead equipment of the section covered by the contract.
- (g) In the case of materials, components, fittings and equipments supplied by the purchaser under 1.2.20, no liability will rest on the contractor for failures on account of defective materials or workmanship and for any consequential damages. Such defective materials, if not yet erected on line, will be returned by the contractor to the purchaser and such quantities will be considered for the purpose of final reconciliation.

1.2.50 FINAL ACCEPTANCE:

- (a) The final acceptance of the entire equipment installed on the group shall take effect from the date of **expiry of the period of guarantee** as defined in paragraph 1.2.49 of the expiry of the last of the respective periods of guarantee of various sections for which provisional acceptance certificates are issued or brought into commercial operation, provided in any case that the contractor has complied fully with his obligations under clause 1.2.49 in respect of each section of the group, provided also that the attention has been paid by way of maintenance by the purchaser.
- (b) If on the other hand the contractor has not so complied with his obligation under Para 1.2.49 in respect of any section, the Purchaser may either extend the period of guarantee in respect of that section until the necessary works are carried out by the Contractor or carry out those works or being them carried out suo-motto on behalf of the Contractor at the Contractor's expenses. After expiry of the period of guarantee for each section, a certificate of final acceptance for the section shall be issued by the Purchaser and the last of such certificate will be called the last and final acceptance certificate. The contract shall not be considered as completed until the issue of final acceptance certificate by the Purchaser.
- (c) The Purchaser shall not be liable to the Contractor for any matter arising out of or in connection with the contract or execution of the work unless the Contractor shall have

made a claim in writing in respect thereof before the issue of final acceptance certificate under this clause.

Notwithstanding the issue of final acceptance certificate, the Contractor and the Purchaser (subject to sub-clause as above) shall remain liable for fulfillment of any obligation incurred under the provision of the contract prior to the issue of final acceptance certificate which remains unperformed at the time such certificate is issued and for determining the nature and extent of such obligation the contract shall be deemed to remain in force between the parties hereto.

1.2.51 PAYMENT:

Payments will be governed by the terms specified in part-I, Chapter III and in accordance with accepted Schedule of Prices, read with relevant Para of the other parts and Chapters of the Tender Papers. The Purchaser retains the right to withhold money due to the Contractor arising out of this contract for any default of the Contractor from other contracts which the contractor may have with the Government of India.

i. The Contractor shall, whenever required, produce or cause to be produced for examination by the Purchaser any quotation/invoice, cost of other account, book of account, voucher, receipt letter, memorandum paper or 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 the cost of the execution of this Contract (the decision of the Purchaser on the question of relevancy of any documents, information or return being final and binding on the parties). The Contractor shall similarly produce vouchers etc., if required, to prove to the Purchaser, that materials supplied by him are in accordance with the specifications laid down in the contract.

ii. If any portion of the work be carried out by a sub-contractor or any subsidiary or allied firm or company the Purchaser shall have power to secure the books of such sub-contractor or any subsidiary or allied firm or company, through the Contractor, and such books shall be open to his inspection. The Contractor should seek prior permission from the Purchaser for subletting whole and/or part of the work to any sub-contractor.

iii. The obligations imposed by sub-clauses (i) and (ii) above are without prejudice to the obligation of the Contractor under any statute, rules or order binding to the Contractor or other conditions of the Contract.

iv. It is an agreed term of the contract that the Purchaser reserves to itself the right to carry out 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 if as a result of such examination any over payment to him is discovered to have been made in respect of any work done or alleged to have been done by him under the contract.

1.2.52. SITE CLEARANCE:

(a) At the end of each spell or work and on completion of the work, the Contractor shall, as a part of his contractual obligation, leave the tracks, switching/booster station sites and their approaches, store yards etc. cleared of rubbish and obstruction of all kinds according to the instructions of the Purchaser's representatives. Besides, he shall take all necessary steps in the course of the execution of the works to avoid the presence of loose earth and ballast on platforms, in drainage on the track formation and pathways in the vicinity. If within a fortnight of completion of the particular item of site work

the refuse is not cleared, the Purchaser will arrange to get them removed at the cost of the Contractor. However, before the Purchaser actually gets the site cleared he shall send intimation in writing to the Contractor expressing his intention.

- (b) The storage of equipment, tools and machinery used by the Contractor shall be done in an orderly manner and anything used by the Contractor for execution of the works shall in no way constitute a danger or hindrance to the working of the Railway or to the movement of its staff or passengers.

1.2.53. EQUIPMENTS, COMPONENTS AND MATERIALS RECEIVED FOR WORK

The Contractor shall utilize all equipments, components or materials, procured specifically for the purpose of execution of the work, in the work or other requirements. Any surplus materials left over at the end of the work shall not be disposed off without prior approval of the Purchaser in writing. The Purchaser may within a period of six months from the date of provisional Acceptance of the last section, notify the Contractor of the Purchaser's interest in any or all of the surplus materials and shall have the right to take over the materials at SOR prices. The materials so notified by the Purchaser shall be taken over by the Purchaser and paid for in full. The Contractor may use in any manner deemed fit, only such surplus materials which are not covered by the Purchaser's notification after getting the approval of the Purchaser in writing.

1.2.54 SETTLEMENT OF DISPUTES:

- (a) The settlement of disputes and differences arising out of contract shall be done as per clauses 63 & 64 of General Conditions of Contract-**April 2022 and as amended from time to time.**
- (b) **Claims to be restricted to 20% of contract value:-** The provision of Clauses 63 & 64 of General Conditions of Contract will be applicable only for settlement of claims or disputes between the parties for value less than or equal to 20% of the value of the contract and when claims of disputes are of value more than 20% of the value of the contract, provision of clause 63 & 64 and other relevant clause of the General Conditions of Contract will not be applicable and arbitration will not be a remedy for settlement of such disputes.

Excepted matters not to be referred to arbitration.

(i) In terms of clause 63 of General Conditions of Contract – April 2022, the disputes and differences, for which provision has been made in following clauses of General Conditions of the Contract, shall be deemed as “Excepted matters” and decisions of the Railway Authority thereon shall be final and binding on the contractor and these “Excepted Matters” shall stand specifically excluded from the purview of the arbitration clause and not referred to arbitration.

Clause 8 Assistance by the Railway for the stores to be obtained by the Contractor.

Clause18(1)	Illegal Gratification.
Clause18(2)	Monetary dealings with any employee of the Railway.
Clause22(5)	Meaning and intent of specification and drawings.
Clause39(1)	Rates for extra items of works.

Clause39(2)	Payment to the Contractor for work executed before determination of rates.
Clause43(2)	Signing of “No Claim Certificate” .
Clause45(a)	Objections to recorded measurements within seven days.
Clause55	Provisions of Payments of Wages Act.
Clause55-A(5)	Recovery from Contractor, Wages paid to Contractor’s labour.
Clause57	Provision of Workmen’s Compensation Act.
Clause57-A	Provision of Mines Act.
Clause 61(1)	Right of Railway to determine the contract.
Clause 61(2)	Payment on determination of contract.
Clause 62(1) to(xiii)(B)	Determination of Contract owing to default of Contractor.

- (ii) In terms of clause 63 of General Conditions of Contract-**2022**, the disputes and differences, for which provision has been made in “**Special Conditions of Contract**” included in tender documents, shall also be deemed as ‘Excepted matters’ and decisions of the Railway authority thereon shall be final and binding on the contractor and these ‘Excepted matter’ shall stand specifically excluded from the purview of the arbitration clause and not referred to arbitration.
- (iii) It should be specifically noted that some of the detailed drawings may not have finalized by the Railway and will, therefore, be supplied to the Contractor, as and when they are finalized on demand. No compensation on whatsoever on this account shall be payable by the Railway Administration.
- (iv) No claim whatsoever will be entertained by the Railway on account of any delay or hold up of the work(s) arising out of delay in approval of drawings, changes, modifications, alterations, additions, omission and site layout plan or detailed drawings and design and or late supply of such materials as are required to be arranged by the Railway or due to any other factor on Railway account.
- (v) No claim for idle labour and or idle machinery etc. on any account will be entertained. Similarly no claims shall be entertained for business loss or any such loss.
- (d) **Arbitrators to be appointed only by General Manger of Railways** - The Arbitration Tribunal shall consist of working Gazetted Officers of Railway and such tribunal shall be appointed only by the General Manager of the Railways.
- (e) The Claimant Contractor shall seek reference to arbitration to settle the disputes only within the ambit of conditions of mentioned above.

1.2.55 DELETED.

1.2.56 REFUND OF SECURITY DEPOSIT & PERFORMANCE GUARANTEE:

- (a) The Security Deposit, shall be released only after the expiry of the Maintenance / Guarantee Period and issuance of the Final Acceptance Certificate. 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, 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 respect and that all the contractual obligations have been fulfilled by the contractor and that there is no due from the contractor to Railways against the contract concerned. Before releasing the SD, an unconditional and unequivocal no claim certificate from the contractor concerned should be obtained.

(b) 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 contractor.

1.2.57 Issue of identity cards to contractor's labours.

The identity card should be issued to the contract labourers nominated to work in the railway premises by the contractor, indicating Contract No, Name of the person, place of work etc. If identity card is not issued to contract labourers, labours will not be permitted to work in the Railway premises. The list of the labour should be submitted to this office for records.

1.2.58 DRAFTING OF CONTRACTOR'S VEHICLES & EQUIPMENT IN CASE OF ACCIDENT / NATURAL CALAMITIES INVOLVING HUMAN LIVES:

i) Railway reserves the right to withdraw/draft/takeover possession of any of the vehicles and equipments of the Contractor deployed by him at the work side in case of Railway accidents /natural calamities involving loss of human lives occur and deploy, utilize, engage them for work of relief, restoration Railway service etc. The said vehicles and equipments along with driver/operator shall be immediately handed over to Railway Administration on advise of Engineer or Engineer's representative. The decision of Railway as to type, No. of vehicle and period of engagement shall be final and binding on the Contractor.

ii) The crew, fuel, and maintenance of the vehicles during the above period shall be provided by the Contractor to the satisfaction of the Railways.

iii) The Contractor shall be paid higher charges for the drafted vehicles/equipment by operating suitable Non-Schedule items at the Rates decided between the Engineer and the Contractor. Operation of Schedule item will be approved with vetting of associate finance by Dy.CEE(C)/DEE(C) operating the Contract. However, if the Contractor is not satisfied with Engineer's decision he may appeal to the CAO(C) within 30 days of getting the decision of the Engineer supported by the analysis of the Rates claimed. The CAO(C)'s decision after hearing of the both parties in the matter would be final and binding on the Contractor.

iv) In case Railway withdraws/drafts/takes possession of Contractor's vehicle/equipment, Log Book will be maintained by Railway's representative and it will be jointly signed by Railway's authorized representative and Contractor's driver of vehicle/operator of equipment. Payment will be made accordingly on agreed rates.

v) The Contractor shall provide following information about the vehicle/equipment available with them at the time of entering in to contract.

S.No	Particulars of vehicle/equipment	No. of unit.	Kind/Make.	Capacity	Age & Condition	Present location	Remarks.

1.2.59: JOINT PROCEDURE ORDER FOR UNDERTAKING DIGGING WORK IN THE VICINITY OF UNDERGROUND SIGNALLING, ELECTRICAL AND TELECOMMUNICATION CABLES.

- A. a number of Engineering works in connection with gauge conversion/doubling/third line are in progress on various Railways, which require extensive digging work near the running track, in closed vicinity of the working S&T cables carrying vital safety circuits as well as electrical cables feeding the power supply to cabins, ASM room, RRI cabin, intermediate block huts (IBH) etc. Similarly, S&T organization under open line or construction units under CAO/C are executing various signaling and telecommunication works requiring digging of earth for laying of cables or casting of foundations for the erection of signal posts etc. Rail Tel are also executing the work of laying of quad cable and OFC on various Railways as a part of sanctioned works for exclusive use of railways for carrying voice and data i.e. administrative and control communication, PRS, FOIS etc or shared by RailTel corporation of India Ltd. On certain sections digging is also required for laying of electrical cable and casting of foundation for the erection of OHE masts by Electrical deptt. Generally, these works are executed by contractors employed by these organizations.
- B However, while carrying out these works in the vicinity of working signaling, Telecommunication and electrical cables, at times, cable cuts take place due to JCB Machines working along the track or during the digging work being done by contractors carrying out the Civil Engineering works. Similarly, such cable cuts are also resulting due to works undertaken by S&T or Electrical depts. Such cable faults results in the failure of vital signaling and telecommunication circuits.
- C Henceforth, the following joint procedure shall be followed by Engineering, Electrical and S&T (and Rail Tel organization, wherever such works are being done by them) Officers of the respective divisions and by the construction organization, while carrying out any digging work near to existing signaling & telecommunication and electrical cables, so that the instances of cable out due to execution of works can be controlled and minimized.
1. S&T Department (and Rail Tel, where they have laid the cables) & Electrical Depts. Shall provide a detailed cable route plan showing exact location of cable at an interval of 200m or wherever there is change in alignment so that the same is located easily by the Engineering official/contract. This cable route plans shall be made available to the DSE/DEN or DY CE/C as the case may be by SR.DSTE/DSTE or SR.DEE/DEE/DEE of the divisions or DY CSTE/C or DY CEE/C/ within a reasonable time in duplicate, DSE/DEN or DY CE/C will send copies to their field unit i.e. AEN/SE/P way & works.
 2. Before taking up any digging activity on a particular work by any agency. Sr DSTE /DSTE or Sr.DEE/DEE of the section shall be approached in writing by the concerned Engg or S&T or Electrical officer for permitting to undertake the work. After ensuring t6hat the concerned executing agencies, including the contractor have fully understood the S&T and Electrical cable route plan shall permit the work in writing.
 3. After getting the permission from S&T or Electrical Depts. As the case may be, the relevant portion of the cable route plan shall be attached to the letter through which permission is issued to the contractor by concerned Engg. Official for commencement of work and ensuring that the contractors have fully understood the cable route plan and precautions to be taken to prevent damage to the underground cables. The contractor shall be asked to study the cable plan and follow it meticulously to ensure that the safety of the cable is not endangered. Such a provision, including any penalty for default, should

form part of agreement also. It is advisable that a suitable post of SE(Sig) or SE(Tele) or SE(Elect) shall be created chargeable to the estimates of doubling/Gauge conversion, who can help Engg agencies in the execution of the work. However basic responsibility will be of the Department executing the work and the contractor.

4. The SE (P.way) or SE(Works) shall pass on the information to the concerned SE(Sig) or SE(Tele) or SE(Elect) about the works being taken up by the contractors in their sections at least 3 days in advance of the day of the work. In addition Engineering control shall also be informed by SE(P Way) or SE(Works) which in turn shall pass on the information to the Test Room/Network operation center of Rail Tel/TPC/Electrical control.
5. On receiving the above information, SE(Sig) or SE(Tele) or SE(Elect) shall visit the site on or before the date of taking up the work and issue permission to the contractor to commence the work after checking that adequate precautions have been taken to avoid the damage to the cables. The permission shall be granted within 3 days of submission of such requests.
6. The name of the contractor, his contact telephone number, the nature of the work shall be notified in the Engineering control as soon as the concerned Engg .official issued the letter authorizing commencement of work to the contractor. Test room be given a copy and Test room shall collect any further details from the Engineering control and shall pass it on to S&T/Rail Tel & Elect officials regularly.
7. In case of works being taken up by the State Government, National Highway authority etc. the details of the permission given i.e. the nature of work, kilometer etc. be given to the Engineering control including the contact persons number so that the work can be done in a planned manner. The permission letter shall indicate the contact numbers of Test Room/Network operations center of Rail Tel/TPC/Elect control.
8. Where the nature of the work taken up by the Engineering department is such that the OFC or other S&T cables or Electrical cables is to be shifted and relocated, notice of minimum one week shall be given so that the Division/Rail Tel/construction can plan the works properly for shifting. Such shifting works shall in addition, for security and integrity of the cables, be supervised by S&T supervisors/Rail Tel supervisors/Electrical supervisors.
9. The concerned SE(P.Way)/SE(Works)/SE(Sig)/SE(Tele)/SE(Elect) or Rail Tel supervisors, supervising the work of the contractor shall ensure that the existing emergency sockets are not damaged in view of their importance in providing communication during accident/emergency.
10. In case of minor nature of works where shifting of cable is not required, in order to prevent damage to the cable, the Engineering Contractor shall take out the S&T or optical fibre cable or Electrical cable carefully from the trench and place it properly alongside at a safe location before starting the earthwork under the supervision of SE(Sig) or SE(Tele) or SE(Electrical). The cable shall be reburied soon after completion of excavation with proper care including placement of the brick over the cable by the concerned S&T supervisors or Electrical Supervisors. However, the work will be charged to the concerned engineering works.
11. In all the section where major project are to be taken up/going on Rail Tel/S&T Depts. Shall deploy their official to take preventive/corrective action at site of work.

12. No new OFC/Quad cable shall be laid close to existing track. It shall be laid close to Railway boundary as per extant instructions i.e. 1.0m from the Railway boundary to the extent possible to avoid any interference with future works (doubling etc.). It shall be ensured in the new works of cable laying that the cable route is properly identified with electronic or concrete markers. Henceforth, wherever cable laying is planned and before undertaking the laying work, the cable route plan of the same shall be got approved from the concerned Sr.DEN or DY CE/Const. to avoid possible damages in future. Such approvals shall be granted within 7 days of submission of the requests.
13. The works of excavating the trench and laying of the cable should proceed in quick succession, leaving a minimum time between the two activities.
14. Any damage caused to OFC/Quad cable or electrical cable during execution of the work, necessary debit shall be raised on Engineering Department who shall bear the cost of the corrective action.
15. All types of bonds ie rail bond, cross bond and structure bond shall be restored by the contractor with a view to keep the rail voltage low to ensure safety of personnel.
16. Above joint circular shall be applicable for construction as well as open line organization of Engineering, S&T & Electrical.
17. The S&T cable and electrical cable route plan should be got approved from the concerned Sr.DSTE/DSTE & Sr.DEE/DEE respectively, before undertaking the work and completion cable route plan should be finalized Block section by Block section as soon as the work is completed.

In addition to the above safety procedure the following safety precautions may be followed during the execution of work in electrified area.

- A Power supply arrangement, Sectioning diagrams, Locations plan, Cable route plan, equipment layout plan. SED be approved by open line HQ before execution of the work. Approval of drawing, design, specifications of material having deviation from RDSO/CORE drawing/design/specification be approved from open line HQ.
- B Joint discussion of Construction/Conversion activities with drawing, LOP, SED, sectioning diagram one day in advance by Conversion/Construction and Open Line Supervisors and recording the methodology to execute the work in a register which will have Joint signatures of all the Sr. Supervisors. No execution of the work without following the above procedure.
- C. Filling up of check sheets at work site and joint signature by Construction and Open Line TRD supervisors duly recording the defects and deficiencies in check sheets, attending such defects and deficiencies and balance work on the same day or at the first available block. Further work will only progress on completion of these defects.
- D. Monitoring of movement of EMU and Mail/Express trains minimum 2 Nos. each after completion of work and repeating the details to the TPC who in turn will maintain a register for verification.
- E. Modification of overlap, cross over/turnouts, section insulator by tower wagon duly supervised by Open Line SSE/SE and certified as per check sheet for operation of traffic.
- F. Scrutiny and certification of Competency Certificate issued by contractors for his employees on safety and technical skill by Railway so that failure due to inadequate technical knowledge and non-observance of safety norms is avoided.

- G. Contractor shall ensure that no staff is working on line/track side without proper permission by Railway. Work shall be commenced only after obtaining necessary traffic and power block required and in the presence of authorized Railway's representative.
- H. Only eligible and competent staff shall be employed by contractors and they must wear identity card while working on line no person without identity card should be allowed.
- I. Contractors, site incharge must keep 2 red flags & 1 green flag during day time multi coloured lamp/torch light (having red & green colour) during night time and a whistle contractor must make adequate light arrangement at work site.
- J. Site Incharge of the contractor must ensure proper discharging of line and grounding/earthing of required lines on both side of the work plate. While using metallic ladders in multiple line section staff must be careful as the OHE of the adjoining line is alive so that accidental touching should not lead to fatal accidents.
- K. While unloading/stacking/loading, released or new material along the tracks, the Contractor must ensure that the material is not infringing the schedule of dimensions and keep them safely away, also care shall be taken to keep the material in such a way that due to vibration or slight movement, it should not come near the track and infringe the movement of the train and stacked as per the specified height & distance from Railway track.
- L. Where the road vehicles and/or machinery are required to work in the close vicinity of Railway line, the work shall be carried out that there is no infringement to the Railway's schedule of dimension even for a short period. For this purpose, the area where road vehicles and/or machinery are required to ply shall be demarcated and acknowledged by the contractor. Special care shall be taken for turning/reversal of road vehicle/machinery without infringing the running tracks. Barricading shall be provided wherever justified in feasible as per site conditions.
- M. Strict adherence to the relevant provisions of the 'General Conditions of Contract' and the 'Special Conditions of Contract' pertaining to safety of both men and material not only of the Contractor but also of the Railways.
- N. All staff must wear required safety gadgets such as helmets, phosphorescent jackets, identify badges, safety belts & shoes as required.
- O. Power traffic block must be restored in time after completion of work and after ensuring safety.
- P. Contractor must keep First Aid Box at work place for emergency.
- Q. In no case manual shifting/transportation of structures, bulky material and fittings be done without proper power and traffic block and in the presence of authorized Railway representative.
- R. Material at site shall be got transported on same day by Contractor. If material is stored at site in advance a watchman must be kept. Also unused/released material, if any, should be moved away from site on the same day. No material is kept at site and unattended/unclaimed.
- S. Proper arrangement of mobile communication with TPC should be provided by Contractor as per the contract.
- T. During emergency, block must be cleared in minimum possible time. Adequate communication, preferably over walkie-talkie, should be available within the gang at work site.

- U. Necessary safety equipment and tools to be used by Contractor's staff must be checked & tested periodically as per norms. Record to be maintained for this purpose.
- V. Contractor shall give necessary training to their Supervisors and staff and ensure that they know about the safety norms to be followed for working in Railway premises and in the vicinity of Railway track in electrified territories.
- W. Proper care shall be taken in storing inflammable substances to avoid any fire.
- X. Supplementary site specific instructions, whenever considered necessary shall be issued by the Supervisor In-charge as applicable.

Above instructions shall be included as special condition, in all Electrical Contracts, involving works near running track.

1.2.60 :Special Condition of contract

It should be specifically noted that some of the detailed drawings may not have finalized by the Railway and will, therefore, be supplied to the contractor as and when they are finalized on demand. No compensation whatsoever on this account shall be payable by the Railway Administration.

No claim whatsoever will be entertained by the Railway on account of any delay or hold up of the work(s) arising out of delay in approval of drawings, changes, modifications, alterations, additions, omission and site layout plan or detailed drawings and design and or late supply of such materials as are required to be arranged by the Railway or due to any other factor on Railway account.

No claim for idle labour and idle machinery etc. on any account will be entertained. Similarly no claims shall be entertained for business loss or any such loss.

1.2.61: “ Employment of Staff”

- (a) The contract is liable for cancellation if either the contractor himself or any of his employee is found to be a person of Gazetted rank of Engineering Department which includes Civil, Mechanical, Electrical, Signal & Telecommunication Department of Railways whether pensionable or non-pensionable who after retirement has sought engagement as contractor for or in connection with the execution of public works whether on Railway, P.W.D. or Defence Forces or as an employee of such Contractor within 2 years of his retirement without obtaining the permission of the President of India before taking up such engagement or employment.
- (b) The contractor shall employ the following technical staff during the execution of the work.
- (c) At least one Graduate Electrical/Electronics Engineer when the cost of the work to be executed is Rs. 50 Lakhs and above.
- (d) At least one qualified Electrical/Electronics diploma holder when the cost of the work to be executed is more than Rs. 10 Lakhs, but less than Rs. 50 Lakhs.
- (e) Technical staff should be available at site whenever required by the Engineer-in-charge to take instructions. In case the desired level of technical staff fails to take instructions of the Engineer-in-charge, contractor shall be liable to pay a reasonable amount to the Railways not exceeding a sum of Rs. 5000/- (Rs. Five Thousand only) for each calendar month or part

thereof for default in case of Graduate engineer and Rs. 2500/- (Rs. Two thousand five hundred only) for each calendar year month or part thereof for default in case of Diploma holder.

(f) The decision of the Engineer-in-charge as to the period for which required technical staff was not employed by the contractor and as to the reasonableness of the amount to be deducted from the contractor, shall be final & binding on the contractor.

(g) The contract is liable to be terminated in case of persistent failure to engage suitable technical staff by the contractor.

Note : The are required to engage apprentices when the work (s) is / are under taken by them last for a period of one year or more and /or the cost of work is Rs.One lakh or more.

1.2.62 Verification of credentials submitted by Tenderer for finalization of two Packet Tenders.

In order to save time in finalization of first Packet of 2 packet system following procedure for dealing with Two packet Tenders shall be followed.

(i) Special condition in tender documents for tenders to be floated will be added specifying that every tenderer will compulsorily submit an affidavit in the format prescribed along with the documents verifying the genuineness of the credentials submitted by them. Non-submission of affidavit will result in summarily rejection of the tender/bid concerned.

(ii) On opening of the first Packet of two Packet tender, the offer of the Convenor will take immediate action to sent letters to the appropriate authorities who have issued credentials submitted by different Tenderers. However, the processing of tenders will be done on the basis of credentials submitted along with affidavit by the Tenderer without waiting for confirmation of credentials. The briefing note will be vetted by Finance as per credentials and affidavit submitted by the Tenderers.

(iii) On finalization of the first packet on the basis of credentials and affidavit of the lowest 3 available price bids has not been received, they will be chased and the finalization of the price bid will be done only on verification of the credentials of the lowest price bid.

The approved format for affidavit is enclosed.

The following matter should be incorporated at the following places in Tender document:

I) Important Note for Tenderers

The tenderer shall submit 'Format for Certificate' in the prescribed format (Annexure-V) along with the 'Tender document ' (part-1), Technical Bid (Packet-I) verifying the genuineness of the credentials submitted by them.

i) "System of Tendering" under technical Bid

A 'Format for Certificate' in the prescribed (Annexure V) to be submitted by tenderer along with Tenderer (Section-I) Technical Bid (Packet-I).

i) Section 'A' Tender Information under list of documents / Annexures to be submitted by the Tenderer (Section-I) along with Tender.

1)A 'Format for Certificate' to be submitted by tenderer alongwith tender document (Annex.-V)

i) Verification of credentials

An affidavit is required to be submitted by the tenderers (as given in Annexure V).Based on this affidavit, eligibility of tenderers for Technical Bid (Packet-I) will be decided. **However, the suitability/eligibility of shortlisted tenderers will be provisional and same shall be subject to verification of their credentials from issuing authority.**

If contents in documents submitted by tenderers are found to be incorrect/false, action will be taken against such tenderers as per provisions contained in Affidavit submitted by them as annexure V.

If the Tenderer(s) fail to submit the affidavit as prescribed in clause along with his/their offer Technical Bid (Packet-I), his/their offer shall be considered incomplete and will be summarily rejected.

i) Index page

Annexure V Format for Certificate

i) Annexure V Format for Certificate

Format for Annexure V is attached.

Tenderer must submit all prescribed documents to establish eligibility as well as documents required to be submitted by JV Firms as laid down in 'Guidelines for participation of Joint venture Firms' which form part of tender document.

Any document required for establishing eligibility shall not be entertained after opening of the tender.



Government of India
Ministry Of Railways
(Railway Board)

**Indian Railways
Standard
General Conditions of Contract**

April 2022

New Delhi

Engineering Department

Indian Railways
STANDARD GENERAL CONDITIONS OF CONTRACT
April 2022
I N D E X

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PART I

Instructions to Tenderers (ITT)

1.0 Applicability: These instructions and conditions of contract shall be applicable for all the tenders and contracts of railways for execution of ‘Works’ as defined in GFR 2017.

1.01 Order of Precedence of Documents: In a contract agreement, in case of any difference, contradiction, discrepancy, with regard to conditions of tender/contract, specifications, drawings, Bill(s) of Quantities etc., forming part of the tender/contract, the following shall be the order of precedence:

- i. Letter of Award/Acceptance (LOA)
- ii. Bill(s) of Quantities
- iii. Special Conditions of Contract
- iv. Technical Specifications as given in tender documents
- v. Drawings
- vi. Indian Railways Standard General Conditions of Contract updated with correction slips issued up to date of inviting tender or as otherwise specified in the tender documents.
- vii. Indian Railways Unified Standard Specification (IRUSS-2019) updated with correction slips issued up to date of inviting tender or as otherwise specified in the tender documents, if applicable in the contract.
- viii. CPWD Specifications 2019 Vol I & II updated with correction slips issued up to date of inviting tender or as otherwise specified in the tender documents, if applicable in the contract.
- ix. Indian Railways Unified Standard Specifications (Works and Material) 2010 updated with correction slips issued up to date of inviting tender or as otherwise specified in the tender documents, if applicable in the contract.
- x. IR Specifications/Guidelines updated with correction slips issued up to date of inviting tender or as otherwise specified in the tender documents.
- xi. Relevant B.I.S. Codes updated with correction slips issued up to date of inviting tender or as otherwise specified in the tender documents.

1.1 Interpretation: These Instructions to Tenderers shall be read in conjunction with the Standard General Conditions of Contract which are referred to herein and shall be subject to modifications additions or suppression by Special Conditions of Contract and/or Special Specifications, if any, annexed to the Tender Forms.

1.2 Definition: In these Instructions to Tenderers, the following terms shall have the meanings 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 Railway or Successor Railway authorized to deal with any matter, which these presents are concerned on his behalf.
- (b) “General Manager” shall mean the Officer-in-Charge of the general superintendence and control of the Zonal Railway/Production Unit and shall also include Addl. General Manager,

General Manager (Construction) 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 Electrical Engineer, Chief Electrical Engineer (Construction), Chief Signal & Telecom Engineer, Chief Signal & Telecom Engineer (Construction), Chief Mechanical Engineer and shall mean and include their successors of the Successor Railway.

(d) “Divisional Railway Manager” shall mean the Officer-in-Charge of a Division of Zonal Railway and shall mean and include Divisional Railway Manager of the Successor Railway.

(e) “Engineer” shall mean the Divisional Engineer or Executive Engineer, Divisional Signal & Telecom Engineer, Divisional Electrical Engineer, Divisional Mechanical Engineer in executive charge of the works and shall include the superior officers, both Open Line and Construction Organisations, of Engineering, Signal & Telecom, Mechanical and Electrical Departments, i.e. the Senior Divisional Engineer/Deputy Chief Engineer, Senior Divisional Signal & Telecom Engineer / Dy. Chief Signal & Telecom Engineer, Senior Divisional Electrical Engineer / Deputy Chief Electrical Engineer, Senior Divisional Mechanical Engineer and shall mean & include the Engineers of the Successor Railway.

(f) “Tenderer” shall mean the person / firm / co-operative or company whether incorporated or not who tenders for the works with a view to execute the works on contract with the Railway and shall include their representatives, successors and permitted assigns.

(g) “Limited Tenders” shall mean tenders invited from all or some contractors on the approved or select list of contractors with the Railway.

(h) “Open Tenders” shall mean the tenders invited in open and public manner and with adequate notice.

(i) “Works” shall mean the works contemplated in the drawings and Bill(s) of Quantities set forth in the tender forms and required to be executed according to the specifications.

(j) “Specifications” shall mean the Specifications for Materials and Works of the Railway as specified under the authority of the Ministry of Railways or Chief Engineer or as amplified, added to or superseded by special specifications if any, appended to the Tender Forms.

(k) Standard Schedule of Rates (SSOR) shall mean the schedule of Rates adopted by the Railway, which includes-

1. “Unified Standard Schedule of Rates of the Railway (USSOR)” i.e. the Standard Schedule of Rates of the Railway issued under the authority of the Chief Engineer from time to time, updated with correction slips issued up to date of inviting tender or as otherwise specified in the tender documents;

2. “Delhi Schedule Of Rates (DSR)” i.e. the Standard Schedule of Rates published by Director General/ Central Public Works Department, Government of India, New Delhi, as adopted and modified by the Railway under the authority of the Chief Engineer from time to time, updated with correction slips issued up to date of inviting tender or as otherwise specified in the tender documents.

(l) “Drawings” shall mean the maps, drawings, plans and tracings, or prints thereof annexed to the Tender Forms.

(m) “Contractor’s authorized Engineer” shall mean a graduate engineer or equivalent, having more than 3 years experience in the relevant field of construction work involved in the contract, duly approved by the Engineer.

(n) Date of inviting tender shall be the date of publishing tender notice on IREPS website if tender is published on website or the date of publication in newspaper in case tender is not published on website.

(o) “Bill of Quantities” shall mean Schedule of Item(s) included in the tender document along with respective quantities.

1.3 Words importing the singular number shall also include the plural and vice versa where the context requires.

CREDENTIALS OF CONTRACTORS

2. Application for Registration and Approved list of contractors:

2.1 Works of construction and of supply of material shall be entrusted for execution to contractors whose capabilities and financial status have been investigated and approved to the satisfaction of the Railway. A list of approved contractors may also be maintained by the Railway. The said list be revised periodically once in a year or so by giving wide publicity through advertisements etc. For registration, the contractor including a contractor who is already on the approved list shall apply to the concerned General Manager (Construction) / Chief Administrative Officer (Construction) / Principal Chief Engineer / Principal Chief Signal & Telecommunication Engineer / Principal Chief Mechanical Engineer / Principal Chief Electrical Engineer/ Divisional Railway Manager, furnishing particulars regarding:

- (a) his position as an independent contractor specifying engineering organization available with details of partners / staff / engineers employed with qualifications and experience;
- (b) his capacity to undertake and carry out works satisfactorily as vouched for by a responsible official or firm; details about the transport equipments, construction tools and plants etc. required for the work, maintained by him;
- (c) his previous experience of works similar to that to be contracted for, in proof of which original certificates or testimonials may be called for and their genuineness verified, if needs be, by reference to the signatories thereof;
- (d) his knowledge from actual personal investigation of the resources of the area/zone or zones in which he offers to work;
- (e) his ability to supervise the work personally or by competent and duly authorized agent;
- (f) his financial position;

2.2 An applicant shall clearly state the categories of works and the area/zone/division(s)/district(s) in which he desires registration in the list of approved contractors.

2.3 The selection of contractors for enlistment in the approved list would be done by a committee for different value of slabs as notified by Railway.

2.4 An annual fee as prescribed by the Railway from time to time would be charged from such approved contractors to cover the cost of sending notices to them and clerkage for tenders etc. Notices shall be sent to them on registered e-mail address and registered postal address.

TENDERS FOR WORKS

3. Tender Form: Tender Forms shall embody the contents of the contract documents either directly or by reference and shall be as per specimen form, Annexure-I. e-Tender Forms shall be issued free of cost to all tenderers.

4. Omissions & Discrepancies: Should a tenderer find discrepancies in or omissions from the drawings or any of the Tender Forms or should he be in doubt as to their meaning, he should at once notify the authority inviting tenders. The tender inviting authority may, if deemed necessary, clarify the same to all tenderers. It shall be understood that every endeavour has been made to avoid any error which can materially affect the basis of tender and successful tenderer shall take upon himself and provide for the risk of any error which may subsequently be discovered and shall make no subsequent claim on account thereof.

5. Bid Security:

- (1) (a) The tenderer shall be required to submit the Bid Security with the tender for the due performance with the stipulation to keep the offer open till such date as specified in the tender, under the conditions of tender. The Bid Security shall be as under:

Value of the Work	Bid Security
For all works	2% of the estimated cost of the work

Note:

- (i) The Bid Security shall be rounded off to the nearest ₹100. This Bid Security shall be applicable for all modes of tendering.
 - (ii) Any firm recognized by Department of Industrial Policy and Promotion (DIPP) as 'Startups' shall be exempted from payment of Bid Security detailed above.
 - (iii) Labour Cooperative Societies shall submit only 50% of above Bid Security detailed above.
- (b) It shall be understood that the tender documents have been issued to the tenderer and the tenderer is permitted to tender in consideration of stipulation on his part, that after submitting his tender he will not resile from his offer or modify the terms and conditions thereof in a manner not acceptable to the Engineer. Should the tenderer fail to observe or comply with the said stipulation, the aforesaid amount shall be liable to be forfeited to the Railway.
- (c) If his tender is accepted, this Bid Security mentioned in sub para (a) above will be retained as part security for the due and faithful fulfillment of the contract in terms of Clause 16 of the Standard General Conditions of Contract. The Bid Security of other Tenderers shall, save as herein before provided, be returned to them, but the Railway shall not be responsible for any loss or depreciation that may happen thereto while in their possession, nor be liable to pay interest thereon.
- (2) The Bid Security shall be deposited either in cash through e-payment gateway or submitted as Bank Guarantee bond from a scheduled commercial bank of India or as mentioned in tender documents. The Bank Guarantee bond shall be as per **Annexure-VIA** and shall be valid for a period of 90days beyond the bid validity period.
- (3) **In case, submission of Bid Security in the form of Bank Guarantee, following shall be ensured:**
- i. A scanned copy of the Bank Guarantee shall be uploaded on e-Procurement Portal (IREPS) while applying to the tender.
 - ii. The original Bank Guarantee should be delivered in person to the official nominated as indicated in the tender document ~~within 5 working days before closing date for of deadline of~~ submission of bids (i.e. excluding the last date of submission of bids).
 - iii. Non submission of scanned copy of Bank Guarantee with the bid on e-tendering portal (IREPS) and/or non submission of original Bank Guarantee within the specified period shall lead to summary rejection of bid.
 - iv. The Tender Security shall remain valid for a period of 90 days beyond the validity period for the Tender.

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- v. The details of the BG, physically submitted should match with the details available in the scanned copy and the data entered during bid submission time, failing which the bid will be rejected
- vi. The Bank Guarantee shall be placed in an envelope, which shall be sealed. The envelope shall clearly bear the identification “**Bid for the ***** Project**” and shall clearly indicate the name and address of the Bidder. In addition, the Bid Due Date should be indicated on the right hand top corner of the envelope.
- vii. The envelope shall be addressed to the officer and address as mentioned in the tender document.
- viii. If the envelope is not sealed and marked as instructed above, the Railway assumes no responsibility for the misplacement or premature opening of the contents of the Bid submitted and consequent losses, if any, suffered by the Bidder.

6. Care in Submission of Tenders:

- (a) (i) Before submitting a tender, the 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 forms are adequate and all inclusive to accord with the provisions in Clause-37 of the Standard General Conditions of Contract for the completion of works to the entire satisfaction of the Engineer.
- (a)(ii) Tenderers will examine the various provisions of The Central Goods and Services Tax Act, 2017(CGST)/ Integrated Goods and Services Tax Act, 2017(IGST)/ Union Territory Goods and Services Tax Act, 2017(UTGST)/ respective state’s State Goods and Services Tax Act (SGST) also, as notified by Central/State Govt.& as amended from time to time and applicable taxes before bidding. Tenderers will ensure that full benefit of Input Tax Credit (ITC) likely to be availed by them is duly considered while quoting rates.
- (a)(iii) The successful tenderer who is liable to be registered under CGST/IGST/UTGST/SGST Act shall submit GSTIN along with other details required under CGST/IGST/UTGST/SGST Act to railway immediately after the award of contract, without which no payment shall be released to the Contractor. The Contractor shall be responsible for deposition of applicable GST to the concerned authority.
- (a)(iv) In case the successful tenderer is not liable to be registered under CGST/IGST/UTGST/ SGST Act, the railway shall deduct the applicable GST from his/their bills under reverse charge mechanism (RCM) and deposit the same to the concerned authority.
- (b) When work is tendered for by a firm or company, the tender shall be signed by the individual legally authorized to enter into commitments on their behalf.
- (c) The Railway will not be bound by any power of attorney granted by the tenderer or by changes in the composition of the firm made subsequent to the

execution of the contract. It may, however, recognize such power of attorney and changes after obtaining proper legal advice, the cost of which will be chargeable to the Contractor.

- (a)(v) *Contractor shall be liable to pay/refund the amount collected as GST to the Indian Railways along with interest and penalties, if any imposed by the authorities, in case GST input tax credit of Indian Railways is denied/rejected by the tax authorities due to reasons mentioned below but not limited to:*

Wrong/incorrect invoices issued by Contractor;

No-filing of GST returns;

Non-payment of GST collected from Indian Railways to the authorities;

Any other non-compliance done by Contractor;

General Indemnity: *Contractor hereby agrees to indemnify and hold harmless the Indian Railways from and against any and all losses, including loss on account of Input Tax Credit and all losses incurred by the Indian Railways relating to or arising out of or in connection with any actual or threatened claim, legal action, proceedings, prosecution or inquiry by or against the Indian Railways arising out, directly or indirectly, of failure by the contractor to comply with the provisions of GST and related laws, or based upon or arising from any failure by the Contractor.*

Retention Money: *Any payment liable to be paid by Indian Railways to contractor against the goods or services or both supplied by such contractor to Indian Railways shall be kept on hold in case supplier makes any non-compliance of any of the GST law provisions including non-reporting of invoices in GST returns. Such payment shall be released after proper verification of records and availability of ITC to Indian Railways as per provisions of GST Law.*

6.1 The tenderers shall submit a copy of certificate stating that all their statements/documents submitted alongwith bid are true and factual. Standard format of certificate to be submitted by the bidder is enclosed as **Annexure-V**. In addition to Annexure-V, in case of other than Company/Proprietary firm, Annexure –V(A) shall also be submitted by the each member of a Partnership Firm / Joint Venture (JV) / Hindu Undivided Family (HUF) / Limited Liability Partnership (LLP) etc. as the case may be. Non submission of above certificate by the bidder shall result in **summarily** rejection of his/their bid. It shall be mandatorily incumbent upon the tenderer to identify, state and submit the supporting documents duly self attested/digitally signed by which they/he is qualifying the Qualifying Criteria mentioned in the Tender Document.

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CONSIDERATION OF TENDERS

7. Right of Railway to Deal with Tenders: The Railway reserves the right of not to invite tenders for any of Railway work or works or to invite open or limited tenders and when tenders are called to accept a tender in whole or in part or reject any tender or all tenders without assigning reasons for any such action. In case if tender is accepted in part by Railway administration, Letter of Acceptance shall be issued as counter offer to the Tenderer, which shall be subject to acceptance by the Tenderer.

7A. Two Packets System of Tendering: With a view to assess the tenders technically without being influenced by the financial bids, 'Two Packets System of tendering' shall be adopted wherein tender documents provide for the same.

7B. Pre Bid Conference: Intenders having advertised value more than Rs 50 Crore or as

mentioned in the tender document, Railway shall conduct Pre Bid Conference(s) with the prospective bidders.

7C. Make in India Policy: Provisions of Make in India Policy 2017 issued by Govt. of India, as amended from time to time, shall be followed for consideration of tenders.

7D. Permission to Bid for a bidder from a country which shares Land boundary with India: Any bidder from the countries sharing a land border with India will be eligible to bid in any procurement of works (including turnkey projects) only if the bidder is registered with the Competent Authority. The Competent Authority for registration will be the Registration Committee constituted by the Department for Promotion of Industry and Internal Trade (DPIIT), Government of India. For interpretation of this para, Department of Expenditure, Ministry of Finance, Government of India letter F.No.6/18/2019-PPD dated 23/07/2020 shall be referred.

7E. Clarification of Bids: To assist in the examination, evaluation & comparison and pre-qualification of the Tender, the Railway may, at its discretion, ask any Bidder for a clarification of its Bid. Any clarification submitted by a Bidder that is not in response to a request by the Railway shall not be entertained or considered. The Railway request for clarification and the response of the bidder in this regard shall be in writing.

However, if a Bidder does not provide clarification of its bid by the date and time communicated in the Railway request for clarification, the bid shall be evaluated as per the documents submitted along with the bid.

8. Execution of Contract Document: The Tenderer whose tender is accepted shall be required to appear in person at the office of General Manager/General Manager (Construction), Chief Administrative Officer (Construction), Divisional Railway Manager or concerned Engineer, as the case may be, or if tenderer is a firm or corporation, a duly authorized representative shall appear (there would be no need for appear in person if agreement is signed digitally) and execute the contract agreement within seven days of notice from Railways that the Contract Agreement is ready. Failure to do so shall constitute a breach of the agreement affected by the acceptance of the tender. The Contract Agreement shall be entered into by Railway only after submission of valid Performance Guarantee by the Contractor. In such cases the Railway may determine that such tenderer has abandoned the contract and there upon his tender and acceptance thereof shall be treated as cancelled and the Railway shall be entitled to forfeit the full amount of the Bid Security and other dues payable to the Contractor under this contract. The failed Contractor shall be debarred from participating in the re-tender for that work.

9. Form of Contract Document: Every contract shall be complete in respect of the document it shall so constitute. Not less than 2 copies of the contract document shall be signed by the competent authority and the Contractor and one copy given to the Contractor (there would be no need of signing two copies if agreement is signed digitally).

(a) For Zone Contracts, awarded on the basis of the percentage above or below the applicable chapter(s) of Standard Schedule of Rates (SSOR) for the whole or part of financial year, the contract agreement required to be executed by the tenderer whose tender is accepted shall be as per specimen form, Annexure-II. During the currency of the Zone Contract, work orders as per specimen form Annexures-III, for works not exceeding ₹ 5,00,000 each, shall be issued by the Divisional Railway Manager / Executive Engineer under the agreement for Zone Contract.

(b) For contracts for specific works, the contract document required to be executed by the tenderer whose tender is accepted shall be an agreement as per specimen form Annexure- IV.

ANNEXURE - I

 RAILWAY
TENDER FORM (First Sheet)

Tender No. _____

Name of Work _____

To

The President of India

Acting through the _____ Railway

I/We _____ have read the various conditions to tender attached hereto and agree to abide by the said conditions. I/We also agree to keep this offer open for acceptance for a period of _____ days from the date fixed for closing of the tender and in default thereof, I/We will be liable for forfeiture of my/our "Bid Security". I/We offer to do the work for _____ Railway, at the rates quoted in the attached bill(s) of quantities and hereby bind myself/ourselves to complete the work in all respects within _____ months from the date of issue of letter of acceptance of the tender.

3. I/We also hereby agree to abide by the Indian Railways Standard General Conditions of Contract, with all correction slips 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 Railway in the annexed Special Conditions/Specifications, Standard Schedule of Rates (SSOR) with all correction slips up-to-date for the present contract.

3. A Bid Security of ₹ _____ has already been deposited online/ submitted as Bank Guarantee bond. Full value of the Bid Security shall stand forfeited without prejudice to any other right or remedies in case my/our Tender is accepted and if:

- (a) I/We do not submit the Performance Guarantee within the time specified in the Tender document;
- (b) I/We do not execute the contract documents within seven days after receipt of notice issued by the Railway that such documents are ready; and
- (c) I/We do not commence the work within fifteen days after receipt of orders to that effect.

4. (a) I/We am/are a Startup firm registered by Department of Industrial Policy and Promotion (DIPP) and my registration number is valid upto (Copy enclosed) and hence exempted from submission of Bid Security.

5. We are a Labour Cooperative Society and our Registration No. is with and hence required to deposit only 50% of Bid Security.

6. 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 Witnesses:~~

(1) _____

(2) _____

Signature of Tenderer(s)

Date _____

Address of the Tenderer(s)

*ACS-7 dated 25.09.2024

ANNEXURE - I (Contd. ...)

TENDER FORM (Second Sheet)

1. Instructions to Tenderers and Conditions of Tender: The following documents form part of Tender / Contract:

- (a) Tender Forms – First Sheet and Second Sheet
- (b) Special Conditions/Specifications (enclosed)
- (c) Bill(s) of quantities (enclosed)
- (d) Standard General Conditions of Contract and Standard Specifications (Works and Materials) of Indian Railways as amended/corrected upto latest correction slips, copies of which can be seen in the office of _____ or obtained from the office of the Chief Engineer, _____ Railway on payment of prescribed charges.
- (e) Standard Schedule of Rates (SSOR) as amended / corrected upto latest correction slips, copies of which can be seen in the office of _____ or obtained from the office of the Chief Engineer, _____ Railway on payment of prescribed charges.
- (f) All general and detailed drawings pertaining to this work which will be issued by the Engineer or his representatives (from time to time) with all changes and modifications.

2. Drawings for the Work: The Drawing for the work can be seen in the office of the _____ and / or Chief Engineer, _____ Railway at any time during the office hours. The drawings are only for the guidance of Tenderer(s). Detailed working drawings (if required) based generally on the drawing mentioned above, will be given by the Engineer or his representative from time to time.

3. The Tenderer(s) shall quote his / their rates as a percentage above or below the Standard Schedule of Rates (SSOR) of _____ Railway as applicable to _____ Division except where he/they are required to quote item rates and must tender for all the items shown in the Bill(s) of Quantities attached. The quantities shown in the attached Bill(s) of Quantities are given as a guide and are approximate only and are subject to variation according to the needs of the Railway. The Railway does not guarantee work under each item of the Bill(s) of Quantities. The tenderer(s) shall quote rates / rebates only at specified place in Tender Form supplied by Railway. Any revision of rates / rebates submitted (quoted) through a separate letter whether enclosed with the bid (Tender Form) or submitted separately or mentioned elsewhere in the document other than specified place shall be summarily ignored and will not be considered.

4. Tenders containing erasures and / or alterations of tender documents are liable to be rejected. Any correction made by tender(s) in his/their entries must be attested by him / them.

5. The works are required to be completed within a period of _____ months from the date of issue of acceptance letter.

6. Bid Security:

(a) Subject to exemptions provided under para 5(1) (a) of Part-1 (ITT) of this document, the tender must be accompanied by a Bid Security as mentioned in tender documents, failing which the tender shall be summarily rejected.

(b) The Tenderer(s) shall keep the offer open for a minimum period of 60 days (in case of two packet system of tendering 90days) from the date of closing of the Tender. It is understood that the tender documents have been issued to the Tenderer(s) and the Tenderer(s), is / are

permitted to tender in consideration of the stipulation on his / their part that after submitting his / their tender subject to the period being extended further, if required by mutual agreement from time to time, he will not resale from his offer or modify the terms and conditions thereof in a manner not acceptable to _____ Railway. Should the tenderer fail to observe or comply with the foregoing stipulation, the amount deposited or Bank guarantee bond submitted as Bid Security for the due performance of the above stipulation, shall be forfeited to the Railway.

- (c) If his tender is accepted,
- (i) the Bid Security mentioned in sub para(a) above deposited in cash through e-payment gateway will be retained as part security for the due and faithful fulfillment of the contract in terms of Clause 16 of the Standard General Conditions of Contract;
 - (ii) the Bid Security mentioned in sub para(a) above submitted as Bank guarantee bond, will be encashed as part security for the due and faithful fulfillment of the contract in terms of Clause 16 of the Standard General Conditions of Contract.

The Bid Security of other Tenderers shall, save as herein before provided, be returned to them, but the Railway shall not be responsible for any loss or depreciation to the Bid Security that may happen thereto while in their possession, nor be liable to pay interest thereon.

- (d) In case Contractor submits the Term Deposit Receipt/Bank Guarantee Bond towards either the Full Security Depositor the Part Security Deposit equal to or more than Bid Security, the Railway shall return the Bid Security so retained as per sub para(c) above, to the Contractor.

7. Rights of the Railway to deal with Tender: The authority for the acceptance of the tender will rest with the Railway. It shall not be obligatory on the said authority to accept the lowest tender or any other tender, and tenderer(s) shall neither demand any explanation for the cause of rejection of his/ their tender nor the Railway to assign reasons for declining to consider or reject any particular tender or tenders.

8. If the tenderer(s) deliberately gives / give wrong information in his / their tender or creates / create circumstances for the acceptance of his / their tender, the Railway reserves the right to reject such tender at any stage.

9. If any partner(s) of a partnership firm expires after the submission of its tender or after the acceptance of its tender, the Railway shall deem such tender as cancelled/contract as terminated under clause 61 of the Standard General Conditions of Contract, unless the firm retains its character as per partnership agreement. If a sole proprietor expires after the submission of tender or after the acceptance of tender, the Railway shall deem such tender as cancelled / contract as terminated under clause 61 of the Standard General Conditions of Contract.

10. Eligibility Criteria:

10.1 Technical Eligibility Criteria:

(a) The tenderer must have successfully completed or substantially completed any one of the following categories of work(s) during last 07 (seven) years, ending last day of month previous to the one in which tender is invited:

- (i) Three similar works each costing not less than the amount equal to 30% of advertised value of the tender, or
- (ii) Two similar works each costing not less than the amount equal to 40% of advertised value of the tender, or
- (iii) One similar work costing not less than the amount equal to 60% of advertised value of the tender.

(b) (1) In case of tenders for composite works (e.g. works involving more than one distinct component, such as Civil Engineering works, S&T works, Electrical works, OHE works etc. and in the case of major bridges – substructure, superstructure etc.), tenderer must have successfully completed or substantially completed any one of the following categories of work(s) during last 07 (seven) years, ending last day of month previous to the one in which tender is invited:

- (i) Three similar works each costing not less than the amount equal to 30% of advertised value of each component of tender, or
- (ii) Two similar works each costing not less than the amount equal to 40% of advertised value of each component of tender, or
- (iii) One similar work each costing not less than the amount equal to 60% of advertised value of each component of tender.

Note for b(1): Separate completed works of minimum required values shall also be considered for fulfillment of technical eligibility criteria for different components.

(b)(2) In such cases, what constitutes a component in a composite work shall be clearly pre-defined with estimated tender cost of it, as part of the tender documents without any ambiguity.

(b) (3) To evaluate the technical eligibility of tenderer, only components of work as stipulated in tender documents for evaluation of technical eligibility, shall be considered. The scope of work covered in other remaining components shall be either executed by tenderer himself if he has work experience as mentioned in clause 7 of the Standard General Conditions of Contractor through subcontractor fulfilling the requirements as per clause 7 of the Standard General Conditions of Contract or jointly i.e., partly himself and remaining through subcontractor, with prior approval of Chief Engineer in writing.

However, if required in tender documents by way of Special Conditions, a formal agreement duly notarised, legally enforceable in the court of law, shall be executed by the main contractor with the subcontractor for the component(s) of work proposed to be executed by the subcontractor(s), and shall be submitted along with the offer for considering subletting of that scope of work towards fulfilment of technical eligibility. Such subcontractor must fulfill technical eligibility criteria as follows:

The subcontractor shall have successfully completed at least one work similar to work proposed for subcontract, costing not less than 35% value of work to be subletted, in last 5 years, ending last day of month previous to the one in which tender is invited through a works contract.

Note: for subletting of work costing up to Rs 50 lakh, no previous work experience of subcontractor shall be asked for by the Railway.

In case after award of contract or during execution of work it becomes necessary for contractor to change subcontractor, the same shall be done with subcontractor(s) fulfilling the requirements as per clause 7 of the Standard General Conditions of Contract, with prior approval of Chief Engineer in writing.

Note for Item 10.1:

Work experience certificate from private individual shall not be considered. However, in addition to work experience certificates issued by any Govt. Organisation, work experience certificate issued by Public listed company having average annual turnover of Rs 500 crore and above in last 3 financial years excluding the current financial year, listed on National Stock Exchange or Bombay Stock

Exchange, incorporated/registered at least 5 years prior to the date of closing of tender, shall also be considered provided the work experience certificate has been issued by a person authorized by the Public listed company to issue such certificates.

In case tenderer submits work experience certificate issued by public listed company, the tenderer shall also submit along with work experience certificate, the relevant copy of work order, bill of quantities, bill wise details of payment received duly certified by Chartered Accountant, TDS certificates for all payments received and copy of final/last bill paid by company in support of above work experience certificate.

10.2. Financial Eligibility Criteria: The tenderer must have minimum average annual contractual turnover of ~~1.5~~V/Nor 'V' whichever is less; where

V= Advertised value of the tender in crores of Rupees

N= Number of years prescribed for completion of work for which bids have been invited.

The average annual contractual turnover shall be calculated as an average of “total contractual payments” in the previous three financial years, as per the audited balance sheet. However, in case balance sheet of the previous year is yet to be prepared/ audited, the audited balance sheet of the fourth previous year shall be considered for calculating average annual contractual turnover.

The tenderers shall submit requisite information as per Annexure-VIB, along with copies of Audited Balance Sheets duly certified by the Chartered Accountant/ Certificate from Chartered Accountant duly supported by Audited Balance Sheet.

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10.3 Bid Capacity: The tender/technical bid will be evaluated based on bid capacity formula detailed as Annexure-VI.

10.4 No Technical and Financial credentials are required for tenders having advertised value up to Rs 50 lakh.

10.5 Credentials if submitted in foreign currency shall be converted into Indian currency i.e., Indian Rupee as under:

The conversion rate of US Dollars into Rupees shall be the daily representative exchange rates published by the Reserve Bank of India or entity authorized by RBI to do so for the relevant date or immediately previous date for which rates have been published. Where, relevant date shall be as on the last day of month previous to the one in which tender is invited. In case of any other currency, the same shall first be converted to US Dollars as on the last day of month previous to the one in which tender is invited, and the amount so derived in US Dollars shall be converted into Rupees at the aforesaid rate. The conversion rate of such currencies shall be the daily representative exchange rates published by the International Monetary Fund for the relevant date or immediately previous date for which rates have been published.

[Explanation for Para 10 of the Tender Form (Second Sheet) including Para 10.1 to 10.5 - Eligibility Criteria:

1. *Substantially Completed Work means an ongoing work in which payment equal to or more than 90% of the present contract value (excluding the payment made for adjustment of Price variation (PVC), if any) has been made to the contractor in that ongoing contract and no proceedings of termination of contract on*

Contractor's default has been initiated. The credential certificate in this regard should have been issued not prior to 60 days of date of invitation of present tender.

2. *In case a work is started prior to 07 (seven) years, ending last day of month previous to the one in which tender is invited, but completed in last 07 (seven) years, ending last day of month previous to the one in which tender is invited, the completed work shall be considered for fulfillment of credentials.*
3. *If a work is physically completed and completion certificate to this extent is issued by the concerned organization but final bill is pending, such work shall be considered for fulfillment of credentials*
4. *In case of completed work, the value of final bill (gross amount) including the PVC amount (if paid) shall be considered as the completion cost of work. In case final bill is pending, only the total gross amount already paid including the PVC amount (if paid) shall be considered as the completion cost of work.*

In case of substantially completed work, the total gross amount already paid including the PVC amount (if paid), as mentioned in the certificate, shall be considered as the cost of substantially completed work.

5. *If a bidder has successfully completed a work as subcontractor and the work experience certificate has been issued for such work to the subcontractor by a Govt. Organization or public listed company as defined in Note for Item 10.1 Para 10 of the Tender Form (Second Sheet), the same shall be considered for the purpose of fulfillment of credentials.*
6. *In case a work is considered similar in nature for fulfillment of technical credentials, the overall cost including the PVC amount (if paid) of that completed work or substantially completed work, shall be considered and no separate evaluation for each component of that work shall be made to decide eligibility.*
7. *In case of newly formed partnership firm, the credentials of individual partners from previous propriety firm(s) or dissolved previous partnership firm(s) or split previous partnership firm(s), shall be considered only to the extent of their share in previous entity on the date of dissolution / split and their share in newly formed partnership firm. For example, a partner A had 30% share in previous entity and his share in present partnership firm is 20%. In the present tender under consideration, the credentials of partner A will be considered to the extent of $0.3 \times 0.2 \times \text{value of the work done in the previous entity}$. For this purpose, the tenderer shall submit along with his bid all the relevant documents which include copy of previous partnership deed(s), dissolution deed(s) and proof of surrender of PAN No.(s) in case of dissolution of partnership firm(s) etc.*
8. *In case of existing partnership firm, if any one or more partners quit the partnership firm, the credentials of remaining partnership firm shall be re-worked out i.e., the quitting partner(s) shall take away his credentials to the extent of his share on the date of quitting the partnership firm(e.g. in a partnership firm of partners A, B & C having share 30%, 30% & 40% respectively and credentials of Rs 10 crore; in case partner C quits the firm, the credentials of this partnership firm shall remain as Rs 6 crore). For this purpose, the tenderer shall submit along with his bid all the relevant documents which include copy of previous partnership deed(s), dissolution deed(s) and proof of surrender of PAN No.(s) in case of dissolution of partnership firm(s) etc.*

9. *In case of existing partnership firm if any new partner(s) joins the firm without any modification in the name and PAN/TAN no. of the firm, the credentials of partnership firm shall get enhanced to the extent of credentials of newly added partner(s) on the same principles as mentioned in item 6 above. For this purpose, the tenderer shall submit along with his bid all the relevant documents which include copy of previous partnership deeds, dissolution/splitting deeds and proof of surrender of PAN No.(s) in case of dissolution of partnership firm etc.*
10. *Any partner in a partnership firm cannot use or claim his credentials in any other firm without leaving the partnership firm i.e., In a partnership firm of A&B partners, A or B partner cannot use credentials of partnership firm of A&B partners in any other partnership firm or propriety firm without leaving partnership firm of A&B partners.*
11. *In case a partner in a partnership firm is replaced due to succession as per succession law, the proportion of credentials of the previous partner will be passed on to the successor.*
12. *If the percentage share among partners of a partnership firm is changed, but the partners remain the same, the credentials of the firm before such modification in the share will continue to be considered for the firm as it is without any change in their value. Further, in case a partner of partnership firm retires without taking away any credentials from the firm, the credentials of partnership firm shall remain the same as it is without any change in their value.*
13. *In a partnership firm "AB" of A&B partners, in case A also works as propriety firm "P" or partner in some other partnership firm "AX", credentials of A in propriety firm "P" or in other partnership firm "AX" earned after the date of becoming a partner of the firm AB shall not be added in partnership firm AB.*
14. *In case a tenderer is LLP, the credentials of tenderer shall be worked out on above lines similar to a partnership firm.*
15. *In case company A is merged with company B, then company B would get the credentials of company A also.]*

11. Tenderer Credentials:

Documents testifying tenderer previous experience and financial status should be produced alongwith the tender.

Tenderer(s) who is / are not borne on the approved list of the Contractors of _____ Railway shall submit alongwith his / their tender:

- (i) Certificates and testimonials regarding contracting experience for the type of job for which tender is invited with list of works carried out in the past.
- (ii) Audited Balance Sheet duly certified by the Chartered Accountant regarding contractual payments received in the past.
- (iii) The list of personnel / organization on hand and proposed to be engaged for the tendered work. Similarly list of Plant & Machinery available on hand and proposed to be inducted and hired for the tendered work.
- (iv) A copy of certificate stating that they are not liable to be disqualified and all their statements/documents submitted alongwith bid are true and factual. Standard format of

the certificate to be submitted by the bidder is enclosed as Annexure-V. In addition to Annexure-V, in case of other than Company/Proprietary firm, Annexure –V(A) shall also be submitted by the each member of a Partnership Firm / Joint Venture (JV) / Hindu Undivided Family (HUF) / Limited Liability Partnership (LLP) etc. as the case may be. Non submission of a copy of certificate by the bidder shall result in summarily rejection of his/their bid. It shall be mandatorily incumbent upon the tenderer to identify, state and submit the supporting documents duly self attested/ digitally signed by which they/he are/is qualifying the Qualifying Criteria mentioned in the Tender Document.

- (v) The Railway 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, make available all such information, evidence and documents as may be necessary for such verification. Any such verification or lack of such verification, by the Railway shall not relieve the bidder of its obligations or liabilities hereunder nor will it affect any rights of the Railway there under.
- (vi) (a) In case of any information submitted by tenderer is found to be false, forged or incorrect at any time during process for evaluation of tenders, it shall lead to forfeiture of the tender Bid Security besides banning of business for a period of upto ~~two~~ **five** years.
- (b) In case of any information submitted by tenderer is found to be false, forged or incorrect after the award of contract, the contract shall be terminated. Bid Security, Performance Guarantee and Security Deposit available with the railway shall be forfeited. In addition, other dues of the contractor, if any, under this contract shall be forfeited and agency shall be banned for doing business for a period of upto ~~two~~ **five** years.

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12. Non-compliance with any of the conditions set forth therein above is liable to result in the tender being rejected.

13. Execution of Contract Documents: The successful Tenderer(s) shall be required to execute an agreement with the President of India acting through the _____, _____ Railway for carrying out the work according to the Standard General Conditions of Contract, Special Conditions / Specifications annexed to the tender and Standard Specifications (Works and Materials) of Railway as amended/corrected upto latest correction slips, mentioned in tender form (First Sheet).

14. Documents to be Submitted Along with Tender

(i) The tenderer shall clearly specify whether the tender is submitted on his own (Proprietary Firm) or on behalf of a Partnership Firm / Company / Joint Venture (JV) / Registered Society / Registered Trust / Hindu Undivided Family (HUF) / Limited Liability Partnership (LLP) etc. The tenderer(s) shall enclose the attested copies of the constitution of their concern, and copy of PAN Card along with their tender. Tender Documents in such cases are to be signed by such persons as may be legally competent to sign them on behalf of the firm, company, association, trust or society, as the case may be.

(ii) Following documents shall be submitted by the tenderer:

(a) Sole Proprietorship Firm:

(i) All documents in terms of Para 10 of the Tender Form (Second Sheet) above.

(b) HUF:

(i) A copy of notarized affidavit on Stamp Paper declaring that he who is submitting the tender on behalf of HUF is in the position of 'Karta' of Hindu Undivided Family

(HUF) and he has the authority, power and consent given by other members to act on behalf of HUF.

(ii) All other documents in terms of Para 10 of the Tender Form (Second Sheet) above.

(c) **Partnership Firm:**

(i) All documents as mentioned in para 18 of the Tender Form (Second Sheet).

(d) **Joint Venture (JV):** All documents as mentioned in para 17 of the Tender Form (Second Sheet).

(e) **Company registered under Companies Act 2013:**

(i) The copies of **MOA (Memorandum of Association) / AOA (Articles of Association)** of the company

(ii) A copy of Certificate of Incorporation

(iii) A copy of Authorization/Power of Attorney issued by the Company (backed by the resolution of Board of Directors) in favour of the individual to sign the tender on behalf of the company and create liability against the company.

(iv) All other documents in terms Para 10 of the Tender Form (Second Sheet) above.

(f) **LLP (Limited Liability Partnership):**

(i) A copy of LLP Agreement

(ii) A copy of Certificate of Incorporation

(iii) A copy of Power of Attorney/Authorization issued by the LLP in favour of the individual to sign the tender on behalf of the LLP and create liability against the LLP.

(iv) An undertaking by all partners of the LLP that they are not blacklisted or debarred by Railways or any other Ministry / Department of the Govt. of India from participation in tenders / contracts as on the date of submission of bids, either in their individual capacity or in any firm/LLP or JV in which they were / are partners/members. Concealment / wrong information in regard to above shall make the contract liable for determination under Clause 62 of the Standard General Conditions of Contract.

(v) All other documents in terms of Para 10 of the Tender Form (Second Sheet).

(g) **Registered Society & Registered Trust:**

(i) A copy of Certificate of Registration

(ii) A copy of Memorandum of Association of Society/Trust Deed

(iii) A copy of Power of Attorney in favour of the individual to sign the tender documents and create liability against the Society/Trust.

(iv) A copy of Rules & Regulations of the Society

(v) All other documents in terms of Para 10 of the Tender Form (Second Sheet) above.

(iii) If it is NOT mentioned in the submitted tender that tender is being submitted on behalf of a Sole Proprietorship firm / Partnership firm / Joint Venture / Registered Company etc., then the tender shall be treated as having been submitted by the individual who has signed the tender.

(iv) After opening of the tender, any document pertaining to the constitution of Sole Proprietorship Firm / Partnership Firm / Registered Company/ Registered Trust / Registered Society / HUF/LLP etc. shall be neither asked nor considered, if submitted. Further, no suo moto cognizance of any document available in public domain (i.e., on internet etc.) or in Railway's

record/office files etc. will be taken for consideration of the tender, if no such mention is available in tender offer submitted.

(v) A tender from JV shall be considered only where permissible as per the tender conditions.

(vi) The Railway will not be bound by any change of power of attorney or in the composition of the firm made subsequent to the submission of tender. Railway may, however, recognize such power of attorney and changes after obtaining proper legal advice, the cost of which will be chargeable to the Contractor.

15. The tenderer whether sole proprietor / a company or a partnership firm / ~~joint venture (JV)~~ / registered society / registered trust / HUF / LLP etc if they want to act through agent or individual partner(s), should submit along with the tender, a copy of power of attorney duly stamped and authenticated by a Notary Public or by Magistrate in favour of the specific person whether he/they be partner(s) of the firm or any other person, specifically authorizing him/them to sign the tender, submit the tender and further to deal with the Tender/ Contract up to the stage of signing the agreement except in case where such specific person is authorized for above purposes through a provision made in the partnership deed / Memorandum of Understanding / Article of Association / Board resolution, failing which tender shall be summarily rejected.

A separate power of attorney duly stamped and authenticated by a Notary Public or by Magistrate in favour of the specific person whether he/they be partner(s) of the firm or any other person, shall be submitted after award of work, specifically authorizing him/them to deal with all other contractual activities subsequent to signing of agreement, if required.

Note: A Power of Attorney executed and issued overseas, the document will also have to be legalized by the Indian Embassy and notarized in the jurisdiction where the Power of Attorney is being issued. However, the Power of Attorney provided by Bidders from countries that have signed the Hague Legislation Convention 1961 are not required to be legalized by the Indian Embassy if it carries a conforming Apostille certificate.

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16. Employment/Partnership etc. of Retired Railway Employees:

(a) Should a tenderer

i) be a retired Engineer of the gazetted rank or any other gazetted officer working before his retirement, whether in the executive or administrative capacity or whether holding a pensionable post or not, in the Engineering or any other department of any of the railways owned and administered by the President of India for the time being, OR

ii) being partnership firm / joint venture (JV) / registered society / registered trust etc have as one of its partners/members a retired Engineer of the gazetted rank or any other gazetted officer working before his retirement, OR

iii) being an incorporated company have any such retired Engineer of the gazetted rank or any other gazetted officer working before his retirement as one of its directors

AND

in case where such Engineer or officer had not retired from government service at least 1 year prior to the date of submission of the tender

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the tenderer will give full information as to the date of retirement of such Engineer or gazetted officer from the said service and as to whether permission for taking such contract, or if the Contractor be a partnership firm or an incorporated company, to become a partner or director as the case may be, has been obtained by the tenderer or the Engineer or officer, as the case may be from the President of India or any officer, duly authorized by him in this behalf, shall be clearly stated in writing at the time of submitting the tender.

- b) In case, upon successful award of contract, should a tenderer depute for execution of the works under or to deal matters related with this contract, any retired Engineer of gazetted rank or retired gazetted officer working before his retirement in the Engineering or any other department of any of the railways owned and administered by the President of India for the time being, and now in his employment, then the tenderer will ensure that retired Engineer or retired gazetted officer had retired from government service at least 1 year prior to the date of his employment with tenderer and in case he had retired from service within a year then he possesses the requisite permission from the President of India or any officer, duly authorized by him in this behalf, to get associated with the tenderer.
- c) Should a tenderer or Contractor being an individual, have member(s) of his family or in the case of partnership firm/ company / joint venture (JV) / registered society / registered trust etc. one or more of his partner(s)/shareholder(s) or member(s) of the family of partner(s)/shareholder(s) having share of more than 1% in the tendering entity employed in gazetted capacity in the Engineering or any other department of the railway, then the tenderer at the time of submission of tender, will inform the authority inviting tenders the details of such persons.

Note: -If information as required as per 16.a), b), c) above has not been furnished, contract is liable to be dealt in accordance with provision of clause 62 of the Standard General Condition of contract.

JOINT VENTURE (JV) IN WORKS TENDERS

17. Participation of Joint Venture (JV) in Works Tender: This paragraph shall be applicable for works tenders wherein tender documents provide for the same.

17.1 Separate identity/name shall be given to the Joint Venture.

17.2 Number of members in a JV shall not be more than three, if the work involves only one department (say Civil or S&T or Electrical or Mechanical) and shall not be more than five, if the work involves more than one Department. One of the members of the JV shall be its Lead Member who shall have a majority (at least 51%) share of interest in the JV. The other members shall have a share of not less than 20% each in case of JV with upto three members and not less than 10% each in case of JV with more than three members. In case of JV with foreign member(s), the Lead Member has to be an Indian firm/company with a minimum share of 51%.

17.3 A member of JV shall not be permitted to participate either in individual capacity or as a member of another JV in the same tender.

17.4 The tender form shall be purchased and submitted only in the name of the JV and not in the name of any constituent member. The tender form can however be submitted by JV or any of its constituent member or any person authorized by JV through Power of Attorney to submit tender.

17.5 Bid Security shall be submitted by JV or authorized person of JV either as :

- (i) Cash through e-payment gateway or as mentioned in tender document, or
- (ii) Bank Guarantee bond either in the name of JV, or in the name of all members of JV as per MOU irrespective of their share in the JV if the JV has not been constituted legally till the date of submission of tender.

17.6 A copy of Memorandum of Understanding (MoU) duly executed by the JV members on a stamp paper, shall be submitted by the JV alongwith the tender. The complete details of the members of the JV, their share and responsibility in the JV etc. particularly with reference to financial, technical and other obligations shall be furnished in the MoU.

17.7 Once the tender is submitted, the MoU shall not normally be modified / altered / terminated during the validity of the tender. In case the tenderer fails to observe/comply with this stipulation, the full Bid Security shall be liable to be forfeited.

17.8 Approval for change of constitution of JV shall be at the sole discretion of the Railway. The constitution of the JV shall not normally be allowed to be modified after submission of the bid by the JV, except when modification becomes inevitable due to succession laws etc., provided further that there is no change in qualification of minimum eligibility criteria by JV after change of composition. However, the Lead Member shall continue to be the Lead Member of the JV. Failure to observe this requirement would render the offer invalid.

17.9 Similarly, after the contract is awarded, the constitution of JV shall not be normally allowed to be altered during the currency of contract except when modification become inevitable due to succession laws etc. and minimum eligibility criteria should not get vitiated. Failure to observe this stipulation shall be deemed to be breach of contract with all consequential penal action as per contract conditions.

17.10 On award of contract to a JV, a single Performance Guarantee shall be submitted by the JV as per tender conditions. All the Guarantees like Performance Guarantee, Bank Guarantee for Mobilization Advance, Machinery Advance etc. shall be accepted only in the name of the JV and no splitting of guarantees amongst the members of the JV shall be permitted.

17.11 On issue of LOA (Letter of Acceptance), the JV entity to whom the work has been awarded, with the same shareholding pattern as was declared in the MOU/JV Agreement submitted alongwith the tender, shall be got registered before the Registrar of the Companies under 'The Companies Act -2013' (in case JV entity is to be registered as Company) or before the Registrar/Sub-Registrar under the 'The Indian Partnership Act, 1932' (in case JV entity is to be registered as Partnership Firm) or under 'The LLP Act 2008' (in case JV entity is to be registered as LLP). A separate PAN shall be obtained for this entity. The documents pertaining to this entity including its PAN shall be furnished to the Railways before signing the contract agreement for the work. In case the tenderer fails to observe/comply with this stipulation within 60 days of issue of LOA, contract is liable to be terminated. In case contract is terminated railway shall be entitled to forfeit the full amount of the Bid Security and other dues payable to the Contractor under this contract. The entity so registered, in the registered documents, shall have, inter-alia, following Clauses:

17.11.1 Joint and Several Liability - Members of the entity to which the contract is awarded, shall be jointly and severally liable to the Railway for execution of the project in accordance with General and Special Conditions of Contract. The members of the entity shall also be liable jointly and severally for the loss, damages caused to the Railways during the course of execution of the contract or due to non-execution of the contract or part thereof.

17.11.2 Duration of the Registered Entity - It shall be valid during the entire currency of the contract including the period of extension, if any and the maintenance period after the work is completed.

17.11.3 Governing Laws - The Registered Entity shall in all respect be governed by and interpreted in accordance with Indian Laws.

17.12 Authorized Member - Joint Venture members in the JV MoU shall authorize Lead member on behalf of the Joint Venture to deal with the ~~tender-Contract~~, sign the agreement or enter into contract in respect of the said tender, to receive payment, to witness joint measurement of work done, to sign measurement books and similar such action in respect of the said tender/contract. All notices/correspondences with respect to the contract would be sent only to this authorized member of the JV.

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17.13 No member of the Joint Venture shall have the right to assign or transfer the interest right or liability in the contract without the written consent of the other members and that of the Railway in respect of the said tender/contract.

17.14 Documents to be enclosed by the JV alongwith the tender:

17.14.1 In case one or more of the members of the JV is/are partnership firm(s), following documents shall be submitted:

- (i) A notarized copy of the Partnership Deed or a copy of the Partnership deed registered with the Registrar.
- (ii) A copy of consent of all the partners or individual authorized by partnership firm, to enter into the Joint Venture Agreement on a stamp paper,
- (iii) A notarized or registered copy of Power of Attorney in favour of the individual to sign the MOU/JV Agreement on behalf of the partnership firm and create liability against the firm.
- (iv) An undertaking by all partners of the partnership firm that they are not blacklisted or debarred by Railways or any other Ministry / Department of the Govt. of India from participation in tenders / contracts as on the date of submission of bids, either in their individual capacity or in any firm/LLP in which they were / are partners/members. Any Concealment / wrong information in regard to above shall make the bid ineligible or the contract shall be determined under Clause 62 of the Standard General Conditions of Contract.

17.14.2 In case one or more members is/are Proprietary Firm or HUF, the following documents shall be enclosed:

- (i) A copy of notarized affidavit on Stamp Paper declaring that his Concern is a proprietary Concern and he is sole proprietor of the Concern OR he who is signing the affidavit on behalf of HUF is in the position of 'Karta' of Hindu Undivided Family (HUF) and he has the authority, power and consent given by other members to act on behalf of HUF.

17.14.3 In case one or more members of the JV is/are companies, the following documents shall be submitted:

- (i) A copy of resolutions of the Directors of the Company, permitting the company to enter into a JV agreement,
- (ii) The copies of MOA (Memorandum of Association) / AOA (Articles of Association) of the company
- (iii) A copy of Certificate of Incorporation
- (iv) A copy of Authorization/copy of Power of Attorney issued by the Company (backed by the resolution of Board of Directors) in favour of the individual, to sign the tender, sign MOU/JV Agreement on behalf of the company and create liability against the company

17.14.4 In case one or more members of the JV is/are LLP firm/s, the following documents shall be submitted:

- (i) A copy of LLP Agreement
- (ii) A copy of Certificate of Incorporation of LLP
- (iii) A copy of resolution passed by partners of LLP firm, permitting the Firm to enter into a JV agreement
- (iv) A copy of Authorization /copy of Power of Attorney issued by the LLP firm (backed by resolution passed by the Partners) in favour of the individual, to sign the tender and/or sign the MOU/ JV agreement on behalf of the LLP and create liability against the LLP.
- (v) An undertaking by all partners of the LLP that they are not blacklisted or debarred by Railways or any other Ministry / Department of the Govt. of India from participation in tenders / contracts as on the date of submission of bids, either in their individual capacity or in any firm/LLP or JV in which they were / are partners/members. Any Concealment / wrong information in regard to above shall make the contract liable for determination under Clause 62 of the Standard General Conditions of Contract.

17.14.5 In case one or more members of the JV is/are Society/s or Trust/s, the following documents shall be submitted:

- (i) A copy of Certificate of Registration
- (ii) A copy of Memorandum of Association of Society/Trust Deed
- (iii) A copy of Rules & Regulations of the Society
- (iv) A copy of Power of Attorney, in favour of the individual to sign the tender documents and create liability against the Society/Trust.

17.14.6 All other documents in terms of Para 10 of the Tender Form (Second Sheet) above.

17.14.7A Power of Attorney executed and issued overseas, the document will also have to be legalized by the Indian Embassy and notarized in the jurisdiction where the Power of Attorney is being issued. However, the Power of Attorney provided by Bidders from countries that have signed the Hague Legislation Convention 1961 are not required to be legalized by the Indian Embassy if it carries a conforming Apostille certificate.

***ACS-3**

17.15 Credentials & Qualifying Criteria: Technical, financial eligibility and Bid capacity of the JV shall be adjudged based on satisfactory fulfillment of the following criteria:

17.15.1 Technical Eligibility Criteria ('a' or 'b' mentioned hereunder):

- (a) For Works without composite components

The technical eligibility for the work as per para 10.1 above, shall be satisfied by either the 'JV in its own name & style' or 'Lead member of the JV'.

Each other (non-lead) member(s) of JV, who is/ are not satisfying the technical eligibility for the work as per para 10.1 above, shall have technical capacity of minimum ~~25%~~ 10% of the cost of work i.e., each non-lead member of JV member must have satisfactorily completed or substantially completed during the last 07 (seven) years, ending last day of month previous to the one in which tender is invited, one similar single work for a minimum of ~~25%~~ 10% of advertised value of the tender.

(b) For works with composite components

The technical eligibility for major component of work as per para 10.1 above, shall be satisfied by either the 'JV in its own name & style' or 'Lead member of the JV' and technical eligibility for other component(s) of work as per para 10.1 above, shall be satisfied by either the 'JV in its own name & style' or 'any member of the JV'.

Each other (non-lead) member(s) of JV, who is/ are not satisfying the technical eligibility for any component of the work as per para 10.1 above, shall have technical capacity of minimum ~~25%~~ 10% of the cost of any component of work mentioned in technical eligibility criteria. i.e., each other (non-lead) member of must have satisfactorily completed or substantially completed during the last 07 (seven) years, ending last day of month previous to the one in which tender is invited, one similar single work for a minimum of ~~25%~~ 10% of cost of any component of work mentioned in technical eligibility criteria.

ACS-1 14.07.2022

Note for Para 17.15.1:

a) *The Major component of the work for this purpose shall be the component of work having highest value. In cases where value of two or more component of work is same, any one work can be classified as Major component of work.*

b) *Value of a completed work done by a Member in an earlier JV shall be reckoned only to the extent of the concerned member's share in that JV for the purpose of satisfying his/her compliance to the above mentioned technical eligibility criteria in the tender under consideration.*

17.15.2 Financial Eligibility Criteria

The JV shall satisfy the requirement of "Financial Eligibility" mentioned at para 10.2 above. The "financial capacity" of the lead member of JV shall not be less than 51% of the financial eligibility criteria mentioned at para 10.2 above.

The arithmetic sum of individual "financial capacity" of all the members shall be taken as JV's "financial capacity" to satisfy this requirement.

Note: Contractual payment received by a Member in an earlier JV shall be reckoned only to the extent of the concerned member's share in that JV for the purpose of satisfying compliance of the above mentioned financial eligibility criteria in the tender under consideration.

17.15.3 Bid Capacity

The JV shall satisfy the requirement of "Bid Capacity" requirement mentioned at para 10.3 above. The arithmetic sum of individual "Bid capacity" of all the members shall be taken as JV's "Bid capacity" to satisfy this requirement.

18. Participation of Partnership Firms in works tenders:

18.1 The Partnership Firms participating in the tender should be legally valid under the provisions of the Indian Partnership Act.

18.2 The partnership firm should have been in existence or should have been formed prior to submission of tender. Partnership firm should have either been registered with the Registrar or the partnership deed should have been notarized as per the Indian Partnership Act, prior to submission of tender.

18.3 Separate identity / name should be given to the partnership firm. The partnership firm should have PAN / TAN number in its own name and PAN / TAN number in the name of any of the constituent partners shall not be considered. The valid constituents of the firm shall be called partners.

18.4 Once the tender has been submitted, the constitution of the firm shall not normally be allowed to be modified / altered / terminated during the validity of the tender as well as the currency of the contract except when modification becomes inevitable due to succession laws etc., in which case prior permission should be taken from Railway and in any case the minimum eligibility criteria should not get vitiated. The re-constitution of firm in such cases should be followed by a notary certified Supplementary Deed. The approval for change of constitution of the firm, in any case, shall be at the sole discretion of the Railways and the tenderer shall have no claims what-so-ever. Any change in the constitution of Partnership firm after submission of tender shall be with the consent of all partners and with the signatures of all partners as that in the Partnership Deed. Failure to observe this requirement shall render the offer invalid and full Bid Security shall be forfeited.

If any Partner/s withdraws from the firm after submission of the tender and before the award of the contract, the offer shall be rejected and Bid Security of the tenderer will be forfeited. If any new partner joins the firm after submission of tender but prior to award of contract, his / her credentials shall not qualify for consideration towards eligibility criteria either individually or in proportion to his share in the previous firm. In case the tenderer fails to inform Railway beforehand about any such changes / modification in the constitution which is inevitable due to succession laws etc. and the contract is awarded to such firm, then it will be considered a breach of the contract conditions liable for determination of the contract under Clause 62 of the Standard General Conditions of Contract.

18.5 A partner of the firm shall not be permitted to participate either in his individual capacity or as a partner of any other firm in the same tender.

18.6 The tender form shall be submitted only in the name of partnership firm. The Bid Security shall be submitted by partnership firm. The Bid Security submitted in the name of any individual partner or in the name of authorized partner (s) shall not be considered.

18.7 On issue of Letter of Acceptance (LOA) to the partnership firm, all the guarantees like Performance Guarantee, Guarantee for various Advances to the Contractor shall be submitted only in the name of the partnership firm and no splitting of guarantees among the partners shall be acceptable.

18.8 On issue of Letter of Acceptance (LOA), contract agreement with partnership firm shall be executed in the name of the firm only and not in the name of any individual partner.

18.9 In case the Letter of Acceptance (LOA) is issued to a partnership firm, the following undertakings shall be furnished by all the partners through a notarized affidavit, before signing of contract agreement.

(a) Joint and several liabilities:

The partners of the firm to which the Letter of Acceptance (LOA) is issued, shall be jointly and severally liable to the Railway for execution of the contract in accordance with General and Special Conditions of the Contract. The partners shall also be liable jointly and severally for the loss, damages caused to the Railway during the course of execution of the contract or due to non-execution of the contract or part thereof.

(b) Duration of the partnership deed and partnership firm agreement:

The partnership deed/partnership firm agreement shall normally not be modified/altered/terminated during the currency of contract and the maintenance period after the work is completed as contemplated in the conditions of the contract. Any change carried out by partners in the constitution of the firm without permission of Railway, shall constitute a breach of the

contract, liable for determination of the contract under Clause 62 of the Standard General Conditions of Contract.

(c) Governing laws: The partnership firm agreement shall in all respect be governed by and interpreted in accordance with the Indian laws.

(d) No partner of the firm shall have the right to assign or transfer the interest right or liability in the contract without the written consent of the other partner/s and that of the Railway.

18.10 The tenderer shall clearly specify that the tender is submitted on behalf of a partnership firm. The following documents shall be submitted by the partnership firm, with the tender:

- (i) A notarized copy of the Partnership Deed or a copy of the Partnership deed registered with the Registrar.
- (ii) A notarized or registered copy of Power of Attorney in favour of the individual to tender for the work, sign the agreement etc. and create liability against the firm.
- (iii) An undertaking by all partners of the partnership firm that they are not blacklisted or debarred by Railways or any other Ministry / Department of the Govt. of India from participation in tenders / contracts as on the date of submission of bids, either in their individual capacity or in any firm/LLP in which they were / are partners/members. Any Concealment / wrong information in regard to above shall make the bid ineligible or the contract shall be determined under Clause 62 of the Standard General Conditions of Contract.
- (iv) All other documents in terms of Para 10 of the Tender Form (Second Sheet) above.

18.11 Evaluation of eligibility of a partnership firm:

Technical and financial eligibility of the firm shall be adjudged based on satisfactory fulfillment of the eligibility criteria laid down in Para 10 of the Tender Form (Second Sheet) above.

19.0 Advances to Contractor –

If specifically provided in Tender Documents of tender having advertised value more than Rs 50 Crores, Railway shall make payment, as an Interest bearing advances, as per Contractor's request. These advances shall carry a simple interest _____ as indicated in the Tender documents. The payment and recovery of such advances shall be made as per manners prescribed in Clause 46.4 of the Standard General Conditions of Contract.

(Signature)
(Designation)

Signature of Tenderer(s) _____ Railway Date _____
Date _____

ANNEXURE - I (Contd. ...)

TENDER FORM (Third Sheet)

Name of Work: _____

BILL OF QUANTITIES

1. Standard Schedule of Rates (SSOR) Items:

SL	Item No. of SSOR	Description of Item of Work	Approximate Quantity	Unit	Rates in Figures and Words to be filled by tenderer (₹)	Amount (₹)
1	2	3	4	5	6	7

2. Non Standard Schedule of Rates (SSOR) Items:

SL	Item No.	Description of Item of Work	Approximate Quantity	Unit	Rates in Figures and Words to be filled by tenderer (₹)	Amount (₹)
1	2	3	4	5	6	7

The quantities shown in above Bill of Quantities are approximate and are as a guide to give the tenderer(s) an idea of quantum of work involved. The Railway reserves the right to increase/ decrease and/or delete or include any of the quantities given above and no extra rate will be allowed on this account.

I/We undertake to do the work at _____ % above/below the Standard Schedule of Rates (SSOR) of the _____ Railway as applicable to _____ Division or at the rates quoted above for each item.

Dated _____

Signature of the Tenderer(s)

Note: Columns 1 to 5 shall be filled by the office of the Authority inviting tender. Columns 6 & 7 shall be filled by the Tenderer(s) only when percentage tenders are not invited.

ANNEXURE – II

AGREEMENT FOR ZONE CONTRACT

CONTRACT AGREEMENT No. _____ DATED _____.
 ARTICLES OF AGREEMENT made this _____ day of _____ between
 the President of India acting through the _____, _____ Railway
 hereinafter called the "Railway" of the one part and _____
 hereinafter called the "Contractor" of the other part.

WHEREAS the Contractor has agreed with the Railway during the period of _____
 months from _____ to _____ for the performance of:

(a) New Works, additions and alterations to existing structures, special repair works and
 supply of building materials subject to the contract value for such works not exceeding
 ₹ _____.

(b) All ordinary repair and maintenance works at any site between kilometer _____ and
 kilometre _____ as will be set forth in the work orders (which work orders shall be deemed
 and taken to be part of this contract) that will be issued during the said period at _____ %
 above/below the Standard Schedule of Rates (SSOR) of the _____ Railway, corrected
 up to the latest correction slips and Standard Specifications of the _____ Railway
 corrected upto latest correction slips and the Special Conditions and Special Specifications, if
 any in conformity with the drawings (if any) that will be issued with the work order, aforesaid
 AND WHEREAS the performance of the said work is an act in which the public are interested.

NOW THIS INDENTURE PRESENTS WITNESSETH That in consideration of the
 payment to be made by the Railway, the Contractor will duly perform the works set forth in the
 said Work Order and shall execute the same with great promptness, care and accuracy, in a
 workman like manner to the satisfaction of the Railway and will complete the same on or before
 the respective dates specified therein in accordance with the said specifications and said
 drawings (if any) and said conditions of contract and will observe, fulfill and keep all the
 conditions therein mentioned, (which shall be deemed and taken to be part of this contract as if
 the same had been duly set forth herein), AND the Railway both here-by agree that if the
 Contractor shall duly perform the said work in the manner aforesaid and observe and keep the
 said terms and conditions, the Railway will pay or cause to be paid to the Contractor for the said
 works on the completion thereof the amount due in respect thereof at the rates specified above.

Contractor _____

Designation _____

Address _____

Railway _____

(For President of India)

Witnesses (to signature of Contractor):

Signature of witnesses with address _____

Date _____

Signature of witnesses with address _____

Date _____

ANNEXURE - III

WORK ORDER UNDER ZONE CONTRACT

WORK ORDER NO. _____, DATED _____ UNDER CONTRACT AGREEMENT

NO. _____ DATED _____.

Name of Work _____ (SITE) _____

Schedule of Drawings _____

Authority _____

Allocation _____

The Contractor(s) _____ is / are hereby ordered to carry out the following works at _____% above/below the Standard Schedule of Rates (SSOR) of _____, updated with correction slips issued up to date of inviting tender or as otherwise specified in the tender documents under Zone Contract Agreement here-in-before referred to:

SL	Item No.	Description of Item of Work	Approximate Quantity	Unit	Rates in Figures and Words (₹)	Amount (₹)
1	2	3	4	5	6	7
Total Approximate Value of Work = ₹ _____						

The works herein mentioned are required to be completed on or before _____ (Date). The quantities provided herein are approximate and subject to variation under Clause 42 of the Standard General Conditions of Contract updated with correction slips issued up to date of inviting tender or as otherwise specified in the tender documents.

Divisional Railway Manager/Divisional _____ Engineer

_____ Division

_____ Railway

Date _____

for President of India

I agree to complete the works herein set forth on or before the date specified under the Zone Contract Agreement herein before referred to in conformity with the drawings hereto annexed and in accordance with the General and Special (if any) Conditions of Contract updated with correction slips issued up to date of inviting tender or as otherwise specified in the tender documents and the Standard Specifications of _____ Railway updated with correction slips issued up to date of inviting tender or as otherwise specified in the tender documents .

I also agree to maintain such works for the period specified below from the date of completion:

- (a) Repair and maintenance work including white/color washing: three calendar months from date of completion.

(b) All new works except earth work: Six calendar months from date of completion.

Contractor _____ (Signature) Railway: Designation _____

Address _____

For President of India)

Date _____

Date _____

Signature of Witnesses (to Signature of Contractor) with address

1. _____

2. _____

ANNEXURE - IV

RAILWAY

CONTRACT AGREEMENT OF WORKS

CONTRACT AGREEMENT NO. _____ DATED _____

ARTICLES OF AGREEMENT made this _____ day of _____ 20____
between President of India acting through the Railway Administration hereafter called the
"Railway" of the one part and _____ herein after called the
"Contractor" of other part.

WHEREAS the Contractor has agreed with the Railway for performance of the works
_____ set forth in the Bill(s) of Quantities hereto annexed upon the Standard
General Conditions of Contract, updated with correction slips issued up to date of inviting
tender or as otherwise specified in the tender documents and the Specifications of
_____ updated with correction slips issued up to date of inviting tender or as
otherwise specified in the tender documents and the applicable Standard Schedule of Rates
(SSOR) of _____ updated with correction slips issued up to date of inviting tender or as
otherwise specified in the tender documents and the Special Conditions and Special
Specifications, if any and in conformity with the drawings here-into annexed AND WHEREAS
the performance of the said works is an act in which the public are interested.

NOW THIS INDENTURE WITNESSETH that in consideration to the payments to be
made by the Railways, the Contractors will duly perform the said works in the said Bill(s) of
Quantities set forth and shall execute the same with great promptness, care and accuracy in a
workman like manner to the satisfaction of the Railway and will complete the same in
accordance with the said specifications and said drawings and said conditions of contract on or
before the _____ day of _____ 20____ and will maintain the said works for a period of
_____ Calendar months from the certified date of their completion and will observe, fulfill
and keep all the conditions therein mentioned (which shall be deemed and taken to be part of
this contract, as if the same have been fully set forth herein), AND the Railway, both hereby
agree that if the Contractor shall duly perform the said works in the manner aforesaid and
observe and keep the said terms and conditions, the Railway will pay or cause to be paid to the
Contractor for the said works on the final completion thereof the amount due in respect thereof
at the rates specified in the Bill(s) of Quantities hereto annexed.

Contractor _____ (Signature) Railway: Designation _____

Address _____ (For President of India)

Date _____ Date _____

Signature of **Witnesses** (to Signature of Contractor) with address:**Witnesses:**

ANNEXURE-V
Reference -Para 6.1 of ITT

**FORMAT FOR CERTIFICATE TO BE SUBMITTED / UPLOADED BY TENDERER
ALONGWITH THE TENDER DOCUMENTS**

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 tender No. _____ of _____ (*Railway*)**, 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 railway Administration 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 certify that I/we the tenderer(s) is/are not blacklisted or debarred by Railways or any other Ministry / Department of Govt. of India from participation in tender on the date of submission of bids, either in individual capacity or as a HUF/ member of the partnership firm/LLP/JV/Society/Trust.
8. I/we understand that if the contents of the ~~affidavit~~**certificate** 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 Bid Security ~~besides~~**and may also lead to any other action provided in the contract including** banning of business for a period of upto ~~five~~**two** year. Further, I/we (*insert name of the tenderer*) ** _____ and all my/our constituents understand that my/our offer shall be summarily rejected.
9. I/we also understand that if the contents of the ~~affidavit~~**certificate** 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 Bid Security/Security Deposit and Performance guarantee ~~besides~~**and may also lead to** any other action provided in the contract including banning of business for a period of upto ~~five~~**two** year.

10. I/We have read the clause regarding restriction on procurement from a bidder of a country which shares a land border with India and certify that I am/We are not from such a country or, if from such a country, have been registered with the competent Authority. I/We hereby certify that I/we fulfil all the requirements in this regard and am/are eligible to be considered (evidence of valid registration by the competent authority is enclosed)

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.

~~This affidavit certificate is to be given by each member of JV or Partners of Partnership firm/LLP/etc.~~

ACS-1, 14.07.2022

ACS-2, 13.12.2022

ACS-3

ACS-4

ANNEXURE-V(A)

Reference -Para 6.1 of ITT

(This certificate is to be given by attorney/authorized signatory/each member of Partnership firm/Joint Venture (JV) / Hindu Undivided Family (HUF) / Limited Liability Partnership (LLP) etc.)

I/We.....(Name), attorney/authorized signatory of the
..... (constituent firm/constituent partner) and member/partner of the
.....(tendering firm) hereby solemnly affirm and state as under:

1. I/we certify that (constituent firm/constituent partner) is/are not blacklisted or debarred by Railways or any other Ministry / Department of Govt. of India from participation in tender on the date of submission of bids, either in individual capacity or as a HUF/ member of the partnership firm/LLP/JV/Society/Trust.
2. I/We have read the clause regarding restriction on procurement from a bidder of a country which shares a land border with India and certify that I am/We are not from such a country or, if from such a country, have been registered with the competent Authority. I/We hereby certify that I/we fulfil all the requirements in this regard and am/are eligible to be considered (evidence of valid registration by the competent authority is enclosed),

SEAL AND SIGNATURE
OF THE CONSTITUENT FIRM/CONSTITUENT PARTNER

Place:

Dated:

ACS-2, 13.12.2022

ANNEXURE – VI

Reference -Para 10.3 & 17.15.3 of Tender Form (Second Sheet) of Annexure I of ITT

TENDERER'S CREDENTIALS (BID CAPACITY)**RAILWAY**

For tenders having advertised value more than Rs 20 crore wherein eligibility criteria includes bid capacity also, the tenderer will be qualified only if its available bid capacity is equal to or more than the total bid value of the present tender. The available bid capacity shall be calculated as under:

$$\text{Available Bid Capacity} = [A \times N \times 2] - 0.33 \times N \times B$$

Where,

A = Maximum value of construction works executed and payment received in any one of the previous three financial years or the current financial year (up to date of inviting tender), taking into account the completed as well as works in progress.

N= Number of years prescribed for completion of work for which bids has been invited.

~~B = Value of existing commitments and balance amount of ongoing works with the tenderer as on date one month prior to the tender closing date to be completed in next 'N' years.~~ Existing commitments and balance amount of ongoing works with tenderer as per the prescribed proforma of Railway for statement of all works in progress and also the works which are awarded to tenderer but yet not started upto the date of inviting of tender.

ACS-1 14.07.2022

Note:

- (a) The Tenderer(s) shall furnish the details of -
 - (i) Maximum value of construction works executed and payment received in any one of the previous three financial years or the current financial year (up to date of inviting tender) for calculating A, and
 - (ii) Existing commitments and balance amount of ongoing works with tenderer as per the prescribed proforma of Railway for statement of all works in progress and also the works which are awarded to tenderer but yet not started upto the date of inviting of tender for calculating B. In case of no works in hand, a 'NIL' statement should be furnished.

The submitted details for (i) and (ii) above should be duly verified by Chartered Accountant.

- (b) In case if a bidder is JV, the tenderer(s) must furnish the details of
 - (i) Maximum value of construction works executed and payment received in any one of the previous three financial years or the current financial year (up to date of inviting tender) by each member of JV for calculating A, and
 - (ii) Existing commitments and balance amount of ongoing works with each member of JV either in individual capacity or as a member of other JV as per the prescribed proforma of Railway for statement of all works in progress and also the works which are awarded to each member of JV either in individual capacity or as a member of other JV but yet not started upto the date of inviting of tender for calculating B. In case of no works in hand, a 'NIL' statement should be furnished.

The submitted details for (i) and (ii) above should be duly verified by Chartered Accountant.

- (c) Value of a completed work/work in progress/work awarded but yet not started for a Member in an earlier JV shall be reckoned only to the extent of the concerned member's share in that JV for the purpose of satisfying his/her compliance to the above mentioned bid capacity in the tender under consideration.
- (d) The arithmetic sum of individual “bid capacity” of all the members shall be taken as JV’s “bid capacity”.
- (e) In case, the tenderer/s failed to submit the above statement along with offer, their/his offer shall be considered as incomplete and will be rejected **summarily**.
- (f) The available bid capacity of tenderer shall be assessed based on the details submitted by the tenderer. In case, the available bid capacity is lesser than estimated cost of work put to tender, his offer shall not be considered even if he has been found eligible in other eligibility criteria/tender requirement.

Annexure –VIA

Para 5 of the Instructions to Tenderers

(Bid Security)**Bank Guarantee Bond from any scheduled commercial bank
of India***(On non-judicial stamp paper, which should be in the name of the Executing Bank).***Name of the Bank: -----**

President of India,

Acting through,

..... Railway,

Beneficiary: Railway

Date:.....

Bank Guarantee Bond No.:**Date:-----**

In consideration of the President of India acting through----- (***Designation & address of Contract Signing Authority***), Railway,, (hereinafter called "The Railway") having invited the bid for _____ through Notice inviting tender (NIT) No. _____, We have been informed that ***[Insert name of the Bidder]***..... (***hereinafter called "the Bidder"***) intends to submit its bid (hereinafter called "the Bid") .

WHEREAS, the Bidder is required to furnish Bid Security for the sum of ***[Insert required Value of Bid Security]***, in the form of Bank Guarantee, according to conditions of Bid.

AND

WHEREAS, ***[Insert Name of the Bank]***, with its Branch ***[Insert Address]*** having its Headquarters office at..... ***[Insert Address]***, hereinafter called the **Bank**, acting through ***[Insert Name and Designation of the authorised persons of the Bank]***, have, at the request of the Bidder, agreed to give guarantee for Bid Security as hereinafter contained, in favour of the Railway:

1. KNOW ALL MEN that by these present that I/We the undersigned ***[Insert name(s) of authorized representatives of the Bank]***, being fully authorized to sign and incur obligations for and on behalf of the Bank, confirm that the Bank, hereby, unconditionally and irrevocably guarantee to pay to the Railway full amount in the sum of ***[Insert required Value of Bid Security]*** as above stated.
2. The Bank undertakes to immediately pay on presentation of demand by the Railway any amount up to and including aforementioned full amount without any demur, reservation or recourse. Any such demand made by the Railway on the Bank shall be final, conclusive and binding, absolute and unequivocal on the Bank notwithstanding any disputes raised/ pending before any Court, Tribunal, Arbitration or any Authority or any threatened litigation by the Bidder or Bank.
3. The Bank shall pay the amount as demanded immediately on presentation of the demand by Railway without any reference to the Bidder and without the Railway being required to show grounds or give reasons for its demand of the amount so demanded.
4. The guarantee hereinbefore shall not be affected by any change in the constitution of the Bank or in the constitution of the Bidder.
5. The Bank agrees that no change, addition, modifications to the terms of the Bid document or to any documents, which have been or may be made between the Railway and the Bidder, will in any way absolve the Bank from the liability under this guarantee; and the Bank, hereby, waives any requirement for notice of any such change, addition or modification made by Railway at any time.

6. This guarantee will remain valid and effective from.....*[insert date of issue]*till.....*[insert date, which should be minimum 90 days beyond the expiry of validity of Bid]*. Any demand in respect of this Guarantee should reach the Bank within the validity period of Bid Security.
7. The Bank Guarantee is unconditional and irrevocable.
8. The expressions Bank and Railway herein before used shall include their respective successors and assigns.
9. The Bank hereby undertakes not to revoke the guarantee during its currency, except with the previous consent in writing of the Railway. This guarantee is subject to the Uniform Rules for Demand Guarantees, ICC Publication No.758.
10. The Bank hereby confirms that it is on the SFMS (Structured Financial Messaging System) and shall invariably send the advice of this Bank Guarantee to the following bank details –

IFSC CODE	SBIN00RAIL
IFSC TYPE	BRANCH
BANK NAME	STATE BANK OF INDIA
BRANCH NAME	RAIL
CITY NAME	NAVI MUMBAI
ADDRESS	SECTOR-11, CBD BELAPUR, NAVI MUMBAI
DISTRICT	NAVI MUMBAI
STATE	MAHARASHTRA
BG ENABLED	YES

11. The Guarantee shall be valid in addition to and without prejudice to any other security Guarantee(s) of Bidder in favour of the Railway. The Bank, under this Guarantee, shall be deemed as Principal Debtor of the Railway.

Date

Place.....

.....

Bank's Seal and authorized signature(s)

[Name in Block letters]

[Designation with Code]

No.].....

[P/Attorney] No.

Witness:

- 1 Signature, Name & Address & Seal
- 2 Signature, Name& address & Seal

Bank's Seal

*[P/Attorney]*No.

Note: All italicized text is for guidance on how to prepare this bank guarantee and shall be deleted from the final document.

Annexure –VIB

Reference -Para 10.2 & 17.15.2 of Tender Form (Second Sheet) of Annexure I of ITT

Each Bidder or each member of a JV must fill in this form separately:**NAME OF BIDDER/JV PARTNER:**

Annual Contractual Turnover Data for the Previous 3/4 Years (Contractual Payment only)			
Year	Amount Currency	Exchange Rate	Indian National Rupees Equivalent
Average Annual Contractual Turnover for last 3 years			

1. The average annual contractual turnover shall be calculated as an average of “total contractual payments” in the previous three financial years. However, in case balance sheet of the previous year is yet to be prepared/ audited, the audited balance sheet of the fourth previous year shall be considered for calculating average annual contractual turnover.
2. The information supplied shall be substantiated by data in the audited balance sheets and profit and loss accounts for the relevant years in respect of the bidder or all members constituting the bidder.
3. Contents of this form should be certified by a Chartered Accountant duly supported by Audited Balance Sheet duly certified by the Chartered Accountant.

SEAL AND SIGNATURE OF THE BIDDER

Certified that all figures and facts submitted in this form have been furnished after full consideration of all observations/notes in Auditor’s reports. _____

(Signature of Chartered Accountant)**Name of CA:** _____**Registration No:** _____**(Seal)**

Part II

STANDARD GENERAL CONDITIONS OF CONTRACT

1. (1) Definitions: In these Standard 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 Railway or of the Successor Railway authorized to deal with any matters which these presents are concerned on his behalf.

(b) "General Manager" shall mean the Officer in-charge of the General Superintendence and Control of the Railway and shall also include Addl. General Manager, the General Manager (Construction) 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 & Telecommunication Engineer, Chief Signal & Telecommunication Engineer (Construction), Chief Electrical Engineer, Chief Electrical Engineer (Construction), Chief Mechanical Engineer and shall mean & include their successors, of the Successor Railway.

(d) "Divisional Railway Manager" shall mean the Officer in-charge of a Division of the Railway and shall mean and include the Divisional Railway Manager of the Successor Railway.

(e) "Engineer" shall mean the Divisional Engineer or the Executive Engineer, Divisional Signal & Telecom Engineer, Divisional Electrical Engineer, Divisional Mechanical Engineer in executive charge of the works and shall include the superior officers of Open Line and Construction organisations on the Railway of the Engineering, Signal & Telecom, Electrical and Mechanical Departments, i.e. the Senior Divisional Engineer/Deputy Chief Engineer, Senior Divisional Signal & Telecom Engineer / Dy.Chief Signal & Telecom Engineer, Senior Divisional Electrical Engineer / Deputy Chief Electrical Engineer, Senior Divisional Mechanical Engineer and shall mean & include the Engineers of the Successors Railway.

(f) "Engineer's Representative" shall mean the Assistant Engineer, Assistant Signal & Telecommunication Engineer and Assistant Electrical Engineer, Assistant Mechanical Engineer in direct charge of the works and shall include any Sr. Section/Junior Engineer of Civil Engineering/Signal and Telecommunication Engineering/Mechanical Engineering/Electrical Engineering Departments appointed by the Railway and shall mean and include the Engineer's Representative of the Successor Railway.

(g) "Contractor" shall mean the Person/Firm/LLP/Trust/Co-operative Society or Company whether incorporated or not who enters into the contract with the Railway and shall include their executors, administrators, successors and permitted assigns.

(h) "Contract" shall mean and include the Agreement, the Work Order, the accepted Bill(s) of Quantities or Chapter(s) of Standard Schedule of Rates (SSOR) of the Railway modified by the tender percentage for items of works quantified, or not quantified, the Standard General Conditions of Contract, the Special Conditions of Contracts, if any; the Drawing, the Specifications, the Special Specifications, if any and Tender Forms, if any.

(i) "Works" shall mean the works to be executed in accordance with the contract.

(j) "Specifications" shall mean the Standard Specifications for Materials & Works of Railway as specified by Railway under the authority of the Chief Engineer or as amplified, added to or superseded by Special Specifications, if any.

(k) Standard Schedule of Rates (SSOR) shall mean the schedule of Rates adopted by the Railway, which includes-

1. "Unified Standard Schedule of Rates of the Railway (USSOR)" i.e. the Standard Schedule of Rates of the Railway issued under the authority of the Chief Engineer from time to time, updated with correction slips issued up to date of inviting tender or as otherwise specified in the tender documents;

2. "Delhi Schedule Of Rates (DSR)" i.e. the Standard Schedule of Rates published by Director General/ Central Public Works Department, Government of India, New Delhi, as adopted and modified by the Railway under the authority of the Chief Engineer from time to time, updated with correction slips issued up to date of inviting tender or as otherwise specified in the tender documents.

(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 Plant" 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 specified period of maintenance from the date of completion of the works, as certified by the Engineer.

(q) 'Contractor's authorized Engineer' shall mean a graduate Engineer or equivalent, having more than 3 years experience in the relevant field of construction work involved in the contract, duly approved by Engineer.

(r) Date of inviting tender shall be the date of publishing tender notice on IREPS website if tender is published on website or the date of publication in newspaper in case tender is not published on website.

(s) "Bill of Quantities" shall mean Schedule of Item(s) included in the tender document along with respective quantities and rates, accepted by the Railway.

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 and Marginal Headings: The headings and marginal headings in these Standard 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 the contract.

GENERAL OBLIGATIONS

2. (1) Execution Co-Relation and Intent of Contract Documents: The contract documents shall be signed in triplicate by the Railway and the Contractor. The contract documents are complementary and what is called for by anyone shall be as binding as if called for by all, the intention of the documents is to include all labour and materials, equipments and transportation necessary for proper execution of work. Materials or works not covered by or properly inferable from any heading or class of the specifications shall not be supplied by the Railway 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 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 in all respects as if the Contractor and the Successor Railway/Project were parties thereto 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,

the contract shall, notwithstanding any things contained herein contrary there to, be binding on the Contractor and the Successor Railway in the same manner and take effect in all respects as if the Contractor and the Successor Railway had been parties thereto from the date of this contract.

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 bye-laws of any local 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 reason 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.

3.(3) Environmental and Forest clearances:

The Railway represents and warrants that the environmental and forest clearances pertaining to the work commensurate with the progress of work/agreed programme, will be obtained by Engineer. In the event of any delay in securing respective clearances leading to delay in execution of work, the Contractor shall be entitled to Extension of Time for the period of such delay in accordance with the provisions of Clause-17A(ii).

4. Communications to be in Writing: All notices, communications, reference and complaints made by the Railway or the Engineer or the Engineer's Representative or the Contractor inter-se concerning the works shall be in writing or *e-mail* on registered *e-mail* IDs i.e. the *e mail* id provided for correspondence in the contract agreement, otherwise *email* id registered with IREPS and no notice, communication, reference or complaint not in writing or through *e-mail*, 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/ *e-mail* 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 shall be occupied by the Contractor without the permission of the Railway. 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 in any manner whatsoever without the special permission in writing of the Chief Engineer, save as provided below. Any breach of this condition shall entitle the Railway to rescind the contract under Clause 62 of these Conditions and also render the Contractor liable for payment to the Railway 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.

In case Contractor intends to subcontract part of work, he shall submit a proposal in writing

seeking permission of Chief Engineer for the same. While submitting the proposal to railway, Contractor shall ensure the following:

- (a) (i) Total value of work to be assigned to sub-contractor(s) shall not be more than 50% of total contract value.

(ii) The subcontractor shall have successfully completed at least one work similar to work proposed for subcontract in last 5 years, ending date of submission of proposal by Contractor to Railway, costing not less than 35% value of work to be subletted, through a works contract. For fulfilment of above, Work Experience Certificate issued by a Govt. Department/Organisation shall be considered. Further, Work Experience Certificate issued by a Public listed company shall be considered provided the company is having average annual turnover of Rs 500 crore and above in last 3 financial years excluding the current financial year, listed on National Stock Exchange or Bombay Stock Exchange, registered at least 5 years back from the date of submission of proposal by Contractor to Railway and work experience certificate issued by a person authorised by the Public Listed Company to issue such certificates.

Note: for subletting of work costing up to Rs 50 lakh no previous work experience shall be asked for by the Railway.

In case contractor submits subcontractor's work experience certificate issued by public listed company, the contractor shall also submit along with work experience certificate, the relevant copy of work order, bill of quantities, bill wise details of payment received duly certified by Chartered Accountant, TDS certificates for all payments received and copy of final/last bill paid by company in support of above work experience certificate.

- (iii) There is no banning of business with the sub-contractor in force over IR.
- (b) The Contractor shall provide to the Engineer a copy of the agreement to be entered into by Contractor with subcontractor. No subcontractor shall be permitted without a formal agreement between Contractor and subcontractor. This agreement shall clearly define the scope of work to be carried out by subcontractor and the terms of payment in clear & unambiguous manner.
- (c) On receipt of approval from Chief Engineer, Contractor shall enter into a formal agreement legally enforceable in Court of Law with subcontractor and submit a copy of the same to the Engineer.
- (d) The Contractor shall intimate to the Engineer not less than 7 days in advance, the intended date of commencement of subcontractor's work.
- (e) Once having entered into above arrangement, Contractor shall discontinue such arrangement, if he intends to do so at his own or on the instructions of Railway, with prior intimation to Chief Engineer.
- (f) The Contractor shall indemnify railway against any claim of subcontractor.
- (g) The Contractor shall release payment to the Sub-contractor(s) promptly and shall endeavour to resolve all issues amicably and speedily with the Sub-contractor(s), so that the execution of work is not affected in any manner whatsoever.
- (h) In addition to issuance of work experience certificate to Contractor, the Engineer, when, based on documents, is satisfied that subcontracted work has been carried out by

subcontractor, shall issue work experience certificate to the subcontractor also for the portion of work subcontracted and successfully completed by the sub-contractor.

*Note: Work Experience Certificate to the subcontractor shall be issued only when the contractor's work is complete and contractor is entitled for the issuance of Work Experience Certificate. However, in the same contract, when the Chief Engineer, based on documents, is satisfied that the subcontractor has successfully carried out subletted work; without issuance of work experience certificate to subcontractor at this stage, the Chief Engineer can, **only once**, consider the successfully completed subletted work for the fulfilment of eligibility for further subletting of work to the subcontractor in the same contract. When the contractor's work is complete and contractor is entitled for the issuance of work experience certificate, the subcontractor shall be issued one Work Experience Certificate for the total scope of work executed by the subcontractor in the contract.*

- (i) The responsibility of successful completion of work by subcontractor shall lie with Contractor. Subcontracting will in no way relieve the Contractor to execute the work as per terms of the Contract.
- (j) Further, in case Engineer is of the view that subcontractor's performance is not satisfactory, he may instruct the Contractor to remove the subcontractor from the work and Contractor has to comply with the above instructions with due promptness. Contractor shall intimate the actual date of discontinuation of subcontract to Engineer. No claim of Contractor whatsoever on this account shall be entertained by the Railway and this shall be deemed as 'excepted matter' (matter not arbitrable).
- (k) The permitted subcontracting of work by the Contractor shall not establish any contractual relationship between the sub-contractor and the Railway and shall not relieve the Contractor of any responsibility under the Contract.

8. Assistance by Railway for the Stores to be obtained by the Contractor: Owing to difficulty in obtaining certain materials (including Tools & Plant) in the market, the Railway may have agreed without any liability therefore to endeavour 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 the day to day position regarding their availability and accordingly adjust progress of works including employment of labour and the Railway 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 non-supply.

9. Railway Passes: No free railway passes shall be issued by the Railway to the Contractor or any of his employee/worker.

10. Carriage of Materials: No forwarding orders shall be issued by the Railway for the conveyance of Contractor's materials, tools and plant by train which may be required for use in the works and the Contractor shall pay full freight charges at public tariff rates therefor.

11. Use of Ballast Trains: The Railway may agree to allow the Contractor use of the ballast or material trains under such conditions as shall be specially prescribed, provided that the Contractor shall pay for the use thereof charges calculated at public tariff rates on the marked carrying capacity of each vehicle subject to specified minimum charge per day or part of day and provided further that the Contractor shall indemnify the Railway against any claims or damages arising out of the use or misuse thereof and against any liabilities under the Workmen's Compensation Act, 1923 or any statutory amendments thereto.

12. Representation on Works: The Contractor shall, when he is not personally present on the site of the works place, 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 Railway to rescind the contract under Clause 62 of these Conditions.

13. Relics and Treasures: All gold, silver, oil, other minerals of any description, 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 Railway and the Contractor shall duly preserve the same to the satisfaction of the Railway and shall from time to time deliver the same to such person or persons as the Railway 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, stone, clay ballast, earth, trees, 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 Railway 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 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 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 Security Deposit shall be 5% of the contract value. The Bid Security submitted by the Contractor with his tender will be retained/encashed by the Railways as part of security for the due and faithful fulfillment of the contract by the Contractor. Provided further that, if Contractor submits the Cash or Term Deposit Receipt issued from a Scheduled commercial bank of India or irrevocable Bank Guarantee Bond from a Scheduled commercial bank of India, either towards the Full Security Depositor the Part Security Deposit equal to or more than Bid Security, the Railway shall return the Bid Security, to the Contractor.

Balance of Security Deposit may be deposited by the Contractor in cash or Term Deposit Receipt issued from Scheduled commercial bank of India or irrevocable Bank Guarantee bond issued from Scheduled commercial bank of India, or may be recovered at the rate of 6% of the bill amount till the full Security Deposit is recovered. Provided also that in case of defaulting Contractor, the Railway may retain any amount due for payment to the Contractor on the pending "on account bills" so that the amounts so retained (including amount guaranteed through Performance Guarantee) may not exceed 10% of the total value of the contract.

The Irrevocable Bank Guarantee submitted towards Security deposit shall be initially valid up to the stipulated date of Maintenance period plus 60 days and shall be extended from time to time, depending upon extension of contract granted in terms of Clause 17A and 17B of the Standard General Conditions of Contract.

Note: Security Deposit deposited in cash by the Contractor or recovered from the running bills of a Contractor or submitted by contractor as Term Deposit Receipt(s) can be refunded/returned to the contractor, in lieu of irrevocable Bank Guarantee bond issued from scheduled commercial bank of India, to be submitted by him, for an amount equal to or more than the already available Security Deposit, provided however that, in a contract of value less than Rs. 50 Crore, such refund/ return of the already available Security Deposit is permitted up to two times and in a contract of value equal to or more than Rs. 50 Crore, such refund / return of the already available Security Deposit is permitted up to three times.

16.(2) (i) Refund of Security Deposit: Security Deposit mentioned in sub clause (1) above shall be returned to the Contractor along with or after, the following:

- (a) Final Payment of the Contract as per clause 51.(1) **and**
- (b) Execution of Final Supplementary Agreement or Certification by Engineer that Railway has No Claim on Contractor **and**
- (c) Maintenance Certificate issued, on expiry of the maintenance period as per clause 50.(1), in case applicable.

16. (2) (ii) Forfeiture of Security Deposit: Whenever the contract is rescinded as a whole under clause 62 (1) of these conditions, the Security Deposit already with railways under the contract shall be forfeited. However, in case the contract is rescinded in part or parts under clause 62 (1) of these conditions, the Security Deposit shall not be forfeited.

16.(3) No interest shall be payable upon the Bid Security and Security Deposit or amounts payable to the Contractor under the Contract, but Government Securities deposited in terms of Sub-Clause 16.(4)(b) of this clause will be payable with interest accrued thereon.

16.(4) Performance Guarantee

The procedure for obtaining Performance Guarantee is outlined below:

- (a) The successful bidder shall have to submit a Performance Guarantee (PG) within 21 (Twenty one) days from the date of issue of Letter of Acceptance (LOA). Extension of time for submission of PG beyond 21 (Twenty one) 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 12% per annum shall be charged for the delay beyond 21 (Twenty one) days, i.e. from 22nd day after the date of issue of LOA. Further, if the 60th day happens to be a declared holiday in the concerned office of the Railway, submission of PG can be accepted on the next working day.

In all other cases, if the Contractor fails to submit the requisite PG even after 60 days from the date of issue of LOA, the contract is liable to be terminated. In case contract is terminated railway shall be entitled to forfeit Bid Security and other dues payable to the contractor against that particular contract, subject to maximum of PG amount. In case a tenderer has not submitted Bid Security on the strength of their registration as a Startup recognized by Department of Industrial Policy and Promotion (DIPP) under Ministry of Commerce and Industry, DIPP shall be informed to this effect.

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 5% of the original contract value** and **Additional Performance Guarantee as per clause 16(4)(h)** in any of the following forms.
 - (i) A deposit of Cash;
 - (ii) Irrevocable Bank Guarantee;
 - (iii) Insurance surety Bond as per Annexure-XVII.

Note:

In case of extension of Date of Completion selected bidder needs to submit extended Insurance Surety Bond/Fresh Insurance Surety Bond/Fresh Performance Security, in any form as given above, before expiry of existing Insurance Surety Bond.

- (iv) Government Securities including State Loan Bonds at 5% below the market value;
- (v) Pay Orders and Demand Drafts tendered by any Scheduled Commercial Bank of India;

- (vi) Guarantee Bonds executed or Deposits Receipts tendered by any Scheduled Commercial Bank of India;
- (vii) Deposit in the Post Office Saving Bank;
- (viii) Deposit in the National Savings Certificates;
- (ix) Twelve years National Defence Certificates;
- (x) Ten years Defence Deposits;
- (xi) National Defence Bonds and
- (xii) Unit Trust Certificates at 50% below market value or at the face value whichever is less. Also, FDR in favour of FA&CAO (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 is based on original contract value and shall not change due to subsequent variation(s) in the original contract value.
- (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.
- (f) Whenever the contract is rescinded, the Performance Guarantee already submitted for the contract shall be encashed.
- (g) The Engineer shall not make a claim under the Performance Guarantee except for amounts to which the President of India is entitled under the contract (notwithstanding 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 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 clause 62 of these conditions.
- (h) If a tender is accepted on the quoted rates of bidder which is below the advertised tender value, an additional performance security shall be submitted by the bidder as below:

Bid quoted in % of advertised cost	Additional Performance Guarantee (%)
Below 0 - 5% (inclusive)	Nil
Below 5%	5%

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/pandemics, 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 or 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.

17A 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.
- (ii) **Extension for Delay not due to Railway or Contractor:** If in the opinion of the Engineer, the progress of work has any time been delayed by any act or neglect of Railway's employees or by other Contractor employed by the Railway 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 reason of proceeding taken or threatened by or dispute with adjoining or to neighbouring 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 Railway 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 endeavours 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.
- (iii) **Extension for Delay due to Railways:** In the event of any failure or delay by the Railway 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 Railway 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 therefor, but in any such case, the Railway may grant such extension or extensions of the completion date as may be considered reasonable.

The Contractor shall indicate the period for which the work is likely to be delayed and shall seek extension of time as may be considered necessary under clause 17A(i) or/and 17A(ii) or/ and 17A(iii) above, as soon as the cause thereof shall arise and, in any case, not less than ~~one month~~ **15 days** before the expiry of the date fixed for completion of

the works. The Engineer shall consider the same and shall grant and communicate 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.

The non-submission of request for extension or submission of request within less than ~~one month~~ **15 days** before the expiry of the date fixed for completion of the works, shall make him ineligible for extension under these sub clauses, subject to final decision of Engineer.

ACS-1 14.07.2022

17B Extension of Time with Liquidated Damages (LD) 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 not 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 17A, the Railway may, if satisfied that the works can be completed by the Contractor within reasonable short time thereafter, allow the Contractor for further extension of time (Proforma at Annexure-VII) as the Engineer may decide. On such extension the Railway 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 for each week or part of the week, a sum calculated at the *rate of Liquidated Damages as decided by Engineer, between 0.05% to 0.30 % of contract value of the works for each week or part of the week.* ~~following rates of the contract value of the works.~~

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 5% of the contract 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.

S.No.	Duration of extension of time under Clause 17B	Rate of Liquidated Damages
(i)	Up to Twenty Five percent of original period of completion including period of extension of time granted under Section 17A(i)	As decided by Engineer, between 0.01% to 0.05% of contract value for each week or part of the week
(ii)	Above Twenty Five percent but upto Fifty percent of original period of completion including period of extension of time granted under Section 17A(i)	0.10 % of contract value for each week or part of the week
(iii)	Above Fifty percent of original period of completion including period of extension of time granted under Section 17A(i)	0.30 % of contract value for each week or part of the week

Provided further, that if the Railway 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 Railway 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.

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NOTE:

In a contract, where extension(s) of time have been allowed once under clause 17B, further request(s) for extension of time under clause 17A can also be considered under exceptional circumstances. Such extension(s) of time under clause 17A shall be without any Liquidated damages, but the Liquidated damages already recovered during extension(s) of time granted previously under clause 17B shall not be waived. However, Price variation during such extension(s) shall be dealt as applicable for extension(s) of time under clause 17B.

17C Bonus for Early Completion of Work: In open tenders having advertised value more than Rs.50 crore and original period of completion 12 months or more, when there is no reduction in original scope of work by more than 10%, and no extension granted on either railway or Contractor's account, Contractor shall be entitled for a bonus of 1% for each 30 days early completion of work. The period of less than 30 days shall be ignored while working out bonus. The maximum bonus shall be limited to 5% of original contract value. The completion date shall be reckoned as the date of issuance of completion certificate by Engineer.

18.(1) Illegal Gratification: Any bribe, commission, gift or advantage given, promised or offered by or on behalf of the Contractor or his partner or agent or servant or anyone on his behalf, to any officer or employee of the Railway or to any person on his behalf in relation to obtaining or execution of this or any other contract with the Railway 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 Railway and to the payment of any loss or damage resulting from such decision and the Railway shall be entitled to deduct the amounts so payable from the Contractor's bills/Security Deposit or any other dues of Contractor with the Government of India.

18.(2) The Contractor shall not lend or borrow from or have or enter into any monetary dealings or transactions either directly or indirectly with any employee of the Railway and if he shall do so, the Railway shall be entitled forthwith to rescind the contract and all other contracts with the Railway. Any question or dispute as to the commission of any such offence or compensation payable to the Railway under this Clause shall be settled by the General Manager of the Railway, in such a manner as he shall consider fit & sufficient and his decision shall be final & 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 upto 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 effect from the Engineer and shall proceed with the same with due expedition and without delay

19.(3) Accepted Programme 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 programme of work indicating the time schedule of various items of works in the form of Bar Chart/PERT/CPM. He shall also submit the details of organisation (in terms of labour 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 programme of work amended as necessary by discussions with the Engineer, shall be treated as the agreed programme of the work for the purpose of this contract and the Contractor shall endeavor to fulfill this programme 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 programme.

In Contracts for works of New Line/Gauge Conversion/Doubling/Railway Electrification, finalized through Tenders having advertised value more than ~~Rs.50 crores~~ **Rs.100 crores**, the Contractor shall submit a detailed time programme to the Engineer within 30 days after issue of LOA. The program shall include the physical and Financial Progress vis-à-vis program and forecast cash flow adopting Project Management Software such as **Primavera/Sure Track/MS Project etc.** The program must identify the milestones, interface requirements and program reporting elements. The Contractor shall supply, free of cost one set of authorized software to the Engineer and the soft copy of structured program for the project. This shall be updated every month. The Contractor shall also submit a revised programme whenever the previous programme is inconsistent with actual progress. Each programme shall include:

The order in which the Contractor intends to carry out the Works, including the anticipated timing of each stage, Contractor's Documents, procurement, manufacture of Plant, delivery to Site, construction, erection and testing, each of these stages for work by each Subcontractor, if any, the sequence and timing of inspections and tests specified in the Contract, and a supporting report which includes:

a general description of the methods which the Contractor intends to adopt, and of the major stages, in the execution of the Works, and
details showing the Contractor's reasonable estimate for the number of each class of Contractor's Personnel & Equipment, required on the Site for each major stage.

Unless the Engineer, within 21 days after receiving a programme, gives notice to the Contractor stating the extent to which it does not comply with the Contract, the Contractor shall proceed in accordance with the programme, subject to his other obligations under the Contract. The Engineer shall be entitled to rely upon the programme when planning their activities.

If, at any time, the Engineer gives notice to the Contractor that a programme fails (to the extent stated) to comply with the Contract or to be consistent with actual progress and the Contractor's stated intentions, the Contractor shall submit a revised programme to the Engineer within 15 days in accordance with this Sub-Clause.

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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 check these at frequent intervals. The Contractor shall provide all facilities like labour and instruments and shall co-operate with the Engineer's representative for checking of all alignment, grades, levels and dimensions. If, at any time, during the progress of the works any error 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 sequence 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 authorised, except under written instructions 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 Railway.

20.(4) Separate Contracts in Connection with Works: The Railway 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 Contractor's work depends upon 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 site and the detailed drawings shall be made available to the contractor commensurate with the accepted programme of work submitted under clause 19(3). 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 therefrom and shall be responsible for all loss to the Railway.

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 Railway to the Contractor are deemed to be the property of the Railway. 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 Railway 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 him of the Contractor's request, additional instructions by means of drawings or otherwise, necessary for the proper execution of the works or any part thereof. All such drawings 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 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. However, if the Engineer is satisfied that the work is not likely to be completed in time except by resorting to night work, he may order the same without confirming any right on the Contractor for claiming any extra payment for the same.

24. Damage to Railway 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 or the lives, persons or property of others from whatsoever cause in connection with the works until they are taken over by the Railway, although all reasonable and proper precautions may have been taken by the Contractor. In case the Railway shall be called upon to make good any costs, loss or damages, or to pay any 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 may incur in reference thereto, shall be charged to the Contractor. The Railway 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, Storehouses and Yards: The Contractor shall at his own expense provide himself with sheds, storehouses 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, storehouses and yards 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 plant which the Engineer may object to shall not be brought upon or used in the works, but shall be forthwith removed from the sheds, storehouses or yards by the Contractor. The Contractor shall at his own expenses provide and maintain suitable mortar mills, soaking vats or any other equipments 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 & proper manner and shall employ only such supervisors, workmen & 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 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 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(s) or equivalent, or qualified Diploma Engineer(s), as prescribed in the tender documents.

26A.2 In case the Contractor fails to employ the Engineer, as aforesaid in Para 26A.1, he shall be liable to pay liquidated damages at the rates, as prescribed in the tender documents.

26A.3 No. of qualified Engineers required to be deployed by the Contractor for various

activities contained in the works contract shall be specified in the tender documents as 'Special Condition of Contract'.

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 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 therefor, 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 Railway shall be entitled to rescind the contract under Clause 62 of these conditions.
- (d) The provision of Construction and Demolition Waste Management Rule 2016 issued by Ministry of Environment Forest and Climate Change dated 29.03.2016 and published in the Gazette of India, Part – II, Section -3, Sub-section (ii) are binding upon the Contractor. Contractor shall implement these provisions at worksites, for which no extra payment will be payable.

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 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 evicted by the Railway, necessary expenses incurred by the Railway 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) Water Supply from Railway System: The Railway may supply to the Contractor part or whole of the quantity of the water required for the execution of works from the Railway's existing water supply system at or near the site of works on specified terms and conditions and at such charges as shall be determined by the Railway and payable by the Contractor, provided that the Contractor shall arrange, at his own expense, to effect the connections and lay additional pipelines and accessories on the site and that the Contractor shall not be entitled to any compensation for interruption or failure of the water supply.

31.(3) Water Supply by Railway Transport: In the event of the Railway arranging supply of water to the Contractor at or near the site of works by travelling water tanks or other means, the freight and other charges incurred thereby, including demurrage charges that may be levied, shall be paid by the Contractor in addition to the charges referred to in Sub-Clause (2) of the Clause provided that the Contractor shall not be entitled to any compensation for interruption or failure of the water supply.

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.

(b) Electric Supply from the Railway System: The Railway may supply to the Contractor part or whole of the electric power wherever available and possible, required for execution of works from the Railway's existing electric supply systems at or near the site of works on specified terms and conditions and such charges as shall be determined by the Railway and payable by the Contractor provided the cost of arranging necessary connections to the Railway's Electric Supply systems and laying of underground/overhead conductor, circuit protection, electric power meters, transmission structure, shall be borne by the Contractor and that the Contractor shall not be entitled to any compensation for interruption or failure of the Electric supply system.

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 be deemed to be the property of the Railway. 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 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 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: The Contractor shall take all reasonable care of all tools, plant and materials or other property whether of a like description or not belonging to the Railway 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 sub-contractor, 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 Railway's Plant: The Railway 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, alteration, diversion or obstruction to such roads or water courses by the Contractor or his agent or his staff shall be recoverable from the Contractor's bills/Security Deposit or any other dues of Contractor with the Government of India.

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 erect 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 railway property and shall post such look out men as may, in the opinion of the Engineer, be required to comply with regulations appertaining to the work. Contractor shall ensure placement of barricading / partitions at the place of work to ensure safety of habitants of adjacent area, failing which Engineer may advise stoppage of work as per his discretion.

34.(5) Display Board: The Contractor shall be responsible for displaying the details of works i.e. name of work, approximate cost, expected date of completion, name and address of the Contractor and address of Engineer on a proper steel Board of size not less than 1m x 1m.

35. Use of Explosives: Explosives shall not be used on the works or on the site by the Contractor without the permission of the Engineer and then also only in the manner and to the extent to which such permission is given. Where explosives are required for the works, they shall be stored in a special magazine to be provided by and at the cost of the Contractor in accordance with the Explosive Rules. The Contractor shall obtain the necessary license for the storage and the use of explosives. All operations in which or for which explosives are employed shall be at the sole risk and responsibility of the Contractor and the Contractor shall indemnify the Railway in respect thereof.

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, or
- (d) Necessary for the safety of adjoining public or other property or safety of the public or workmen or those who have to be at the site, or

- (e) Necessary to avoid disruption of traffic and utilities, as also to permit fast repair and restoration of any damaged utilities, or
- (f) Due to instruction of The National Green Tribunal or any other statutory authority due to high level of pollution in the city of worksite.

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 suspension exceeds 14 days, the Contractor shall be entitled to such extension of time for completion of the works as the Engineer 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 Railway.

37. Rates for Items of Works:

(i) The rates, entered in the accepted Bill(s) of Quantities 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, the setting of all work and of the construction, repair and upkeep of all center 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 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 clause 17 & 17A 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.

38. Demurrage and Wharfage Dues: Demurrage charges calculated in accordance with the

scale in force for the time being on the Railway and incurred by the Contractor failing to load or unload any goods or materials within the time allowed by the Railway for loading as also wharfage charges, of materials not removed in time, as also charges due on consignments booked by or to him shall be paid by the Contractor, failing which such charges shall be debited to the Contractor's account in the hands of the Railway and shall be deducted from any sums which may become due to him in terms of the contracts.

39.(1) Rates for Extra Item(s) of Works:

(a) Standard Schedule of Rates (SSOR) Items: Any item of work carried out by the Contractor on the instructions of the Engineer which is not included in the accepted Bill(s) of Quantities but figures in the Standard Schedule of Rates (SSOR), shall be executed at the rates set forth in the "Standard Schedule of Rates (SSOR)" modified by the tender percentage as accepted in the contract for that chapter of Standard Schedule of Rates (SSOR). ~~However, the cumulative value of all such extra item(s) together (modified by the respective tender percentage) shall not exceed 10 % of the original contract value.~~

For item(s) not covered in this sub clause, the rate shall be decided as agreed upon between the Engineer and the Contractor before the execution of such items of work as per sub clause (b).

(b) Other Items: For any item of work to be carried out by the Contractor but not included in the accepted Bill(s) of Quantities and also not covered under sub clause (a) above, the Contractor 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 Bill(s) of Quantities does not include rate or rates for such 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 Railway 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.

The assessment of rates for extra item(s) shall be arrived at based on the prevailing market rates of labour, machinery & materials and by taking guidance from the following documents in order of priority:

- i. Analysis of Rates for "Unified Standard Schedule of Rates of Indian Railways (USSOR)"
- ii. Analysis of Rates for "Delhi Schedule of Rates issued by CPWD (DSR)"
- iii. Market Analysis

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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 hereuntofore-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 the 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 Chief Engineer within 30 days of getting the decision of the Engineer, supported by analysis of the rates claimed. The Chief Engineer's decision after hearing both the parties in the matter would be final and binding on the Contractor and the Railway.

40.(1) Handing over of Works: The Contractor shall be bound to hand over the works executed under the contract to the Railway 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 the 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 Railway 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 affected by means of public sales of such materials and property or in such a way as deemed fit and convenient to the Engineer.

40A Offloading of Part(s) of Work: At the final stage of completion/ commissioning of work, in case the contractor fails to complete the final part(s) of the work and the value of such part(s) of the work is limited to 5% of the original contract value, the Engineer may allow/decide for offloading of such part(s) of works, either after the Contractor's request in writing to do so or after serving a 14 (Fourteen) days suo-moto notice (as per annexure- VIIA), if the Engineer is of the opinion that :-

- (i) Such Offloading of works (up to 5% of original contract value) would enable successful completion of contract/work,
- (ii) Termination/ Part termination of the contract at this stage is not be in the interest of the Railway/work;, and
- (iii) The anticipated additional cost for execution of such works through other mode would not be substantial and can be recovered from the pending dues of the contractor;

The Contractor shall be informed, in due course, by the Engineer of the mode and cost of execution of such offloaded work through other agency(ies) (as per annexure- VIIB). The extra expenditure so incurred in execution of the offloaded work, shall be recovered from subsequent Bill(s) or any other dues of the Contractor, but not exceeding the value of Performance Guarantee available in the contract. There shall be no other repercussion of such offloading on execution of the balance contract. The Contractor shall have no claim on account of above mentioned offloading of works.

VARIATIONS IN EXTENT OF CONTRACT

41. Modification to Contract to be in Writing: In the event of any of the provisions of the contract required to be modified after the contract documents have been signed, the modifications shall be made in writing and signed by the Railway 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 Railway unless and until the same is incorporated in a formal instrument and signed by the Railway and the Contractor, and till then the Railway shall have the right to repudiate such arrangements.

42.(1) Powers of Modification to Contract: The Engineer on behalf of the Railway 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 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 (in which no variation limit shall apply). However, the rates for the increased quantities shall be as per sub- para (iii) below.

(ii) 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.

(iii) In case an increase in quantity of an individual item by more than 25% of the agreement quantity is considered unavoidable, then same shall be executed at following rates

- a. 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;
- b. 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 tender;
- c. Variation in quantities of individual items beyond 150% will be avoided and would be permitted only in exceptional unavoidable circumstances and shall be paid at 96% of the rate awarded for that item in that particular tender.
- d. Variation to quantities of Minor Value Item:
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 contract value.
 - d.(i) Quantities operated upto and including 100% of the agreement quantity of the concerned minor value item, shall be paid at the rate awarded for that item in that particular tender;
 - d.(ii) Quantities operated in excess of 100% but upto 200% of the agreement quantity of the concerned minor value item, shall be paid at 98% of the rate awarded for that item in that particular tender;
 - d.(iii) Variation in quantities of individual minor value item beyond 200% will be avoided and would be permitted only in exceptional unavoidable circumstances and shall be paid at 96% of the rate awarded for that item in that particular tender.

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

(v) As far as Standard Schedule of Rates (SSOR) items are concerned, the variation limit of 25% would apply to the value of SSOR schedule(s) as a whole and not on individual SSOR items. However, in case of Non Standard Schedule of Rates (SSOR) 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).

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 expressly included and provided for in the Specifications and Drawings and the amounts to be paid therefor shall be calculated in accordance with the accepted Bill(s) of Quantities. Any

extra item(s)/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.

CLAIMS

43.(1) Quarterly Statement of Claims: The Contractor shall prepare and furnish to the Engineer once in every quarter commencing from the month following the month of issue of Letter of Acceptance, 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 quarter and no claim for payment for 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 Railway under or by virtue of or arising out of this contract, nor shall the Railway entertain or consider any such claim, if made by the Contractor, after he shall have signed a "No Claim" Certificate in favour of the Railway in such form as shall be required by the Railway 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 Bill(s) of Quantities Annexed to Contract: The quantities set out in the accepted Bill(s) of Quantities 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 fulfillment of his obligations under the contract.

45(i). Measurement of Works by Railway: The Contractor shall be paid for the works at the rates in the accepted Bill(s) of Quantities 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 Railway. The quantities for items the unit of which in the accepted Bill(s) of Quantities 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 Bill(s) of Quantities 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 measurements. 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.

45(ii). Measurement of Works by Contractor's Authorized Representative (in case the contract provides for the same):

(a) The Contractor shall be paid for the works at the rates in the accepted Bill(s) of Quantities and for extra works at rates determined under Clause 39 of these Conditions on the measurements taken by the Contractor's authorized Engineer in accordance with the rules prescribed for the purpose by the Railway. The quantities for items the unit of which in the accepted Bill(s) of Quantities 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 Bill(s) of Quantities 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. The date and time on which 'on account' or 'final' measurements are to be made shall be communicated to the Engineer.

The date and time of test checks shall be communicated to the Contractor who shall be present at the site and shall witness the test checks, failing the Contractor's attendance the test checks may be conducted in his absence and such test checks shall not withstanding such absence be binding upon Contractor provided always that any objection made by Contractor to test check shall be duly investigated and considered in the manner set out below:

- (i) It shall be open to the Contractor to take specific objection to test checks of any recorded measurement within 7 days of date of such test checks. Any re-test check done by the concerned Railway's authority in the presence of the Contractor or in his absence after due notice given to him in consequent 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.
- (ii) 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.

(b) Incorrect measurement, actions to be taken: If in case during test check or otherwise, it is detected by the Engineer that agency has claimed any exaggerated measurement or has claimed any false measurement for the works which have not been executed; amounting to variation of 5% or more of claimed gross bill amount, action shall be taken as following:

- (i) On first occasion of noticing exaggerated/ false measurement, Engineer shall recover liquidated damages equal to 10% of claimed gross bill value.
- (ii) On any next occasion of noticing any exaggerated/false measurement, railway shall recover liquidated damages equal to 15% of claimed gross bill value. In addition, the facility of recording of measurements by Contractor as well as release of provisional payment shall be withdrawn. Once withdrawn, measurements shall be done by railway as per clause 45(i) above.

46.(1) "On-Account " Payments: The Contractor shall be entitled to be paid from time to time by way of "On-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 the Engineer's/Engineer's Representative's certificates of measurements or Engineer's certified "Contractor's authorized Engineer's 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 six percent by way of Security Deposits, until the amount of Security Deposit by way of such retentions shall amount to 5% 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 upto ₹1 will be reckoned as ₹ 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 Engineer/Engineer's Representative) 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) If payment(s) of Advances are applicable in the contract, as mentioned in the Tender Documents, Railway shall make payment(s) of Interest bearing advances, on the request of contractor. The payment and recovery of such Advances shall be made as under:

(a): Mobilisation Advance –

This shall be limited to 10% of the Contract value and shall be paid in 2 stages :

Stage 1– 5% of Contract Value on signing of the contract agreement.

Stage 2 – 5% on mobilization of site-establishment, setting up offices, bringing in equipment and actual commencement of work.

The stage 1 of advance shall be payable immediately after signing of contract agreement.

The stage 2 of advance shall be payable at the time of mobilisation, only after submission of an utilization certificate by the contractor that the Stage 1 advance has been properly utilized in the contract.

These Advances shall be payable against irrevocable guarantee (Bank Guarantee, FDRs) from a scheduled commercial bank of India of at least 110% of the value of the sanctioned advance amount (covering principal plus interest).

(b): Advance Against Machinery and Equipment –

This advance shall be limited to a maximum of 10% of the contract value against new Machinery & Equipment, involving substantial outlay, brought to site and essentially required for the work. This advance shall not exceed 75% of the purchase price of such Equipment and shall be payable when Equipment is hypothecated to the President of India by a suitable bond or alternatively covered by an irrevocable Bank Guarantee from a scheduled commercial bank of India for full cost of the Plant & Equipment in a form acceptable to Railways. The Plant & Equipment shall be insured for the full value and for the entire period, they are required for the work. This Plant & Equipment shall not be removed from the site of work without prior written permission of the Engineer. No advance should be given against old Plant & Machinery.

The advances under sub clause (a) and (b) above, are subject to the following conditions

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(i) The full amount of Advances shall be recovered from contractor dues. The recovery shall commence when the value of contract executed reaches 15% of original contract value and shall be completed when the value of work executed reaches 85% of the original contract value. The installments on each "on account bill" will be on pro-rata basis.

Interest shall be recovered on the advance outstanding for the period commencing from the date of payment of advance till date of particular on-account bill (through which

recovery of principal is effected) and adjusted fully against on-account bill along with pro-rata principal recovery. In the event of any short-fall, the same shall be carried forward to the next on-account bill and shall attract interest.

(ii) The advances shall be used by the Contractor for the purpose of the Contract, and for the purpose for which they are paid. Under no circumstances, shall the advances be diverted for other purposes. Any such diversion shall be construed as a breach of the Contract and the Contractor shall be asked to return the advance at once and pay interest at 15% per annum till the advance is recovered back from him. The Contractor shall return the advance and pay the interest in one go without demur. The Contractor, if required by the Engineer shall provide the details of utilisation of Mobilisation advance.

(iii) If the Contractor is found to have contravened the provision, it will constitute a breach of contract and Railway shall be entitled to terminate the contract and forfeit his Performance Guarantee as well as Security Deposit.

(iv) In cases, where the Contract is rescinded as per clause 62 of the contract or short closed under any other condition(s) of the contract, without making full recovery of advances and accrued interest thereon, by the Railway, such balance of advances and accrued interest thereon shall immediately become due and payable by the Contractor to the Railway. The same shall be recovered from any due of Contractor with the Government of India.

46.(5) Manner of Payment: Unless otherwise specified payments to the Contractor will be transferred electronically to his bank account.

46A. Price Variation Clause (PVC):

46A.1 Applicability: Price Variation Clause (PVC) shall be applicable only in tender having advertised value above **Rs. 2 Crores** ~~and having completion period above 12 months~~. Provided further that, in a contract where PVC is applicable, following shall be outside the purview of price adjustments (i.e. shall be excluded from the gross value of the work for the purpose of price variation) :

- a) Materials supplied by Railway to the Contractors, either free or at fixed rate;
- b) Any extra item(s) included in subsequent variation falling outside the purview of the Bill(s) of Quantities of tender, under clause 39. (1)(b) of these Standard General Conditions, unless applicability of PVC and 'Base Month' has been specially agreed, while fixing the rates of such extra item(s).

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46A.2 Base Month: The Base Month for 'Price Variation Clause' shall be taken as the one month prior to closing of tender, unless otherwise stated elsewhere. The quarter for applicability of PVC shall commence from the month following the Base month. The Price Variation shall be based on the average Price Index of the quarter under consideration.

46A.3 Validity:

Rates accepted by Railway Administration shall hold good till completion of work and no additional individual claim shall be admissible except:

- (a) Payment/recovery for increase/decrease in GST on works contract or imposition/removal of any tax/cess on Works Contract as per Clause 37,
- (b) Payment/recovery for overall market situation as per Price Variation Clause given hereunder.

46A.4 Components of various items in a contract on which variation in prices be admissible, shall be steel, cement, ferrous material, non-ferrous material, insulators, zinc and other materials, labour,

plant & machinery, fuel, explosives, detonators etc. Adjustment for variation in prices of these items shall be determined in the manner prescribed.

46A.5 No price variation shall be admissible for fixed components.

46A.6 The percentages of various components in various type of works shall be as specified for all item (s)/ Bill(s) of Quantities in tender document and the same shall be fixed as per table & classifications given below:

(I). For Civil Engineering Works

S N	Classification		1A, 2 & 3A	4A	5A	6A	7	8A	9A	1B, 3B, 4B, 5B, 6B 8B & 9B	1C, 3C, 4C, 5C, 6C, 8C & 9C	3D, 4D, 5D, 6D, 8D & 9D	3E, 4E, 5E, 6E, 8E & 9E
	Components												
1	Fixed	*	15	15	15	15	15	15	15	15	15	15	15
2	Labour	L _c	15 20 0	20 25 5	25 30 0	15 20 0	15 20 0	15 20 0	20	5 0 0	5 0 0	10	25
3	Steel	S _c	0	0	20 0 0	0	0	0	0	75 8 5	0	50	0
4	Cement	C _c	0	0	15	0	0	0	0	0	75 8 5	0	0
5	Plant Machinery & Spares	PM _c	35 30 30	15	0 5 5	20	20 1 5	20	30	0	0	10	30
6	Fuel & Lubricants	F _c	25	15	10 5 5	35 1 5	35 1 5	35 2 0	15	5 0 0	5 0 0	10	20
7	Other materials	M _c	10 1 0	15	15 3 0	15 30 30	15 5 5	15 2 5	20	0	0	5	10
8	Detonators & Explosive	E _c	0	20 15 15	0	0	0	0	0	0	0	0	0
Total			100	100	100	100	100	100	100	100	100	100	100

* It shall not be considered for any price variation.

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The classification mentioned in the table above represents following type of item(s) in the work(s) –

1 Earthwork in Formation

1A All Item(s) excluding 1B or/and 1C

1B Item(s) for supply of Steel

1C Item(s) for supply of Cement

2 Ballast Supply Works

3 Tunnelling Works (Without Explosives)

3A All Item(s) excluding 3B or/and 3C or/and 3D or/and 3E

3B Item(s) for supply of Steel

3C Item(s) for supply of Cement or/and Grout

3D Item(s) for Fabrication & Erection of Structures including supply of Steel

3E Item(s) for Fabrication & Erection of Structures excluding supply of Steel.

4 Tunnelling Works (With explosives)

4A All Item(s) excluding 4B or/and 4C or/and 4D or/and 4E

4B Item(s) for supply of Steel

4C Item(s) for supply of Cement or/and Grout

4D Item(s) for Fabrication & Erection of Structures including supply of Steel

4E Item(s) for Fabrication & Erection of Structures excluding supply of Steel.

5 Building Works

5A All Item(s) excluding 5B or/and 5C or/and 5D or/and 5E

5B Item(s) for supply of Steel

5C Item(s) for supply of Cement

5D Item(s) for Fabrication & Erection of Structures including supply of Steel

5E Item(s) for Fabrication & Erection of Structures excluding supply of Steel.

6 Bridges & Protection work

6A All Item(s) excluding 6B or/and 6C or/and 6D or/and 6E

6B Item(s) for supply of Steel

6C Item(s) for supply of Cement

6D Item(s) for Fabrication, Assembly, Erection & Launching of Girders including supply of Steel

6E Item(s) for Fabrication, Assembly, Erection & Launching of Girders excluding supply of Steel

7 Permanent Way linking

8 Platform, Passenger Amenities

8A All Item(s) excluding 8B or/and 8C or/and 8D or/and 8E

8B Item(s) for supply of Steel item/fittings

8C Item(s) for supply of Cement Item

8D Item(s) for Fabrication & Erection of Structures including supply of Steel

8E Item(s) for Fabrication & Erection of Structures excluding supply of Steel

9 Any Other Works not covered in Classification 1 to 8

9A All Item(s) excluding 9B or/and 9C or/and 9D or/and 9E

9B Item(s) for supply of Steel

9C Item(s) for supply of Cement or/and Grout

9D Item(s) for Fabrication & Erection of Structures including supply of Steel

9E Item(s) for Fabrication & Erection of Structures excluding supply of Steel

46A.7 Formulae: The Amount of variation in prices in various components (labour, material etc.) shall be worked out by the following formulae:

$$(i) \quad L = \frac{(W \text{ or } \cancel{W_S \text{ or } W_C} \text{ or } W_{SF} \text{ or } W_F \text{ or } W_{SFL} \text{ or } W_{FL}) \times (L_Q - L_B) \times L_C}{L_B \times 100}$$

$$(ii) \quad M = \frac{(W \text{ or } W_{SF} \text{ or } W_F \text{ or } W_{SFL} \text{ or } W_{FL}) \times (M_Q - M_B) \times M_C}{M_B \times 100}$$

$$(iii) \quad F = \frac{(W \text{ or } \cancel{W_S \text{ or } W_C} \text{ or } W_{SF} \text{ or } W_F \text{ or } W_{SFL} \text{ or } W_{FL}) \times (F_Q - F_B) \times F_C}{F_B \times 100}$$

$$(iv) \quad E = \frac{(W \text{ or } \cancel{W_S \text{ or } W_C} \text{ or } \cancel{W_{SF} \text{ or } W_F} \text{ or } \cancel{W_{SFL} \text{ or } W_{FL}}) \times (E_Q - E_B) \times E_C}{E_B \times 100}$$

$$(v) \text{ PM} = \frac{(W \text{ or } \cancel{W_S} \text{ or } \cancel{W_C} \text{ or } W_{SF} \text{ or } W_F \text{ or } W_{SFL} \text{ or } W_{FL}) \times (PM_Q - PM_B) \times PM_C}{PM_B \times 100}$$

$$(vi) \text{ S} = \frac{(W \text{ or } W_S \text{ or } W_{SF}) \times (S_Q - S_B) \times S_C}{S_B \times 100}$$

$$(vii) \text{ C} = \frac{(W \text{ or } W_C) \times (C_Q - C_B) \times C_C}{C_B \times 100}$$

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(II) For Railway Electrification Works:

$$(viii) \text{ T} = [0.4136 \times (C_Q - C_B) / C_B] \times 85$$

$$(ix) \text{ R} = [0.94 \times (R_T - R_O) / R_O + 0.06 \times (Z_T - Z_O) / Z_O] \times 85$$

$$(x) \text{ N} = [(P_T - P_O) / P_O] \times 85$$

$$(xi) \text{ I} = [(I_T - I_O) / I_O] \times 85$$

$$(xii) \text{ G} = [(M_Q - M_B) / M_B] \times 85$$

$$(xiii) \text{ Er} = [(L_Q - L_B) / L_B] \times 85$$

Where,

L	Amount of price variation in Labour
M	Amount of price variation in Materials
F	Amount of price variation in Fuel
E	Amount of price variation in Explosives
PM	Amount of price variation in Plant, Machinery and Spares
S	Amount of price variation in Steel Supply Item
C	Amount of price variation in Cement Supply Item
T	Percentage variation payable on the gross value of bill of Concreting (Bill(s) of Quantities for concrete items)
R	Percentage variation payable on the gross value of bill of Ferrous Items (Bill(s) of Quantities for ferrous items)
N	Percentage variation payable on the gross value of bill of Non-Ferrous Items (Bill(s) of Quantities for non-ferrous items)
I	Percentage variation payable on the gross value of bill of Insulator (Bill(s) of Quantities for Insulator items)
G	Percentage variation payable on the gross value of bill of General Works (Bill(s) of Quantities for General items)
Er	Percentage variation payable on the gross value of erection (Bill(s) of Quantities for Erection Item)
L _C	% of Labour Component in the item(s)
M _C	% of Material Component in the item(s)
F _C	% of Fuel Component in the item(s)
E _C	% of Explosive Component in the item(s)
PM _C	% of Plant, Machinery and Spares Component in the item(s)

S _C	% of Steel Supply item Component in the item(s)
C _C	% of Cement Supply item Component in the item(s)
W	Gross value of work done by Contractor as per on-account bill(s) excluding the Gross value of work under W _S or/and W _C or/and W _{SF} or/and W _F or/and W _{SFL} or/and W _{FL} and cost of materials supplied by Railway either free or at fixed rate,
W _S	Gross value of work done by Contractor for item(s) of supply of steel.
W _C	Gross value of work done by Contractor for item(s) of supply of cement and /or supply of grout material.
W _{SF}	Gross value of work done by Contractor for item(s) of Fabrication & Erection of Structures including supply of Steel.
W _F	Gross value of work done by Contractor for Fabrication & Erection of Structures excluding supply of Steel.
W _{SFL}	Gross value of work done by Contractor for item(s) of Fabrication, Assembly, Erection / Launching of Girders including supply of Steel.
W _{FL}	Gross value of work done by Contractor for item(s) of Fabrication, Assembly, Erection / Launching of Girders excluding supply of Steel.
L _B	Consumer Price Index for Industrial Workers - All India: Published in R.B.I. Bulletin for the base period
L _Q	Consumer Price Index for Industrial Workers - All India: Published in R.B.I. Bulletin for the average price index of the 3 months of the quarter under consideration
M _B	Wholesale Price Index: All commodities – as published in the R.B.I. Bulletin for the base period
M _Q	Wholesale Price Index: All commodities – as published in the R.B.I. Bulletin for the average price index of the 3 months of the quarter under consideration
F _B	The average of official prices of Diesel available on the official website of ‘Petroleum Planning and Analysis cell’ under Ministry of Petroleum and Natural Gas for Delhi, Kolkata, Mumbai & Chennai, for the base period
F _Q	The average of official prices of Diesel available on the official website of ‘Petroleum Planning and Analysis cell’ under Ministry of Petroleum and Natural Gas for Delhi, Kolkata, Mumbai & Chennai, for the 3 months of the quarter under consideration
E _B	Index number of Monthly Whole Sale Price Index for the category ‘Explosive’ of (g). Manufacture of other chemical products under (J) MANUFACTURE OF CHEMICALS AND CHEMICAL PRODUCTS, published by Office of Economic Adviser, Govt. of India, Ministry of Commerce & Industry, Department of Industrial Policy & Promotion (DIPP), for the base period.
E _Q	Index number of Monthly Whole Sale Price Index for the category ‘Explosive’ of (g). Manufacture of other chemical products under (J) MANUFACTURE OF CHEMICALS AND CHEMICAL PRODUCTS, published by Office of Economic Adviser, Govt. of India, Govt. of India, Ministry of Commerce & Industry, Department of Industrial Policy & Promotion (DIPP), for the average price index of 3 months of the quarter under consideration.
PM _B	Index Number of Wholesale Prices in India by Groups and Sub Groups (Averages) for ‘Manufacture of machinery for mining, quarrying and construction’ – published

	in RBI (Reserve Bank of India) Bulletin, for the base period.
PM _Q	Index Number of Wholesale Prices in India by Groups and Sub Groups (Averages) for ‘Manufacture of machinery for mining, quarrying and construction’– published in RBI (Reserve Bank of India) Bulletin, for the average price index of 3 months of the quarter under consideration.
S _B	The average rate provided by the Joint Plant Committee for the relevant category of steel item as mentioned in Clause 46A.9; for the base period.
S _Q	The average rate provided by the Joint Plant Committee for the relevant category of steel item as mentioned in Clause 46A.9; for the 3 months of the quarter under consideration.
C _B	Index No. of Wholesale Price Index of sub-group Cement, Lime & Plaster as published in RBI Bulletin for the base period
C _Q	No. of Wholesale Price Index of sub-group Cement, Lime & Plaster as published in RBI Bulletin for the average price index of the 3 months of the quarter under consideration
R _T	IEEMA price index for Steel Blooms (size 150mmx150mm) for the month which is two months prior to date of inspection of material.
R _O	IEEMA price index for Steel Blooms (size 150mmx150mm)for the month which is one month prior to date of opening of tender.
P _T	IEEMA price index for Copper wire rods for the month which is two months prior to date of inspection of material.
P _O	IEEMA price index for Copper wire rods for the month which is one month prior to date of opening of tender.
Z _T	IEEMA price index for Zinc for the month which is two months prior to date of inspection of material
Z _O	IEEMA price index for Zinc for the month which is one month prior to date of opening of tender
I _T	RBI wholesale price index for the sub-group “Insulators” for the month which is two months prior to date of inspection of material
I _O	RBI wholesale price index for the sub-group “Insulators” for the month which is one month prior to date of opening of tender

(III) SIGNALING & TELECOMMUNICATION WORKS:

- (a) The following expressions and meanings are assigned to the value of the work done for signalling and telecommunication works:

SIGWK = Value of signalling works for a stage payment of the item signalling works;

INVSIG = Value of inventory for signalling works for a stage payment of the item inventory for signalling works;

INTGTESTSIG = Value of integrated testing and commission for signalling works of the Railway Project;

COMWK= Value of telecommunication works for a stage payment of the item telecommunication works;

INVCOM = Value of inventory for telecommunication works for a stage payment of the item

inventory for telecommunication works; and

INTGTESTCOM = Value of integrated testing and commission for telecommunication works of the Railway Project.

- (b) Price adjustment for changes in cost of signalling works and telecommunication works shall be paid in accordance with the following formula:

- (i)
$$\text{VSIGWK} = 0.85 \text{ SIGWK} \times [\text{PELEX} \times (\text{ELEX}_i - \text{ELEX}_o) / \text{ELEX}_o + \text{POFC} \times (\text{OFC}_i - \text{OFC}_o) / \text{OFC}_o + \text{PLB} \times (\text{LBI} - \text{LBO}) / \text{LBO} + \text{POTH} \times (\text{OTHi} - \text{OTH}_o) / \text{OTH}_o + \text{S30C} \times (\text{P30C}_i - \text{P30C}_o) / \text{P30C}_o + \text{S24C} \times (\text{P24C}_i - \text{P24C}_o) / \text{P24C}_o + \text{S19C} \times (\text{P19C}_i - \text{P19C}_o) / \text{P19C}_o + \text{S12C} \times (\text{P12C}_i - \text{P12C}_o) / \text{P12C}_o + \text{S9C} \times (\text{P9C}_i - \text{P9C}_o) / \text{P9C}_o + \text{S6C} \times (\text{P6C}_i - \text{P6C}_o) / \text{P6C}_o + \text{S4C} \times (\text{P4C}_i - \text{P4C}_o) / \text{P4C}_o + \text{S2C} \times (\text{P2C}_i - \text{P2C}_o) / \text{P2C}_o + \text{S12C2.5} \times (\text{P12C2.5}_i - \text{P12C2.5}_o) / \text{P12C2.5}_o + \text{S2C2.5} \times (\text{P2C2.5}_i - \text{P2C2.5}_o) / \text{P2C2.5}_o + \text{S2C25} \times (\text{P2C25}_i - \text{P2C25}_o) / \text{P2C25}_o + \text{QC} \times (\text{PQC}_i - \text{PQC}_o) / \text{PQC}_o];$$
- (ii)
$$\text{VINVSIG} = 0.85 \text{ SIGWK} \times [\text{PELEX} \times (\text{ELEX}_i - \text{ELEX}_o) / \text{ELEX}_o + \text{POTH} \times (\text{OTHi} - \text{OTH}_o) / \text{OTH}_o];$$
- (iii)
$$\text{VINTGTESTSIG} = 0.85 \text{ INTGTESTSIG} \times [\text{PLB} \times (\text{LBI} - \text{LBO}) / \text{LBO} + \text{POTH} \times (\text{OTHi} - \text{OTH}_o) / \text{OTH}_o];$$
- (iv)
$$\text{VCOMWK} = 0.85 \text{ COMWK} \times [\text{PELEX} \times (\text{ELEX}_i - \text{ELEX}_o) / \text{ELEX}_o + \text{POFC} \times (\text{OFC}_i - \text{OFC}_o) / \text{OFC}_o + \text{PLB} \times (\text{LBI} - \text{LBO}) / \text{LBO} + \text{POTH} \times (\text{OTHi} - \text{OTH}_o) / \text{OTH}_o + \text{S30C} \times (\text{P30C}_i - \text{P30C}_o) / \text{P30C}_o + \text{S24C} \times (\text{P24C}_i - \text{P24C}_o) / \text{P24C}_o + \text{S19C} \times (\text{P19C}_i - \text{P19C}_o) / \text{P19C}_o + \text{S12C} \times (\text{P12C}_i - \text{P12C}_o) / \text{P12C}_o + \text{S9C} \times (\text{P9C}_i - \text{P9C}_o) / \text{P9C}_o + \text{S6C} \times (\text{P6C}_i - \text{P6C}_o) / \text{P6C}_o + \text{S4C} \times (\text{P4C}_i - \text{P4C}_o) / \text{P4C}_o + \text{S2C} \times (\text{P2C}_i - \text{P2C}_o) / \text{P2C}_o + \text{S12C2.5} \times (\text{P12C2.5}_i - \text{P12C2.5}_o) / \text{P12C2.5}_o + \text{S2C2.5} \times (\text{P2C2.5}_i - \text{P2C2.5}_o) / \text{P2C2.5}_o + \text{S2C25} \times (\text{P2C25}_i - \text{P2C25}_o) / \text{P2C25}_o + \text{QC} \times (\text{PQC}_i - \text{PQC}_o) / \text{PQC}_o + \text{PCEQP} \times (\text{CEQP}_i - \text{CEQP}_o) / \text{CEQP}_o];$$
- (v)
$$\text{VINVCOM} = 0.85 \text{ SIGWK} \times [\text{PELEX} \times (\text{ELEX}_i - \text{ELEX}_o) / \text{ELEX}_o + \text{PCEQP} \times (\text{CEQP}_i - \text{CEQP}_o) / \text{CEQP}_o + \text{POTH} \times (\text{OTHi} - \text{OTH}_o) / \text{OTH}_o];$$
 and
- (vi)
$$\text{VINTGTESTCOM} = 0.85 \text{ INTGTESTCOM} \times [\text{PLB} \times (\text{LBI} - \text{LBO}) / \text{LBO} + \text{POTH} \times (\text{OTHi} - \text{OTH}_o) / \text{OTH}_o].$$

Where

VSIGWK = Increase or decrease in the cost of signalling works during the period under consideration due to changes in the rates for relevant components as specified in sub-paragraph (h);

VINVSIG = Increase or decrease in the cost of inventory for signalling during the period under consideration due to changes in the rates for relevant components as specified in sub-paragraph (h);

VINTGTESTSIG = Increase or decrease in the cost of integrated testing and commissioning of signalling works of the Railway Project during the period under consideration due to changes in the rates for relevant components as specified in sub-paragraph (h);

VCOMWK = Increase or decrease in the cost of communication works during the period under consideration due to changes in the rates for relevant components as specified in sub-paragraph (h);

VINVCOM = Increase or decrease in the cost of inventory for telecommunications works during the period under consideration due to changes in the rates for relevant components as specified in sub-paragraph (h);

VINTGTESTCOM = Increase or decrease in the cost of integrated testing and commissioning of telecommunication works of the Railway Project during the period under consideration due to changes in the rates for relevant components as specified in sub-paragraph (h);

PCEQP, PELEX, PIC, PLB, POFC, and POTH are the percentages of communication equipment, electronics, PVC insulated cables, labour, optical fibre cables, and other materials respectively;

CEQP_o = The wholesale price index as published by the Ministry of Commerce and Industry, Government of India (hereinafter called “WPI”) for communication equipment for the month of the Base Month;

CEQP_i = The WPI for communication equipment for the average price index of the 3 months of the quarter under consideration;

ELEX_o = The WPI for electronics for the month of the Base Month;

ELEX_i = The WPI for electronics for the average price index of the 3 months of the quarter under consideration;

P30C_i = Price payable per Km as adjusted in accordance with price variation Clause for size 30C x 1.5 sq mm signalling cable

P30C_o = Price per Km of cable as per purchase order/ Contract agreement.

S30C = Percentage of size 30C x 1.5 sq mm signalling cable shall govern the price adjustment of the contract price for signalling and telecommunication works.

P24C_i = Price payable per Km as adjusted in accordance with price variation Clause for size 24C x 1.5 sq mm signalling cable

P24C_o = Price per Km of cable as per purchase order/ Contract agreement.

S24C = Percentage of size 24C x 1.5 sq mm signalling cable shall govern the price adjustment of the contract price for signalling and telecommunication works.

P19C_i = Price payable per Km as adjusted in accordance with price variation Clause for size 19C x 1.5 sq mm signalling cable

P19C_o = Price per Km of cable as per purchase order/ Contract agreement.

S19C = Percentage of size 19C x 1.5 sq mm signalling cable shall govern the price adjustment of the contract price for signalling and telecommunication works.

P12C_i = Price payable per Km as adjusted in accordance with price variation Clause for size 12C x 1.5 sq mm signalling cable

P12C_o = Price per Km of cable as per purchase order/ Contract agreement.

S12C = Percentage of size 12C x 1.5 sq mm signalling cable shall govern the price adjustment of the contract price for signalling and telecommunication works.

P9C_i = Price payable per Km as adjusted in accordance with price variation Clause for size 9C x 1.5 sq mm signalling cable

$P9C_o$ = Price per Km of cable as per purchase order/ Contract agreement.

$S9C$ = Percentage of size 9C x 1.5 sq mm signalling cable shall govern the price adjustment of the contract price for signalling and telecommunication works.

$P6C_i$ = Price payable per Km as adjusted in accordance with price variation Clause for size 6C x 1.5 sq mm signalling cable

$P6C_o$ = Price per Km of cable as per purchase order/ Contract agreement.

$S6C$ = Percentage of size 6C x 1.5 sq mm signalling cable shall govern the price adjustment of the contract price for signalling and telecommunication works.

$P4C_i$ = Price payable per Km as adjusted in accordance with price variation Clause for size 4C x 1.5 sq mm signalling cable

$P4C_o$ = Price per Km of cable as per purchase order/ Contract agreement.

$S4C$ = Percentage of size 4C x 1.5 sq mm signalling cable shall govern the price adjustment of the contract price for signalling and telecommunication works.

$P2C_i$ = Price payable per Km as adjusted in accordance with price variation Clause for size 2C x 1.5 sq mm signalling cable

$P2C_o$ = Price per Km of cable as per purchase order/ Contract agreement.

$S2C$ = Percentage of size 2C x 1.5 sq mm signalling cable shall govern the price adjustment of the contract price for signalling and telecommunication works.

$P12C2.5_i$ = Price payable per Km as adjusted in accordance with price variation Clause for size 12C x 2.5 sq mm signalling cable

$P12C2.5_o$ = Price per Km of cable as per purchase order/ Contract agreement.

$S12C2.5$ = Percentage of size 12C x 2.5 sq mm signalling cable shall govern the price adjustment of the contract price for signalling and telecommunication works.

$P2C2.5_i$ = Price payable per Km as adjusted in accordance with price variation Clause for size 2C x 2.5 sq mm signalling cable

$P2C2.5_o$ = Price per Km of cable as per purchase order/ Contract agreement.

$S2C2.5$ = Percentage of size 2C x 2.5 sq mm signalling cable shall govern the price adjustment of the contract price for signalling and telecommunication works.

$P2C25_i$ = Price payable per Km as adjusted in accordance with price variation Clause for size 2C x 25 sq mm signalling cable

$P2C25_o$ = Price per Km of cable as per purchase order/ Contract agreement.

$S2C25$ = Percentage of size 2C x 25 sq mm signalling cable shall govern the price adjustment of the contract price for signalling and telecommunication works.

PQC_i = Price payable per Km as adjusted in accordance with price variation Clause for size 0.9mm dia, 6 Quad cable.

PQC_o = Price per Km of cable as per purchase order/ Contract agreement.

QC = Percentage of size 0.9mm dia, 6 Quad cable shall govern the price.

LBo = The consumer price index for industrial workers – All India, published by

Labour Bureau, Ministry of Labour, Government of India, (hereinafter called “CPI”) for the month of the Base Month;

LBi = The CPI for industrial workers – All India for the average price index of the 3 months of the quarter under consideration;

OFCo = The WPI for fibre cables for the month of the Base Month;

OFCi = The WPI for fibre cables for the average price index of the 3 months of the quarter under consideration;

OTHo = The WPI for all commodities for the month of the Base Month; and

OTHi = The WPI for all commodities for the average price index of the 3 months of the quarter under consideration.

- (c) The following percentages shall govern the price adjustment of the Contract Price for signalling and telecommunication works:

Works Component	Signalling			Telecommunication		
	Signalling Works	Signalling inventory	Integrated testing and Commissioning	Telecommunication Works	Telecomm inventory	Integrated testing and Commissioning
Electronics (PELEX)	***%	***%	—	***%	***%	—
Communication Equipment (PCEQP)	—	—	—	***%	***%	—
Optical Fibre Cable (POFC)	***%	—	—	***%	—	—
30C x 1.5 sq mm signalling cable(S30C)	***%	—	—	***%	—	—
24C x 1.5 sq mm signalling cable (S24C)	***%	—	—	***%	—	—
19Cx 1.5 sq mm signalling cable (S19C)	***%	—	—	***%	—	—
12C x 1.5 sq mm signalling cable (S12C)	***%	—	—	***%	—	—
9C x 1.5 sq mm signalling cable (S9C)	***%	—	—	***%	—	—
6C x 1.5 sq mm signalling cable (S6C)	***%	—	—	***%	—	—
4C x 1.5 sq mm signalling cable (S4C)	***%	—	—	***%	—	—
2C x 1.5 sq mm signalling cable (S2C)	***%	—	—	***%	—	—

12C x 2.5 sq mm signalling cable (S12C2.5)	***%	—	—	***%	—	—
2C x 2.5 sq mm signalling cable (S2C2.5)	***%	—	—	***%	—	—
2C x 25 sq mm signalling cable (S2C25)	***%	—	—	***%	—	—
0.9 mm dia, 6Quad cable (QC)	***%	—	—	***%	—	—
Labour (PLB)	***%	—	***%	***%	***%	***%
Other materials	***%	***%	***%	***%	***%	***%
Total	100%	100%	100%	100%	100%	100%

(Note- the percentages may be finalized by tendering authority depending on BOQ)

FORMULAE FOR SIGNALING & TELECOM CABLE

The price payable for signalling cables is variable as per Price Variation Formula given below:

For Signalling Copper Cables:

$$P_i = P_o + CuF (Cu - C_{uo}) + CCF_{cu}(CC - C_{Co}) + FeF (Fe - Fe_o)$$

For Telecom Copper Cables For Jelly Filled, 0.9 mm dia, 6 quad cable

$$P_i = P_o + CuF (Cu - C_{uo}) + AlF_{cu}(Al - A_{lo}) + CCF_{cu} (CC - C_{Co}) + FeF (Fe - Fe_o)$$

For Aluminium Power Cables:

$$P_i = P_o + AlF (Al - A_{lo}) + CCFAI(CC - C_{Co}) + FeF (Fe - Fe_o)$$

Where,

P_i = Price payable per KM as adjusted in accordance with Price variation clause.

P_o = Price per KM of cable as per Purchase order.

CuF = Variation factor for Copper

C_{uo} = Price of copper Rod in Rs. Per MT

$CCFCu$ = Variation factor for PVC Compound for Copper Signalling & Telecom cable

C_{Co} = Price of PVC Compound in Rs. Per MT

AlF = Variation factor for Aluminium

A_{lo} = Price of EC grade LME Aluminium rods (Properzi rods) in Rs. Per MT.

$CCFAI$ = Variation factor for PVC Compound for Aluminium power cable

FeF = Variation factor for Steel

Fe_o = Price of Steel for Armour (Flat strip 4 mm. x 0.8mm/ Round 1.4mm dia) in Rs. Per MT

(Prices per MT for C_{uo} , C_{Co} , Fe_o , A_{lo} as applicable on the 1st working day of the month, one month prior to the deadline for submission of bids. The above prices and

indices are as published by IEEMA vide circular reference no. IEEMA (PVC) /CABLE --/-- one month prior to the deadline for submission of bids.)

Cu= Price of Copper Rod in Rs. Per MT.

CC= Price of PVC Compound in Rs. Per MT.

Fe= Price of Steel for Armouring (Flat strip 4mm x 0.8 mm/ Round 1.4mm dia) in Rs. Per MT.

Al = Price of EC grade LME Aluminium rods (Properzi rods) in Rs. Per MT.

(Prices per MT for Cu, CC, Fe, Al as prevailing on 1st working day of the calendar month covering the date One month prior to the date of inspection call letter will be applicable for the calculation of updated price. The above prices and indices are as published by IEEMA vide circular reference no. IEEMA (PVC) /CABLE --/-- one month prior to the date of inspection.)

The value of variation factors for copper, steel and PVC Compound are different for different sizes of signalling cables. Accordingly, the PVC formula for some of the types of signalling cable is as given under:-

Underground Railway Signalling Cable unscreened and armoured copper conductor

- (i) Size 30 C x 1.5 sq.mm.

$$P30C_i = P30C_o + 0.391(Cu - C_uo) + 0.557(CC - CC_o) + 0.425(Fe - Fe_o)$$

For armouring, price of steel flat strip of size 4mmx0.8mm is to be taken into consideration.

- (ii) Size 24C x 1.5 sq.mm

$$P24C_i = P24C_o + 0.313(Cu - C_uo) + 0.481(CC - CC_o) + 0.398(Fe - Fe_o)$$

For armouring, value of steel flat strip of size 4mmx0.8mm is to be taken into consideration.

- (iii) Size 19C x 1.5 sq.mm

$$P19C_i = P19C_o + 0.248(Cu - C_uo) + 0.395(CC - CC_o) + 0.343(Fe - Fe_o)$$

For armouring, value of steel flat strip of size 4mmx0.8mm is to be taken into consideration.

- (iv) Size 12C x 1.5 sq.mm

$$P12C_i = P12C_o + 0.157(Cu - C_uo) + 0.277(CC - CC_o) + 0.289(Fe - Fe_o)$$

For armouring, value of steel wire size 1.4mm dia is to be taken into consideration.

- (v) Size 9C x 1.5 sq.mm

$$P9C_i = P9C_o + 0.117(Cu - C_uo) + 0.241(CC - CC_o) + 0.383(Fe - Fe_o)$$

For armouring, value of steel wire size 1.4mm dia is to be taken into consideration.

- (vi) Size 6Cx 1.5 sq.mm

$$P6C_i = P6C_o + 0.078(Cu - C_uo) + 0.199(CC - CC_o) + 0.329(Fe - Fe_o)$$

For armouring, value of steel wire size 1.4mm dia is to be taken into consideration.

- (vii) Size 4C x 1.5 sq.mm

$$P4C_i = P4C_o + 0.052(Cu - C_{uo}) + 0.152(CC - C_{Co}) + 0.277(Fe - Fe_o)$$

For armouring, value of steel wire size 1.4mm dia is to be taken into consideration.

- (viii) Size 2C x 4 sq.mm(multistrand)

$$P2C_i = P2C_o + 0.073(Cu - C_{uo}) + 0.156(CC - C_{Co}) + 0.3(Fe - Fe_o)$$

For armouring, value of steel wire size 1.4mm dia is to be taken into consideration.

- (ix) Size 12C x 2.5 sq.mm

$$P12C_{2.5_i} = P12C_{2.5_o} + 0.282(Cu - C_{uo}) + 0.371(CC - C_{Co}) + 0.342(Fe - Fe_o)$$

For armouring, value of steel flat strip of size 4mm x 0.8mm is to be taken into consideration.

- (x) Size 2C x 2.5 sq.mm

$$P2C_{2.5_i} = P2C_{2.5_o} + 0.047(Cu - C_{uo}) + 0.139(CC - C_{Co}) + 0.277(Fe - Fe_o)$$

For armouring, value of steel wire size 1.4mm dia is to be taken into consideration.

- (xi) Size 2C x 25 sq.mm PVC insulated, armoured, Aluminium power cable

$$P2C_{25_i} = P2C_{25_o} + 0.146(Al - A_{lo}) + 0.303(CC - C_{Co}) + 0.306(Fe - Fe_o)$$

For armouring, value of steel flat strip of size 4mm x 0.8mm is to be taken into consideration.

- (xii) For Jelly filled, 0.9mm dia, 6 quad cable

$$PQC_i = PQC_o + 0.135(Al - A_{lo}) + 0.139(Cu - C_{uo}) + 0.515(CC - C_{Co}) + 0.693(Fe - Fe_o)$$

For PVC Compound Grade CW-22, is to be taken into consideration.

46A.8 The demands for escalation of cost shall be allowed on the basis of provisional indices as mentioned above in Clause 46A.7. Any adjustment needed to be done based on the finally published indices shall be made as and when they become available.

46A.9: (1) Relevant categories of steel for the purpose of operating Price Variation formula as mentioned in this Clause shall be as under:

SL	Classification	Rates to be used for calculating SQ or SB
1.	Reinforcement bars and other rounds	Average of per tonne rates of 10mm dia TMT & 25mm dia TMT; confirming IS1786; Fe 500
2.	All types and sizes of angles, channels and joists	Average of per tonne rates of 'Angle 75x75x6mm, Mild Steel Plate 10mm thickness and Channel 150x75mm; confirming IS2062, E250 Gr "A"
3.	All types and sizes of plates	Average of per tonne rates of 'MS Plates 10mm thickness and 25mm thickness; confirming IS2062, E250 Gr "A"
4.	Any other section of steel not covered in the above categories	Average of price for the 3 categories covered under SL 1, 2 & 3 in this table.

(2). Relevant city for referring "JPC (Joint Plant Committee)" rates of steel items (SQ /SB) in different Zonal Railways shall be as under :

SL	City	Railway
----	------	---------

1.	Delhi	Northern , North Central, North Eastern, North Western
2.	Kolkata	Eastern, East Central, East Coast, Northeast Frontier, South Eastern, Southeast Central
3.	Mumbai	Central, Western, West Central
4.	Chennai	Southern, South Central&South Western

46A.10 Price Variation during Extended Period of Contract

The price adjustment as worked out above, i.e. either increase or decrease shall be applicable upto the stipulated date of completion of work including the extended period of completion where such extension has been granted under Clause 17A of the Standard General Conditions of Contract. However, where extension of time has been granted due to Contractor's failure under Clause 17B of the Standard General Conditions of Contract, price adjustment shall be done as follows:

- a. In case the indices increase above the indices applicable to the last month of original completion period or the extended period under Clause 17A, the price adjustment for the period of extension granted under Clause 17B shall be limited to the amount payable as per the Indices applicable to the last month of the original completion period or the extended period under Clause 17A of the Standard General Conditions of Contract; as the case may be.
- b. In case the indices fall below the indices applicable to the last month of original/ extended period of completion under Clause 17A, as the case may be; then the lower indices shall be adopted for the price adjustment for the period of extension under Clause 17B of the Standard General Conditions of Contract.

47. 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 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 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 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.

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.

48(3) Final Supplementary Agreement: After the work is completed or otherwise concluded by the parties with mutual consent, and taken over by the Railway as per terms and conditions of the contract agreement, and there is unequivocal no claim on either side under the Contract other than as mentioned in item 4 of Annexure XIV, the parties shall execute the Final Supplementary Agreement as per Annexure XIV.

49. Approval only by Maintenance Certificate: No certificate other than Maintenance Certificate, if applicable, 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.

50.(1) Maintenance Certificate: The Contract shall not be considered as completed until a Maintenance Certificate, if applicable, 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) to 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 Railway.

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 against the contract concerned

50.(2) Cessation of Railway's Liability: The Railway 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.

50.(3) Unfulfilled Obligations: Notwithstanding the issue of the Maintenance Certificate the Contractor and (subject to Sub-Clause (2) of this Clause) the Railway 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.

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 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 rates accepted in Bill(s) of Quantities 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 Contractor having signed delivered to the Engineer enclosing either a full account in detail of all claims he may have on the Railway 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 not covered under excepted matter i.e. Clauses 7(j), 8, 18, 22(5), 39.1, 39.2, 40A,

43(2), 45(i)(a), 55, 55-A(5), 57, 57A, 61(1), 61(2) and 62(1), 63(iv) and 63.2.11 of the Standard General Conditions of Contract or in any Clause (stated as excepted matter) of the Special Conditions of the Contract, 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 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 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.

51-A. 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 Standard 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. 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 Railway 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 Railway 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 Railway 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 Railway 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 Railway will be kept withheld or retained as such by the

Railways 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 company, the Railway 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 / company, as the case may be whether in his individual capacity or otherwise.

52-A 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 Railway, against any claim of this or any other Railway or any other Department of the Central Government in respect of 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 Railway in regard to terminated contracts may be made from the Final Bill, 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 Railway's 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 Railway will be kept withheld or retained as such by the Railway 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. 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 Railway 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 and sufficient discharge as aforesaid provided that nothing in this Clause contained shall be deemed to prejudice or effect any claim which the Railway 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 interse.

LABOUR

54. 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 thereunder 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.

54-A. 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.

55. Provisions of Payments of Wages Act: The Contractor shall comply with the provisions of the Payment of Wages Act, 1936 and the rules made thereunder 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.

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

55-A.(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.

55-A.(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.

55-A.(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.

55-A.(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.

55-A.(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 Engineer regarding the amount actually recoverable from the Contractor as stated above shall be final and binding on the Contractor.

55-B.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.

55-C (i) Contractor is to abide by the provisions of various labour laws in terms of above clause 54, 55, 55-A and 55-B of the Standard General Conditions 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 in Portal shall be done as under:

- (a) Contractor shall apply for onetime 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 Letter of Acceptances (LoAs) issued in his favour.
- (c) The contractor once registered on the portal, shall provide details of his Letter of Acceptances (LoAs) / 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.

(ii) 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."

55-D. 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 by Registering Officer of the concerned State Govt. (Labour Dept.). The Cess shall be deducted from contractor's bills as per provisions of the Act.

56. 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 arrangement to render all possible assistance.

57. 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.

57-A. 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.

58. Railway not to Provide Quarters for Contractors: No quarters shall normally be provided by the Railway for the accommodation of the Contractor or any of his staff employed on the work. In exceptional cases where accommodation is provided to the Contractor at the Railway's discretion, recoveries shall be made at such rates as may be fixed by the Railway for the full rent of the buildings and equipments therein as well as charges for electric current, water supply and conservancy.

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 creche (Bal-Mandir) where 50 or more women are employed at a time. Suitable sites on Railway 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 Railway. 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, bye-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 endeavours to

(i) 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

(ii) Security of property in the neighbourhood of the works. In the event of the Railway 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 Railway 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 or the Medical Staff of the Railway. Should the Contractor fail to make the adequate sanitary arrangements, these will be provided by the Railway and the cost thereof 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 Railway Medical Authority. 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 healthy sites as required by the Engineer, failing which within the time specified in the Engineer's requisition, the work may be done by the Railway and the cost thereof recovered from the Contractor.

59.(6) Treatment of Contractor's Staff in Railway Hospitals: The Contractor and his staff, other than labourers and their families requiring medical aid from the railway hospital and dispensaries will be treated as private patients and charged accordingly. The Contractors' labourers and their Families will be granted free treatment in railway hospitals and dispensaries where no other hospitals or dispensaries are available provided the Contractor pays the cost of medicines, dressing and diet money according to the normal scale and additional charges for special examinations such as pathological and bacteriological examination, X-Ray, etc. and for surgical operation.

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 Railway Medical Authority 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) Restrictions on the Employment of Retired Engineers of Railway 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 his Performance Guarantee as well as Security Deposit.

60.(1) Non-Employment of Labourers below the age of 15: The Contractor shall not employ children below the age of 15 as labourers directly or through petty Contractors or sub-contractors 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 (Proforma at Annexure-VIII) 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 this 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 is fit to work in the capacity stated in the certificate.

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 of 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 Railway to Determine the Contract: The Railway 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 therefor 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 shall admit and consider such claims as are deemed reasonable and are supported by vouchers to the satisfaction of the Engineer. The 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:

- (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 programme of work by a margin of 10% of the stipulated period, or
- (ix) Fail to Execute the contract documents in terms of Para 8 of the Instructions to Tenderers.
- (x) Fail to submit the documents pertaining to identity of JV and PAN in terms of Para 17.11 of Tender Form (Second Sheet) of Annexure I available in the Instructions to Tenderers.
- (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 under Clause 25 and 27 of these Conditions, or
- (xii) Fail to take steps to employ competent or additional staff and labour as required under Clause 26 of these Conditions, or
- (xiii) Fail to afford the Engineer or Engineer's representative proper facilities for inspecting the works or any part thereof as required under Clause 28 of these Conditions, or
- (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 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) Fail to adhere to the provisions of Para 16 of Tender Form (Second Sheet) of Annexure I of the Instructions to Tenderers, or provision Clause 59(9) of these Conditions.
- (xvi) 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 may serve the Contractor with a notice (Proforma at Annexure-IX) 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 (Proforma at Annexure-X or XII, as the case may be) 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 Annexure-XI or XIII, as the case may be) should be issued.

Note: Engineer at his discretion may resort to the part termination of contract with notices (Proforma at Annexure- IX, XII and XIII), only in cases where progress of work is more than or equal to 80% of the original scope of work.

62.(2) Right of Railway 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 available 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 clause 16(2) of these Conditions.

(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.

SETTLEMENT OF DISPUTES – INDIAN RAILWAY ARBITRATION AND CONCILIATION RULES

63. Conciliation of Disputes:

- (i) This clause is applicable in the tender having advertised value less than or equal to Rs 50 Crore.
- (ii) 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 "Chief Engineer" or "Divisional Railway Manager" through "Notice of Dispute" provided that no such notice shall be served later than 30 days after the date of issue of Completion Certificate by the Engineer. Chief Engineer or Divisional Railway Manager shall, within 30 days after receipt of the Contractor's "Notice of Dispute", notify the name of conciliator(s) to the Contractor.

- (iii) The Conciliator(s) shall assist the parties to reach an amicable settlement in an independent and impartial manner within the terms of contract.
- (iv) If the parties reach agreement on a settlement of the dispute, they shall draw up and sign a written settlement agreement duly signed by Engineer In-charge, Contractor and conciliator(s). When the parties sign the settlement agreement, it shall be final and binding on the parties.
- (v) The parties shall not initiate, during the conciliation proceedings, any arbitral or judicial proceedings in respect of a dispute that is the subject matter of the conciliation proceedings.
- (vi) The conciliation proceedings shall be terminated as per Section 76 of 'The Arbitration and Conciliation Act, 1996.

63.1 Matters Finally Determined by the Railway: 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 GM and the GM 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 matters for which provision has been made in Clauses 7(j), 8, 18, 22(5), 39.1, 39.2, 40A, 43(2), 45(i)(a), 55, 55-A(5), 57, 57A, 61(1), 61(2), 62(1), 63(iv) and 63.2.11 of the Standard General Conditions of Contract or in any Clause (stated as excepted matter) of the Special Conditions of the Contract, shall be deemed as 'excepted matters' (matters not arbitrable) and decisions of the Railway authority, thereon shall be final and binding on the Contractor; provided further that 'excepted matters' shall stand specifically excluded from the purview of the Dispute Adjudication Board (DAB) and Arbitration.

63.2 Dispute Adjudication Board (DAB): This clause is applicable in the tender having advertised value more than Rs 50 Crore.

63.2.1 Any dispute/s if not settled with the Engineer, shall be referred to DAB.

The DAB shall consist of a panel of three Retired Railway Officers, retired not below senior administrative grade (SAG). The DAB shall be formed within 90 days of signing of Contract Agreement. For this purpose, a panel of DAB members shall be maintained in the General Manager's office. The complete panel, which shall not be less than five members, shall be sent by Chief Engineer to the Contractor to nominate one member of the DAB from the panel as Contractor's nominee within two weeks of receipt of the panel. On receipt of Contractor's nominee, the Chief Engineer shall nominate one member from the same panel as Railway nominee for the DAB. Both above nominees shall jointly select presiding member of the DAB from the same panel.

63.2.2 The appointment of DAB shall be effectuated by way of a tri-partite agreement among the Railway, Contractor and the respective DAB members. The terms of the remuneration of each member shall be as fixed by Ministry of Railways from time to time. Each party shall be responsible for paying one-half of this remuneration.

63.2.3 If one or more of the members appointed refuses to act as DAB member, or is unable or unwilling to perform his functions as DAB member for any reason whatsoever or dies or in the opinion of the Chief Engineer fails to act without undue delay, the parties shall terminate the mandate of such DAB member and thereupon new DAB member shall be appointed in the same manner, as the outgoing DAB member had been appointed.

63.2.4 The appointment of any member may be terminated by mutual agreement of both Parties, but not by the Railway or the Contractor acting alone. Unless otherwise agreed by both the Parties, the appointment of the DAB (including each member) shall expire upon expiry of this Contract Agreement.

63.2.5 Before start of DAB proceedings, each DAB member shall give the following certificate to the Railway and the Contractor:

“I have no any past or present relationship in relation to the subject matter in dispute, whether financial, business, professional or other kind. Further, I have no any past or present relationship with or interest in any of the parties whether financial, business, professional or other kind, which is likely to give rise to justifiable doubts as to my independence or impartiality.”

63.2.6 DAB proceedings shall be conducted as decided by the DAB. The DAB shall give its decision within 90 days of a Dispute referred to it by any of the Parties, duly recording the reasons before arriving at the decision. The DAB shall decide the issue within terms and conditions of the contract. This time limit shall be extendable subject to the Parties mutual agreement.

63.2.7 The DAB decision shall not be binding on both the Parties. In case any party is not satisfied by the decision of DAB, then the aggrieved party may approach Arbitral Tribunal for arbitration proceedings.

63.2.8 No dispute shall be referred to Arbitral Tribunal unless the same has been referred to DAB for adjudication. However, in case DAB is not formed due to any reason, the disputes can be directly referred to Arbitral Tribunal to adjudicate the dispute.

63.2.9 In the specific cases of any misconduct by any of the members of the DAB, the parties shall have the right to specifically bring it to the notice of the DAB such conduct, through a statement filed with necessary documents in proof of such misconduct and the DAB, after taking NOTICE of such conduct initiate the replacement of the member concerned, in the same manner the member to be replaced was appointed.

63.2.10 Once the decision is given by DAB, DAB cannot review the decision at its own or on the request of one party, unless both parties agree for review of decision by DAB.

63.2.11 In case DAB decision is not challenged by either party within 180 days of receipt of decision of DAB, the decision shall be considered as final and parties would be barred for referring the same to Arbitral Tribunal for adjudication.

63.2.12 The obligation of the Railway and the Contactor shall not be altered by reasons of issue being or under reference to DAB.

63.2.13 The DAB shall conduct the proceedings at any convenient venue which shall be decided by DAB in consultations with parties.

63.2.14 It is a term of this contract that the Parties shall not approach any Court of Law for settlement of such disputes or differences unless an attempt has first been made by the parties to settle such disputes or differences through DAB and Arbitral Tribunal.

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 Railway of any certificate to which the Contractor may claim to be entitled to, or if the Railway 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 63.1 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)(a): 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 Railway, shall be referred to arbitration and other matters shall not be included in the reference.

64.(1)(ii)(b): The parties may waive off the applicability of Sub-Section 12(5) of Arbitration and Conciliation (Amendment) Act 2015, if they agree for such waiver in writing, after dispute having arisen between them, in the format given under Annexure XV of these conditions.

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 Railway.

64.(1)(iii)(b): The claimant shall submit his claims stating the facts supporting the claims alongwith 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.

64.(1)(iii)(c): The Railway 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, unless otherwise extension has been granted by Tribunal.

64.(1)(iii)(d): Place of Arbitration: The place of arbitration would be within the geographical limits of the Division of the Railway where the cause of action arose or the Headquarters of the concerned Railway or any other place with the written consent of both the parties.

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 defense 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 that the final bill is ready for payment, he/they will be deemed to have waived his/their claim(s) and the Railway 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 Railway 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) : Appointment of Arbitrator where applicability of section 12 (5) of Arbitration and Conciliation Act has been waived off:

64.(3)(a)(i): In cases where the total value of all claims in question added together does not exceed ₹ 1,00,00,000/- (Rupees One Crore), the Arbitral Tribunal shall consist of a Sole Arbitrator who shall be a Gazetted Officer of Railway not below Junior Administrative Grade, nominated by the General Manager. The sole arbitrator shall be appointed within 60 days from the day when a written and valid demand for arbitration is received by General Manager.

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 Gazetted Railway Officers not below Junior Administrative Grade or 2 Railway Gazetted Officers not below Junior Administrative Grade and a retired Railway Officer, retired not below the rank of Senior Administrative Grade Officer, as the arbitrators. For this purpose, the Railway will send a panel of at least four (4) names of Gazetted Railway Officers of one or more departments of the Railway which may also include the name(s) of retired Railway Officer(s) empanelled to work as Railway Arbitrator to the Contractor within 60 days from the day when a written and valid demand for arbitration is received by the General Manager.

Contractor will be asked to suggest to General Manager 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. The General Manager 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. General Manager 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 the Accounts Department shall be considered of equal status to the officers in Senior Administrative Grade of other departments of the Railway for the purpose of appointment of arbitrator.

64.3.(a).iii: The serving railway officer working in arbitral tribunal in the ongoing arbitration cases as per clause 64.(3)(a)(i) and clause 64.(3)(a)(ii) above, can continue as arbitrator in the tribunal even after his retirement.

64.(3)(b): Appointment of Arbitrator where applicability of Section 12 (5) of Arbitration and Conciliation Act has not been waived off:

(i) In cases where the total value of all claims in question added together does not exceed ₹ 50,00,000/- (Rupees Fifty Lakh), the Arbitral Tribunal shall consist of a Retired Railway Officer, retired not below the rank of Senior Administrative Grade Officer, as the arbitrator. For this purpose, the Railway will send a panel of at least four (4) names of retired Railway Officer(s) empanelled to work as Railway Arbitrator duly indicating their retirement dates to the Contractor within 60 days from the day when a written and valid demand for arbitration is received by the General Manager.

Contractor will be asked to suggest to General Manager at least 2 names out of the panel for appointment as arbitrator within 30 days from the date of dispatch of the request by Railway. The General Manager shall appoint at least one out of them as the arbitrator within 30 days from the receipt of the names of Contractor's nominees.

(ii) In cases where the total value of all claims in question added together exceed ₹ 50,00,000/- (Rupees Fifty Lakh), the Arbitral Tribunal shall consist of a Panel of three (3) retired Railway Officer, retired not below the rank of Senior Administrative Grade Officer, as the arbitrators. For this purpose, the Railway will send a panel of at least four (4) names of retired Railway Officer(s) empanelled to work as Railway Arbitrator duly indicating their retirement date to the

Contractor within 60 days from the day when a written and valid demand for arbitration is received by the General Manager.

Contractor will be asked to suggest to General Manager 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. The General Manager 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. General Manager 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 has served in the Accounts Department.

64.(3)(c)(i): 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 General Manager fails to act without undue delay, the General Manager 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) (c) (ii): (a) 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 proceedings shall normally be conducted on the basis of documents and written statements.

(b) Before proceeding into the merits of any dispute, the Arbitral Tribunal shall first decide and pass its orders over any plea submitted/objections raised by any party, if any, regarding appointment of Arbitral Tribunal, validity of arbitration agreement, jurisdiction and scope of the Tribunal to deal with the dispute (s) submitted to arbitration, applicability of time 'limitation' to any dispute, any violation of agreed procedure regarding conduct of the arbitral proceedings or plea for interim measures of protection and record its orders in day to day proceedings. A copy of the proceedings duly signed by all the members of tribunal should be provided to both the parties.

64.3(c)(iii): (i) Qualification of Arbitrator (s):

(a) Serving Gazetted Railway Officers of not below JA Grade level.

(b) Retired Railway Officers not below SA Grade level, one year after his date of retirement.

(c) Age of arbitrator at the time of appointment shall be below 70 years.

(ii) An arbitrator may be appointed notwithstanding the total number of arbitration cases in which he has been appointed in the past.

(iii) While appointing arbitrator(s) under Sub-Clause 64.(3)(a)(i), 64.(3)(a)(ii), 64.(3)(b)(i) & 64.(3)(b)(ii) 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 Railway servant(s) expressed views on all or any of the matters under dispute or differences. A certification to this effect as per annexure- XVI shall be taken from Arbitrators also. 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)(d)(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 therefrom.

64.(3)(d)(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)(d)(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 Railway Board from time to time and the fee shall be borne equally by both the parties, provided parties sign an agreement in the format given at Annexure XV to these conditions after/ while referring these disputes to Arbitration. Further, the fee payable to the arbitrator(s) would be governed by the instructions issued on the subject by Railway Board from time to time irrespective of the fact whether the arbitrator(s) is/are appointed by the Railway Administration or by the court of law unless specifically directed by Hon'ble court otherwise on the matter.

64.(7) Subject to the provisions of the aforesaid Arbitration and Conciliation Act 1996 and the rules thereunder and relevant para of the Standard General Conditions of Contract and any statutory modifications thereof shall apply to the appointment of arbitrators and arbitration proceedings under this Clause.

64.(8) In case arbitration award is challenged by a party in the Court of Law, 75% of award amount, pending adjudication by Court of Law, shall be made by party to other party. In case payment is to be made by Railway to Contractor, the terms & conditions as incorporated in the Ministry of Railways letter No. 2016/CE(I)/CT/ARB/3(NITI Aayog)/Pt. dated 08th Mar,2017 as amended from time to time, shall be followed. In case Contractor has to pay to the Railway, then 75% of the award amount shall be deducted by the Railway from the Contractor's bills, Performance Guarantee/ Security Deposit or any other dues of Contractor with the Government of India.

PART-II ANNEXURES

ANNEXURE – VII

Reference Para 17B

Registered Acknowledgement Due

PROFORMA FOR TIME EXTENSION

No. _____

Dated: _____

Sub: (i) _____ *(name of work)*.

(ii) Acceptance letter no. _____

(iii) Understanding/Agreement no. _____

Ref: _____ *(Quote specific application of Contractor for extension to the date received)*

Dear Sir,

1. The stipulated date for completion of the work mentioned above is _____. From the progress made so far and the present rate of progress, it is unlikely that the work will be completed by the above date (or 'However, the work was not completed on this date').

2. Expecting that you may be able to complete the work if some more time is given, the competent authority, although not bound to do so, hereby extends the time for completion from _____ to _____.

3. Please note that an amount equal to the liquidated damages for delay in the completion of the work after the expiry of _____ *(give here the stipulated date for completion with/without any liquidated damage fixed earlier)* will be recovered from you as mentioned in Clause 17B of the Standard General Conditions of Contract for the extended period, notwithstanding the grant of this extension. You may proceed with the work accordingly.

4. The above extension of the completion date will also be subject to the further condition that no increase in rates on any account will be payable to you.

5. Please intimate within a week of the receipt of this letter your acceptance of the extension of the conditions stated above.

6. Please note that in the event of your declining to accept the extension on the above said conditions or in the event of your failure after accepting or acting upto this extension to complete the work by _____ *(here mention the extended date)*, further action will be taken in terms of Clause 62 of the Standard General Conditions of Contract.

Yours faithfully

For and on behalf of the President of India

ANNEXURE – VIIA
(Reference Clause 40(A))

Registered Acknowledgement Due

**PROFORMA OF 14 DAYS NOTICE FOR OFFLOADING OF PART OF CONTRACT
WORK**

_____ RAILWAY
(Without Prejudice)

To

M/s _____

Dear Sir,

Contract Agreement No. _____

In connection with _____

In spite of repeated instructions to you by the subordinate offices as well as by this office through various letters of even no. _____, dated _____; you have failed to show adequate progress of work so as to complete the contract within the original / extended date of completion of contract and part(s) of contract work are yet to be started/ still lagging behind the agreed program of work, listed as under:

(Details of part(s) of work which is delayed and can be executed independently, to be mentioned).

2. Your attention is invited to this office/Chief Engineer's office letter no. _____, dated _____ in reference to your representation, dated _____.

3. As you have failed to abide by the instructions issued to commence the work /to show adequate progress of work, you are hereby given 14 days' notice in accordance with Clause 40A of the Standard General Conditions of Contract to deploy adequate resources i.e. *(the details of resource requirement, to be mentioned)* and commence / to make good the progress for part(s) of works detailed above, failing which action as provided in Clause 40A of the Standard General Conditions of Contract shall be commenced after expiry of 14 days' notice period viz. to offload few/ all part(s) of work mentioned above to any of the existing or new contractor without your participation and at your Risk & Cost, not exceeding the value of Performance Guarantee of this contract, which may please be noted.

Kindly acknowledge receipt.

Yours faithfully

For and on behalf of the President of India

ANNEXURE – VIIB
(Reference Clause 40(A))

Registered Acknowledgement Due

NOTICE FOR PART OF CONTRACT WORK OFFLOADED

_____ **RAILWAY**

(Without Prejudice)

To

M/s _____

Dear Sir,

Contract Agreement No. _____

In connection with _____

1. Fourteen days' notice under Clause 40A of the Standard General Conditions of Contract was given to you under this office letter of even no., dated _____; but you have taken no/inadequate action to deploy adequate resources to commence the part(s) of work/show adequate progress of the part(s) of work, mentioned therein.

As you have failed to abide by the instructions issued to commence the part(s) of work/show adequate progress of the part(s) of work even at the lapse of 14 days' notice period under Clause 40A of the Standard General Conditions of Contract, few part(s) of the work under the contract have been offloaded and being executed by other mode(s) at the cost detailed below:

Or,

1. Please refer your request letter no..... dated, wherein it was requested under clause 40 A of the Standard General Conditions of Contract to offload part(s) of works at your risk & cost. The details of part(s) of the work under the contract which have been offloaded and being executed by other mode(s) at the cost detailed below:

(List of Part(s) of work offloaded, Details of mode of execution of such offloaded work alongwith approximate cost thereof to be mentioned)

2. The final measurement of work(s) already executed for above part(s) of work recorded as per clause 45 (A) or/and 45 (B) of the Standard General Conditions of Contract is enclosed herewith.

3. The Bill(s) of Quantities for Part(s) of work offloaded is enclosed herewith.

4. The additional cost in execution of offloaded work through mode(s) mentioned in para (1) above is determined as Rs. _____, over& above the cost of execution under this contract (including the PVC amount payable as per contract, as on the date of issue of this notice). This additional cost shall be recovered from your next on account bill(s)

or any other dues payable to you under contract.

5. The Contract value gets reduced to Rs.....:

6. You are requested to continue with the balance work in the contract subsequent to offloading of above part(s) of work.

Kindly acknowledge receipt.

Yours faithfully

For and on behalf of the President of India

ANNEXURE – VIII

Reference Para 60.(2)

CERTIFICATE OF FITNESS

1. (a) Serial Number _____
(b) Date _____
2. Name of person examined _____
3. Father's Name: son/daughter of _____
Residing at _____
4. Sex _____
5. Residence: _____
6. Physical fitness _____
7. Identification marks _____
8. Date of birth, if available, and/or certified age _____
I certify that I have personally examined (name) _____ who is desirous of being employed in a factory or on a work requiring manual labour and that his/her age as nearly as can be ascertained from my examination, is _____ years.

I certify that he/she is fit for employment in a factory or on a work requiring manual labour as an adult/child.
9. Reasons for :
(a) Refusal to grant certificate, or _____
(b) Revoking the certificate _____

Signature or left hand

Thumb impression of the person examined.

Signature of Certifying Surgeon

Note: In case of physical disability, the exact details and cause of the physical disability should be clearly stated.

ANNEXURE – IX

(Reference Clause 62. (1)

Registered Acknowledgement Due

**PROFORMA OF 7 DAYS NOTICE FOR WORKS AS A WHOLE/ IN PARTS
(DETAILS OF PART OF WORK TO BE MENTIONED)**_____ **RAILWAY**

(Without Prejudice)

To

M/s _____

Dear Sir,

Contract Agreement No. _____

In connection with _____

In spite of repeated instructions to you by the subordinate offices as well as by this office through various letters of even no. _____, dated _____; you have failed to start work/show adequate progress and/or submit detailed programme for completing the work/part of work (details of part of work to be mentioned).

2. Your attention is invited to this office/Chief Engineer's office letter no. _____, dated _____ in reference to your representation, dated _____.

3. As you have failed to abide by the instructions issued to commence the work /to show adequate progress of work you are hereby given 7 days' notice in accordance with Clause 62 of the Standard General Conditions of Contract to commence works / to make good the progress, failing which further action as provided in Clause 62 of the Standard General Conditions of Contract viz. to terminate your Contract and complete the balance work without your participation will be taken.

Kindly acknowledge receipt.

Yours faithfully

For and on behalf of the President of India

ANNEXURE – X

Reference Para 62(1)

Registered Acknowledgement Due

PROFORMA OF 48 HRS. NOTICE FOR WHOLE WORK_____**RAILWAY**

(Without Prejudice)

To

M/s _____

Dear Sir,

Contract Agreement No. _____

In connection with _____

Seven days' notice under Clause 62 of the Standard General Conditions of Contract was given to you under this office letter of even no., dated _____; but you have taken no action to commence the work/show adequate progress of the work.

2. You are hereby given 48 hours' notice in terms of Clause 62 of the Standard General Conditions of Contract to commence works / to make good the progress of works, failing which and on expiry of this period your above contract will be rescinded and the work under this contract will be carried out independently without your participation and your Security Deposit shall be forfeited and Performance Guarantee shall also be encashed and any other consequences which may please be noted.

Kindly acknowledge receipt.

Yours faithfully

For and on behalf of the President of India

ANNEXURE – XI

Reference Para 62.(1)

Registered Acknowledgement Due/Standard Correspondence through IR-WCMS/Email on
registered IREPS Email

PROFORMA OF TERMINATION NOTICE**RAILWAY**

(Without Prejudice)

No. _____

Dated _____

To _____

M/s _____

Dear Sir,

Contract Agreement No. _____

In connection with _____

Forty eight hours (48 hrs.) notice was given to you under this office letter of even no., dated _____; but you have taken no action to commence the work/show adequate progress of the work.

Since the period of 48 hours' notice has already expired, the above contract stands rescinded in terms of Clause 62 of the Standard General Conditions of Contract and the balance work under this contract will be carried out independently without your participation. Your participation as well as participation of every member/partner in any manner as an individual or a partnership firm/JV is hereby debarred from participation in the tender for executing the balance work and your Security Deposit shall be forfeited and Performance Guarantee shall also be encashed.

The Final measurements of work executed by you against the said contract will be taken/started on at hls. at site. The measurement will be continued till all the measurement are taken. You are advised to be present at site on the above mentioned date and time to witness the measurements, otherwise measurements will be taken ex-parte and thereafter, variation (addendum & corrigendum) & final bill of work executed till date of termination based on ex-parte final measurements shall also be processed ex-parte.

Yours faithfully

For and on behalf of the President of India

ANNEXURE – XII

Reference Para 62.(1)

Registered Acknowledgement Due

PROFORMA OF 48 HRS. NOTICE FOR PART OF THE WORK.....

(DETAILS OF PART OF WORK TO BE MENTIONED)

RAILWAY

(Without Prejudice)

To

M/s

Dear Sir,

Contract Agreement No. _____

In connection with

1. Seven days' notice under Clause 62 of the Standard General Conditions of Contract was given to you under this office letter of even no., dated _____; but you have taken no action to commence the work/show adequate progress of the part of work.....(details of part to be mentioned).
2. You are hereby given 48 hours' notice in terms of Clause 62 of the Standard General Conditions of Contract to commence works / to make good the progress of works, failing which and on expiry of this period your above part of work.....(Details of part to be mentioned) in contract will be rescinded and the work will be carried out independently without your participation.
3. Your full Performance Guarantee for the contract shall be forfeited and you shall not be issued any completion certificate for the contract. However, no additional Performance Guarantee shall be required for balance of work being executed through the part terminated contract.
4. The contract value of part terminated contract shall stand reduced to

Kindly acknowledge receipt.

Yours faithfully

For and on behalf of the President of India

ANNEXURE – XIII

Reference Para 62.(1)

Registered Acknowledgement Due

**PROFORMA OF TERMINATION NOTICE FOR PART OF THE WORK.....
(DETAILS OF PART OF WORK TO BE MENTIONED)****RAILWAY**

(Without Prejudice)

No. _____

Dated _____

To

M/s _____

Dear Sir,

Contract Agreement No. _____

In connection with _____

1. Forty eight hours (48 hrs.) notice was given to you under this office letter of even no., dated _____; but you have taken no action to commence the work/show adequate progress of the part of work.....(details of part to be mentioned).
2. Your above part of work in contract(details of part to be mentioned) stands rescinded in terms of Clause 62 of the Standard General Conditions of Contract and the same will be carried out independently without your participation. Your participation as well as participation of every member/partner in any manner as an individual or a partnership firm/JV is hereby debarred from participation in the tender for executing the balance work
3. Your full Performance Guarantee for the contract shall be forfeited and you shall not be issued any completion certificate for the contract. However, no additional Performance Guarantee shall be required for balance of work being executed through the part terminated contract.
4. The contract value of part terminated contract stands reduced to

Kindly acknowledge receipt.

Yours faithfully

For and on behalf of the President of India

ANNEXURE – XIV
Reference Para 48.(3)

FINAL SUPPLEMENTARY AGREEMENT

1. Articles of agreement made this day _____ in the year _____ between the President of India, acting through the _____ Railway Administration having his office at _____ herein after called the Railway of the one part and _____ of the second part.
2. Whereas the party hereto of the second part executed an agreement with the party hereto of the first part being agreement Number _____ dated _____ for the performance _____ herein after called the 'Principal Agreement'.
3. 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.
4. And whereas the party hereto of the first part already made payment to the party hereto of the second part diverse sums from time to time aggregating to ₹ _____ including the Final Bill bearing voucher No. _____ dated _____ of value _____ duly adjusted as per price variation clause, if applicable (the receipt of which is hereby acknowledged by the party hereto of the second part in full and final settlement of all his /its claims under the principal agreement.

And whereas the party hereto of the second part have received sum of ₹ _____ through the Final Bill bearing voucher No. _____ dated _____ duly adjusted as per price variation clause (PVC), if applicable (the receipt of which is hereby acknowledged by the party thereto of the second part) from the party hereto of the first part in full and final settlement of all his/its disputed claims under 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 excluding the Security Deposit, the party hereto of the second part have no further dues of claims against the party hereto of the first part under the said Principal Agreement. It is further agreed by and between the parties that the 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.

(Applicable in case Final Supplementary Agreement is signed after release of Final Payment)

Or

And whereas the party hereto of the first part already made payment to the party hereto of the second part diverse sums from time to time aggregating to ₹ _____ through various On Account Bills (the receipt of which is hereby acknowledged by the party hereto of the second part).

And whereas the party hereto of the second part have received sum of ₹ _____ through various On Account Bills (the receipt of which is hereby acknowledged by the party thereto of the second part) from the party hereto of the first part and party hereto of the second part have accepted final measurements recorded on Page No..... to Page No.... of Measurement Book No.....and corresponding Final Bill duly adjusted as per price variation clause (PVC), if applicable, for full and final settlement of all his/its disputed claims under principal agreement.

Now, it is hereby agreed by and between the parties in the consideration of sums already paid through various On Account Bills and sums to be paid through Final Bill duly adjusted as per price variation clause (PVC), if applicable, based on accepted final measurements including the Security Deposit 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, the party hereto of the second part have no further dues of claims against the party hereto of the first part under the said Principal Agreement.

(Applicable in case Final Supplementary Agreement is signed before release of Final Payment)

5. 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 be deemed to be non-existent for all purposes.

Signature of the Contractor/s

for and on behalf of the President of India

Witnesses

ADDRESS: _____

ANNEXURE-XV

Reference Para 64.3 & 64.6

Agreement towards Waiver under Section 12(5) and Section 31A (5) of Arbitration and Conciliation (Amendment) Act

I/we..... (Name of agency/Contractor) with reference to agreement no..... raise disputes as to the construction and operation of this contract, or the respective rights and liabilities, withholding of certificate and demand arbitration in respect of following claims :

Brief of claim:

- (i) Claim 1- Detailed at Annexure-
- (ii) Claim 2 –
- (iii) Claim 3 –

I/we..... (post of Engineer) with reference to agreement no..... hereby raise disputes as to the construction and operation of this contract, or the respective rights and liabilities, withholding of certificate and demand arbitration in respect of following claims:

I/we.....do/do not agree to waive off applicability of section 12(5) of Arbitration and Conciliation (Amendment) Act.

Signature of Claimant_____ Signature of Respondent

Agreement under Section 31(5)

I/we..... (Name of claimant) with reference to agreement no..... hereby waive off the applicability of sub section 31-A (2) to 31-A (4) of the Arbitration and Conciliation (Amendment) Act. We further agree that the cost of arbitration will be shared by the parties as per Clause 64(6) of the Standard General Conditions of Contract.

.

Signature of Claimant_____ Signature of Respondent_____

*Strike out whichever not applicable.

ANNEXURE-XVI

Reference Para 64.(3)

Certification by Arbitrators appointed under Clause 63 & 64 of Indian Railways General Conditions of Contract

1. Name:
2. Contact Details:
3. Prior experience (Including Experience with Arbitrations):
4. **I do not have more than ten on-going Arbitration cases with me.**
5. I hereby certify that I have retired from Railways w.e.f. _____ and empanelled as Railway Arbitrator as per 'The Arbitration and Conciliation Act- 1996'.
6. I have no any past or present relationship in relation to the subject matter in dispute, whether financial, business, professional or other kind.
Or
I have past or present relationship in relation to the subject matter in dispute, whether financial, business, professional or other kind. The list of such interests is as under:
7. I have no any past or present relationship with or interest in any of the parties whether financial, business, professional or other kind, which is likely to give rise to justifiable doubts as to my independence or impartiality in terms of The Arbitration and Conciliation Act-1996.
Or
I have past or present relationship with or interest in any of the parties whether financial, business, professional or other kind, which is likely to give rise to justifiable doubts as to my independence or impartiality in terms of The Arbitration and Conciliation Act-1996. The details of such relationship or interests are as under:
8. There are no concurrent Circumstances which are likely to affect my ability to devote sufficient time to the arbitration and in particular to finish the entire arbitration within twelve months.

Or

There are Circumstances which are likely to affect my ability to devote sufficient time to the arbitration and in particular to finish the entire arbitration within twelve months. The list of such circumstances is as under:

ANNEXURE-XVII

Reference Para 16.(4)

Insurance Surety Bond for Performance Security

Name of the issuer of surety bond:

President of India,

Acting

through.....,

.....,

Railway.

Date:

.....

Surety Bond No:

Issue Date:

Amount of Bond:

Expiry Date:

WHEREAS, In consideration of the President of India acting through..... (Designation & address of contract signing authority),.....Railway,..... (hereinafter called "The Railway") having accepted the bid of WS XXXXX hereinafter called the contractor, for the work of XXX' under invitation for bids No XXXX, Dated XXXXX, Vide Letter of Acceptance No.....

AND

WHEREAS, the contractor is required to furnish Performance Security for the sum of ₹ XXXX **(Rupees XXXX Only)**, in the form of Surety Bond, being a condition precedent to the signing of the contract agreement.

PART - I

CHAPTER - III

PRICE AND PAYMENT

PART – I
CHAPTER - III
PRICES AND PAYMENTS

Para No.	Subject
1.3.1	Scope
1.3.2.1	Unit prices for materials
1.3.2.2	Unit prices for erection
1.3.2.3	Other price adjustments
1.3.2.4	Price variation
1.3.2.5	Quantities
1.3.3.1	Non-schedule items
1.3.3.2	Price of additional supplies
1.3.4.0	Payments and recoveries
1.3.5.0	Invoicing procedure
1.3.6.0	Payments for designs and drawings
1.3.7.0	Payments for supply and erection
1.3.8.0	Recoveries from the contractors
1.3.9.0	Reconciliation of materials
1.3.10.0	Mobilisation advance

Note: Many clauses, paragraphs, chapters are having relation with others. Due care has been taken while relating those. But if dispute arises at any stage then the decision of the Railway shall be final.

PART – I

CHAPTER – III

PRICES AND PAYMENTS

1.3.1.0 SCOPE:

This chapter deals with prices to be paid for supply and / or erection of various items of work or for supplies and other amounts payable in accordance with accepted schedules of prices and rates and terms and conditions of payment mentioned herein. This is a Works contract. The total prices for the completed items of work are the actual prices payable to the Contractor as per the terms and conditions of the Contract.

1.3.2.0

The unit rates given against various items of work in tender papers are the standard schedule of rates (S.O.R.). The tenderers are required to quote uniform percentage below / at par / above against the total estimated cost of work. The actual payment to be made against any item of SOR shall be derived after loading the SOR prices with the tenderer's quoted percentage. The prices so obtained shall be the unit prices for the various items of work given in SOR.

1.3.2.1.1 UNIT PRICES FOR MATERIALS:

The unit prices for supply indicated in the SOR are inclusive of the prices of materials including all incidental charges for transport, loading/unloading and handling of materials, commission for arranging dispatch by rail/road direct from manufacturer's factory and completing all necessary formalities in this respect, such as submission of forwarding notes, arranging placement of wagons, collection of railway receipt, conservancy charges as applicable from time to time, all insurance premium, bankers charges for bank guarantee, indemnity bonds inclusive of cost of stamps, etc. as also siding or shunting charges, if any levied by the Railway.

The unit prices includes all taxes, duties and levies (include Works Contract Tax) applicable on this works contract. Therefore, they should quote their prices taking into account the rate of taxes as leviable in the event of sale through works contract to the Central Railway Organization in that state and present tax structure applicable.

Necessary, Sales Tax concessional Form A/D and Octroi exemption certificate will be issued by Railways on written request of the contractor. No reimbursement on account of Octroi duty will be entertained by the purchaser.

The price shall also include provision for losses and wastages in transit and erection.

1.3.2.2 UNIT PRICES FOR ERECTION:

1. The unit prices for erection indicated in the SOR are inclusive of cost of erection and material testing to be done by the Contractor to the extent indicated in the Explanatory Note given in the tender papers and also cover all cost of administration of the contract, insurance premium, banker's charges for guarantees, cost of stamps, cost of storage, loading and unloading and handling of materials and for any road transport which the Contractor may use for carrying materials between his depot/s and site of work. The unit price includes cost of works and adjustments necessary to be done by the Contractor during or after the tests carried out.
2. Unit price for erection specially under traffic block and power block working has been included in the SOR as 100% extra(or as per the rate mentioned in the schedule) [on erection only] under separate Schedule Items.

3. Unit prices indicated in SOR also includes for cost of coal, fuel, oil, watch & ward etc, for erection work.

Cess for Construction works: 1% cess on total erection value for Building and other construction works shall be recovered from the contractor's Bill. This is As per Government Resolution (G.R.) vide No.BCA2009/PK 108/Labour 7-A, dt: 17/06/2010. and Dy.CE(C)/wks/CSTM's letter no.EW/187/465/VIII/ST, dt:14.06.2010.

1.3.2.3 OTHER PRICE ADJUSTMENTS:

No adjustment on account of variation in insurance and freight charges (road or rail) will be permitted.

1.3.2.4 PRICE VARIATION:

- 1.1 Price variation Clause (PVC) shall be applicable only for contracts of value (contract Agreement value) Rs.2 Crore or more, irrespective of the contract completion period.
- 1.1 The rates quoted by Tenderers and accepted by Railway Administration shall hold good till the completion of the work and no additional or individual claim will be admissible on account of fluctuation in market rates, increase in taxes or any other levies/tolls etc. except that payment /recovery for overall market situation shall be made:

As per 'Price Variation Clause 46(A) of GCC.

1.1-A :- PVC for Traction Power Transformer and Auto Transformer:-

Price variation, on account of variation in the price input cost of raw materials/components and labour cost as on the date of quotation and the same is deemed to be related to prices of raw materials as specified in the price variation clause given below. In case of any variation in these prices the price payable shall be subject to adjustment up or down in accordance with the following IEEMA formula.

$$P = \frac{P_o}{100} \left(10 + 29 \frac{C}{C_o} + 27 \frac{ES}{ES_o} + 7 \frac{IS}{IS_o} + 5 \frac{IM}{IM_o} + 7 \frac{TO}{TO_o} + 15 \frac{W}{W_o} \right)$$

Where,

P = Price payable as adjusted in accordance with the above formula.

P_o = Price quoted/confirmed.

C_o = Average LME settlement price of copper wire bars (refer notes)
This price is as applicable for the month, **ONE** month prior to the date of tendering.

ES_o = Price of CRGO Electrical Steel Lamination (refer note)
This price is as applicable on the 1st working day of the month, **ONE** months prior to the date of tendering.

IS_o = Average price of steel Plates 10mm thick (refer note)
This price is as applicable on the 1st working day of the month, **ONE** month prior to the date of tendering.

IM_o = Price of insulating Materials (refer notes)
This price is as applicable on the 1st working day of the month, **ONE** month prior to the date

of tendering.

TO=Price of Transformer Oil (refer notes)

This price is as applicable on the 1st working day of the month, **ONE** month prior to the date of tendering.

W₀ = All India average consumer price index number for industrial workers, as published by the Labour Bureau, Ministry of Labour, Govt. of India (Base: 2001 = 100)

This index number is as applicable on the first working day of the month, **THREE** months prior to the date of tendering.

For example, if date of tendering falls in June 2015, applicable prices of Copper Wire Bars (C₀), Transformer Oil (TO₀), Steel Plates 10mm thick (IS₀), CRGO Electrical Steel Laminations (ES₀) and Insulating material (IM₀) should be as on 1st May 2015 and all India average consumer price index no. (W₀) should be for the month of 1st March 2015.

The above prices and indices are as published by IEEMA vide circular reference number IEEMA(PVC)/PWR_TRF/_/_ **ONE** month prior to the date of tendering.

C=Average LME settlement price of copper wire bars (refer notes)

This price is as applicable for the month, **TWO** months prior to the date of delivery.

ES=Price of CRGO Electrical Steel Lamination (refer note)

This price is as applicable on the 1st working day for the month, **TWO** months prior to the date of delivery.

IS=Average price of Steel Plates 10mm thick (refer notes)

This price is as applicable on the 1st working day of the month, **ONE** month prior to the date of prior to the date of delivery.

IM=Price of Insulating Materials (refer notes)

This price is as applicable on the 1st working day of the month, **TWO** months prior to the date of delivery.

TO=Price of Transformer Oil (refer notes)

This price is as applicable on the 1st working day of the month, **ONE** month prior to the date of delivery.

W = All India average consumer price index number for industrial workers, as published by the Labour

Bureau, Ministry of Labour, Govt. of India (Base: 2001 = 100)

This index number is as applicable on the first working day of the month, **THREE** months prior to the date of delivery.

For example, if date of delivery in terms of clause given below falls in December 2015, applicable prices of Copper Wire Bars (C), Insulating material (IM), CRGO Electrical Steel Laminations (ES) should be as on 1st October 2015 and Transformer Oil (TO), Plates 10mm thick (IS), should be 1st November 2015 and all India average consumer price index no. (W) should be for the month of September 2015.

The date of delivery is the date on which the transformer is notified as being ready for inspection/dispatch (in the absence of such notification, the date of manufacturer's dispatch note is to be considered as the date of delivery) or the contracted delivery date (including any agreed extension there to), whichever is earlier.

Note : (a) All prices of raw materials are exclusive of modvatable excise/CV duty amount and

exclusive of all taxes (octroi etc., if any) transformers manufacturers import major raw materials like Copper, CRGO Steel Sheets and Plates etc. The landed cost of these imported raw materials includes applicable custom duty but exclusive of modvatable CVD.

(b) All prices are as on first working day of the month.

(c) The details of prices are as under :-

(i) The LME price of Copper Wire Bars (in Rs./MT) is the LME average settlement price of Copper Wire Bars converted into Indian Rupees with applicable exchange rate of SBI of the month. This price is the landed cost, inclusive of applicable customs duty only but exclusive of countervailing duty.

(ii) The price of CRGO is the price of CRGO Electrical Steel Lamination in Rs./MT suitable for Transformers of rating above 10 MVA or voltage above 33 KV up to 400 kV.

(iii) Price of steel is the average retail price of steel plates 10 mm thick as published by Joint Plant Committee (JPC) in Rs./MT as on 1st working day of month.

(iv) The price of Insulating materials (in Rs./Kg) of pre-compressed pressboard of size 10 mm thick, 3200 mm x 4100 mm is the average C&F price in free currency per MT converted into Indian Rupees with applicable exchange rates prevailing as on 1st working day of the month as quoted by primary suppliers. This price is the landed cost, inclusive of applicable customs duty only but exclusive of countervailing duty.

(v) The price of Transformer Oil (in Rs./K.Ltr) is the average price on ex-refinery basis as quoted by primary products for supply in drums.

(c) Some purchasers are purchasing oil immersed Transformers from manufacturers without first filling of oil. Oil for first filling is procured and filled by the purchasers. For such supplies PVC formula, excluding Oil will apply as under :

$$P = \frac{Po}{93} \left(10 + 29 \frac{C}{Co} + 27 \frac{ES}{ESo} + 7 \frac{IS}{ISo} + 5 \frac{IM}{IMo} + 15 \frac{W}{Wo} \right)$$

Where description of P, Po, C, ES, IS, IM, W etc. remain same as mentioned earlier.

NOTE:-

- (i) Rates accepted by the Railway Administration shall hold good till completion of work and no additional individual claim will be admissible on account of fluctuation in the market rates. Increase in taxes etc. except that payment/recovery for overall market situation shall be made as per price variation clause.
- (ii) No cognizance will be given for any sort of Fluctuations in taxes and other market condition etc. for any individual items for the purpose of making adjustments in payment except as provided for in the under noted clauses.

1.3.2.5.1 QUANTITIES:

The approximate estimated quantities of various items of work are included in Tender Schedule.

1.3.3.0 NON-SCHEDULE & ADDITIONAL SUPPLIES:

1.3.3.1 NON-SCHEDULE ITEMS:

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 price as may be mutually agreed with the Purchaser before commencement after obtaining the competent authority's approval and sanction.

1.3.3.2 PRICE OF ADDITIONAL SUPPLIES:

The additional supplies of individual scheduled items if necessary will be taken over from the contractor at the rate of the bid received / in conformity to clause no. 1.3.2.5

1.3.4.0 PAYMENTS AND RECOVERIES:

- a) No advance payment shall be made to the contractor. However, on account payment will be made against receipt of materials at Purchaser depots /Bhusawal, depending upon availability of storage space.] and also progressive payments will be made for each item of work during the erection stage. The payment terms shall be governed as under.
- b) Subject to any deductions or recoveries which the purchaser be entitled to make under the Contract, the contractor shall unless otherwise agreed to be entitled to get the following payments subject to conditions stipulated in subsequent paragraphs.
 - i) Payment for designs.
 - ii) Initial Payments for supply of materials.
 - iii) Progress payments for supply and erection
 - iv) Payments for additional supplies
 - v) Payment for provisional acceptance
 - vi) Payment for surplus materials taken over
 - vii) Final settlement.

1.3.5.0 INVOICING PROCEDURE:

The contractor shall submit his invoicing procedure for approval by the purchaser within 2 month from the date of receipt of Letter of Acceptance of Tender. Bills will be submitted by the contractor separately for different activities like supply and erection as per practice. Material supply will be normally accepted on completion of full quantum supply of all items against each schedule item. (Instructions of Engineer shall be final in this respect.) normally 5 to 6 on account / initial bills can be raised against each schedule item.

1.3.6.0 PAYMENTS FOR DESIGNS AND DRAWINGS:

Payments for designs and drawings shall be made on the basis of prices included in SOR. Payment shall be made in two installments, the first 50% will be paid on submission of approved design & drawing {8 copies} and balance 50% on submission of as erected /completion drawing as per clause no.2.5.8

1.3.7.0 PAYMENT FOR MATERIALS:

1.3.7.1 Payment for supply of materials:

Payments will be made for materials as specified below:

a) Payment shall be made for supply of equipment, components, fittings and materials required for the erection of the work in schedule as described below. No payment shall be made on supply of concreting materials. Payments made for supply will be subsequently be adjusted against progress payments [both supply and erection] and against payments on provisional Acceptance (Para 1.2.46). Payments shall be covered by a standing indemnity bond in the approved form given in tender paper.

b) Payments for equipments, components, fittings and materials required for execution of the work will be made up to 80 % of the supply value of the item indicated in the tender schedule to the contractor subject to complying the following:

i) Supplier's Challan and manufacturer's challan

ii) Inspection certificate granted by Purchaser's representative.

iii) Certificate of receipt of materials in good condition at Contractor's depot/s duly accepted by the Purchaser's Engineer.

iv) Comprehensive Insurance on supply.

v) Quality Assurance Documents

vi) Indemnity Bond

viii) The contractors supply items will be re-issued to the contractor at purchasers depot for erection purpose on submission of B. G. for an amount equal to 10% of value of supplied material claimed against each on account bill payment. Material will be issued in stages in such a way that at no point of time, the cost of material in contractors custody is more than the value of B.G. available with Railway.

The Bank Guarantee shall be in the prescribed form issued by any state Bank of India or from any Schedule Bank/Nationalised Bank duly conforming to the requirements and valid for one year beyond the date of completion of work. In the event of extension to the time of completion, the contractor shall extend validity of the Bank Guarantee. In case the contractor is unable to furnish the Bank Guarantee, equivalent cash would be held by the purchaser from the payments due to the contractor. If the amount of B.G. found to be inadequate to cover the cost of material required to be issued to the contractor to achieve the required progress of work to meet the completion period, contractor will be required to furnish additional B.G. In case, if contractor is not in a position to furnish additional B. G., equivalent cash would be withheld by the purchaser from payments due to the contractor. Additional B.G. or cash withheld will be returned / refunded soon after same is not required i.e. additional material issued to improve the progress work is erected. After completion of work, surplus material if any and not required by purchaser will be returned to contractor. B.G. will be returned if no material is outstanding after material reconciliation is done and all "On account Payments" are adjusted through progress payments.

B. G. will have to be furnished by the contractor at least 15 days in advance of the date of the issue of material as decided by the Purchasers representative".

1.3.7.2 'ON ACCOUNT' PAYMENTS:

General: On account payment will be made for equipments components, fittings and materials, as per SOR and schedule. On account payment made will subsequently be adjusted against progress payments of the Schedule.

Equipments, Components & Fittings:

On account payment for equipments, components, fittings and materials required for the execution of work will be made to the extent of 80 % of the value of materials required to complete the work of such equipments, components, fittings and materials as per Schedule on handing over of the material to purchaser at contractors' depot at Site or purchaser's depot at Bhusawal depending upon availability of storage space]. Procurement of stores shall be done in the order of their requirements as for erection work.

All invoices shall be accompanied by the following:

i) Supplier's Challan and manufacturer's challan.

ii) Inspection Certificate granted by purchaser's representative (RITES etc.).

iii) Certificate of receipt of materials in good condition at Contractor's depot or purchaser's depot duly accepted by the Purchaser's Engineers.

iv) Comprehensive Insurance on supply.

vi) Quality Assurance Documents.

vi) Submission of Indemnity Bond for entire cost of Contractor supply item.

viii) The contractors supply items will be re-issued to the contractor at purchasers depot for erection purpose on submission of B. G. for an amount equal to 10% of value of supplied material claimed against each on account bill payment. Material will be issued in stages in such a way that at no point of time, the cost of material in contractors custody is more than the value of B.G. available with Railway.

The Bank Guarantee shall be in the prescribed form issued by any state Bank of India or from any Schedule Bank/Nationalised Bank duly conforming to the requirements and valid for one year beyond the date of completion of work. In the event of extension to the time of completion, the contractor shall extend validity of the Bank Guarantee. In case the contractor is unable to furnish the Bank Guarantee, equivalent cash would be held by the purchaser from the payments due to the contractor. If the amount of B.G. found to be inadequate to cover the cost of material required to be issued to the contractor to achieve the required progress of work to meet the completion period, contractor will be required to furnish additional B.G. In case, if contractor is not in a position to furnish additional B. G., equivalent cash would be withheld by the purchaser from payments due to the contractor. Additional B.G. or cash withheld will be returned / refunded soon after same is not required i.e. additional material issued to improve the progress work is erected. After completion of work, surplus material if any and not required by purchaser will be returned to contractor. B.G. will be returned if no material is outstanding after material reconciliation is done and all "On account Payments" are adjusted through progress payments.

B. G. will have to be furnished by the contractor at least 15 days in advance of the date of the issue of material as decided by the Purchasers representative".

Limit for on account payments: The total on account payment shall not exceed 80% of the value of the materials required, for completion of the work. On Account payment for a particular component under a schedule item shall be made only after receipt of full quantity of such item required for respective schedule item. On account' payments will commence only when design and assessment-1 is approved by the Purchaser.

1.3.7.3 Progress payment for supply:

- (i) **80%** of supply on receipt of material after completing the condition of clause 1.3.7.1.
- (ii) **15%** of cost of material on successful erection.
- (iii) Balance **5%** of cost of material on successful commissioning of work and issue of provisional acceptance

Payment for erection:

- (i) 95 % of erection charges on successful erection of various items.
- (ii) Balance 5% on cost of erection charges on successful commissioning and issue of provisional acceptance

1.3.7.4 Payment on provisional acceptance:

On completion of the entire works, and issue of provisional acceptance certificate (Clause no.1.2.46) the contractor will receive balance payment as under:

1.3.7.5 Payment for additional supplies:

The contractor shall receive payment for additional supplies and erection in accordance with conditions stipulated in Para 1.3.3.1.

1.3.7.6 Payment for surplus material taken over: Deleted**1.3.7.7 Final settlement:**

On Successful completion of guarantee period and issue of certificate of final acceptance of entire installations, the security deposit will be refunded / returned to the contractor after adjustment of any dues payable by the contractor to the purchaser.

1.3.7.7.1 Design and Drawings:

Contractor shall ensure that all designs and as erected drawings (6 sets) and Soft copy in 4 nos. 16GB pendrive are submitted to the purchaser as mentioned in the tender schedule before claiming final bill.

1.3.8.0 RECOVERIES FROM THE CONTRACTORS:

All recoveries for materials supplied and services rendered by the Purchaser to the Contractor and other refunds due from the Contractor shall, unless otherwise specified, ordinarily be made by deductions from payments due to the Contractor covering the value of supply and erection during the progress payment for erection and from payment on provisional acceptance.

1.3.9.0 RECONCILIATION OF MATERIALS:

- a) The following procedure shall be adopted for the final reconciliation of the various equipments, materials, fittings and conductors supplied by the purchaser in terms of Para 1.2.20.
- b) All the materials supplied by the purchaser shall be correctly accounted for and quantities reconciled after 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 at Railway Depot in Bhusawal division.

- 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 Para 1.3.9 (f.)
- d) **Wires and conductors** – The Purchaser will supply to the contractor catenary wire, contact wire required for the work based on unit quantities, inclusive of erection allowances as the railway's scope of supply, together with lengths of finished wires and conductor for new items of work and length of wires and conductors as per Schedule (if mentioned).
- e) Out of the quantity as calculated above, the contractor shall return to the purchaser wires and conductors in longest possible bits or in the form of scrap, as calculated on the basis of final quantities of items of work of schedule. The total length of finished wires and conductors deemed to have been erected will be the difference, viz. As calculated on the basis of final quantities of Schedule and bare unit lengths specified together with the lengths of finished wires and conductors for new items of work. Notwithstanding the above, it is a general condition that the contractor shall return to the purchaser all wires and conductors which have been supplied to him but not utilized on work. Should he be unable to do so, the Purchaser shall be entitled to recover, the cost of such wires and conductors as specified in note at the end of Para 1.3.9(f). For the purpose of reconciliation the length of wires or conductor deemed to have been returned by contractor will be the actual length of cut pieces and/or the length calculated on the basis of actual rate of cut pieces/scrap and linear density.
- f) **Other equipments, fittings and components:** The Purchaser will supply the requirement of the various other equipments, components or fittings listed as per Rly's scope of supply in Annexure 'A' Part-1, Chapter-IV. If there are any shortage 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:

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 initial incidental charges together with supervision charges @ 12 ½% of the total cost inclusive of material freight and incidental charges, freight between the Purchaser's source of supply and the contractor's depot or rail head shall be to the contractor's account.

1.3.10 MOBILISATION ADVANCE :- -----Deleted-----

EFT Payment :- Successful tenderer should furnish the details of their respective BANK account for arranging the payment of bills through Electronic Fund Transfer (EFT) system to the associated account officer of Sr. AFA (C) Bhusawal.

1.3.11 “Letter of Credit” as Mode of Payment in Works Tenders:-

Special Condition regarding Inclusion of 'Letter of Credit' as Mode of Payment in Works Tenders or Service Tenders having advertising Tenders value of Rs.10 Lakh and above.(Railway Board Letter No.2018/CE-I/CT/9 Date 04/06/2018)	
(i)	For all the tenders having advertised cost of Rs.10 Lakh and above, the contractor shall have the option to take payment from Railways through a Letter of Credit (LC) arrangement .
(ii)	This option of taking payment through Letter of Credit (LC) arrangement has to be exercised in IREPS (Indian Railway Electronic Procurement System-the e-application on which tenders are called by Railways) by the tenderer at the time of bidding itself and the tenderer shall affirm having read over and agreed to the terms and conditions of the LC option .
(iii)	The option so exercised, shall be an integral part of the bidder's offer.
(iv)	The above option of taking payment through Letter of Credit (LC) arrangement, once exercised by tenderer at the time of bidding, shall be final and no change shall be permitted, thereafter, during execution of contract.
(v)	<p>In case tenderer opts for payment through LC, following shall be the procedure to deal release of payment through LC:</p> <p>(a) The LC shall be a sight LC.</p> <p>(b) The contractor shall select his Advising/Negotiating bank for LC. The incidental cost towards issue of LC and its operation thereof shall be borne by the contractor.</p> <p>(c) SBI, New Delhi, Main Branch will be the nodal branch for issue of LCs based on online requests received from Railway Accounts Units for tenders opened in financial year 2018-19. SBI branches where the respective Railway Accounts Office has its Account (Local SBI branch) will be the issuance/reimbursing branch for LC issued under this arrangement. The Bank shall remain same for this tender till completion of contract. The incidental cost @0.15 % per annum of LC value, towards issue of LC and operation thereof shall be borne by the contractor and shall be recovered from his bills.</p> <p>(d) The LC shall be opened initially for duration of 180 to 365 days in consultation with contractor. The LC shall be extended time to time as per the progress of the contract, on the request of the contractor. The value of LC to be opened initially as well as extended thereafter shall be finalised by the engineer in consultation with the contractor on the basis of expected progress of work.</p> <p>(e) The LC terms and conditions shall inter-alia indemnify and save harmless the Railway from and against all Losses, claims and demands of every nature and description brought or recovered against the Railways by reason of any act or omission of the contractor, his agents or employees, in relation to the Letter of Credit (LC). All sums payable/borne by Railways on this account shall be considered as reasonable compensation and paid by contractor.</p> <p>(f) The LC terms and conditions shall inter-alia provide that Railways will issue a Document of Authorization (format enclosed as Annexure-2) after passing the bill for completed work , to enable contractor to claim the authorized amount from their bank .</p> <p>(g) The acceptable, agreed upon document for payments to be released under the LC shall be the Document of Authorisation.</p> <p>(h) The Document of Authorisation shall be issued by Railway Accounts Office against each bill passed by Railways.</p> <p>(i) On issuance of Document of Authorisation, a copy of Document of Authorisation shall be posted on IREPS for download by the contractor . A digitally signed copy of Document of Authorisation shall also be sent by Railway Accounts Office to Railway's bank (Local SBI Branch).</p> <p>(j) The contractor shall take print out of the Document of Authorisation available on IREPS and present his claim to his bank (advising Bank) for necessary payments as per LC terms and conditions. The claim shall comprise of copy of Document of Authorization, Bill of Exchange and Bill.</p> <p>(k) The payments against LC shall be subject to verification from Railway's Bank (Local SBI Branch).</p> <p>(l) The contractor 's bank (advising Bank) shall submit the documents to the Railway's Bank (Local SBI Branch).</p>

	<p>(m) The Railway's Bank (issuing bank) shall, after verifying the claim so received w.r.t the digitally signed Document of Authorisation received from Railway Accounts Office, release the payment to The contractor's bank (advising Bank) for crediting the same to contractor's account.</p> <p>(n) Any number of bills can be dealt within one LC, provided the sum total of payments to contractor is within the amount for which LC has been opened.</p> <p>(o) The LC shall be closed after the release of final payment including PVC amount, if any to the Contractor.</p> <p>(p) The release of performance guarantee or security deposit shall be dealt directly by Railway with the Contractor i.e. not through LC.</p>
(2)	For opening of LC, executive department shall make a request Letter to concerned Accounts Department on a format placed as Annexure -1
(3)	Necessary Changes in IREPS and IPAS e-application have already been carried out. for having option for payment to contractors through LC.

* * * * *

	Annexure-1
	Request Letter from Executive Branch to Accounts Office for opening of LC
	Office of -----, -----Railway No.----- Date-----
	Sub:- Opening of LC Ref:- Supply Order/ Contract Agreement No. It is requested to open a sight LC against the above referred Order / Agreement in favour of -----The details of beneficiary are as under -
(i)	Name of Contractor /Supplier -
(ii)	Vendor Code
(iii)	Address
(iv)	Tender No.
(v)	Contract Agreement No.
(vi)	Description of Goods/Service
(vii)	Value of Contract
(viii)	Stages of payment
(ix)	Expected payment within 6 months (LC Amount)
(x)	Beneficiary bank details a) Bank name b) Address c) Account No. d) IFSC code
(xi)	Validity/Period for which LC is to be opened
	It is certified that the Supplier/ Contractor has exercised the option of taking payment due against the tender through LC arrangement in IREPS portal at the time of bidding itself and the option has been flagged in the IREPS. This has the approval of -----
	(Signature) Name----- Designation----- (Official Seal)

Annexure-2

LCDA No. (18DIGIT IPAS GENERATED No.)

Date-----

DOCUMENT OF AUTHORIZATION

Reference (i) Works Contract /Supply Contract No.-----Date-----

(ii) Inland Letter of Credit No.----- Date-----

This document is issued against Contract No.----- (From IREPS) ----- Dated-
 ----- for Supply/Work of----- Description of Goods/
 Work From IREPS-----

The beneficiary or the aforementioned Letter of Credit M/S.....(Name and Vendor code)----- (Vendor code-----as per IREPS -----) is entitled to receive payment aggregating INR---\$\$\$----- (From Abstract of Bill Passed) out of a total LC Amount of -----INR----- (From Master Table of LC opened)----- against the first/second commercial Invoice No.(From IPAS-----Dated----- From IPAS---For INR (From IPAS-----raised against the above contract from State Bank of India--- ----- (Branch) LC Master Table)-----on the strength of this Certificate.

The details of payment already made to the beneficiary under this Letter of Credit are as follows:						
S.No.	Invoice No.	Invoice Date	Invoice Amount (INR)	LCDA No.	LCDA Date	Amount Paid (INR)
Total Paid						

This Payment---\$\$\$-----

LC Balance AFTER THIS PAYMENT-----

Signature of authorized Railway authority

Name-----

Designation-----

(Official Seal)

PART - I

CHAPTER - IV

EXPLANATORY NOTES, SPECIFICATIONS AND DRAWINGGS.

PART - I
CHAPTER - IV
EXPLANATORY NOTES OF SCHEDULE
SECTION - I - GENERAL

1.4.1 Explanatory notes for various items of work in Schedule are given below in section – 2 of this chapter.

- 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. 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 of work, indicated herein, except where otherwise specified for materials supplied by the Purchaser.
- 1.4.3 In the explanatory notes given in Section-2 of 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, forgings, 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 Section-2 of 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 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 Section-2 of this chapter under various items where necessary.
- 1.4.6 Reconciliation of materials supplied by the Purchaser (See Para 1.3.9.0):
- (a) The following procedure shall be adopted for the final reconciliation of the various equipments, materials, fittings and conductors supplied by the Purchaser in terms of Para 1.2.20.
 - 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 Contractor.
 - (c) to (e) Deleted.
 - (f) **Other equipment, fittings and components:** The Purchaser will supply the requirement of the various other equipment, components or fittings listed in Annexure-A). If there are any shortage 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: 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 at 12¹/₂% 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 to the contractor's account.

SECTION - 2: ITEM WISE PARTICULAR

- 1) Notwithstanding anything to the contrary in this section, the entire requirements of the equipments components and fittings, for the work, listed in Annexure-A, will be supplied by the Purchaser to the Contractor. The prices in the Schedule of rates shall be exclusive of cost of supply of these items (Railway's supply) mentioned in Annexure-A.
- 2) In the case of wires, conductors, etc., the prices for erection shall include any assembly work to be done in the Contractor depot prior to erection at site, such as fabrication of droppers etc. to shapes and sizes required.
- 3) Against each schedule item, the contractor will not supply only those items which are specifically mentioned [for non-inclusion] in explanatory notes/provided for in Annexure-A. The whole work shall be carried out as per latest RDSO/CORE/CEE, C.RLY's drawings and specifications as per instructions of ENGINEER or his representative and all components given in drawings/specifications and maintenance instructions of assembly/sub assembly/fittings/GAD etc. shall be considered included in the scope of schedule item. List of all items included in each schedule item is not given and it is presumed that all participants in this tender are well experienced in OHE electrification with 2 x 25 KV, AC, 50 Hz., single phase projects of Railways [for facilitating movement of trains] as per latest RDSO/CORE drawings.
- 4) All the materials / equipment supplied by the contractor shall be of make approved by RDSO / CORE. The quantity should be procured as per the category of approved vendors.
- 5) Type Test / Prototype Approval: Contractor should submit the copies of type test certificate or the proto type approval of equipment or items supplied. Such test reports shall be for the tests witnessed by RDSO / CORE / CEE of Railways. In case of non-availability of such test reports or proto type approvals, the type test for such equipment shall be conducted or proto type approval for items shall be obtained as approved by CEE (C). No additional payments in any form shall be made for carrying such type tests or proto type approvals.
- 6) All the fasteners, up to 16 mm diameter except for Bonding Work, used in subject work, shall be of Stainless Steel as per relevant RDSO / CORE specifications.
- 7) **Also, Forged steel OHE fittings / components in place of MCI and compression type terminal lugs, shall only to be used at all places or as per latest guideline issued from time to time.**

Part-1- Part –A-Schedule for 2X25 KV Scott Connected TSS (Single Line)

Item No. 1: Design & drawing of traction sub station

The price shall cover on a flat rate basis per traction substation (V-connected/Scott Connected) of system voltage 220 or 132 or 110 or 66/2x25 kV for survey, investigation of soil bearing pressure, soil resistivity, foundation detail, preparation of cross section drawings, preparation of general arrangement drawings, detailed layout of equipment, bus-bar arrangement and connectors/connections and insulators, layout of cable trenches outdoor and inside the control room, layout of earthing system and earth connections, layout of earth screen wire, design of supporting structures for equipments, detailed drawings for steel work and structural support, suitable concrete pedestals, plinths and foundations for equipment and structural support and drawings/designs for equipment, components, fittings and materials. The price shall include supply of requisite number of copies of all drawings, including completion drawings as specified by the purchaser in connection with supply, erection, testing, and commissioning.

Note : The design for Oil soak pit and drain water sump will also be got approved from the purchaser.

Item No. 2: Design & drawing of feeding post .

The price shall cover on a flat rate basis per feeding station, survey, investigation of soil bearing pressure, preparation of cross section drawings, preparation of general arrangement drawings, detailed

layout of equipment, bus-bar arrangement and connectors/connections and insulators, layout of earthing system and earth connections, cable run layout, detailed designs and drawings for steel work and structural support, suitable concrete plinths for equipment and drawings for equipments, components, fittings and materials supplied by the Contractor/ purchaser. The price shall include supply of requisite number of copies of all drawings, including completion drawings as specified by the purchaser.

Item No. 3: Supply & Erection of 25 KV DO fuse switch assembly.

The price shall cover supply, erection, and connecting up of 25kV drop-out fuse switches for 5/10/25/50/100 kVA capacity Auxiliary (LT Supply) Transformers complete with all mounting accessories including terminal connectors. It shall also include the erection of insulators, DO fuse switch operating pole and fuse links. 25kV Drop out fuse switches shall conform to RDSO specification No. ETI/PSI/14 (1/86) with A&C Slip No. 1 or latest amendments. The supply of 25 kV Post Insulator covered in item No. 4(a).

Item No. 4: Supply & Erection of 132kV termination with disc insulator & adjustor.

The price shall cover supply and erection of all materials for the termination of a single ACSR conductor (61/3.18 mm ZEBRA) strung-bus between gantries/portals, including anchor fittings, single clevis assembly, anchor double straps, string of appropriate numbers of Disc Insulators required as per system voltage, strain clamps and arcing ring, adjusters and other fittings to complete the assembly. The assembly shall be of adequate breaking strength in accordance to the latest RDSO spec./drawing.

Item No. 5:-Supply & Erection of 132 kV termination with disc insulator & without adjustor.

The price shall cover supply and erection of all materials for the termination of a single ACSR conductor (61/3.18 mm ZEBRA) strung between gantries/portals, including anchor fittings, single clevis assembly, anchor double straps, string of appropriate numbers of Disc Insulators required as per system voltage, strain clamps and arcing ring, without adjusters and other fittings to complete the assembly. The assembly shall be of adequate breaking strength in accordance with the latest RDSO spec./drawing.

Item No. 6: Supply and erection of 50 kV termination without adjuster complete with disc insulators.

The price shall cover supply and erection of all materials for the termination of a single ACSR conductor (61/3.18 mm ZEBRA) strung between gantries/portals, including anchor fittings, single clevis assembly, anchor double straps, string of appropriate numbers of Disc Insulators required as per system voltage, strain clamps and arcing ring, without adjusters and other fittings to complete the assembly. The assembly shall be of adequate breaking strength in accordance with the latest RDSO spec./drawing.

Item No. 7: Supply without insulator and erection of materials for termination of copper cross feeder with gantries.

The termination of one cross feeder at both ends constitutes one set. The supply of 9-tonne Insulator assembly covered in item No. 4(b)/4(c)/4(d) .

Item No. 8: Supply and installation of 250 AH, 110 V low maintenance lead acid (LMLA) batteries set with 2 nos. of suitable battery charger (1 set = 1 battery set & 2 nos. battery charger). battery charger. Battery make -EXIDE

The price shall cover supply, erection, testing & commissioning of Lead Acid Battery 110 V, 250Ah low-maintenance lead-acid battery complete with battery stand, Electrolyte and Tool Board, Accessories, connectors with thermometer, hydrometer & wrench etc. as per latest RDSO specification. The price for erection shall include installation, connecting up, charging, testing and commissioning of the battery. 110V, 250 AH low-maintenance lead-acid batteries shall conform to the latest RDSO specification.

The price shall also cover supply, erection, testing & commissioning of 02 nos. suitable battery chargers as per RDSO specification (TI/SPC/PSI/200-250/CHGR/0210) or latest amendments, for charging of 110 V, 250 Ah lead acid battery & connecting it.

Item No. 9: Transportation & Erection of 13 Mtrs.(52/60KG) release long Rails from nominated place with in 10 KM area to works site.

The price shall cover transportation of rail pieces of 13 meters long supplied by the railway from the nearest depot to TSS / SP / SSP. The price shall also cover the loading and unloading of rail pieces.

Item No. 10: Supply & Erection of 132 KV/2x55KV, 60/84/100MVA, ONAN/ONAF, three phase scott connection Traction Power Transformer

The power transformers, complete with all accessories including oil (which may be in separate drums/containers) will be handed over by the purchaser at the sub-station premises. The Contractor shall bring the transformer (Scott connected / V-connected) to its correct position on the foundation and erect all the accessories, check-up the alignment, and make connections of HV and LV terminals to the bus-bars. The Contractor shall carry out oil filtration and pre-commissioning tests as approved by the Purchaser and commission the transformers strictly in accordance with the instructions of the transformer manufacturer or his commissioning Engineer at the site to the complete satisfaction of the Purchaser. The Contractor shall be held responsible to ensure that the work is carried out to the highest standards, in accordance with the relevant codes of practice and any special conditions/guidelines/requirements as laid down by the manufacturer of the transformer are properly complied with. The contractor shall notify the manufacturer regarding the likely date of commissioning, one month in advance, so that the manufacturer can depute his representative, if so desired by him at his own cost, for warranty obligation purposes. Notwithstanding availability of manufacturer's representative or otherwise, it shall be the contractor's responsibility to ensure that the equipment is commissioned as per laid down procedure. However, in case of any extra cost being incurred in this regard, due to delay on the part of the Contractor the same shall be recovered from the Contractor. The Contractor shall make his own arrangements for oil filtration equipment as well as power supply required for the same. All necessary tools, equipment, instruments required for carrying out necessary checks and tests and commissioning of the transformer shall be arranged by the Contractor.

Item No.11: Concrete for foundation and trench in hard soil.&

Item No. 12: Concrete for foundation and trench in rock.

The price shall cover excavation, supply and handling of all materials and accessories, temporary arrangements for excavation in hard soil and concrete/masonry drains/walls requiring use of chisel and hammer for item 2(a) or requiring blasting for item 2(b), shoring and shuttering where necessary, casting concrete including framework, grouting gantry/portal columns and steel supports and finishing the top of the concrete foundation with the required slope/muff. The price shall include dismantling of all connected temporary arrangements, backfilling required, and removal of soil. The Purchaser's Engineer shall certify where use of chisel and hammer or blasting has been necessary. The Contractor shall arrange for the supply of explosives and all tools and plants for blasting operations at his own cost. If half or more of the depth and width of excavation is in hard soil or rock, concrete, /masonry/drains/walls or rock, the entire foundation shall be paid for under item 2(a) or 2(b); if it is less than half, payment for the entire foundation shall be made at the rate for the type of soil in which the majority of the foundation is placed. The price shall include the cost of cement also. Cement shall not be supplied by the Rlys.

NOTE: For measurements for items 2(a) & 2(b):

The payable volume of the foundations under item 2(b) shall be limited to the designed one as shown in the drawings for which the hole has been blasted, irrespective of the actual configuration assumed by the latter due to blasting. The depth of excavation shall be measured from the formation level of the substation to the maximum excavated point

Item No.13:Concrete for foundation other than hard soil and rock.

The price shall include all work mentioned in item 2(a) in all classes of soil, including black cotton and loose soils, except hard soil, concrete/masonry/drains/walls, and rock. The price shall include the cost of cement also. Cement shall not be supplied by the Rlys.

Item No.14:Reinforced concrete for foundation & trench

The price shall cover excavation and all reinforced concrete work for foundations, including the supply

of steel for reinforcement and other materials, including bending/binding, laying of reinforcement, shoring and shuttering where necessary, casting concrete including framework where necessary, grouting, and finishing the tops of foundation blocks with the required slope/muff. The price shall include dismantling of all connected temporary arrangements, backfilling as required, and removal of soil. The price shall also cover all concrete work for cast-in-situ piles and pedestals/columns for mounting equipment. The volume of cast-in-situ piles and pedestal columns shall be added to the volume of the foundation block for purposes of payment. Dowel bars will not be considered as reinforcement for the purpose of this item. The price shall include the cost of cement also. Cement will not be supplied by Rlys.

Item No.15: Reinforced concrete for cable trench covers.

The price shall cover casting of cable trench covers in reinforced concrete as per the latest relevant RDSO drawing. The cable trench covers will be cast in an angle iron frame as per the latest relevant RDSO drawing. The price shall include the supply of steel for reinforcement, angle iron for the framework, fabrication of the angle iron frame, etc. The price shall include positioning and dressing up of the trench covers, if required. The price shall include the cost of cement also. Cement will not be supplied by Railways.

Item No.16: Reinforced brick work for baffle wall

The price shall cover excavation and construction of reinforced brickwork laid in cement mortar 1:3 mix for the baffle wall. The price shall include the supply of steel for reinforcement and other materials. The price shall also include bending/binding and laying of reinforcement, shoring, shuttering, and scaffolding arrangement required for the construction of the brick wall and its curing. The price shall also include dismantling of all connected temporary arrangements, backfilling required, and removal of spoil. The price shall include the cost of cement also. Cement will not be supplied by Railways.

Item No.17: Plastering of brick work.

The price shall cover supply and handling of all materials, scaffolding arrangements, raking out joints, curing and finishing of plaster (12 mm. thicknesses with cement mortar 1:4 mix.) on the Baffle wall. The price shall also include dismantling of all connected temporary arrangements and removal of spoil. The price shall include the cost of cement also. Cement will not be supplied by Railways.

Item No.18: Supply and spreading of gravel / ballast in the switch area

The price shall be per cum rate and shall cover supply and spreading of uniformly graded gravel/ballast of size 20/25mm, in the outdoor switch yard after completing all the works and levelling the switch yard area, but before commissioning of the sub-station. The gravel/ballast shall be of good quality and free from any dust and dirt. Prior approval of ballast shall be taken from the Purchaser for the gravel samples. The gravel/ballast shall be spread out uniformly to a depth of 10 cm. over the area indicated by the Purchaser's Engineer.

Item No.19: Insulator for cross feeder

The price shall cover only supply of 9 tonne insulator assembly (Composite CD-1600 mm) against each Item required for execution of work covered under Items No. **No. 8(a), 8(b) & 8(c)**. Erection cost of insulators are inclusive in Items **No. 8(a), 8(b) & 8(c)**.

Item No.20: Supply & Erection of 25kV Support/post Insulator

The price shall cover the supply and erection of a 25kV solid core post insulator to support Aluminum bus-bars. It shall include supply of fixing bolts, nuts, locknuts, washers and studs etc. It shall also cover-erection of all components required for the assembly including post insulator. Bus-bar clamps/jumper clamps for clamping the bus-bars/jumpers shall be paid under item 33, 34 & 35.

Item No.21: Supply & Erection of 50/55 KV Support Insulator.

The price shall cover supply and erection of 220kV/132kV/110kV/66kV/50kV support insulators. It shall include supply of fixing bolts, nuts, locknuts, washers and studs etc. It shall also cover-erection of all components required for the assembly including post insulator. Bus-bar clamps / jumper clamps for clamping the bus-bar shall be paid under item 33, 34 & 35.

Item No.22:Supply and erection of 132 Kv Support insulator

The price shall cover supply and erection of 220kV/132kV/110kV/66kV/50kV support insulators. It shall include supply of fixing bolts, nuts, locknuts, washers and studs etc. It shall also cover-erection of all components required for the assembly including post insulator. Bus-bar clamps / jumper clamps for clamping the bus-bar shall be paid under item 33, 34 &35 .

Item No. 23: Supply & erection of galvanization steel structure including Traction mast, main masts, fabricated steel other than mast ,SPS , Tower gantries ,portal, supporting structures & small part steel work.

The price shall cover supply, fabrication, galvanization and erection of steel gantries/portals, required in the traction substation (TSS)/FP/SP/SSP. The price shall include alignment setting and grouting of steel work and supply of all necessary galvanized steel bolts, nuts, lock-nuts, washers etc. wherever required as per approved designs and drawings and assembly of the fabricated steel work at site to the extent necessary. The calculated weight to be considered for payment under this item included in relevant drawings at the time of submitting designs for approval of the Purchaser.

Item No. 24:Supply & erection of earth electrode

The price shall cover supply and erection of an earth electrode, as per latest relevant RDSO specification/drawing. The price shall cover the provision of a protective concrete box with removable cover as shown in the drawing. The price shall include the testing of earth value and painting the particulars on the box.

The price shall be inclusive of concrete box with cover for this item.

Item No. 25: Supply and erection of earth bus 75x8 mm. MS strip laid in the ground.

The price shall cover supply and installation per meter length of 75x8mm mild steel flat, buried at a depth of 60cm below ground level. The price shall also cover connections of the steel flats to the earth electrodes to constitute the main earth ring and to the earthed terminals of the 220 kV or 132 kV or 110 kV or 66 kV/ 25kV transformers and metallic frame work/ structure of various equipments etc. as required.

Item No. 26: Supply and erection of earth bus 75x8 mm. MS strip laid exposed.

The price shall cover supply and installation per meter length of 75x8 mm mild steel flat, painted all around with two coats of painting to colour grass green shade-218 of IS: 5 or latest passing through cable trench or exposed above ground level. The price shall also cover the connections of the steel flats to the earth electrodes, to constitute the main earth ring and to the earthed terminals of the various equipment as required.

Item No. 27: Supply & Erection of 8/6 SWG GI wire for earthing

The price shall cover supply, shaping and erection of 8 / 6 SWG G.I. wire per meter used for earthing of control panels, L.T. AC and DC distribution boards, battery chargers, etc. at sub-station control rooms. The requirement of fencing panel earthing to the nearest fencing upright shall also be included and paid for under this item as per requirement of purchaser.

Item No. 28: Supply & Erection of 32 mm dia earth rod for earth mat

The price shall cover supply and installation per meter length of bare mild steel rod of dia 32mm to be buried at a depth of 60cm. below the ground level to form the earthing grid & connected to earth electrodes. The price shall also cover jointing of the M.S. rods to form an earthing grid and connection to M. S. flats for system earthing as per latest relevant standard.

Item No. 29: Supply , erection and termination of earth screen wire of size 19/2.5mm.

The price shall cover supply and stringing per meter length of galvanised steel stranded wire. It shall include the supply and erection of suitable terminations using strain clamps adjuster (on one side only) etc. It shall also include connecting by means of suitable terminal spades, the end of the earth screen wire to the main members of the columns of portals gantries across which these wires are strung or to suitable M.S. flat earth leads. For purposes of payment the clear span between the structures on which earth wire

is run shall be adopted. The clear span will be rounded off to the nearest meter (0.5m and below being ignored).

Item No. 30: Supply and erection fencing panel at substation for TSS

The prices shall include supply and erection of fencing panels as per latest relevant RDSO drawing included in Annexure-1, painted with two coats of red oxide zinc chromate primer and finished with two coats of aluminium paint to IS:2339 or latest. The prices shall not include supply and erection of fencing uprights, anti-climbing devices but shall include the cost of fasteners and the price shall be for a meter length of the panels, measured in the plan view of the approved drawings.

Item No. 31: Supply & erection of fencing up right.

The price shall cover supply and erection of fabricated fencing uprights as per latest relevant RDSO drawing included in Annexure-1 painted with two coats of red oxide zinc chromate primer and finished with two coats of Aluminum paint to IS: 2339 or latest. The price shall be on the basis of black weight of the steel section of the approved drawing with no deduction for holes and skew cuts or no increase for weld materials. The cost of foundation of uprights will be paid under item 2. Provision of the earth connections connecting each upright with the main earth bus as per approved drawing shall be paid under item 12.

Item No. 32: Supply and erection gates

The price shall cover supply and erection of gates including locking device as per relevant RDSO drawing ETI/C/0186 or latest. The gates will be painted with two coats of red oxide zinc chromate primer to IS: 2074 and finished with two coats of aluminium paint and IS: 2339 or latest. The price shall be per meter length of the gate as measured on the plan view of the appropriate approved drawings. The price shall also include providing two bond connections made of multi-stranded flexible steel equivalent to 6 SWG in the form of helical spring for the purpose of continuity of earthing between the gate and the adjacent fencing uprights as per the appropriate approved drawings. Both fixing ends shall be provided with an "eye" and properly crimped.

NOTE: All fasteners, bolts, nuts, locknuts, washers, etc. required for assembly and fixing of steel work shall be galvanized.

Item No. 33: Supply & erection of anti climbing device at substation.

and galvanized barbed wire mounted on the fencing panels as per approved drawings. The price shall be per meter length of the panel. The price shall include painting of the fixtures with two coats of red oxide zinc chromate primer and two finishing coats of aluminium paint and IS: 2339 or latest.

Note: The prices for items 14(a) to 14(d) shall also include the supply of all necessary galvanized steel bolts, nuts, locknuts, washers, etc. required for the assembly and fixing of the steelwork.

Item No. 34: Supply, laying and fixing of heavy duty ISI marked 'B' class GI pipe of 3.65mm wall thickness and 50mm dia to be laid along the wall or floor with proper galvanized clamps/ through the wall or undernaeth the floor in cement concrete as per explanatory note.

The price shall cover the supply and erection of 50 mm dia B class GI pipe with GI flat clamp & required hardware as per the latest relevant IS/RDSO specification or as advised by the purchaser.

Item No. 35: Supply (without Insulator) and Erection of 25 kV, 2000 Amp. Double Pole Isolator without Earthing Blade Assembly (Manually Operated)

The price shall cover the supply of the isolator complete with all parts, fittings and accessories, including mounting framework, operating rod, operating mechanism box and all accessories required for its smooth and trouble-free operation. All such parts, fittings and accessories (excluding Earthing blade assembly) shall be deemed to be in the scope of supply, whether specifically mentioned or not. The price shall be exclusive of the cost of the required 25 kV solid core post and operating rod insulators. The cost of insulators shall be paid under item 45(b)/45(c). The isolators shall conform to RDSO's latest specification no. TI/SPC/PSI/ISOLTR/0210 with A&C slip No. 1 & 2 (or latest).

Item No. 36: Supply (without Insulator) and Erection of 25 kV, 2000 Amp. Double Pole Isolator without Earthing Blade Assembly (Motorized).

The price shall cover the supply of the isolator complete with all parts, fittings and accessories,

including mounting framework, operating rod, operating mechanism box and all accessories required for its smooth and trouble-free operation. All such parts, fittings and accessories (excluding Earthing blade assembly) shall be deemed to be in the scope of supply, whether specifically mentioned or not. The price shall be exclusive of the cost of the required 25 kV solid core post and operating rod insulators. The cost of insulators shall be paid under item 45(b)/45(c). The isolators shall conform to RDSO's latest specification no. TI/SPC/PSI/ISOLTR/0210 with A&C slip No. 1 & 2 (or latest).

Item No. 37: Supply & Erection of 50/55 kV Double pole isolator(With insulator).

The price shall cover the supply of isolators, without insulators. The isolator shall be complete with all parts, fittings, terminal connector and accessories, including mounting framework, operating rod, operating mechanism along with OPEN/CLOSE indication necessary for its efficient operation. All such parts, fittings and accessories shall be deemed to be within the scope of supply, whether specifically mentioned or not. The Isolator shall be conforming to RDSO's specification No. TI/SPC/PSI/ISOLTR/0210 with A&C slips Nos 1 & 2 (or the latest). Insulators for the isolators shall be supplied and paid under Item 46(d).

The price shall include mounting of the Isolator and the operating rod in position and their alignment for smooth and trouble free operation.

The price shall include the cost of erecting the isolators, including the post and operating rod insulators along with the mounting framework, operating rod, operating mechanism box and all accessories; and the supply and erection of an enamelled number plate and a padlock for each isolator. Bus bar connectors provided for making connections to the isolator terminal pad shall be paid under Item 33/34/35.

Item No. 38: Supply & Erection of 132 KV Triple pole Isolator without earthing heel (Manually operated assembly with insulator).

The price shall cover Supply of Isolators, without insulators. The isolator shall be complete with all parts, fittings, terminal connector and accessories including mounting frame work, operating rod, operating mechanism along with OPEN/CLOSE indication necessary for its efficient operation. All such parts, fittings and accessories shall be deemed to be within the scope of supply, whether specifically mentioned or not. The Isolator shall be conforming to RDSO's specification No. TI/SPC/PSI/ISOLTR/0210 with A&C slip No. 1 & 2 (or latest). Insulators for the isolators shall be supplied and paid under Item 49(f).

The price shall cover erection and connecting up of the isolators supplied complete with manually operated mechanism, mounting base, Insulators and all accessories/required for its operation including terminal connectors. The price shall include supply and erection of an enamelled number plate and padlock. The price shall include mounting of the Isolator and the operating rod in position and their alignment for smooth and trouble free operation.

Item No. 39: Supply & Erection of 132 KV Triple pole Isolator with earthing heel (Manually operated assembly with insulator).

The price shall cover Supply of Isolators, without insulators. The isolator shall be complete with all parts, fittings, terminal connector and accessories including mounting frame work, operating rod, operating mechanism along with OPEN/CLOSE indication necessary for its efficient operation. All such parts, fittings and accessories shall be deemed to be within the scope of supply, whether specifically mentioned or not. The Isolator shall be conforming to RDSO's specification No. TI/SPC/PSI/ISOLTR/0210 with A&C slip No. 1 & 2 (or latest). Insulators for the isolators shall be supplied and paid under Item 49(f).

The price shall cover erection and connecting up of the isolators supplied complete with manually operated mechanism, mounting base, Insulators and all accessories/required for its operation including terminal connectors. The price shall include supply and erection of an enamelled number plate and padlock. The price shall include mounting of the Isolator and the operating rod in position and their alignment for smooth and trouble free operation.

Item No. 40: Extra for Supply & Erection of earthing blade assembly for 132 KV Triple pole 1250Amp isolator.

The price shall cover supply and erection of earthing blade assembly. The earthing switch shall be manually operated. The earthing blade assembly shall be conforming to RDSO's specification No. TI/SPC/PSI/ISOLTR/0210 with A&C slip No. 1 and 2 (or latest).

Item No. 41: Supply, erection of 50 kV Berismis AAAC Conductor of size 36 mm dia(768 sqmm).

The price shall include the supply and erection of per meter length of 36mm dia (768 sq mm) AAACBersimis Conductor as per the latest relevant RDSO/BIS specification. The price shall include straightening, shaping, and connecting/clamping of the conductor to the equipment terminals/bus bar supports as required.

Item No. 42:Supply & Erection of 132 kV/66kV/25kVconnectors, bus splices & TEE Connectors etc. required for commissioning of TSS as per explanatory note.

The price shall cover the supply and erection of a bus bar junction and connector of the various type specified, including bolts, nuts, lock nuts, washers, etc., required at the junction of bus bars as per the latest relevant RDSO Specification/drawings/IS or as advised by the purchaser. The price shall also include the supply and erection of an 'Al-Cu' bimetallic strip, if required, to be provided at the junction.

Item No. 43: supply and erection of Aluminium jumper

The price shall cover on a flat rate basis the erection of an Aluminium jumper complete with all components and fittings required for providing jumper connection, including parallel clamps, bimetallic Al-Cu strips wherever required, and terminal or tee clamps at either end. The price shall be applicable for any aluminium jumper/connections in any combination between feeders, return conductors, overhead equipment, isolators and outgoing bus-bars or switching stations and booster stations. Jumper connections for 25 KV feeders at angle tower traction sub-station or at feeding stations will also be paid under this item.

Item No. 44: Supply and erection of 50/39mm tubular aluminium busbar.

The price shall cover supply and erection per metre length of a 50x39 mm dia. aluminium tube to serve as a bus bar or equipment-to-equipment bus bar connection in the traction substation, wherever required. The price shall include bending, shaping, and connecting/clamping the Aluminium tube to the equipment terminals/bus-bar supports as required.

Item No. 45: Supply, erection of ACSR Zebra Conductor of size 28.62 mm dia.

The price shall cover supply and erection per meter length of 54/7/3.18 mm (ZEBRA ACSR) conductor to serve as a bus bar or equipment-to-equipment/bus bar connection in the traction substation, wherever required as per the latest relevant RDSO Specification/drawings/IS or as advised by the purchaser. The price shall include straightening, shaping, and connecting/clamping of the conductor to the equipment terminals/bus-bar supports as required..

Item No. 46: Supply and erection of copper strip for equipment earthing.

The price shall cover supply and erection of 25mmx3mm copper strips to connect the earth terminals of equipments like potential transformers, lightening arrestors and L.T. supply transformers to the main masts of the gantries on which they are mounted. The price shall cover all fastenings required for fixing the copper strips along any structure member of the gantry.

Item No. 47: Supply and Erection of copper cross feeder wires (37/2.25 mm HDBC) across the track at SP/SSP/FP/BT locations

The price shall cover the supply and erection of 25 kV feeder wire across/along the track at the location of SP/SSP/FP/BT/Gantry stations. The feeder wire shall be made of a hard-drawn bare copper conductor of 37/2.5 mm. The price shall be inclusive of the cost of feeder wire but exclusive of termination (which will be paid under item 8(c)) and small parts steel work complete with bolts, nuts, etc., if any.

Item No. 48: Supply and erection of large copper jumper 160 sqmm cross feeder/isolator and OHE.

This jumper shall be provided between copper cross feeders and OHE. The price shall cover the supply of all components and fittings, including 160 sq. mm jumper wire required for providing a flexible copper jumper (160 Sq. mm) between copper cross feeder and the existing OHE, including suitable Parallel clamps complete with fasteners, etc., as required. The price shall also cover the erection of the complete jumper assembly, including the jumper wire.

Item No. 49: Supply & Erection of 12.3 MVA , 55 KV/27.5 KV , 50HZ Auto Transformer with bushing and oil and other equipments as per RDSO spec. suitable for 2 x 25KV AT feedingsystem.

The price shall cover supply, erection, testing & commissioning of an 8MVA, 12.3MVA & 16.5MVA, ONAN, 55kV/27.5kV Autotransformer complete with all parts, fittings & accessories, including oil (which may be in separate drums/containers) as per RDSO's specification No. TI/SPC/PSI/AUTOTR/1200 with A&C Slip No. 01 & 02 or latest. The Contractor shall bring the transformer to its correct position on the foundation and erect all the accessories, check-up the alignment, and make connections of HV and LV terminals to the bus-bars. The Contractor shall carry out oil filtration and pre-commissioning tests as approved by the Purchaser and commission the transformers strictly in accordance with the instructions of the transformer manufacturer or his commissioning engineer at the site to the complete satisfaction of the Purchaser. The Contractor shall be held responsible to ensure that the work is carried out to the highest standards, in accordance with the relevant codes of practice, and any special conditions/guidelines/requirements as laid down by the manufacturer of the transformer are properly complied with. The contractor shall notify the manufacturer regarding the likely date of commissioning one month in advance so that the manufacturer can depute his representative, if so desired by him at his own cost, for warranty obligation purposes. Notwithstanding the availability of the manufacturer's representative or otherwise, it shall be the contractor's responsibility to ensure that the equipment is commissioned as per the laid-down procedure. However, in case of any extra cost being incurred in this regard due to delay on the part of the Contractor, the same shall be recovered from the Contractor. The Contractor shall make his own arrangements for oil filtration equipment as well as the power supply required for the same. All necessary tools, equipment, instruments required for carrying out necessary checks and tests and commissioning of the transformer shall be arranged by the Contractor.

Item No. 50: Supply & erection of control & relay panel incorporating Numerical type protective relays for TSS suitable for Scott connected Power Transformer

The price shall cover supply, erection, testing & commissioning, and connection of control boards with numerical-type relays as per the latest relevant RDSO Specification or as advised by the purchaser for OHE protection, transformer protection, auto re-closing scheme, and shunt capacitor banks, for all types of equipment i.e. circuit breakers, interrupters, isolators, and transformers at the traction substations, complete with all wiring, control switches, meters, protective and auxiliary relays, etc., including the mimic panel.

The price for erection shall also include alignment and grouting of the panels in position and all necessary connections to bring the control board to operation. It shall also include the cost of connecting the frame of each control panel to the earth bus inside the control room.

Item No. 51: Supply, erection, testing and commissioning 25 KV Double pole, vacuum type circuit breaker(2000A) with interlocking.

The price shall cover supply of 25kV Vacuum Circuit breaker complete with operating mechanism, contact wear indication, supporting frames, foundation bolts, all fittings, and accessories including terminal connectors. The circuit breaker shall be conforming to RDSO's specification No. TI/SPC/PSI/LVCBIN/ 0121 with A&C slip No. 1 (or latest). The price shall cover erection of Circuit Breaker including fixing of foundation bolts, grouting the supporting frame and mechanism box on foundation block and mounting of other accessories in their respective places. It shall also cover testing and commissioning of the circuit breaker.

The price shall also cover the supply and erection of an enamelled number plate. All necessary tools, equipment, instruments required for carrying out necessary checks and tests and commissioning shall be arranged by the Contractor.

Item No.52: Supply, erection, testing and commissioning 25 KV vacuum double pole type interruptor

The price shall cover supply of 25kV Vacuum type Interrupter complete with operating mechanism, supporting frames, foundation bolts, all fittings, and accessories including terminal connectors. The Interrupter shall be conforming to RDSO's specification No. TI/SPC/PSI/LVCBIN/ 0121 with A&C slip No. 1 (or latest). The price shall cover erection of Interrupter including fixing of foundation bolts, grouting the supporting frame and mechanism box on foundation block and mounting of other accessories in their respective places. It shall also cover testing and commissioning of the Interrupter.

The price shall also cover the supply and erection of an enamelled number plate. All necessary tools, equipment instruments required for carrying out necessary checks and tests and commissioning shall be arranged by the Contractor.

Item No. 53: Supply & Erection of 132 KV Triple pole SF-6 Circuit breaker with interlock.

The price shall cover Supply of 50/66kV/110kV/132kV/220kV, Out-door type, triple/double pole, SF6 Gas Circuit Breakers, complete with Poles (Interrupting Chamber & Support Insulators), operating mechanism, mounting Steel Frame, terminal Connectors, Interlocking device, Parts, fittings and accessories, SF6 Gas etc. as per RDSO's specification No. TI/SPC/PSI/HVCB/ 0121 with A&C slip No. 1 (or latest) or as advised by the purchaser.

The price shall cover erection of the circuit Breaker including grouting the supporting frame and Mechanism box on foundations block and mounting of other accessories at their respective places. It shall also cover first gas filling, testing and commissioning of the circuit breaker. The price shall also cover the supply and erection of an enamelled number plate. The Contractor shall make his own arrangement for filling of the SF6 gas and power supply required for testing purpose. All necessary tools, equipment, instruments required for carrying out necessary checks, tests and commissioning shall be arranged by the Contractor.

Item No.54: Supply & Erection of 50/66kV Double Pole SF-6Circuit Breaker

The price shall cover Supply of 50/66kV/110kV/132kV/220kV, Out-door type, triple/double pole, SF6 Gas Circuit Breakers, complete with Poles (Interrupting Chamber & Support Insulators), operating mechanism, mounting Steel Frame, terminal Connectors, Interlocking device, Parts, fittings and accessories, SF6 Gas etc. as per RDSO's specification No. TI/SPC/PSI/HVCB/ 0121 with A&C slip No. 1 (or latest) or as advised by the purchaser.

The price shall cover erection of the circuit Breaker including grouting the supporting frame and Mechanism box on foundations block and mounting of other accessories at their respective places. It shall also cover first gas filling, testing and commissioning of the circuit breaker. The price shall also cover the supply and erection of an enamelled number plate. The Contractor shall make his own arrangement for filling of the SF6 gas and power supply required for testing purpose. All necessary tools, equipment, instruments required for carrying out necessary checks, tests and commissioning shall be arranged by the Contractor.

Item No.55: Supply, erection, testing and commissioning 25 KV current transformer(1500-750/5A)

The prices shall cover supply, erection and connecting up of a current transformer complete with all fittings & accessories, enamelled number plate including terminal connectors. The current transformer shall conform to the latest relevant RDSO specification or as advised by the purchaser. The price shall include mounting of the current transformer in position and supply and erection of an enamelled number plate. All necessary tools, equipment, instruments required for carrying out necessary checks, tests and commissioning shall be arranged by the Contractor.

Item No.56: 50 KV CT(1500-750/5A)

The prices shall cover supply, erection and connecting up of a current transformer complete with all fittings & accessories, enamelled number plate including terminal connectors. The current transformer

shall conform to the latest relevant RDSO specification or as advised by the purchaser. The price shall include mounting of the current transformer in position and supply and erection of an enamelled number plate. All necessary tools, equipment, instruments required for carrying out necessary checks, tests and commissioning shall be arranged by the Contractor.

Item No.57: Supply & Erection of 132 KV current transformer.

The prices shall cover supply, erection and connecting up of a current transformer complete with all fittings & accessories, enamelled number plate including terminal connectors. The current transformer shall conform to the latest relevant RDSO specification or as advised by the purchaser. The price shall include mounting of the current transformer in position and supply and erection of an enamelled number plate. All necessary tools, equipment, instruments required for carrying out necessary checks, tests and commissioning shall be arranged by the Contractor.

Item No.58: Supply, erection, testing and commissioning 25 KV potential transformer (PT)Type-I

The prices shall cover supply, erection and connecting up of a current transformer complete with all fittings & accessories, enamelled number plate including terminal connectors. The current transformer shall conform to the latest relevant RDSO specification or as advised by the purchaser. The price shall include mounting of the current transformer in position and supply and erection of an enamelled number plate. All necessary tools, equipment, instruments required for carrying out necessary checks, tests and commissioning shall be arranged by the Contractor.

Item No.59: 27.5 kV /110 V potential transformer (type-II)(52 kV insulation class)

The prices shall cover supply, erection and connecting up of a current transformer complete with all fittings & accessories, enamelled number plate including terminal connectors. The current transformer shall conform to the latest relevant RDSO specification or as advised by the purchaser. The price shall include mounting of the current transformer in position and supply and erection of an enamelled number plate. All necessary tools, equipment, instruments required for carrying out necessary checks, tests and commissioning shall be arranged by the Contractor.

Item No.60: Supply & Erection of 132 KV potential transformer.

The prices shall cover supply, erection and connecting up of a current transformer complete with all fittings & accessories, enamelled number plate including terminal connectors. The current transformer shall conform to the latest relevant RDSO specification or as advised by the purchaser. The price shall include mounting of the current transformer in position and supply and erection of an enamelled number plate. All necessary tools, equipment, instruments required for carrying out necessary checks, tests and commissioning shall be arranged by the Contractor.

Item No.61: Supply & Erection of Lightning Arrestors 42 KV rating for 25 KV side.

The price shall cover supply & Erection of outdoor type Metal Oxide Gapless Type Lightning Arresters for various nominal system voltages complete with terminal connector, an earthing pad, hardware's required for mounting the Lightning Arrester, insulating base, surge monitor, enamelled number plate and disconnectors (if required) as per latest relevant RDSO's specification or as advised by the purchaser.

The price shall cover erection and connecting up of lightning arresters with surge counters complete with all fittings and accessories including terminal connector. It shall also include mounting of the Lightning arrester in position and erection of enamelled number plate.

Item No.62: Supply & Erection of 60kV Lightning arrester with accessories.

The price shall cover supply & Erection of outdoor type Metal Oxide Gapless Type Lightning Arresters for various nominal system voltages complete with terminal connector, an earthing pad, hardware's required for mounting the Lightning Arrester, insulating base, surge monitor, enamelled number plate and disconnectors (if required) as per latest relevant RDSO's specification or as advised by the purchaser. The price shall cover erection and connecting up of lightning arresters with surge counters complete with all fittings and accessories including terminal connector. It shall also include mounting of the Lightning arrester in position and erection of enamelled number plate.

Item No.63: Supply & Erection of 132 KV lightning arrester(110kvLA)

The price shall cover supply & Erection of outdoor type Metal Oxide Gapless Type Lightning Arresters for various nominal system voltages complete with terminal connector, an earthing pad, hardware's

required for mounting the Lightning Arrester, insulating base, surge monitor, enamelled number plate and disconnectors (if required) as per latest relevant RDSO's specification or as advised by the purchaser.

The price shall cover erection and connecting up of lightning arresters with surge counters complete with all fittings and accessories including terminal connector. It shall also include mounting of the Lightning arrestor in position and erection of enamelled number plate.

Item No.64: Supply and installation of 240V, AC distribution board.for TSS

The price shall cover supply, erection, connecting up and testing & commissioning of a 240V AC Distribution Board in the Control Room. It shall include the grouting of the framework of the distribution board in position or mounting it on the wall and necessary connections of 240V A.C. L.T. Distribution Boards in the Control Room. 240V AC Distribution Board shall conform to the latest relevant RDSO specification or as advised by the purchaser.

Item No.65: Supply & Erection of 110V DC distribution board

The price shall cover supply and erection, connecting up and testing & commissioning of 110V DC Distribution Board in the control room. The price shall include the grouting of the frame work of the distribution board in position or mounting it on the wall and necessary connections. 110V D.C. Distribution Board shall conform to the latest relevant RDSO specification or as advised by the purchaser.

Item No.66: Supply, installation of PVC insulated and sheathed copper unarmoured cable size 7 core 2.5 sqmm.

The price shall cover supply and installation per meter length of a PVC 1100V grade 2.5 mm ² (copper conductor) 7-core cable from each circuit breaker and Interrupter to the Control and Relay panel as per the latest relevant RDSO Specification/IS or as advised by the purchaser.

Item No.67: Supply, installation of PVC insulated and sheathed copper unarmoured cable size 10 core 2.5 sqmm.

The price shall cover supply and installation per meter length of a PVC 1100V grade 2.5 mm ² (copper conductor) 10-core cable from the marshalling box of each traction transformer to the control and relay panel as per the latest relevant RDSO Specification/IS or as advised by the purchaser.

Item No.68: Supply, installation of PVC insulated and sheathed copper unarmoured cable size 4x4 sqmm.

The price shall cover supply and installation per meter length of PVC 1100V grade 4 mm ² (copper conductor) 4-core cable from each Traction Transformer to the Control and Relay Board and from the battery charger and battery to the DC distribution board as per the latest relevant RDSO Specification/IS or as advised by the purchaser.

Item No.69: Supply, installation of PVC insulated and sheathed copper unarmoured cable size 2x4 sqmm.

The price shall cover supply and installation per meter length of PVC 1100V grade 4 mm ² (copper conductor) 2-core cable from each current transformer to the control and relay board, from 110V DC distribution board to the control and Relay Board and from the 240V A. C. LT distribution board to the battery chargers as per the latest relevant RDSO Specification/IS or as advised by the purchaser.

Item No.70: Supply, installation of PVC insulated and sheathed copper unarmoured cable size 2x2.5 sqmm.

The price shall cover supply and installation per metre length of PVC 1100V grade 2.5 Sq.mm (copper conductor) 2-core cable from each potential transformer to the control and relay board and from the 240V AC LT distribution board to the control and relay panel as per the latest relevant RDSO Specification/IS or as advised by the purchaser.

Item No.71: Supply Laying, testing and commissioning of Al. XLPE Cable 2 core 300 Sq.mm .

The price shall cover supply and installation per meter length of PVC insulated and armoured 300 Sq.mm 2-Core Aluminium conductor cable from the 10/25 kVA LT Supply Transformer to LT

distribution board as per the latest relevant RDSO Specification/IS or as advised by the purchaser.

Item No.72: Supply & Erection of 25 KV/240V (LT), 50KVA Auxiliary transformer oil filled type with complete accessories as per latest RDSO Spec.

The price shall cover supply of 25kV/240V, 50 kVA LT supply transformers, at site, as per the RDSO's specification (or indicated in Annexure-1), and erection of the same complete with terminal connectors on a mast or gantry. The price shall be applicable for transformers mounted on steel pedestals at switching stations also. The price shall also cover supply and erection of an enameled number plate of approved design. The price shall also cover oil filtration and pre- commissioning tests as approved by the railways. The contractor shall make his own arrangement for oil filtration equipment, as well as power supply required for the same. All necessary tools, equipments, instruments required for carrying out oil filtration/checks/tests and commissioning shall be arranged by the contractor.

Note for Item 19(d): The replenishment of the transformer oil on account of testing and leakages during the warranty period shall be done by the Contractor at his own cost.

Item No.73: Supply & Erection of Fire buckets 10Ltrs.

The description as mentioned is self explanatory and the work is to be carried out as per the directives of Railway representative.

Item No.74: Supply & Erection Fire bucket stands for 3 Buckets.

The description as mentioned is self explanatory and the work is to be carried out as per the directives of Railway representative.

Item No.75: Supply & Erection of MS angle iron for supporting cable.

The price shall cover Supply and Erection of MS angle iron for supporting cable as per latest IS specification.

Item No.76: Supply & Erection of various types of Indication Board and caution boards, safety Board, TSS Name Board, key Box, trilingual, Shock Treatment Chart, Stretcher and T&P Etc.

Price shall cover cost of Supply and Erection of various types of indication boards and caution boards and T & P.

Item No.77:Fault Locator panel for TSS including two numbers of Calculating Unit (CU) and two numbers of Measuring Unit (MU).

The description as mentioned is self explanatory and the work is to be carried out as per the directives of Railway representative and RDSO specification.

Item No.78:Fault Locator wall mount rack for OFC hut

The description as mentioned is self explanatory and the work is to be carried out as per the directives of Railway representative and latest RDSO specification for AFL.

Item No.79:Supply and erection of Control & LED Indication panel for operation of motorised isolator

The description as mentioned is self explanatory and the work is to be carried out as per the directives of Railway representative and latest RDSO specification for AFL.

Item No.80:Supply & Erection of check metering panel with 2PT+set of 3 phase (ABT Meter).

The price shall cover Supply, Erection of check metering panel with 2PT+set of 3 phase (ABT Meter) for the purpose of open access energy management system adopted by Central Railway.

Item No. 81:Supply & Erection of approved Make "Drychemical powder" type fire extinguisher 5Kgs capacity conforming to latest IS:2171.

The description as mentioned is self explanatory and the work is to be carried out as per the directives of Railway representative.

Item No. 82:Supply and Erection of 25kV Support Insulator & Tie rod insulator.

The price shall cover only the supply of a set of 25 kV solid core Post insulators (four nos.) and Operating Rod Insulator (two nos.) respectively for execution of work.

Part-1- Part –B-PQCE for TSS**Item No. 1:Supply (without Insulator) and Erection of 25 kV, 2000 Amp. Single Pole Isolator without Earthing Blade Assembly (Manually Operated)**

The price shall cover the supply of the isolator complete with all parts, fittings and accessories, including mounting framework, operating rod, operating mechanism box and all accessories required for its smooth and trouble-free operation. All such parts, fittings and accessories (excluding Earthing blade assembly) shall be deemed to be in the scope of supply, whether specifically mentioned or not. The price shall be exclusive of the cost of the required 25 kV solid core post and operating rod insulators. The cost of insulators shall be paid under item 45(b)/45(c). The isolators shall conform to RDSO's latest specification no. TI/SPC/PSI/ISOLTR/0210 with A&C slip No. 1 & 2 (or latest).

The price shall include the cost of erecting the isolators, including the post and operating rod insulators along with the mounting framework, operating rod, operating mechanism box and all accessories (excluding Earthing blade assembly), and the supply and erection of an enamelled number plate and a padlock for each isolator. Bus bar connectors provided for making connections to the isolator terminal pad shall be paid under Item 33/34/35.

Item No. 2:Shunt capacitor 2400 kVAR at 25 kV

The lump sum price shall cover supply, erection, testing, and commissioning of 5500/2200/3300kVAR at 40 kV & 2400 kVAR at 25 kV Shunt Capacitor Bank at Traction sub-stations, complete with capacitor unit, internal fuses, discharge devices, rack insulator assembly, inter-connector between units, insulators, suitable earthing lugs including terminal connectors, and other material and hardware required for satisfactory operation of the unit. It shall also include mounting of the capacitor bank on the supporting structures and its connecting to other equipment. Price is inclusive of erection & grouting of supporting structure.

The contractor shall carry out pre-commissioning tests as approved by the purchaser and commission the shunt capacitor bank strictly in accordance with the instructions of the shunt capacitor bank manufacturer or his commissioning engineer at the site to the complete satisfaction of the purchaser. The contractor shall be held responsible to ensure that the work is carried out to the highest standards, in accordance with relevant codes of practice, and any special conditions/guidelines/requirements as laid down by the manufacturer of the shunt capacitor bank are properly complied with. The contractor shall notify the manufacturer regarding the likely date of commissioning, one month in advance so that the manufacturer can depute his representative, if so desired by him, at his own cost, for warranty obligation purposes. Notwithstanding the availability of the manufacturer's representative or otherwise, it shall be the contractor's responsibility to ensure that the equipment is commissioned as per the laid-down procedure. All necessary tools, equipment, and instruments required for carrying out necessary checks and commissioning of the shunt capacitor bank shall be arranged by the contractor. The 25 kV shunt capacitor bank shall conform to the latest relevant RDSO specification No. TI/SPC/PSI/FC & SR/0100(01/10) with A&C Slip No. 1 or the latest amendments or as advised by the purchaser.

Item No. 3:Supply and erection of CR panel for shunt capacitor bank for 2x25 kV TSS. This includes mounting of instrument and relays supply, erection, wiring/ cabling of tubing and commissioning of instrument panel as per RDSO SPEC NO TI/SPC/PSI/PROTCT/7100(07/2012) with A&C slip No 1 or latest

The price shall cover supply, erection, testing & commissioning, and connection of control boards with numerical-type relays as per the latest relevant RDSO Specification or as advised by the purchaser for OHE protection, transformer protection, auto re-closing scheme, and shunt capacitor banks, for all types of equipment i.e. circuit breakers, interrupters, isolators, and transformers at the traction substations, complete with all wiring, control switches, meters, protective and auxiliary relays, etc., including the mimic panel.

The price for erection shall also include alignment and grouting of the panels in position and all necessary connections to bring the control board to operation. It shall also include the cost of connecting

the frame of each control panel to the earth bus inside the control room.

Item No. 4: Series reactor for low loss

The price shall cover the supply, erection, and connecting up of a series reactor suitable for a 5500/2200/3300 at 40 kV and 2400 kVAR at 25 kV shunt capacitor bank complete with all fittings and accessories, including connectors. It shall include mounting of the series reactor in position. The series reactor for the shunt capacitor bank equipment shall conform to the latest relevant RDSO specification or as advised by the purchaser.

Item No. 5: Supply, erection, testing and commissioning 25 KV Double pole, vacuum type circuit breaker (2000A) with interlocking .

The price shall cover supply of 25kV Vacuum Circuit breaker complete with operating mechanism, Contact wear indication, supporting frames, foundation bolts, all fittings, and accessories including terminal connectors. The circuit breaker shall be conforming to RDSO's specification No. TI/SPC/PSI/LVCBIN/ 0121 with A&C slip No. 1 (or latest).

The price shall cover erection of Circuit Breaker including fixing of foundation bolts, grouting the supporting frame and mechanism box on foundation block and mounting of other accessories in their respective places. It shall also cover testing and commissioning of the circuit breaker. The price shall also cover the supply and erection of an enamelled number plate. All necessary tools, equipment, instruments required for carrying out necessary checks and tests and commissioning shall be arranged by the Contractor.

Item No. 6: Supply, erection, testing and commissioning 25 KV current transformer (200-100/5 A) (For compensation equipment)

The prices shall cover supply, erection and connecting up of a current transformer complete with all fittings & accessories, enamelled number plate including terminal connectors. The current transformer shall conform to the latest relevant RDSO specification or as advised by the purchaser.

The price shall include mounting of the current transformer in position and supply and erection of an enamelled number plate. All necessary tools, equipment, instruments required for carrying out necessary checks, tests and commissioning shall be arranged by the Contractor.

Item No. 7: 27.5 kV /110 V potential transformer (type-II) (52 kV insulation class)

The prices shall cover supply, erection and connecting up of a potential transformer complete with all fittings & accessories, enamelled number plate including terminal connectors. The potential transformer shall conform to the latest relevant RDSO specification or as advised by the purchaser.

The price shall include mounting of the current transformer in position and supply and erection of an enamelled number plate. All necessary tools, equipment, instruments required for carrying out necessary checks, tests and commissioning shall be arranged by the Contractor.

Item No. 8: Supply & Erection of Lightning Arrestors 42 KV rating for 25 KV side.

The price shall cover supply & Erection of outdoor type Metal Oxide Gapless Type Lightning Arresters for various nominal system voltages complete with terminal connector, an earthing pad, hardware's required for mounting the Lightning Arrester, insulating base, surge monitor, enamelled number plate and disconnectors (if required) as per latest relevant RDSO's specification or as advised by the purchaser.

The price shall cover erection and connecting up of lightning arresters with surge counters complete with all fittings and accessories including terminal connector. It shall also include mounting of the Lightning arrester in position and erection of enamelled number plate.

Part-2- Schedule for SCADA works

Item No.1:Supply, Erection, Testing & commissioning of RTU's (as per latest RDSO specifications) at

(a) TSS

(b) SP/SSP

Rates will be quoted for Supply, erection, testing & commissioning of RTUs as per RDSO Specification No. TI/SPC/RCC/SCADA/0134 with amendments each controlled station listed in the tender schedule.

The lump sum price shall cover on a flat rate basis the cost of Remote Terminal Units per controlled station. The price shall also cover the cost of all equipment/items including power supply units etc as mentioned in RDSO Specification No. TI/SPC/RCC/SCADA/0134 with amendments and the steel cubicles required for housing the RTUs, cost of interconnecting cables and wiring etc., and all materials necessary for proper functioning of the RTUs. The price shall also cover testing of materials and equipments at the manufacturer's works. The RTU shall be supplied in accordance with RDSO's standard specification and capable of successful working on standard communication protocol as defined in the specification.

Prices shall also cover provision of separate Earthing of communication cable shield at controlled stations:

NOTES: RTUs supplied for the controlled posts shall include the necessary transducers, summation CT, PT, supply change over arrangement, digital analogue input modules, limit settings, CPU cards, power supply unit, surge arrestor, relays and contactors etc. at Traction sub-stations and SPs for different analogue parameters and measurements as per mentioned in the specifications and tender documents.

Item No. 2: Modification/up gradation, testing & commissioning in existing standard SCADA software at RCC Equipments for configuration, integration/ hooking up of additional RTUs of adjacent section with master station i.e.RCC,TSS,SP and SSP.

The price shall cover Supply of Special Tools & Plants for Maintenance as mentioned in the RDSO Spec. TI/SPC/RCC/SCADA/0134.

Part-3- 2nos. 2X25 KV SP (Single Line)

Item No. 1: Design & drawing of SP station

The price shall cover on a flat rate basis per switching station (SP/SSP), survey, investigation of soil bearing pressure, preparation of cross-section drawings, preparation of general arrangement drawings, detailed layout of equipment, bus-bar arrangement and connectors/connections and insulators, terminal connectors, layout of earthing system and earth connections, cable run layout, detailed designs and drawings for steel work and structural support, suitable concrete plinths for equipment, and drawings for equipments, components, fittings, and materials supplied by the Contractor/Purchaser. The price shall include the supply of the requisite number of copies of all drawings, including completion drawings.

Note- For items 1(a) to 1(d), the latest RDSO Drg./Spec./IS shall be followed wherever applicable and as advised by the purchaser.

Item No. 2: Supply and erection of 50 kV termination with adjuster complete with disc insulators.

The price shall cover supply and erection of all materials for the termination of a single ACSR conductor (61/3.18 mm ZEBRA) strung-bus between gantries/portals, including anchor fittings, single clevis assembly, anchor double straps, string of appropriate numbers of Disc Insulators required as per system voltage, strain clamps and arcing ring, adjusters and other fittings to complete the assembly. The assembly shall be of adequate breaking strength in accordance to the latest RDSO spec./drawing.

Item No. 3: supply without insulator and erection of 9 Tonne Suspension insulator . Porcelain

The price shall cover the supply of all materials required for suspension of an all Aluminium 25 Kv feeder (Single or Double SPIDER) or any other similar type of suspension. The price shall cover supply of all components required for the suspension assembly including the appropriate suspension clamps but excluding small parts steel work with bolts and nuts etc., if any. The price shall cover erection of all components, but excluding small parts steel work with bolts and nuts etc., if any. The supply of 9-tonne Insulator assembly covered in item No. 4(b)/4(c)/4(d).

The price shall include the cost of provision of a flat armour tape only to be used in connection with

suspension of "SPIDER" conductor.

Item No. 4: Supply without insulator and erection of materials for termination of copper cross feeder with gantries.

The termination of one cross feeder at both ends constitutes one set. The supply of 9-tonne Insulator assembly covered in item No. 4(b)/4(c)/4(d)

Item No. 5:-Supply and Erection of 110V , 150AH , low maintenance Lead Acid Batteries set with 2 No's of suitable Battery Chargers.

The price shall cover supply, erection, testing & commissioning of Lead Acid Battery 110 V, 250Ah low-maintenance lead-acid battery complete with battery stand, Electrolyte and Tool Board, Accessories, connectors with thermometer, hydrometer & wrench etc. as per latest RDSO specification. The price for erection shall include installation, connecting up, charging, testing and commissioning of the battery. 110V, 250 AH low-maintenance lead-acid batteries shall conform to the latest RDSO specification.

The price shall also cover supply, erection, testing & commissioning of 02 nos. suitable battery chargers as per RDSO specification (TI/SPC/PSI/200-250/CHGR/0210) or latest amendments, for charging of 110 V, 250 Ah lead acid battery & connecting it.

Item No. 6: Transportation & Erection of 13 Mtrs.(52/60KG) release long Rails from nominated place with in 10 KM area to works site.

The price shall cover transportation of rail pieces of 13 meters long supplied by the railway from the nearest depot to TSS / SP / SSP. The price shall also cover the loading and unloading of rail pieces.

Item No. 7: Concrete for foundation and trench in hard soil.

Item No. 8: Concrete for foundation and trench in rock.

The price shall cover excavation, supply and handling of all materials and accessories, temporary arrangements for excavation in hard soil and concrete/masonry drains/walls requiring use of chisel and hammer for item 2(a) or requiring blasting for item 2(b), shoring and shuttering where necessary, casting concrete including framework, grouting gantry/portal columns and steel supports and finishing the top of the concrete foundation with the required slope/muff. The price shall include dismantling of all connected temporary arrangements, backfilling required, and removal of soil. The Purchaser's Engineer shall certify where use of chisel and hammer or blasting has been necessary. The Contractor shall arrange for the supply of explosives and all tools and plants for blasting operations at his own cost. If half or more of the depth and width of excavation is in hard soil or rock, concrete, /masonry/drains/walls or rock, the entire foundation shall be paid for under item 2(a) or 2(b); if it is less than half, payment for the entire foundation shall be made at the rate for the type of soil in which the majority of the foundation is placed. The price shall include the cost of cement also. Cement shall not be supplied by the Rlys.

NOTE: For measurements for items 2(a) & 2(b):

The payable volume of the foundations under item 2(b) shall be limited to the designed one as shown in the drawings for which the hole has been blasted, irrespective of the actual configuration assumed by the latter due to blasting.

The depth of excavation shall be measured from the formation level of the substation to the maximum excavated point

Item No. 9: Concrete for foundation and trench in other than hard soil and rock.

The price shall include all work mentioned in item 2(a) in all classes of soil, including black cotton and loose soils, except hard soil, concrete/masonry/drains/walls, and rock. The price shall include the cost of cement also. Cement shall not be supplied by the Rlys.

Item No. 10: Reinforced concrete for foundation & trench

The price shall cover excavation and all reinforced concrete work for foundations, including the supply of steel for reinforcement and other materials, including bending/binding, laying

of reinforcement, shoring and shuttering where necessary, casting concrete including framework where necessary, grouting, and finishing the tops of foundation blocks with the required slope/muff.

The price shall include dismantling of all connected temporary arrangements, backfilling as required, and removal of soil. The price shall also cover all concrete work for cast-in-situ piles and pedestals/columns for mounting equipment. The volume of cast-in-situ piles and pedestal columns shall be added to the volume of the foundation block for purposes of payment. Dowel bars will not be considered as reinforcement for the purpose of this item. The price shall include the cost of cement also. Cement will not be supplied by Rlys.

Item No. 11: Reinforced concrete for cable trench covers.

The price shall cover casting of cable trench covers in reinforced concrete as per the latest relevant RDSO drawing. The cable trench covers will be cast in an angle iron frame as per the latest relevant RDSO drawing. The price shall include the supply of steel for reinforcement, angle iron for the framework, fabrication of the angle iron frame, etc. The price shall include positioning and dressing up of the trench covers, if required. The price shall include the cost of cement also. Cement will not be supplied by Railways.

Item No. 12: Supply and spreading of gravel / ballast in the switch area

The price shall be per cum rate and shall cover supply and spreading of uniformly graded gravel/ballast of size 20/25mm, in the outdoor switch yard after completing all the works and levelling the switch yard area, but before commissioning of the sub-station. The gravel/ballast shall be of good quality and free from any dust and dirt. Prior approval of ballast shall be taken from the Purchaser for the gravel samples. The gravel/ballast shall be spread out uniformly to a depth of 10cm. over the area indicated by the Purchaser's Engineer.

Item No. 13: Supply of 9 Tonne insulator

The price shall cover only supply of 9 tonne insulator assembly (Composite CD-1600 mm) against each Item required for execution of work covered under Items No. **8(a), 8(b) & 8(c)**. Erection cost of insulators are inclusive in Items **8(a), 8(b) & 8(c)**.

Item No. 14: Insulator for cross feeder

The description as mentioned is self explanatory and the work is to be carried out as per the directives of Railway representative.

Item No. 15: Supply and erection of 25KV support insulators.

The price shall cover the supply and erection of a 25kV solid core post insulator to support Aluminum bus-bars. It shall include supply of fixing bolts, nuts, locknuts, washers and studs etc. It shall also cover erection of all components required for the assembly including post insulator.

Bus-bar clamps/jumper clamps for clamping the bus-bars/jumpers shall be paid under item 33, 34 & 35.

Item No. 16: Supply & erection of galvanization steel structure including Traction mast, main masts, fabricated steel other than mast, SPS, Tower gantries, portal, supporting structures & small part steel work.

The price shall cover supply, fabrication, galvanization and erection of steel gantries/portals, required in the traction substation (TSS)/FP/SP/SSP. The price shall include alignment setting and grouting of steel work and supply of all necessary galvanized steel bolts, nuts, lock-nuts, washers etc. wherever required as per approved designs and drawings and assembly of the fabricated steelwork at site to the extent necessary. The calculated weight to be considered for payment under this item included in relevant drawings at the time of submitting designs for approval of the Purchaser.

Note for Item No. 11(b) :

- i. For the purpose of payment for 'Supply and/or erection', black weights of various structures and fabricated steel work as per respective RDSO's drawings (for individual tower, Beams, Tower extensions, Supporting Structures for equipments, Structures for Isolators, LT Supply Transformer, Structures for Feeding Post etc.) shall be payable to the contractor.
- ii. No payment is permissible for increased weight of any structure or their components on account of galvanisation.
- iii. The payment shall be made on the basis of the final lengths/weight of the structures, in case the same are cut or modified as indicated above before erection.
- iv. In case of any dispute in unit weights mentioned in the drawings, the matter will be decided by the purchaser and the decision taken in the matter will be final and binding onto the contractor.

Item No. 17: Supply & erection of earth electrode as per IS 3043 or RDSO specification.

The price shall cover supply and erection of an earth electrode, as per latest relevant RDSO specification/drawing. The price shall cover the provision of a protective concrete box with removable cover as shown in the drawing. The price shall include the testing of earth value and

painting the particulars on the box.

The price shall be inclusive of concrete box with cover for this item.

Item No. 18: Supply and erection of earth bus 75x8 mm. MS strip laid in the ground.

The price shall cover supply and installation per meter length of 75x8mm mild steel flat, buried at a depth of 60cm below ground level. The price shall also cover connections of the steel flats to the earth electrodes to constitute the main earth ring and to the earthed terminals of the 220 kV or 132kV or 110 kV or 66 kV/ 25kV transformers and metallic frame work/ structure of various equipments etc. as required.

Item No. 19: Supply and erection of earth bus 75x8 mm. MS strip laid exposed.

The price shall cover supply and installation per meter length of 75x8 mm mild steel flat, painted all around with two coats of painting to colour grass green shade-218 of IS: 5 or latest passing through cable trench or exposed above ground level. The price shall also cover the connections of the steel flats to the earth electrodes, to constitute the main earth ring and to the earthed terminals of the various equipment as required.

Item No. 20: 8/6 SWG GI wire for earthing.

The price shall cover supply, shaping and erection of 8 / 6 SWG G.I. wire per meter used for earthing of control panels, L.T. AC and DC distribution boards, battery chargers, etc. at sub-station control rooms. The requirement of fencing panel earthing to the nearest fencing upright shall also be included and paid for under this item as per requirement of purchaser.

Item No. 21: 32 mm dia MS rod for earth mat.

The price shall cover supply and installation per meter length of bare mild steel rod of dia 32mm to be buried at a depth of 60cm. below the ground level to form the earthing grid & connected to earth electrodes. The price shall also cover jointing of the M.S. rods to form an earthing grid and connection to M. S. flats for system earthing as per latest relevant standard.

Note: For purposes of payment for items 12(b) to 12(g) fraction of a meter in the total length of earth lead of each type used at a substation shall be rounded off to the nearest meter (0.5m and below being ignored).

Item No. 22: Supply & erection of earth screen wire of size 19/2.5mm.

The price shall cover supply and stringing per meter length of galvanised steel stranded wire. It shall include the supply and erection of suitable terminations using strain clamps adjuster (on one side only) etc. It shall also include connecting by means of suitable terminal spades, the end of the earth screen wire to the main members of the columns of portals gantries across which these wires are strung or to suitable M.S. flat earth leads. For purposes of payment the clear span between the structures on which earth wire is run shall be adopted. The clear span will be rounded off to the nearest meter (0.5m and below being ignored).

Item No. 23: Supply and erection fencing panel at substation for SP

The prices shall include supply and erection of fencing panels as per latest relevant RDSO drawing included in Annexure-1, painted with two coats of red oxide zinc chromate primer and finished with two coats of aluminium paint to IS:2339 or latest. The prices shall not include supply and erection of fencing uprights, anti-climbing devices but shall include the cost of fasteners and the price shall be for a meter length of the panels, measured in the plan view of the approved drawings.

Item No. 24: Supply & erection of fencing up right.

The price shall cover supply and erection of fabricated fencing uprights as per latest relevant RDSO drawing included in Annexure-1 painted with two coats of red oxide zinc chromate primer and finished with two coats of Aluminum paint to IS: 2339 or latest. The price shall be on the basis of black weight of the steel section of the approved drawing with no deduction for holes and skew cut or no increase for weld materials. The cost of foundation of uprights will be paid under **item 2**. Provision of the earth connections connecting each upright with the main earth bus as per approved drawing shall be paid under item 12.

Item No. 25: Supply and erection of gates

The price shall cover supply and erection of gates including locking device as per relevant RDSO drawing ETI/C/0186 or latest. The gates will be painted with two coats of red oxide zinc chromate primer to IS: 2074 and finished with two coats of aluminium paint and IS: 2339 or latest. The price shall be per meter length of the gate as measured on the plan view of the appropriate approved drawings. The price shall also include providing two bond connections made of multi-stranded flexible steel equivalent to 6 SWG in the form of helical spring for the purpose of continuity of earthing between the gate and the adjacent fencing uprights as per the appropriate approved drawings. Both fixing ends shall be provided with an "eye" and properly crimped.

NOTE: All fasteners, bolts, nuts, locknuts, washers, etc. required for assembly and fixing of steelwork shall be galvanized.

Item No. 26: Supply & erection of anti climbing device at substation..

The price shall cover the supply and erection of an anti-climbing device consisting of steel fixtures and galvanized barbed wire mounted on the fencing panels as per approved drawings. The price shall be per meter length of the panel. The price shall include painting of the fixtures with two coats of red oxide zinc chromate primer and two finishing coats of aluminium paint and IS: 2339 or latest.

Note: The prices for items 14(a) to 14(d) shall also include the supply of all necessary galvanized steel bolts, nuts, locknuts, washers, etc. required for the assembly and fixing of the steelwork.

Item No. 27: Supply, laying and fixing of heavy duty ISI marked 'B' class GI pipe of 3.65mm wall thickness and 50mm dia to be laid along the wall or floor with proper galvanized clamps/ through the wall or underneath the floor in cement concrete as per explanatory note.

The price shall cover the supply and erection of 50 mm dia B class GI pipe with GI flat clamp & required hardware as per the latest relevant IS/RDSO specification or as advised by the purchaser

Item No. 28: Supply (without Insulator) and Erection of 25 kV, 2000 Amp. Double Pole Isolator without Earthing Blade Assembly (Manually Operated)

The price shall cover the supply of the isolator complete with all parts, fittings and accessories, including mounting framework, operating rod, operating mechanism box and all accessories required for its smooth and trouble-free operation. All such parts, fittings and accessories (excluding Earthing blade assembly) shall be deemed to be in the scope of supply, whether specifically mentioned or not. The price shall be exclusive of the cost of the required 25 kV solidcore post and operating rod insulators. The cost of insulators shall be paid under item 45(b)/45(c). The isolators shall conform to RDSO's latest specification no. TI/SPC/PSI/ISOLTR/0210 with A&C slip No. 1 & 2 (or latest).

The price shall include the cost of erecting the isolators, including the post and operating rod insulators along with the mounting framework, operating rod, operating mechanism box and all

accessories (excluding Earthing blade assembly), and the supply and erection of an enamelled number plate and a padlock for each isolator. Bus bar connectors provided for making connections to the isolator terminal pad shall be paid under Item 33/34/35.

Item No. 29: Supply (without Insulator) and Erection of 25 kV, 2000 Amp. Double Pole Isolator without Earthing Blade Assembly (Motorized).

The price shall cover the supply of the isolator complete with all parts, fittings and accessories, including mounting framework, operating rod, operating mechanism box and all accessories required for its smooth and trouble-free operation. All such parts, fittings and accessories (excluding Earthing blade assembly) shall be deemed to be in the scope of supply, whether specifically mentioned or not. The price shall be exclusive of the cost of the required 25 kV solidcore post and operating rod insulators. The cost of insulators shall be paid under item 45(b)/45(c). The isolators shall conform to RDSO's latest specification no. TI/SPC/PSI/ISOLTR/0210 with A&C slip No. 1 & 2 (or latest).

The price shall include the cost of erecting the isolators, including the post and operating rod insulators along with the mounting framework, operating rod, operating mechanism box and all

accessories (excluding Earthing blade assembly), and the supply and erection of an enamelled number plate and a padlock for each isolator. Bus bar connectors provided for making connections to the isolator terminal pad shall be paid under Item 33/34/35.

Item No. 30: 38.25 mm dia (865 mm²) AAC Bull conductor

The price shall cover supply erection, of per meter length of 38.25 mm dia (865 sq mm) as per the latest relevant specification, wherever required. The price shall include straightening, shaping, and connecting/clamping of the conductor to the equipment terminals/bus bar supports as required.

Item No. 31: Supply and erection 25KV system connectors, bus splices & TEE Connectors etc. required for commissioning of SP.

The price shall cover the supply and erection of a bus bar junction and connector of the various types specified, including bolts, nuts, lock nuts, washers, etc., required at the junction of bus bars as per the latest relevant RDSO Specification/drawings/IS or as advised by the purchaser. The price shall also include the supply and erection of an 'Al-Cu' bimetallic strip, if required, to be provided at the junction.

Item No.32: supply and erection of an aluminium jumper

The price shall cover on a flat rate basis the erection of an Aluminium jumper complete with all components and fittings required for providing jumper connection, including parallel clamps, bimetallic Al-Cu strips wherever required, and terminal or tee clamps at either end. The price shall be applicable for any aluminium jumper/connections in any combination between feeders, return conductors, overhead equipment, isolators and outgoing bus-bars or switching stations and booster stations. Jumper connections for 25 KV feeders at angle tower traction sub-station or at feeding stations will also be paid under this item.

Item No. 33: Supply and erection of 50/39mm tubular aluminium busbar.

The price shall cover supply and erection per metre length of a 50x39 mm dia. aluminium tube to serve as a bus bar or equipment-to-equipment bus bar connection in the traction substation, wherever required. The price shall include bending, shaping, and connecting/clamping the Aluminium tube to the equipment terminals/bus-bar supports as required.

Item No. 34: Supply and erection of copper strip for equipment earthing.

The price shall cover supply and erection of 25mmx3mm copper strips to connect the earth terminals of equipment like potential transformers, lightning arrestors, L.T. supply transformers and booster transformers to the main masts of the gantries on which they are mounted. The price shall cover all fastenings required for fixing the copper strips along any structure member of the gantry.

Item No. 35: Supply and erection of Copper jumper (50 mm).

The price shall cover the supply of a 50 sq mm small jumper excluding catenary wire on a flat rate basis, the supply of all components and fittings required for providing a flexible copper jumper connection, including the supply of parallel clamps, bi-metallic aluminium-copper (Al-Cu) strips wherever required and bolted-type terminal connectors wherever required. The price shall also cover the erection of the complete jumper assembly, including the jumper wire. The erection rate shall be applicable for jumper connections using 65-Sq. mm catenary wire (to be supplied by the purchaser) in any combination required for lightning arresters, isolators, etc.

Item No. 36: Supply and Erection of copper cross feeder wires (37/2.25 mm HDBC) across the track at SP/SSP/FP/BT locations

The price shall cover the supply and erection of 25 kV feeder wire across/along the track at the location of SP/SSP/FP/BT/Gantry stations. The feeder wire shall be made of a hard-drawn bare copper conductor of 37/2.5 mm. The price shall be inclusive of the cost of feeder wire but exclusive of termination (which will be paid under item 8(c)) and small parts steel work complete with bolts, nuts, etc., if any.

Item No. 37: Supply and erection of large copper jumper 160 sqmm cross feeder/isolator and OHE.

This jumper shall be provided between the 36 mm Aluminium bus and the copper cross feeder at SP/SSP/FP/BT locations. The price shall cover the supply of all components and fittings including 160 sq.mm jumper wire required for providing a flexible copper jumper (160 Sq.mm) and connection between 36 mm Aluminium bus and cross feeder including suitable connector, parallel clamps, Al-Cu bimetallic strips, fasteners. The price shall also cover the erection of the complete jumper assembly including jumper wire.

Item No. 38: Supply & Erection of 16.5 MVA auto transformer as per spec

The price shall cover supply, erection, testing & commissioning of an 8MVA, 12.3MVA & 16.5MVA, ONAN, 55kV/27.5kV Autotransformer complete with all parts, fittings & accessories, including oil (which may be in separate drums/containers) as per RDSO's specification No. TI/SPC/PSI/AUTOTR/1200 with A&C Slip No. 01 & 02 or latest. The

Contractor shall bring the transformer to its correct position on the foundation and erect all the accessories, check-up the alignment, and make connections of HV and LV terminals to the bus-bars. The Contractor shall carry out oil filtration and pre-commissioning tests as approved by the Purchaser and commission the transformers strictly in accordance with the instructions of the transformer manufacturer or his commissioning engineer at the site to the complete satisfaction of the Purchaser. The Contractor shall be held responsible to ensure that the work is carried out to the highest standards, in accordance with the relevant codes of practice, and any special conditions/guidelines/requirements as laid down by the manufacturer of the transformer are properly complied with. The contractor shall notify the manufacturer regarding the likely date of commissioning one month in advance so that the manufacturer can depute his representative, if so desired by him at his own cost, for warranty obligation purposes. Notwithstanding the availability of the manufacturer's representative or otherwise, it shall be the contractor's responsibility to ensure that the equipment is commissioned as per the laid-down procedure. However, in case of any extra cost being incurred in this regard due to delay on the part of the Contractor, the same shall be recovered from the Contractor. The Contractor shall make his own arrangements for oil filtration equipment as well as the power supply required for the same. All necessary tools, equipment, instruments required for carrying out necessary checks and tests and commissioning of the transformer shall be arranged by the Contractor.

Item No. 39: Supply and erection of C&R panel incorporating Numerical type protective relay for SP suitable for 2x25 kV system

The price shall cover supply, erection, testing & commissioning, and connection of control boards with numerical-type relays as per the latest relevant RDSO Specification or as advised by the purchaser for OHE protection, transformer protection, auto re-closing scheme, and shunt capacitor banks, for all types of equipment i.e. circuit breakers, interrupters, isolators, and transformers at the traction substations, complete with all wiring, control switches, meters, protective and auxiliary relays, etc., including the mimic panel. The price for erection shall also include alignment and grouting of the panels in position and all necessary connections to bring the control board to operation. It shall also include the cost of connecting the frame of each control panel to the earth bus inside the control room.

Item No. 40: Supply, erection, testing and commissioning 25 KV Double pole, vacuum type circuit breaker with interlocking.

The price shall cover supply of 25kV Vacuum Circuit breaker complete with operating mechanism, Contact wear indication, supporting frames, foundation bolts, all fittings, and accessories including terminal connectors. The circuit breaker shall be conforming to RDSO's specification No. TI/SPC/PSI/LVCBIN/ 0121 with A&C slip No. 1 (or latest).

The price shall cover erection of Circuit Breaker including fixing of foundation bolts, grouting the supporting frame and mechanism box on foundation block and mounting of other accessories in their respective places. It shall also cover testing and commissioning of the circuit breaker. The price shall also cover the supply and erection of an enamelled number plate. All necessary tools, equipment, instruments required for carrying out necessary checks and tests and commissioning shall be arranged by the Contractor.

Item No. 41: Supply, erection, testing and commissioning 25 KV vacuum double pole type interruptor.

The price shall cover supply of 25kV Vacuum type Interrupter complete with operating mechanism, supporting frames, foundation bolts, all fittings, and accessories including terminal connectors. The Interrupter shall be conforming to RDSO's specification No. TI/SPC/PSI/LVCBIN/ 0121 with A&C slip No. 1 (or latest).

The price shall cover erection of Interrupter including fixing of foundation bolts, grouting the supporting frame and mechanism box on foundation block and mounting of other accessories in their respective places. It shall also cover testing and commissioning of the Interrupter. The

priceshall also cover the supply and erection of an enamelled number plate. All necessary tools,equipment instruments required for carrying out necessary checks and tests and commissioning shall be arranged by the Contractor.

Item No. 42: 55KV Double pole SF6 Circuit Breaker.

The price shall cover Supply of 50/66kV/110kV/132kV/220kV, Out-door type, triple/double pole,SF6 Gas Circuit Breakers, complete with Poles (Interrupting Chamber & Support Insulators),operating mechanism, mounting Steel Frame, terminal Connectors, Interlocking device, Parts,fittings and accessories, SF6 Gas etc. as per RDSO's specification No. TI/SPC/PSI/HVCB/ 0121with A&C slip No. 1 (or latest) or as advised by the purchaser.

The price shall cover erection of the circuit Breaker including grouting the supporting frame and Mechanism box on foundations block and mounting of other accessories at their respective places.It shall also cover first gas filling, testing and commissioning of the circuit breaker. The price shallalso cover the supply and erection of an enamelled number plate. The Contractor shall make hisown arrangement for filling of the SF6 gas and power supply required for testing purpose. Allnecessary tools, equipment, instruments required for carrying out necessary checks, tests andcommissioning shall be arranged by the Contractor.

Item No. 43: Supply, erection, testing and commissioning 25 KV potential transformer (PT)(type-1)

The prices shall cover supply, erection and connecting up of a potential transformer complete withall fittings & accessories, enamelled number plate including terminal connectors. The potentialtransformer shall conform to the latest relevant RDSO specification or as advised by the purchaser.

The price shall include mounting of the current transformer in position and supply and erection ofan enamelled number plate. All necessary tools, equipment, instruments required for carrying outnecessary checks, tests and commissioning shall be arranged by the Contractor.

Item No. 44 :42 KV Lightening Arrester.

The price shall cover supply & Erection of outdoor type Metal Oxide Gapless Type Lightening Arresters for various nominal system voltages complete with terminal connector, an earthing pad,hardware's required for mounting the Lightning Arrester, insulating base, surge monitor, enamellednumber plate and disconnectors (if required) as per latest relevant RDSO's specification or asadvised by the purchaser.

The price shall cover erection and connecting up of lightning arresters with surge counters completewith all fittings and accessories including terminal connector. It shall also include mounting of theLightning arrestor in position and erection of enamelled number plate.

Item No. 45 :Supply and installation of 240V, AC distribution board for control room The price shall cover supply, erection, connecting up and testing & commissioning of a 240V ACDistribution Board in the Control Room. It shall include the grouting of the framework of thedistribution board in position or mounting it on the wall and necessary connections of 240V A.C. L.T. Distribution Boards in the Control Room. 240V AC Distribution Board shall conform to thelatest relevant RDSO specification or as advised by the purchaser.

Item No.46 :Supply and installation of PVC insulated and sheathed copper unarmoured cable size 7 core 2.5 sqmm.

The price shall cover supply and installation per meter length of a PVC 1100V grade 2.5 mm2 (copper conductor) 7-core cable from each circuit breaker and Interrupter to the Control and Relaypanel as per the latest relevant RDSO Specification/IS or as advised by the purchaser.

Item No. 47: Supply and installation of PVC insulated and sheathed copper unarmoured cable size 2x4 sqmm.

The price shall cover supply and installation per meter length of PVC 1100V grade 4 mm² (copper conductor) 2-core cable from each current transformer to the control and relay board, from 110VDC distribution board to the control and Relay Board and from the 240V A. C. LT distribution board to the battery chargers as per the latest relevant RDSO Specification/IS or as advised by the purchaser.

Item No. 48: Supply and installation of PVC insulated and sheathed copper unarmoured cable size 2x2.5 sqmm.

The price shall cover supply and installation per metre length of PVC 1100V grade 2.5 mm² (copper conductor) 2-core cable from each potential transformer to the control and relay board and from the 240V AC LT distribution board to the control and relay panel as per the latest relevant RDSO Specification/IS or as advised by the purchaser.

Item No. 49 :Supply Laying , testing and commissioning of Al. XLPE Cable 2 core 70 Sq.mm

The price shall include the supply and laying of 2 core, 70 mm² XLPE insulated, PVC sheathed, 1100 V armoured Aluminium conductor as per the latest relevant RDSO Specification/IS or as advised by the purchaser.

Item No.50 :Supply ,filtration, erection , testing and commissioning of 25 KV/240V, 10 KVA Auxiliary transformer oil filed type with complete accessories as per RDSO Spec. ETI/PSI/15(08/2003) or latest.

The price shall cover Supply of 25 kV/240V 10 kVA LT supply transformers, at site, as per the RDSO's specification (or indicated in Annexure-1) and erection of the same complete with terminal connectors on a mast or gantry. The price shall be applicable for transformers mounted on steel pedestals at switching stations also. The price shall also cover supply and erection of an enameled number plate of approved design. The price shall also cover oil filtration and pre-commissioning tests as approved by the railways. The contractor shall make his own arrangement for oil filtration equipment, as well as power supply required for the same. All necessary tools, equipments, instruments required for carrying out oil filtration/ checks/tests and commissioning shall be arranged by the contractor.

Item No. 51: Supply, Erection, testing and commissioning of 25 KV DO fuse switch Assembly.

The price shall cover supply and erection of 25 kV drop out fuse switch complete with all mounting accessories and terminal connectors as required but without the cost of the supply of 25 kV solid core insulator. The price shall not include erection of small parts steel work.

Item No.52 :Supply of insulator for 25 kV DP 2000 A isolator

The price shall cover only supply of 25 kV Solid Core Post and Operating Rod Insulators for execution of work covered under Item 13(a), 13(b) & 13(c) respectively. Erection cost of insulators are inclusive in Items 13(a), 13(b) & 13(c) respectively.

Item No.53: Supply and Erection of approved make "Dry Chemical Powder" type Fire extinguisher 5 Kg. Capacity.

The description as mentioned is self explanatory and the work is to be carried out as per the directives of Railway representative.

Item No. 54: Supply and Erection of Fire buckets stand with 4 nos bucket each Capacity 9 Ltr including locking arrangement.

The description as mentioned is self explanatory, and the work is to be carried out as per the directives of Railway representative.

Item No. 55: Supply, fabrication, painting and fixing of MS angle iron for supporting cable.

The price shall cover Supply and Erection of MS angle iron for supporting cable as per latest IS specification.

Item No. 56: Supply and Erection of various type of indication boards and caution boards and T & P

Price shall cover cost of Supply and Erection of various type of indication boards and caution boards and T & P.

Item No. 57& 58: Supply and Erection of 25KV SP Isolator Amp(motorised)

The description as mentioned is self explanatory and to be executed as per latest RDSO specification

Item No.59: Supply and erection of Control & LED Indication panel for operation of motorised isolator

The description as mentioned is self explanatory and to be executed as per latest RDSO specification

Item No. 60: Supply, Installation, Testing and Commissioning of fault Locator Panel for SP including two numbers of measuring unit (MU)

The description as mentioned is self explanatory and the work is to be carried out as per the directives of Railway representative and latest RDSO specification for AFL.

Item No. 61: Supply, Installation, Testing and Commissioning of fault Locator wall mount rack for OFC hut.

The description as mentioned is self explanatory and the work is to be carried out as per the directives of Railway representative and latest RDSO specification for AFL.

Part-4- Schedule for 4nos. 2X25 KV SSP (Single Line)

Item No. 1: Design & drawing of SSP station.

The price shall cover on a flat rate basis per switching station (SP/SSP), survey, investigation of soil bearing pressure, preparation of cross-section drawings, preparation of general arrangement drawings, detailed layout of equipment, bus-bar arrangement and connectors/connections and insulators, terminal connectors, layout of earthing system and earth connections, cable run layout, detailed designs and drawings for steel work and structural support, suitable concrete plinths for equipment, and drawings for equipments, components, fittings, and materials supplied by the Contractor/Purchaser. The price shall include the supply of the requisite number of copies of all drawings, including completion drawings.

Note-For items 1(a) to 1(d), the latest RDSO Drg./Spec./IS shall be followed wherever applicable and as advised by the purchaser.

Item No. 2: Supply and erection of 50 kV termination with adjuster complete with disc insulators.

The price shall cover supply and erection of all materials for the termination of a single ACSR conductor (61/3.18 mm ZEBRA) strung-bus between gantries/portals, including anchor fittings, single clevis assembly, anchor double straps, string of appropriate numbers of Disc Insulators required as per system voltage, strain clamps and arcing ring, adjusters and other fittings to complete the assembly. The assembly shall be of adequate breaking strength in accordance to the latest RDSO spec./drawing.

Item No. 3: supply without insulator and erection of 9 Tonne Suspension insulator

The price shall cover the supply of all materials required for suspension of an all Aluminium 25 Kvfeeder (Single or Double SPIDER) or any other similar type of suspension. The price shall coversupply of all components required for the suspension assembly including the appropriate suspensionclamps but excluding small parts steel work with bolts and nuts etc., if any. The price shall covererection of all components, but excluding small parts steel work with bolts and nuts etc., if any. Thesupply of 9-tonne Insulator assembly covered in item No. 4(b)/4(c)/4(d).

The price shall include the cost of provision of a flat armour tape only to be used in connection withsuspension of "SPIDER" conductor.

Item No. 4: Supply without insulator and erection of materials for termination of copper cross feeder with gantries.

The termination of one cross feeder at both ends constitutes one set. The supply of 9-tonne Insulatorassembly covered in item No. 4(b)/4(c)/4(d).

Item No. 5:-Supply and Erection of 110V , 150AH , low maintenance Lead Acid Batteries set with 2 No's of suitable Battery Chargers

The price shall cover supply, erection, testing & commissioning of Lead Acid Battery 110 V, 150Ahlow-maintenance lead-acid battery complete with battery stand, Electrolyte and Tool Board,Accessories, connectors with thermometer, hydrometer & wrench etc. as per latest RDSOspecification. The price for erection shall include installation, connecting up, charging, testing andcommissioning of the battery. 110V, 150 AH low-maintenance lead-acid batteries shall conform tothe latest RDSO specification..

The price shall also cover supply, erection, testing & commissioning of 02 nos. suitable batterychargers as per RDSO specification (TI/SPC/PSI/40-150/CHGR/1210) or latest amendments, forcharging of 110 V, 150 Ah lead acid battery & connecting it.

Item No. 6: Transportation & Erection of 13 Mtrs.(52/60KG) release long Rails from nominated place with in 10 KM area to works site.

The price shall cover transportation of rail pieces of 13 meters long supplied by the railway fromthe nearest depot to TSS / SP / SSP. The price shall also cover the loading and unloading of railpieces.

Item No. 7: Concrete for foundation and trench in hard soil.**Item No. 8: Concrete for foundation and trench in rock.**

The price shall cover excavation, supply and handling of all materials and accessories, temporaryarrangements for excavation in hard soil and concrete/masonry drains/walls requiring use of chiseland hammer for item 2(a) or requiring blasting for item 2(b), shoring and shuttering wherenecessary, casting concrete including framework, grouting gantry/portal columns and steel supportsand finishing the top of the concrete foundation with the required slope/muff. The price shallinclude dismantling of all connected temporary arrangements, backfilling required, and removal ofsoil. The Purchaser's Engineer shall certify where use of chisel and hammer or blasting has beennecessary. The Contractor shall arrange for the supply of explosives and all tools and plants forblasting operations at his own cost. If half or more of the depth and width of excavation is in hardsoil or rock, concrete, /masonry/drains/walls or rock, the entire foundation shall be paid for underitem 2(a) or 2(b); if it is less than half, payment for the entire foundation shall be made at the ratefor the type of soil in which the majority of the foundation is placed. The price shall include the costof cement also. Cement shall not be supplied by the Rlys.

NOTE: For measurements for items 2(a) & 2(b):

The payable volume of the foundations under item 2(b) shall be limited to the designed one as shown in the drawings for which the hole has been blasted, irrespective of the actual configurationassumed by the latter due to blasting.

The depth of excavation shall be measured from the formation level of the substation to the maximum excavated point

Item No. 9: Concrete for foundation and trench in other than hard soil and rock.

The price shall include all work mentioned in item 2(a) in all classes of soil, including black cotton and loose soils, except hard soil, concrete/masonry/drain/walls, and rock. The price shall include the cost of cement also. Cement shall not be supplied by the Rlys.

Item No. 10: Reinforced concrete for foundation & trench

The price shall cover excavation and all reinforced concrete work for foundations, including the supply of steel for reinforcement and other materials, including bending/binding, laying of reinforcement, shoring and shuttering where necessary, casting concrete including framework where necessary, grouting, and finishing the tops of foundation blocks with the required slope/muff. The price shall include dismantling of all connected temporary arrangements, backfilling as required, and removal of soil. The price shall also cover all concrete work for cast-in-situ piles and pedestals/columns for mounting equipment. The volume of cast-in-situ piles and pedestal columns shall be added to the volume of the foundation block for purposes of payment. Dowel bars will not be considered as reinforcement for the purpose of this item. The price shall include the cost of cement also. Cement will not be supplied by Rlys.

Item No. 11: Reinforced concrete for cable trench covers.

The price shall cover casting of cable trench covers in reinforced concrete as per the latest relevant RDSO drawing. The cable trench covers will be cast in an angle iron frame as per the latest relevant RDSO drawing. The price shall include the supply of steel for reinforcement, angle iron for the framework, fabrication of the angle iron frame, etc. The price shall include positioning and dressing up of the trench covers, if required. The price shall include the cost of cement also. Cement will not be supplied by Railways.

Item No. 12: Supply and spreading of gravel / ballast in the switch area

The price shall be per cum rate and shall cover supply and spreading of uniformly graded gravel/ballast of size 20/25mm, in the outdoor switch yard after completing all the works and levelling the switch yard area, but before commissioning of the sub-station. The gravel/ballast shall be of good quality and free from any dust and dirt. Prior approval of ballast shall be taken from the Purchaser for the gravel samples. The gravel/ballast shall be spread out uniformly to a depth of 10cm. over the area indicated by the Purchaser's Engineer.

Item No. 13: Insulator for cross feeder

The description as mentioned is self explanatory and the work is to be carried out as per the directives of Railway representative.

Item No. 14: Supply of 9 Tonne insulator

The price shall cover only supply of 9 tonne insulator assembly (Composite CD-1600 mm) against each Item required for execution of work covered under Items No. **8(a), 8(b) & 8(c)**. Erection cost of insulators are inclusive in Items **8(a), 8(b) & 8(c)**.

Item No. 15: Supply and erection of 25KV support insulators.

The price shall cover the supply and erection of a 25kV solid core post insulator to support Aluminum bus-bars. It shall include supply of fixing bolts, nuts, locknuts, washers and studs etc. It shall also cover erection of all components required for the assembly including post insulator.

Bus-bar clamps/jumper clamps for clamping the bus-bars/jumpers shall be paid under item 33, 34 & 35.

Item No. 16: Supply & erection of galvanization steel structure including Traction mast, main masts, fabricated steel other than mast, SPS, Tower gantries, portal, supporting structures & small part steel work.

The price shall cover supply, fabrication, galvanization and erection of steel gantries/portals, required in the traction substation (TSS)/FP/SP/SSP. The price shall include alignment setting and grouting of steel

work and supply of all necessary galvanized steel bolts, nuts, lock-nuts, washers etc. wherever required as per approved designs and drawings and assembly of the fabricated steelwork at site to the extent necessary. The calculated weight to be considered for payment under this item included in relevant drawings at the time of submitting designs for approval of the Purchaser.

Item No. 17: Supply & erection of earth electrode as per IS 3043 or RDSO specification.

The price shall cover supply and erection of an earth electrode, as per latest relevant RDSO specification/drawing. The price shall cover the provision of a protective concrete box with removable cover as shown in the drawing. The price shall include the testing of earth value and painting the particulars on the box.

The price shall be inclusive of concrete box with cover for this item.

Item No. 18: Supply and erection of earth bus 75x8 mm. MS strip laid in the ground.

The price shall cover supply and installation per meter length of 75x8mm mild steel flat, buried at a depth of 60cm below ground level. The price shall also cover connections of the steel flats to the earth electrodes to constitute the main earth ring and to the earthed terminals of the 220 kV or 132kV or 110 kV or 66 kV/ 25kV transformers and metallic frame work/ structure of various equipments etc. as required.

Item No. 19: Supply and erection of earth bus 75x8 mm. MS strip laid exposed.

The price shall cover supply and installation per meter length of 75x8 mm mild steel flat, painted all around with two coats of painting to colour grass green shade-218 of IS: 5 or latest passing through cable trench or exposed above ground level. The price shall also cover the connections of the steel flats to the earth electrodes, to constitute the main earth ring and to the earthed terminals of the various equipment as required.

Item No. 20: Supply of 8/6 SWG GI wire for earthing

The price shall cover supply, shaping and erection of 8 / 6 SWG G.I. wire per meter used for earthing of control panels, L.T. AC and DC distribution boards, battery chargers, etc. at sub-station control rooms. The requirement of fencing panel earthing to the nearest fencing upright shall also be included and paid for under this item as per requirement of purchaser.

Item No. 21: 32 mm dia MS rod for earth mat.

The price shall cover supply and installation per meter length of bare mild steel rod of dia 32mm to be buried at a depth of 60cm. below the ground level to form the earthing grid & connected to earth electrodes. The price shall also cover jointing of the M.S. rods to form an earthing grid and connection to M. S. flats for system earthing as per latest relevant standard.

Item No. 22: Supply & erection of earth screen wire of size 19/2.5mm..

The price shall cover supply and stringing per meter length of galvanised steel stranded wire. It shall include the supply and erection of suitable terminations using strain clamps adjuster (on one side only) etc. It shall also include connecting by means of suitable terminal spades, the end of the earth screen wire to the main members of the columns of portals gantries across which these wires are strung or to suitable M.S. flat earth leads. For purposes of payment the clear span between the structures on which earth wire is run shall be adopted. The clear span will be rounded off to the nearest meter (0.5m and below being ignored).

Item No. 23: Supply and erection fencing panel at substation for SSP

The prices shall include supply and erection of fencing panels as per latest relevant RDSO drawing included in Annexure-1, painted with two coats of red oxide zinc chromate primer and finished with two coats of aluminium paint to IS:2339 or latest. The prices shall not include supply and erection of fencing uprights, anti-climbing devices but shall include the cost of fasteners and the price shall be for a meter length of the panels, measured in the plan view of the approved drawings.

Item No.24: Supply & erection of fencing upright.

The price shall cover supply and erection of fabricated fencing uprights as per latest relevant RDSO drawing included in Annexure-1 painted with two coats of red oxide zinc chromate primer and finished with two coats of Aluminum paint to IS: 2339 or latest. The price shall be on the basis of black weight of the steel section of the approved drawing with no deduction for holes and skew cutouts no increase for weld materials. The cost of foundation of uprights will be paid under **item 2**. Provision of the earth connections connecting each upright with the main earth bus as per approved drawing shall be paid under item 12.

Item No. 25: Supply and erection of gates

The price shall cover supply and erection of gates including locking device as per relevant RDSO drawing ETI/C/0186 or latest. The gates will be painted with two coats of red oxide zinc chromate primer to IS: 2074 and finished with two coats of aluminium paint and IS: 2339 or latest. The price shall be per meter length of the gate as measured on the plan view of the appropriate approved drawings. The price shall also include providing two bond connections made of multi-stranded flexible steel equivalent to 6 SWG in the form of helical spring for the purpose of continuity of earthing between the gate and the adjacent fencing uprights as per the appropriate approved drawings. Both fixing ends shall be provided with an "eye" and properly crimped.

NOTE: All fasteners, bolts, nuts, locknuts, washers, etc. required for assembly and fixing of steelwork shall be galvanized.

Item No. 26: Supply & erection of anti climbing device at substation.

The price shall cover the supply and erection of an anti-climbing device consisting of steel fixtures and galvanized barbed wire mounted on the fencing panels as per approved drawings. The price shall be per meter length of the panel. The price shall include painting of the fixtures with two coats of red oxide zinc chromate primer and two finishing coats of aluminium paint and IS: 2339 or latest.

Note: The prices for items 14(a) to 14(d) shall also include the supply of all necessary galvanized steel bolts, nuts, locknuts, washers, etc. required for the assembly and fixing of the steelwork.

Item No. 27: Supply, laying and fixing of heavy duty ISI marked 'B' class GI pipe of 3.65mm wall thickness and 50mm dia to be laid along the wall or floor with proper galvanized clamps/ through the wall or undernaeth the floor in cement concrete as per explanatory note.

The price shall cover the supply and erection of 50 mm dia B class GI pipe with GI flat clamp & required hardware as per the latest relevant IS/RDSO specification or as advised by the purchaser.

Item No. 28: Supply (without Insulator) and Erection of 25 kV, 2000 Amp. Double Pole Isolator without Earthing Blade Assembly (Manually Operated)

The price shall cover the supply of the isolator complete with all parts, fittings and accessories, including mounting framework, operating rod, operating mechanism box and all accessories required for its smooth and trouble-free operation. All such parts, fittings and accessories (excluding Earthing blade assembly) shall be deemed to be in the scope of supply, whether specifically mentioned or not. The price shall be exclusive of the cost of the required 25 kV solid core post and operating rod insulators. The cost of insulators shall be paid under item 45(b)/45(c). The isolators shall conform to RDSO's latest specification no. TI/SPC/PSI/ISOLTR/0210 with A&C slip No. 1 & 2 (or latest).

The price shall include the cost of erecting the isolators, including the post and operating rod insulators along with the mounting framework, operating rod, operating mechanism box and all accessories (excluding Earthing blade assembly), and the supply and erection of an enamelled number plate and a padlock for each isolator. Bus bar connectors provided for making connections to the isolator terminal pad shall be paid under Item 33/34/35.

Item No. 29: Supply (without Insulator) and Erection of 25 kV, 2000 Amp. Double Pole Isolator without Earthing Blade Assembly (Motorized).

The price shall cover the supply of the isolator complete with all parts, fittings and accessories, including mounting framework, operating rod, operating mechanism box and all accessories required for its smooth

and trouble-free operation. All such parts, fittings and accessories(excluding Earthing blade assembly) shall be deemed to be in the scope of supply, whetherspecifically mentioned or not. The price shall be exclusive of the cost of the required 25 kV solidcore post and operating rod insulators. The cost of insulators shall be paid under item 45(b)/45(c).The isolators shall conform to RDSO's latest specification no. TI/SPC/PSI/ISOLTR/0210 with A&Cslip No. 1 & 2 (or latest).

The price shall include the cost of erecting the isolators, including the post and operating rodinsulators along with the mounting framework, operating rod, operating mechanism box and allaccessories (excluding Earthing blade assembly), and the supply and erection of an enamellednumber plate and a padlock for each isolator. Bus bar connectors provided for making connectionsto the isolator terminal pad shall be paid under Item 33/34/35.

Item No. 30: 38.25 mm dia(865 mm²) AAC Bull conductor

The price shall cover supply erection, of per meter length of 38.25 mm dia (865 sq mm) as per thelatest relevant specification, wherever required. The price shall includestraightening, shaping, andconnecting/clamping of the conductor to the equipment terminals/bus bar supports as required.

Item No. 31:Supply and erection 25KV system connectors, bus splices& TEE Connectors etc. required for commissioning of SSP as per explanatory note.

The price shall cover the supply and erection of a bus bar junction and connector of the various typespecified, including bolts, nuts, lock nuts, washers, etc., required at the junction of bus bars as perthe latest relevant RDSO Specification/drawings/IS or as advised by the purchaser. The price shallalso include the supply and erection of an 'Al-Cu' bimetallic strip, if required, to be provided at thejunction.

Item No. 32:Supply and erection of 50/39mm tubular aluminium busbar.

The price shall cover supply and erection per metre length of a 50x39 mm dia. aluminium tube toserve as a bus bar or equipment-to-equipment bus bar connection in the traction substation,wherever required. The price shall include bending, shaping, and connecting/clamping theAluminium tube to the equipment terminals/bus-bar supports as required.

Item No. 33: supply and erection of an aluminium jumper

The price shall cover on a flat rate basis the erection of an Aluminium jumper complete with allcomponents and fittings required for providing jumper connection, including parallel clamps,bimetallic Al-Cu strips wherever required, and terminal or tee clamps at either end. The price shallbe applicable for any aluminium jumper/connections in any combination between feeders, returnconductors, overhead equipment, isolators and outgoing bus-bars or switching stations and boosterstations. Jumper connections for 25 KV feeders at angle tower traction sub-station or at feedingstations will also be paid under this item.

Item No. 34: Supply and erection of copper strip for equipment earthing.

The price shall cover supply and erection of 25mmx3mm copper strips to connect the earthterminals of equipment like potential transformers, lightening arrestors, L.T. supply transformersand booster transformers to the main masts of the gantries on which they are mounted. The priceshall cover all fastenings required for fixing the copper strips along any structure member of thegantry.

Item No.35:Supply and erection of Copper jumper (50 mm)

The price shall cover the supply of a 50 sq mm small jumper excluding catenary wire on a flat ratebasis, the supply of all components and fittings required for providing a flexible copper jumperconnection, including the supply of parallel clamps, bi-metallic aluminium-copper (Al-Cu) stripswherever required and bolted-type terminal connectors wherever required. The price shall alsocover the erection of the complete jumper assembly, including the jumper wire. The erection rateshall be applicable for jumper connections using 65-Sq. mm catenary wire (to be supplied by thepurchaser) in any combination required for lightning arresters, isolators, etc.

Item No. 36:Supply and Erection of copper cross feeder wires (37/2.25 mm HDBC) across the track at SP/SSP/FP/BT locations

The price shall cover the supply and erection of 25 kV feeder wire across/along the track at thelocation of SP/SSP/FP/BT/Gantry stations. The feeder wire shall be made of a hard-drawn barecopper conductor of

37/2.5 mm. The price shall be inclusive of the cost of feeder wire but exclusive of termination (which will be paid under item 8(c)) and small parts steel work complete with bolts, nuts, etc., if any.

Item No. 37: Supply and erection of large copper jumper 160 sqmm cross feeder/isolator and OHE.

This jumper shall be provided between copper cross feeders and OHE. The price shall cover the supply of all components and fittings, including 160 sq. mm jumper wire required for providing a flexible copper jumper (160 Sq. mm) between copper cross feeder and the existing OHE, including suitable Parallel clamps complete with fasteners, etc., as required. The price shall also cover the erection of the complete jumper assembly, including the jumper wire.

Item No. 38: Supply Erection, testing and commissioning of 16.5 MVA, 54 KV/27KV 50 Hz Auto Transformer with bushing CT oil and other equipment as per RDSO specification suitable for 2x25KV AT feeding system.

The price shall cover supply, erection, testing & commissioning of an 8MVA, 12.3MVA & 16.5MVA, ONAN, 55kV/27.5kV Auto transformer complete with all parts, fittings & accessories, including oil (which may be in separate drums/containers) as per RDSO's specification No. TI/SPC/PSI/AUTOTR/1200 with A&C Slip No. 01 & 02 or latest. The Contractor shall bring the transformer to its correct position on the foundation and erect all the accessories, check-up the alignment, and make connections of HV and LV terminals to the bus-bars. The Contractor shall carry out oil filtration and pre-commissioning tests as approved by the Purchaser and commission the transformers strictly in accordance with the instructions of the transformer manufacturer or his commissioning engineer at the site to the complete satisfaction of the Purchaser. The Contractor shall be held responsible to ensure that the work is carried out to the highest standards, in accordance with the relevant codes of practice, and any special conditions/guidelines/requirements as laid down by the manufacturer of the transformer are properly complied with. The contractor shall notify the manufacturer regarding the likely date of commissioning one month in advance so that the manufacturer can depute his representative, if so desired by him at his own cost, for warranty obligation purposes. Notwithstanding the availability of the manufacturer's representative or otherwise, it shall be the contractor's responsibility to ensure that the equipment is commissioned as per the laid-down procedure. However, in case of any extra cost being incurred in this regard due to delay on the part of the Contractor, the same shall be recovered from the Contractor. The Contractor shall make his own arrangements for oil filtration equipment as well as the power supply required for the same. All necessary tools, equipment, instruments required for carrying out necessary checks and tests and commissioning of the transformer shall be arranged by the Contractor.

Item No. 39: Supply and erection of C&R panel incorporating Numerical type protective relay for SSP suitable for 2x25 kV system

The price shall cover supply, erection, testing & commissioning, and connection of control boards with numerical-type relays as per the latest relevant RDSO Specification or as advised by the purchaser for OHE protection, transformer protection, auto re-closing scheme, and shunt capacitor banks, for all types of equipment i.e. circuit breakers, interrupters, isolators, and transformers at the traction substations, complete with all wiring, control switches, meters, protective and auxiliary relays, etc., including the mimic panel.

The price for erection shall also include alignment and grouting of the panels in position and all necessary connections to bring the control board to operation. It shall also include the cost of connecting the frame of each control panel to the earth bus inside the control room.

Item No. 40: Supply, erection, testing and commissioning 25 KV Double pole, vacuum type circuit breaker with interlocking .

The price shall cover supply of 25kV Vacuum Circuit breaker complete with operating mechanism, contact wear indication, supporting frames, foundation bolts, all fittings, and accessories including terminal connectors. The circuit breaker shall be conforming to RDSO's specification No. TI/SPC/PSI/LVCBIN/ 0121 with A&C slip No. 1 (or latest).

The price shall cover erection of Circuit Breaker including fixing of foundation bolts, grouting the supporting frame and mechanism box on foundation block and mounting of other accessories in their respective places. It shall also cover testing and commissioning of the circuit breaker. The price shall also cover the supply and erection of an enamelled number plate. All necessary tools, equipment, instruments required for carrying out necessary checks and tests and commissioning shall be arranged by the Contractor.

Item No. 41: Supply, erection, testing and commissioning 25 KV vacuum double pole type interrupter .

The price shall cover supply of 25kV Vacuum type Interrupter complete with operating mechanism, supporting frames, foundation bolts, all fittings, and accessories including terminal connectors. The Interrupter shall be conforming to RDSO's specification No. TI/SPC/PSI/LVCBIN/ 0121 with A&C slip No. 1 (or latest).

The price shall cover erection of Interrupter including fixing of foundation bolts, grouting the supporting frame and mechanism box on foundation block and mounting of other accessories in their respective places. It shall also cover testing and commissioning of the Interrupter. The price shall also cover the supply and erection of an enamelled number plate. All necessary tools, equipment instruments required for carrying out necessary checks and tests and commissioning shall be arranged by the Contractor.

Item No. 42: Supply, erection, testing and commissioning 25 KV potential transformer (PT)(type-1)

The price shall cover Supply of 50/66kV/110kV/132kV/220kV, Out-door type, triple/double pole, SF6 Gas Circuit Breakers, complete with Poles (Interrupting Chamber & Support Insulators), operating mechanism, mounting Steel Frame, terminal Connectors, Interlocking device, Parts, fittings and accessories, SF6 Gas etc. as per RDSO's specification No. TI/SPC/PSI/HVCB/ 0121 with A&C slip No. 1 (or latest) or as advised by the purchaser.

The price shall cover erection of the circuit Breaker including grouting the supporting frame and Mechanism box on foundations block and mounting of other accessories at their respective places. It shall also cover first gas filling, testing and commissioning of the circuit breaker. The price shall also cover the supply and erection of an enamelled number plate. The Contractor shall make his own arrangement for filling of the SF6 gas and power supply required for testing purpose. All necessary tools, equipment, instruments required for carrying out necessary checks, tests and commissioning shall be arranged by the Contractor.

Item No. 43 :42 KV Lightning Arrester

The price shall cover supply & Erection of outdoor type Metal Oxide Gapless Type Lightning Arresters for various nominal system voltages complete with terminal connector, an earthing pad, hardware's required for mounting the Lightning Arrester, insulating base, surge monitor, enamelled number plate and disconnectors (if required) as per latest relevant RDSO's specification or as advised by the purchaser.

The price shall cover erection and connecting up of lightning arresters with surge counters complete with all fittings and accessories including terminal connector. It shall also include mounting of the Lightning arrestor in position and erection of enamelled number plate.

Item No. 44: Supply and installation of 240V, AC distribution board for control room

The price shall cover supply, erection, connecting up and testing & commissioning of a 240V AC Distribution Board in the Control Room. It shall include the grouting of the framework of the distribution board in position or mounting it on the wall and necessary connections of 240V A.C. L.T. Distribution Boards in the Control Room. 240V AC Distribution Board shall conform to the latest relevant RDSO specification or as advised by the purchaser.

Item No.45: Supply installation of PVC insulated and sheathed copper unarmoured cable size 7 core 2.5 sqmm.

The price shall cover supply and installation per meter length of a PVC 1100V grade 2.5 mm²(copper conductor) 7-core cable from each circuit breaker and Interrupter to the Control and Relay panel as per the latest relevant RDSO Specification/IS or as advised by the purchaser.

Item No. 46: Supply installation of PVC insulated and sheathed copper unarmoured cable size 2x4 sqmm.

The price shall cover supply and installation per meter length of PVC 1100V grade 4 mm² (copper conductor) 2-core cable from each current transformer to the control and relay board, from 110VDC distribution board to the control and Relay Board and from the 240V A. C. LT distribution board to the battery chargers as per the latest relevant RDSO Specification/IS or as advised by the purchaser.

Item No. 47: Supply installation of PVC insulated and sheathed copper unarmoured cable size 2x2.5 sqmm.

The price shall cover supply and installation per metre length of PVC 1100V grade 2.5 mm²(copper conductor) 2-core cable from each potential transformer to the control and relay board and from the 240V AC LT distribution board to the control and relay panel as per the latest relevant RDSO Specification/IS or as advised by the purchaser.

Item No. 48 : Supply Laying , testing and commissioning of Al. XLPE Cable 2 core 70 Sq.mm The price shall include the supply and laying of 2 core, 70 mm² XLPE insulated, PVC sheathed, 1100 V armoured Aluminium conductor as per the latest relevant RDSO Specification/IS or as advised by the purchaser.

Item No.49: Supply , filtration, erection , testing and commissioning of 25 KV/240V, 10 KVA Auxiliary transformer oil filled type with complete accessories as per RDSO Spec. ETI/PSI/15(08/2003) or latest.

The price shall cover Supply of 25 kV/240V 10 kVA LT supply transformers, at site, as per the RDSO's specification (or indicated in Annexure-1) and erection of the same complete with terminal connectors on a mast or gantry. The price shall be applicable for transformers mounted on steel pedestals at switching stations also. The price shall also cover supply and erection of an enameled number plate of approved design. The price shall also cover oil filtration and pre-commissioning tests as approved by the railways. The contractor shall make his own arrangement for oil filtration equipment, as well as power supply required for the same. All necessary tools, equipments, instruments required for carrying out oil filtration/ checks/tests and commissioning shall be arranged by the contractor.

Item No. 50: Supply, Erection, testing and commissioning of 25 KV DO fuse switch Assembly.

The price shall cover supply and erection of 25 kV drop out fuse switch complete with all mounting accessories and terminal connectors as required but without the cost of the supply of 25 kV solid core insulator. The price shall not include erection of small parts steel work.

Item No.51: Supply of insulator for 25 kV DP 2000 A isolator

The price shall cover only supply of 25 kV Solid Core Post and Operating Rod Insulators for execution of work covered under Item 13(a), 13(b) & 13(c) respectively. Erection cost of insulators are inclusive in Items 13(a), 13(b) & 13(c) respectively.

Item No.52: Supply & Erection of approved Make "Drychemical powder" type fire extinguisher 5Kgs capacity conforming to latest IS:2171.

The description as mentioned is self explanatory and the work is to be carried out as per the directives of Railway representative.

Item No. 53: Supply of Fire buckets stand with 4 nos bucket each Capacity 9 Ltr including locking arrangement.

The description as mentioned is self explanatory and the work is to be carried out as per the directives of Railway representative.

Item No. 54: Supply, fabrication, painting and fixing of MS angle iron for supporting cable.

The price shall cover Supply and Erection of MS angle iron for supporting cable as per latest IS specification.

Item No. 55: Supply only of various type of Indication Board and caution boards, safety Board, TSS Name Board, key Box, trilingual, Shock Treatment Chart, Stretcher and T&P Etc.,

Price shall cover cost of Supply and Erection of various type of indication boards and caution boards and T & P.

Item No. 56& 57: Supply of 25KV SP Isolator Amp (motorised)

The description as mentioned is self explanatory and to be executed as per latest RDSO specification.

Item No. 58: Supply and erection of Control & LED Indication panel for operation of motorised isolator

The description as mentioned is self explanatory and to be executed as per latest RDSO specification.

Item No. 59: Supply, Installation, Testing and Commissioning of fault Locator Panel for SSP including one number of measuring unit (MU)

The description as mentioned is self explanatory and the work is to be carried out as per the directives of Railway representative and latest RDSO specification for AFL.

Item No. 60: Supply, Installation, Testing and Commissioning of fault Locator wall mount rack for OFC hut.

The description as mentioned is self explanatory and the work is to be carried out as per the directives of Railway representative and latest RDSO specification for AFL.

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PART-II

CHAPTER-I

GENERAL SPECIFICATION

PARA NO.

SUBJECT

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PART – II
CHAPTER – I
GENERAL SPECIFICATIONS

SECTION – I
GENERAL

2.1.1 INTRODUCTION :

This part of Tender Papers is divided into seven chapters and contains general, technical and other specifications for design and erection of complete 25KV A.C. 50Hz. single phase traction overhead equipment, switching stations, L.T. supply transformer stations complete with foundations, structures, and 25KV feeders, if any. This part also give reference to technical specifications of materials and components, procedure for submission of designs and drawings of basic arrangements, components fittings design and other typical design relating to overhead equipment, switching stations and booster transformer stations. A list of the standard drawing is included in Annexure-I, Part-IV.

SCOPE OF WORK:

The sections of the Indian Railways to be equipped with traction overhead equipment in accordance with this specification are detailed in Part-III wherein the particular features of the sections to be electrified and their special requirements are indicated.

2.1.2 CLIMATIC DATA.

Generally for OHE construction a minimum temperature of 4 deg.C and maximum temperature of 65 deg. C are to be considered. Mean temperature should be taken as 35 deg.C. Rain fall generally occurs from June to September. The average rain fall during monsoon season is approx. 65 cm. Maximum relative humidity in area is generally 83%.

2.1.3 WIND PRESSURE.

For design of layout of overhead equipment maximum span etc. wind pressure shall be applicable as per relevant IS. Structures and foundations of overhead equipment, switching stations, booster transformer stations and LT supply transformer stations shall be designed for the wind pressure applicable.

2.1.4 SYSTEM PARTICULARS.

The nominal voltage of the overhead equipment will be 25KV A.C, 50Hz. single phase. The supply voltage may, however, rise upto 27.5 KV. One terminal of the 25KV system will be solidly earthed at the traction sub-station and also connected to the running rails. The other terminal will be connected to the overhead equipment through switchgear provided at the traction sub-station and the feeding station.

2.1.5 ROLLING STOCK.

- a) Locomotive.
The Electric Locomotives may be/ will generally be equipped with DC Motors fed through rectifiers installed on the locomotives.
- b) Oversize consignments.
The specific requirements in regard to movement of steam locomotives and oversize consignments for each section shall be indicated by the purchaser in due course.

2.1.6

a) Power supply sub-stations.

Electric power will be supplied at 25kV AC 50Hz. single phase from traction sub-stations to feeding stations spaced 50 to 80Km. apart along the track..

b) Switching Stations.

Power supply will be controlled to the different sections of traction overhead equipment by switching stations. At these stations the switching will be effected by means of “Interrupters” which are single pole, non-automatic oil circuit breakers capable of repeatedly interrupting normal full load current. There are three types of switching stations:

- i) Feeding stations;
 - ii) Sectioning Stations and
 - iii) Sub-sectioning Stations.
- c) **Feeding stations.**
Supply will be effected to the overhead equipment through switchgear installed at feeding stations. All feeding stations will be located normally near the track.
- d) **Sectioning Stations.**
The substations cannot, as a rule, be parallel and consequently a neutral section of overhead equipment with insulated overlaps on either side will be provided approximately midway between two consecutive feeding stations. Neutral sections may also be provided at feeding stations. Facilities to bridge the neutral section between feeding stations will be provided at sectioning stations.
- e) **Sub-sectioning Station.**
In order to facilitate maintenance of overhead equipment and to permit isolation of faulty sections and expeditious restoration of power supply in healthy sections, sub-sectioning stations with insulated overlaps will be provided between the feeding stations and the sectioning stations.
- f) **Return Conductors.**
Deleted.
- g) **Booster Stations.**
Deleted.
- h) Supply and erection of traction sub-stations mentioned in Sub-Para (a) above do not come within the purview of this specification.

* * * * *

SECTION – 2

OVERHEAD EQUIPMENT.

2.1.10 TRACK:

- a) Gauge - The track gauge is 1676 mm (5' – 6").
- b) Speed.
The overhead equipment which shall be of the simple polygonal type and pre-sag should be designed for a maximum speed of 160 km/h (approx. 100 miles/h) if regulated, and for maximum speed of 80 km/h (approx. 50 miles/h) if unregulated, unless otherwise specified in other parts of tender papers. Pre-sag to be adopted shall be as per latest RDSO guidelines.
- c) Curves.
The minimum radius permissible is 175M (573 ft.) i.e. a 10 deg. Curve. Inside station limits, the curvature at a 1 in 8 ½ turnout is 8 deg. I.e. of radius 219M (716ft.).
- d) Super Elevation,
The maximum super elevation is 165mm (6 ½"). On curves, the minimum setting of structures shall be decided on the basis of maximum super elevation (see para 2.3.10). For purposes of design and erection of overhead equipment, the actual super elevation as existing at site or as indicated to the Contractor shall be adopted.
- e) Low Joints.
For low or loosely packed rail joints, a difference of 25mm (1") in the level of opposite rails may be 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 tracks 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.

2.1.11 a) Sectioning Insulated Overlaps.

Insulated overlaps are provided for facility of isolation. Some of the overlaps may be provided with manually operated isolator switches. In addition for connection in overhead equipment to booster transformers insulated overlaps are indicated in the Sectioning Diagram/s.

b) Sectioning Yard Supply.

The sectioning diagram/s also indicate the tracks in station yards 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 interruptor in accordance with arrangement indicated in the sectioning diagram/s.

c) Section Insulators.

Section Insulators shall be provided as indicated in the Sectioning diagram or cross-over between main tracks and to isolate sections of overhead equipment in yards and sidings. Section insulators may also be used to form neutral sections at special locations as indicated in approved drawings.

d) Feeders

Where a traction sub-station is located away from the track to be electrified, 25kV feeder and return feeders will be run from the traction sub-station to the feeding station. A 150 Sq. mm Hard drawn copper conductor shall make up such feeders.

e) 25kV along Track Feeders.

25kV track feeders may connect sections of overhead equipment or connect the overhead equipment to a switching station or an isolator switch or gantry. Such feeders will be run usually on traction structure and sometimes on independent masts. A 150 Sq. mm Hard drawn copper conductor shall make up such feeders.

f) Return Conductor.

Deleted.

g) Schematic Arrangements.

The different arrangements of feeders, return feeders 25kV along track feeders and return conductors.

h) Sectioning Diagram.

The provisional sectioning diagram/s of the sections to be electrified is/are supplied by the purchaser to successful tenderer.

2.1.12 PANTOGRAPHS.

a) The outline of the pantograph, its dimensions and its current collecting area is as per standard RDSO's guidelines.

b) Number of pantograph and Pressure.

Each locomotive will be equipped with two pantographs but only one pantograph generally the trailing one will be in use at a time. The working pressure of the pantograph on the contact wire may vary between 5 and 15Kgs.

c) Spacing in multiple headed trains.

The distance between adjacent running pantographs in the case of multiple heading would normally be 20M. This distance may, however, be reduced to 7.9M. between the two pantographs in very exceptions cases.

d) Insulation Clearance.

The electrical clearances for the pantographs on tangent tracks and on curves for design and erection of overhead equipment shall be based on the Schedule of Dimensions 1676mm. Gauge, 1939 printed in 1973 in metric units, issued by the Ministry of Railway (Railway Board), Government of India and any other orders that may be issued by the Railway Board from time to time.

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 160 KMPH the contact wire is given a pre sag value of which shall conform to latest RDSO's guidelines for 72M span and reduced suitably for other spans.
- b) Catenary:
The Catenary wire shall be either of cadmium copper 19/2.19mm, 65sq.mm nominal section.
- c) Contact Wire.
The contact wire shall be grooved and made of hard drawn copper having 107sq.mm cross section.
- d) Droppers.
Droppers shall be made of hard drawn round copper wire, approximately 5mm dia. Droppers shall be spaced not more than 9 M apart.
- e) Encumbrance.
As a general rule, the nominal "encumbrance" i.e. the centre distance between the catenary and the contact wire at the support shall be 1.40M. 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 in span jumpers, potential equalizer jumpers at insulated overlaps and neutral section, shall be of 50sq.mm nominal, 19/1.8mm size. Flexible jumpers of nominal section 105sq.mm, 19/7/1.06mm size shall be used at overlaps, turnouts, crossings etc.
- g) Bridle wire.
Bridle wire for supporting contact wire for regulated tramway equipment shall be of Cadmium Copper 7/2.10mm in size.
- h) Anti-theft Jumper.
Anti-theft jumper of 50 sq.mm nominal 19/1.8mm in size shall be used in out of run wire of conventional OHE and copper cadmium anti-creep wire as an anti-theft measure. The jumpers connecting the Al. Conductors to any other conductors, terminal or clamp shall be made with the aid of suitable bimetallic clamps. All aluminium jumpers of size 19/7/1.4mm bare $\frac{3}{4}$ hard shall be used to connect other aluminium conductors such as return conductor. The tail ends of feeder wires from the strain clamps at the termination of a feeder, return feeder or return conductor may be connected directly to a terminal or clamp where feasible to avoid the use of separate jumper wire.

2.1.14 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 temperatures by means of automatic tensioning devices desired 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 Mtr from any one of them. 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 RDSO's drawings. Alternatively,

the arrangement may consist of anchoring the 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 RDSO's drawing. The Purchaser shall indicate the type of anti-creeps to be adopted in the pegging plans.

- b) Unregulated.
The unregulated type of overhead equipment has no provision for automatic regulation of tension of either the catenary or the contact wire.
- c) Tramway type Equipment Regulated (Contact wire only).
In Tramway type equipment regulated only a contact wire is provided without a continuous catenary or droppers. The tension in the contact wire is regulated. At support, bridle wire is used for supporting the contact wire.

2.1.15 PLANE OF CONTACT.

- a) Regulated.
The regulated overhead equipment shall be so erected that the contact wire has the designed sag.
- b) Unregulated.
In the case of unregulated equipment the contact wire shall have no sag at an ambient temperature of 35 deg. 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 overhead equipment would be supplied by the 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.

2.1.16 TENSION.

- a) Regulated.
 - i) In regulated equipment the tension in the catenary and in the contact wire shall be 1000 Kgf. in each conductor.
 - ii) The regulated tension in the aluminum alloy catenary shall be 1000kgf and 1000kgf. in the copper contact wire.
- b) Unregulated.
In unregulated equipment the tension in the catenary and in the contact wire at 35 deg. C without wind shall be 1000kgf. in each conductor.
- c) Tramway type.
In regulated type tramway equipment, the tensions shall be 1250kgf.

2.1.17 CLEARANCES.

- a) General
The distance between live parts and parts at earth potential (or parts likely to be earthed) shall be as large as possible. In all cases the values given in Schedule of Dimensions (B.G. – 1676 mm) revised in 2004, or its latest revision 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 & 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 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-I, Part-IV. If these clearances are not available, the Contractor shall advise the Purchaser in time to enable the latter to take up necessary modifications.

2.1.18 HEIGHT OF CONTACT WIRE.

- a) Normally, the minimum height of contact wire above rail level shall be 5.50 Mtr at mid span under the worst temperature conditions. This height may be reduced under bridges and in tunnels to the extent permitted by the Purchaser. The minimum height shall be 4.80 Mtr. In electric locomotives sheds and over electric locomotive inspection pits the minimum height shall be 5.80Mtr.

At level crossings the minimum height shall be 5.50M. Any infringement restricting minimum height at level crossings will be removed by the Purchaser.

- 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 lines 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.

2.1.19 STAGGER.

The ensure uniform wear of contact strips of pantographs the contact wire shall normally be staggered in manner which will be indicated by the Purchaser.

2.1.20 TERMINATION.

- a) General.

Traction overhead line shall be terminated using components specified in Chapter 2.4. The termination may be carried forward by one or two spans if anchoring facilities so require.

- 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) Elementary 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.

2.1.21 TYPE OF STRUCTURES.

- a) Cantilever.

The overhead equipment of main track 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 as per RDSO's drawing.

b) Head Spans.

Head spans construction may be adopted with unregulated overhead equipment. A single head span shall not normally cover more than six tracks (See Annexure-I for general arrangement drawings of head spans carrying complete overhead equipment.).

c) Portals.

In cases where the tracks in a multiple track section do not permit location of independent masts and where automatic tensioning of overhead equipments 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 (See also 2.3.7). 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 indicted by the Purchaser and observing the schedule furnished by him (See Part-II, Chapter-II).

2.1.22 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 adjustments of the whole equipment after erection to cater for displacement of the track during maintenance upto the extent of 100 mm on either side except as otherwise relaxed by the Purchaser (See Para 2.1.10 g.). In special locations, pull-off arrangements may be used with the approval of the Purchaser (See Annexure-I) for drawings of the bracket assembly and components).

2.1.23 OVERLAPS.

Overlaps shall be provided at suitable intervals such that neither the tension length exceeds, 1500Mtr not the fixed anchor to balance weight anchor exceeds 750 Mtr.

a) General.

The two contact wires at the overlapping zone shall be parallel to each other in a plane parallel to the track and run separated from each other (See Annexure-I for general arrangement drawings).

b) Insulated.

In case of insulated overlaps the separation between the two contact and the two catenary wires shall be 0.5M (See Annexure-I for general arrangement drawings.).

2.1.24 POINTS AND CROSSINGS.

Arrangements of overhead equipment of different types e.g. regulated, unregulated or tramway at points and crossings shall be in accordance with the standard RDSO's drawings.

2.1.25 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 upto 70 km/h. The outline of a section insulator is shown in a drawing listed in Annexure-I. The section insulators shall be of the single wire type.

b) **Size and weight.**

The section insulator assembly shall be such that it should be possible to install the insulator in the overhead equipment provided the axial distance between the catenary and the contact wire with section insulator in position is not less than 450mm. The weight of the complete assembly shall not be more than 45 Kgs for single wire type excluding the weight of the catenary insulator and the catenary ending clamps.

2.1.26 ISOLATORS.

Manually operated isolators single or double pole type with or without earth contact assembly may be required to bridge certain section insulators or insulated overlaps (See Para 2.1.11). In certain large yards isolators controlling different lines may be grouped together on a gantry.

2.1.27 RETURN CONDUCTORS.

Deleted.

2.1.28 BRIDGES & TUNNELS.

a) **Over bridges.**

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

b) **Tunnels & Cuttings.**

The arrangements proposed for the equipment in tunnels and cutting shall take into account the special features of each location and shall be in accordance with the RDSO's drawing & design.

c) **Safety Screens.**

On over bridges metallic protective screens shall be provided in order to prevent any person from coming into contact with the live overhead equipment. Such screens shall be properly earthed.

d) **Height Gauges at Level Crossings.**

Height gauges will be provided all level crossings in accordance with the RDSO's drawing & design.

2.1.29 BONDING AND EARTHING.

a) **Bonding and earthing shall be done in accordance with the code for bonding and earthing.**

b) **Longitudinal and Transverse Bonding.**

Longitudinal and transverse bonding of tracks bonding of structures including traction structures to rails and associated earths shall be provided in accordance with the above code.

c) **Traction Structure Bonding.**

Every traction mast or structure shall be bonded to a non-track circulated rail unless it is provided with a continuous earth wire or it is individually earthed by means of an earthing station.

d) Double Rail Track Circuit.

Where track circuits are provided on both rails traction masts/structures shall not be bonded to rails but shall be provided with an earth wire made of steel reinforced aluminium conductor consisting of 6 strands of aluminium and one strand of steel each of 4.09mm dia. (RACCOON). (Conforming to IS:398 Pt.II 1976). The earth wire shall be run on traction masts or structures. They shall be divided into different electrical sections not exceeding 1,000M long. The earth wire in each such section shall be connected at two traction structures, situated at a distance not exceeding 250M on either side of the mid-point of the section to two 10 Ohm earth which will be provided by the Contractor. Sections on which earth wire is required to be provided as per the RDSO's drawing.

2.1.30. LT SUPPLY TRANSFORMER STATIONS.

See para 2.1.40.(c)

2.1.31 LIGHTING ARRESTORS.

No Lightning Arrestors will be provided on the traction overhead equipment.

2.1.32 CERAMIC BEADED GLASS FIBRE TYPE SHORT NEUTRAL SECTION ASSEMBLY.

Ceramic beaded glass fiber type Neutral section assembly shall consist of resin bonded fiber glass (or equivalent) or ceramic beads with PTFE spacers (or similar) adequately dimensioned and rated for the application. The insulators shall have suitable end fitting for connections to the contact wire through end fitting. For smooth passage of pantograph without any shock from contact wire to insulator and vice-versa, suitable runners preferably of stainless steel shall be provided. The central position of the assembly along with arc trap shall be solidly earthed as the later with earthing clamp is provided to trap any arc current caused by break of contact between pantograph and live contact wire when it passes from contact wire to insulator. The distance between arc trap and nearest line position shall be adjustable upto a max. of 320mm. Suitable means of suspension of the components of the assembly from the catenary conductor shall be provided. The complete assembly shall be as light as possible and so constructed those adjustments of components can easily be made during erection and maintenance and also for ensuring smooth passage of pantograph.

In the catenary conductor, resin bonded fiberglass insulators with suitable covering shall be provided. The insulators shall have suitable end fittings for connection to catenary wire through end fittings. The central portion shall be solidly earthed.

The neutral section assembly shall be suitable for erection symmetrically on either side of the cantilever bracket support with regulated or unregulated conventional/composite OHE where one point each for suspension of catenary conductor and contact wire is available as also shown in GA drawing in the RDSO's drawings.

* * * * *

SECTION – 3

SWITCHING STATIONS (EXCLUDING FEEDING POSTS), BOOSTER TRANSFORMER STATIONS AND LT SUPPLY TRANSFORMER STATIONS.

2.1.40 DESCRIPTION.

a) Switching Stations.

Every switching station has a gantry with two or more main masts (Up-right). The interrupters are located behind the gantry. Isolators, potential transformers, station class lightening arrestors and pedestal insulators are mounted on a gantry. From the gantry, connections are made to various sections of overhead equipment by cross feeders and

jumper connections. Switching stations are unattended and remote controlled from a remote controlcentre (see Part-III). A small masonry cubicle, called the control cubicle, is provided by the Purchaser at each switching station to house control equipment, batteries, battery charger, S&T terminal equipment, a terminal board for terminating cables from the switching station equipment, a telephone and telephone equipment and AC 230V distribution board. The switching station and its control cubicle shall be enclosed by fencing, except at feeding stations that are located within the traction sub-station premises.

b) Booster Transformer.

Deleted.

c) LT supply Transformer Stations.

The low tension supply required at switching stations will be obtained through LT supply Transformers included as a part of switching stations, mounted on steel structures and connected to the 25kV side through rigid busbars of the aluminum. In special cases, where the length of connection is small 50 sq. mm, copper wires may be used for connection, with the approval of the Purchaser. At locations other than at switching stations wherever low tension supply is required LT supply Transformer stations included as a part of OHE may be provided along side the track at isolated location.

LT supply transformer stations shall essentially comprise of a mast mounted transformer connected to the traction overhead equipment through dropout fuse switches. The 230V side shall be connected to a distribution board located at the remote control cubicle by means of 2 core 25sq.mm aluminum cable [See Para 2.4.23 (a)]. The general arrangement shall be as per RDSO standards.

2.1.41 SCOPE OF WORK:

- a) Switching Stations.
The switching stations shall be complete in all respects in accordance with specifications. The work shall not include:
 - i) Fill up and leveling of the ground to the extent necessary.
 - ii) Provision of control cubicles for installation of remotecontrol equipment for switching station.
 - iii) Provision of 230V AC distribution board.
 - iv) Provision of lights, plug points inside the cubicles.
- v) S&T terminal equipment, telephone and telephone equipment.
- vi) Trench work inside the cubicles.
- vii) Provision of busbars from the traction substation to the feeding station in the cases of those feeding stations, which are located within the sub-station premises. However the provision of tee connector on the feeding station busbar would form part of the switching station work.
- viii) Supply of equipments as per Annexure-A Part-I, Chapter-IV.
- b) Booster transformer station.
Deleted.
- c) LT supply transformer station shall be complete in all respects in accordance with the specification of work shall, however, not include (i) cable and cubicle connections in LT side except at switching stations where this is included as a part of switching stations work (ii) supply of LT supply transformer, drop out fuse switch and other equipment as listed in Annexure-A Part-I, Chapter-IV.

2.1.42 CLEARANCE.

All clearances for live and earthed parts shall be as per stipulations in ACTM/RDSO drawings/IS/IE rules.

2.1.43 SETTING OF GANTRIES.

The gantries are normally aligned parallel to the track the minimum distance of the face of the gantry from the centre of the nearest track is referred to as the 'setting' of the gantry. The setting shall be as per standards mentioned in RDSO drawings.

2.1.44 DATUM LEVEL.

The datum level will be the finished level of the gantry mast foundation. All vertical dimensions shall be stated with respect to this datum level. Datum levels of individual stations will be indicated on the location and connection diagrams.

2.1.45 MOUNTING OF EQUIPMENT AND BUSBAR ARRANGEMENT.

- a) The interrupters and isolators shall be mounted in such a way that these can be manually operated conveniently by a person standing on the ground. The indicators showing the 'OPEN' or 'CLOSE' position of the equipment shall be so arranged as to be visible from outside the fencing enclosure on the side of the main gantry.
- b) The busbar arrangement for typical switching stations shall be as per RDSO drawings.

2.1.46 FENCING AND ANTICLIMBING DEVICES.

Every switching station, together with its associated control cubicle shall be enclosed by fencing except at feeding stations that are located within the traction sub-station premises. The fencing shall have an anti-climbing device also at top.

At booster transformer and LT supply transformer stations, suitable anti-climbing devices consisting of galvanized steel clamp fixtures shall be mounted on each mast. The device shall be fitted below the transformer supporting beam or steel work.. The general arrangement drawings indicating the fencing and anti-climbing devices shall be as per RDSO drawings.

2.1.47 NUMBERING.

Each booster transformer, interrupter, potential transformer, LT supply transformer and isolator shall carry an enameled number plate of approved design as per RDSO drawings/specification. The numbering shall be got approved from purchaser.

2.1.48 INTERLOCKING ARRANGEMENT.

An interlock shall be provided between each interrupter and its associated double pole isolator, to prevent operation of the isolator from the open to the closed position or vice-versa, unless the interrupter is locked in the open position and to prevent operation of interrupter either manually or by remote control unless the isolator is lock in the open or closed position. The interlocking device shall consist of a lock combined with an electrical contact to make or break the remote control circuit on the operating mechanism of the interrupter and a lock for the isolator operating mechanism and interlock key for the two locks.

2.1.49 EARTHING ARRANGEMENT.

- a) Earthing of switching stations, booster transformer stations and LT supply transformer stations shall generally comply with the code of practice for earthing IS:3043 latest version except where otherwise specified below:

Earthing System:

- b) Switching Stations.
- (i) At each switching station, two separate and independent earth circuits shall be provided, one for earthing the HT equipment and the other for earthing the LT equipment.

- ii) **Earth circuits.**
Each earth circuit shall take the form of closed ring and shall be provided with a minimum of two earth electrodes. Each earth electrode shall consist of galvanized iron pipe, 40mm nominal bore at least 3.1 M long provided with a spike at one end and welded lug suitable for taking minimum size of 40mmx6mm mild steel flat, directly at the other. The pipe shall be embedded into the ground. The earth electrodes of the HT and the LT earth circuits shall be located as far apart as it is possible.
- iii) **HT Earth Circuits.**
The resistance to earth of the HT earth circuit shall be less than 2 ohms. If this value can not be achieved with a maximum of four separate but inter-connected earth electrodes then the additional earth electrodes shall have the surrounding earth treated with charcoal and salt filling. All mast, structures, fencing upright and equipment pedestals shall be connected by two separate and distinct connections to the closed loop of the earth bus. Earth bus and connection to it shall be of MS flats of a minimum size 40mmx6mm. Potential transformers and lightning arrestors shall be bonded to mast/structures by 25mmx3mm copper strips.
- iv) **LT Earth Circuits.**
The LT earth circuit shall also comprise of a minimum of two inter-connected earth electrodes as described in Para (iii) above and the total resistance to earth of the earth circuit shall be less than 2 ohm. This circuit will not form a part of this contract at those feeding stations that are located within the traction substation premises. All low tension equipment, control boards, one terminal of the secondaries of the potential and LT supply transformers, metal casing of battery charges, each connections of 8 SWG galvanized iron wire to the LT earth bus. The section of the LT earth bus shall be the same as that of the HT earth circuit.
- v) **Earth strips.**
The earth bus and connections of HT earth circuit shall be painted with two coats of red oxide zinc Chromate primer to IS:2074 with a minimum thickness of 1.5 mils (40 microns) and with two finishing coats or bitumen 85/25 (blown grade to IS:702) with 20% mica to a thickness of about 15 mils (375 microns) either by hot application or by brushing a solution of it with suitable viscosity to obtain the thickness in minimum number of coats and buried at a depth of 300mm below the ground level.
The earth bus of the LT earth circuit shall run along the wall fixed on wooden gutties at a height of 300mm from the floor. The connections to equipment will run from the bus along the wall and in recesses in the floor. All recesses will be covered with cement plaster after finishing the work. The connection of earth strips to each other shall be made by 10mm dia. steel rivets or by welding. The connections to the various items of equipment and structures or fencing posts, shall be made with G.I. Bolts. The earth connection to the structural members shall be made at a height of about 150mm above the foundation.
- vi) **Interconnection.**
The HT and LT earthing systems shall be inter-connected. In addition, at all switching stations, the HT earth shall be connected by two independent mild steel flat each of minimum size 40mmx6mm painted with two coats of red oxide zinc chromate primer to IS:2074 and finished with two coats of bitumen 85/25 blown grade as described above, to the non track circuited rail in a single-rail-track circuited section and to the neutral point of an impedance bond provided by the Purchaser where doubled-rail-track circuiting is employed so as to limit high potential gradients developing in the vicinity of switching stations in the event of fault.

c) Booster Transformer Stations. Deleted

d) LT supply Transformer Stations.

The earthing arrangement of a pole mounted LT supply transformer station shall comprise inter-connected earth electrode/electrodes having a resistance not exceeding 10 ohms. If this value cannot be achieved with two electrodes, additional electrodes shall have surrounding earth treated with charcoal and salt filling. The transformer and the lightning arrestor shall be connected to the supporting steel structure by means of independent connections at the top by means of 25mmx3mm copper strip. At the bottom, the steel structures shall be connected to the inter-connected earth electrodes and to the nearest traction rail by means of two independent connections of mild steel flats having a minimum size of 40mmx6mm. In addition, the earth electrode should be connected to the traction rail by means of minimum size of 40mmx6mm mild steel flat. The mild steel flat shall be painted with two coats of red oxide zinc chromate primer to IS:2074 with a minimum thickness of 1.5 mils (40 microns) and with two finishing coats of bitumen 85/25 (blown grade to IS:702 with 20% mica to a thickness of 15 mils (375 microns) either by hot application or by brushing a solution of it with suitable viscosity to obtain the thickness in minimum number of coats.

2.1.50 CABLE CONNECTION.

a) All PVC cable provided out-door shall be either laid in the trenches or neatly clamped to the structures as approved by the Purchaser.

b) Termination of Cables.

The cable shall be terminated neatly and all the cores arranged and dressed properly. Suitable index terminal strips of ferrules shall be provided at all terminals to facilitate maintenance.

PART – II
CHAPTER - II
FOUNDATIONS

PARA No.	SUBJECT.
2.2.1	Scope
2.2.2	Design of foundation
2.2.3	Bearing pressure
2.2.4	Concrete
2.2.5	Size and grading of aggregates
2.2.6	Sand for foundation
2.2.7	Sinking of Concrete shells
2.2.8	Type of foundations in black cottonsoil.

PART – II

CHAPTER - II

FOUNDATIONS

2.2.1 SCOPE: This chapter deals with the designs of foundations & anchor blocks for traction structures carrying overhead equipment (including those on bridges), structures at switching stations and other concrete work. It also deals with the specification for concrete.

2.2.2 DESIGN OF FOUNDATIONS:

- a. Soil Pressure: - For design of foundations for traction structure carrying overhead equipment, the Contractor shall determine the type and allowable bearing pressure of soil at suitable intervals and adopt the type and size of foundations, suitable for particular locations with the help of the approved employment schedules. In cases of particularly weak soil, the bearing pressure may have to be determined for each location where so advised by the purchaser. Soil bearing pressure, using SPT (Falling weight equipment should be determined generally for every 5 Kilometer interval or less wherever change of soil is encountered. In general IS code of practice (IS : 6403) should be followed. In addition, at every 250m the soil bearing pressure should be determined by dial gauge type penetrometers. Dial gauge type penetrometers shall also be made available by the Contractor at each foundation site so as to facilitate cross check at each individual location. For design of foundations for masts and gantries at switching stations and booster stations, the Contractor shall determine the type and allowably bearing pressure of soil at the locations of such stations and shall prepare designs for the foundations suitable for each location to suit the bearing pressure of the soil in consultation with the Purchaser.
- b. Structure carrying overhead equipment: -
Foundation for traction structures carrying overhead equipment shall be either of the side bearing, side-gravity or new pure gravity type according to their location, formation of the sub-grade and bearing pressure of the soil. In new filled up soil or cinder formation, new pure gravity sand-filled core foundations, or foundations with cast-in-situ reinforced concrete piles, or cantilever type foundation with counter-weights or guyed foundations may be adopted.
- c. On Bridge Piers-
Complete design of foundation for traction structures on bridges to suit different locations and local conditions shall be prepared and submitted by the contractor along with detailed calculation, justifying the design for purchaser's approval will be furnished by the Purchaser.
- a. Masts and Fabricated Structures at Switching Stations Fencing.
Foundations for the masts of gantries at switching stations shall be of the pure gravity type, the base of which shall rest on consolidated soil.
- e. Foundations for fencing posts shall rest on consolidated soil if the depth of unconsolidated soil is less than 1.5m below the datum level and shall be rectangular parallel piped, in shape. If the depth of unconsolidated soil is more than 1.5m the foundation block shall rest on reinforced concrete piles cast-in-citu or reinforced concrete foundation may be adopted as desires by the Purchaser.

- f. **Typical Design.** Typical designs and drawings of side bearing and new pure gravity and side gravity type foundations etc., employment schedules for standard foundations for traction structures for various locations and types are as per standard RDSO drawings.
- g. **Special Foundations:** In the case of foundations at locations not covered by the employment schedules furnished by the Purchaser, the contractor shall prepare special designs and furnish full design calculations justifying the choice of the type of foundations for such locations. In black cotton soil special pile foundations of under reamed type as per RDSO's standard designs (Reference RDSO's Drawing No. ETI / C/0062 Mod 'A') or any other approved design may have to be cast at limited locations for trial purpose. The Tenderer may furnish the technical details of alternative design, construction methods proposed, to be adopted and their previous background / experience, if any. The decision of the Purchaser with regard to feasibility and suitability of adoption of the alternative design for each type of foundations will be final.
- h. **Equipment Pedestals.**
Pedestals for interrupters and L/T supply transformers where required, shall be of mass concrete with the base resting on consolidated soil.
- i. Deleted.
- j. **Cable trenches.**
The cable trench shall rest on original ground if the depth of unconsolidated soil is less than 0.5m. If the depth of unconsolidated soil is more 0.5m the cable trench shall be made of reinforced cement concrete of approved design supported at suitable intervals on concrete pillars.

2.2.4 BEARING PRESSURE.

a. Guiding Information: -

b. Subject to Para 2.2.2 (a) above, the following allowable bearing pressures may generally be expected for kinds of soil. The information is given for guidance only.

- i. Average good soil in banks and cuttings 11,000 Kg / sq.m.
- i. Morrum soil in cuttings 22,000 Kg/ sq.m.
- (iii) New Banks and bad soils bank & cuttings 5,500 Kg/sq.m.

(iv) **Black cotton soil:-** Pure gravity foundation shall normally be adopted. However, under reamed pile foundations may be adopted at the option of the Purchaser in limited locations for trial purpose. In case of dry black cotton soil, the soil should be subjected to bearing pressure as close as possible but not exceeding 16,500 kg / sq. mtr the depth of the foundation block being not less than 2.8mtr. In the case of wet black cotton soil, the soil should be subjected to a bearing pressure as close as possible but not exceeding 8000 kg / sq. m. In the case of hard rock, a hole should be blasted in the rock or by means of any other drilling and pneumatic method and the mast sealed into it with concrete.

2.2.4 CONCRETE:- Concrete for foundations shall be nominal mix of grade M-15 as per IS 456 latest version and for grouting, mugging, embedding of structures in foundations, normal mix concrete of M-20 grade of IS:456 latest.

2.2.4.1 Proportions of mix as per details given in IS 456.

2.2.5 SIZE & GRADING OF AGGREGATES: The graded coarse aggregate 40 mm nominal size (Table 2 of IS 383-1970) shall be used for foundation. A coarse aggregate for grouting muffs and embedding shall be of 20mm graded nominal size as per table 2 of IS 383-1970 (Specification for coarse and fine aggregate from natural sources for concrete).

Fine aggregate shall be graded from 10mm downwards. The maximum size of aggregate for under reamed pile foundation shall be 20mm graded nominal size.

2.2.6. SAND CORED FOUNDATIONS: After erection of masts in sand cored foundations, the core hole of the foundation blocks shall be filled with dried sand & covered with a layer of bitumen of 80mm thickness below 30mm from top level of the block. A hemispherical shaped muff shall be provided on such foundations in lieu of standard type.

2.2.7 SINKING OF CONCRETE SHELLS: Where the water table is high, one or more sections of reinforced concrete shells may have to sunk before casting concrete. The size of each shell shall be 1200 mm outside dia x 50 mm thick x 600 height reinforced with 6mm $\frac{1}{4}$ " dia rods spaced 150mm apart, both longitudinally & circumferentially. The concrete shall be grade M 15 as per provision of Para 2.2.4.

2.2.8 TYPE OF FOUNDATION IN BLACK COTTON SOIL: The foundations in dry black cotton soil should be of type NBC as per RDSO Drawing No. – TI/DRG/CIV/FND/RDSO/00001/04/0 or latest.

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PART – II
CHAPTER - III
STRUCTURES

PARA No.	SUBJECT
2.3.1	Scope
2.3.2	Types
2.3.3	Design
2.3.4	Cantilever Mast
2.3.5	Anchor Mast
2.3.6	Deleted
2.3.7	Portals
2.3.8	Structures on bridges
2.3.9	Special structures
2.3.10	General
2.3.11	Checking of steel works
2.3.12	Steel section & specification
2.3.13	Drawing & design
2.3.14	Workmanship
2.3.15	Dispatch of structure
2.3.16	Galvanisation
2.3.17	Setting of structure

PART – II CHAPTER - III

STRUCTURES

2.3.1 SCOPE:

This Chapter deals with the design of steel structures and steel work for overhead equipment, switching stations, booster transformer stations and LT supply transformer stations and the specification for steel mast and pre-stressed concrete trial mast.

2.3.2 TYPES:

Structures and gantries may consist of any or more of the following types:

- i) Broad flange beams.
- ii) Rolled Steel joists.
- iii) Fabricated steel structures like B / K / 175 , 200, 225, 250,

TTC / G/O / N / R portals structures. Structure/ uprights shall generally be embedded in concrete foundation blocks; in special cases structures may be secured by means of holding down bolts.

2.3.3 DESIGN:

- a) Steel Structures.

Design for steel structures shall, except where otherwise provided, comply with the “Indian Standard Code of Practice for use of structural steel in general building construction” IS 800-1984 or its latest version.. The thickness of smallest steel section used shall be 5mm for galvanized members.

- b) All steel structures and small part steel for carrying overhead equipment are to be fully galvanized after drilling and fabrication as per specification ETI / OHE/ 13 (4/84) & to the latest amendments and no painted structures are to be used.

2.3.4 CANTILEVER MASTS:

- a) For purpose of design the worst possible combination of all loads that may occur shall be considered. The load shall include the following (weights to be assumed for design of structures are shown against important items)
 - i) Weight of OHE (1.6 Kgs / M for each conventional OHE, and 1.32 Kg/Metre for each composite OHE).
 - i) Weight of bracket supporting the OHE (60 Kgs / normal bracket).
 - ii) Weight of a man (60 Kgs).
 - iii) Weight of feeder, return conductor or other special equipment wherever they occur as per RDSO.
 - iv) Weight of earth wire (0.32 Kgs / M).
 - v) The affect of eccentricity of vertical and horizontal loads on the bracket due to variation in temperature.
 - vii) Radial forces on the mast, due to stagger, curvature, anchorage, etc.
 - viii) Winds load perpendicular and parallel to the track. The wind pressure adopted shall be taken as that indicated in part –II, chapter – I.
 - ix) Weight of the mast upright itself, and
 - x) Any other load or loads that may occur due to the special location of the structure

- b) Deflection.

Not withstanding the provisions contained in IS: 800-1984 referred to in Para 2.3.3

above regarding permissible deflection, the following shall apply:

- i) The deflection at the top of the mast due to permanent load shall not exceed 8 cm. and the mast shall be so erected that it becomes reasonably vertical after application of permanent loads; and
- ii) Additional deflection under maximum wind pressure shall not exceed 8cm at the level of the contact wire.

- c) Torsion:

The torsion rotation of the mast due to permanent load shall not exceed 0.1radian.

- d) Typical Design:

The typical design of a traction mast is included in the set of standard drawings. Employment schedules for standard masts for various locations and types are as per standard RDSO drawings.

2.3.5 ANCHOR MAST:

2.3.6

- a) Mast at which overhead equipment will be anchored shall also normally be of the same type as those in other locations. Anchor masts shall normally be provided with suitable guys, strut may be permitted in special cases.
- b) Dwarf Mast: At certain locations where due to local conditions it is not feasible to anchor the guy rod on a foundation block in the ground, a dwarf mast shall be used in accordance with approved design.

2.3.6 Deleted.

2.3.6. HEAD SPANS (See Para 2.1.21 & 2.4.19)

- a) Load.

The loads to be considered shall be as detailed in Para 2.3.4(a) as far as applicable and at their worst combination.

- b) Sag for Head Span wire.
The sag for the head span wire shall be approximately one-tenth (1/10) of the span.
- c) Minimum Tension in Cross Span and Steady Span Wires.
For purpose of design, a minimum tension of 200Kg. shall be ensured in the span wires for worst combination of temperature and wind load.
- d) Deflection of Mast.
Deflection at the top of the mast or structure shall be limited to one-eightieth ($1/80^{\text{th}}$) of its height above foundation.

2.3.7 PORTALS: (See 2.1.21)

- a) **General-** Portals shall be of fabricated steel of standard types to RDSO designs/drawings.

b) **Load:** The loads shall be as detailed in Para 2.3.4.(a) as applicable.

2.3.8 STRUCTURES ON BRIDGES:

- a) The structures may be either cantilever mast or portal (hinged or fixed at base) depending on the type & condition of bridge pier capping. The arrangement shall be decided on referring Paper No. – ELCORE/ALD/C&D/OHE/DESIGN/9/4/05, dated 25-04-2005. As far as possible cantilever mast grouted in foundation on pier will be used. Where this is not possible cantilever mast with holding down bolts or suitable portals (hinged or fixed at base) may be adopted.
- (b) Designs of structures on bridges to suit different locations and local conditions will be furnished to the contractor by the purchaser. In case of bolted structure on bridge piers contractor has to submit the detail design for base arrangement for approval of purchaser.

2.3.9 SPECIAL STRUCTURES:

In the case of structures at locations not covered by the employment schedules furnished by the purchaser, the contractor shall furnish complete design calculations justifying the choice of the type of structures for such locations.

2.3.10 SETTING OF STRUCTURES.

- a) The setting is the distance from the centre line of the track, on straight or curve to the face of the mast/structure of fitting located on mast.
- b) On straight and outside of curve, the standard setting shall be as per the relevant RDSO drawing. Minimum setting of structures shall be 2.5 Mtrs plus curve allowance as required. Wherever this distance cannot be provided specific approval of Purchaser shall be obtained before erection. Setting of portal upright, overlap/turnout structures, anchoring structures and other masts carrying more than one OHE will be 3.0m wherever possible.
- (c) Extra Clearance in Curves.
The minimum setting of structures on curves shall be determined by adding to the above minimum figures an extra clearance as per RDSO's guidelines.
- d) Structures with counter-weights.
In case of structures carrying counter-weight assemblies, the term "setting" shall refer to the minimum distance of the counter-weight from the track centre under the worst conditions of wind.
- e) Structures on Platform.
The setting of structures on platforms will be not less than 4.75m.
- f) Structures near Signals.
In the vicinity of signals, structures shall be located in a manner, which shall ensure good visibility where necessary, the setting shall be as per relevant RDSO drawings/designs.
- g) Setting of Structures.
The value of setting of masts/structures shall be painted on each mast/structures. The figures shall be 25mm in size in white on a red background. In addition, the track level shall also be marked on the mast/structure by a horizontal red painted stroke.
- h) General
 - 1. This Specification provide for fabrication, galvanization and supply of structures as mentioned in Schedule-1 for supporting Traction Overhead Equipment of permanent

way and distribution lines of the Central Railway. The Contractor shall carry out the manufacture / supply the structures as mentioned in schedule of rates and quantity.

The work shall be strictly in accordance with the following standard specification, rules and codes of practice. All steel used for manufacture shall be as prescribed below:

- | | | | |
|----|----------------------|---|----------------------------------|
| a) | Quality of steel | - | IS 2062 Grade-A. |
| b) | Fabrication etc. | - | IS 800 |
| c) | Electric Arc Welding | - | IS 816 |
| d) | Galvanization | - | RDSO Specn. No.ETI/OHE/13 (4/84) |

Latest edition of the above codes/specifications with correction slips issued from time to time shall be applicable to the work except to the extent it is modified.

2.3.11 NUMBERING OF STRUCTURES CARRYING OVERHEAD EQUIPMENT

All structures shall be numbered in accordance with the numbering given in the approved overhead equipment layout plans. Retro reflective number plates shall be provided on each mast or structure as per RDSO standards.

2.3.11.1 CHECKING OF STEEL WORK.

The fabricated steel work will be inspected and passed by a representative of Purchaser (Like M/s RITES or Chief Electrical Engineer (Construction)) but such passing shall in no way relieve the Contractors from the responsibilities under the contract.

2.3.12. STEEL WORK FOR SWITCHING STATIONS & GANTRIES.

- a) Horizontal members of main as well as auxiliary gantry carrying isolator switches, insulators, potential transformers etc. shall be made from steel sections viz. channels, angles and small joints, single or fabricated. They shall preferably be attached to masts by means of clamps to avoid drilling of mast section.
- b) For purpose of design, all possible loads which may occur in the worst combination shall be considered. The loads shall include the following:-
 - i) Weight of insulators, instrument transformers, isolator switches, bus bars and their accessories.
 - ii) Loads caused by feeders, along and across tracks, return feeders etc:
 - iii) Loads caused by anchorage due to guying of anchored masts (where applicable);
 - iv) Pull or push on the structure due to anchorage and radial tension (where applicable);
 - v) Wind load on the different structures, conductors and equipment. The wind pressure shall be taken as per relevant IS specification.
 - vi) Weight of man working on the structures;

Weight of structure itself;

Erection of loads; and any other load or loads which may occur due to special equipment wherever they occur.

c) Tension of Conductors.

For purpose of designs, the maximum tension of different conductors, without wind load, shall normally be as under:-

- i) Maximum tension in the incoming feeder from traction sub-station to the auxiliary gantry at the feeding posts under worst conditions 600Kgf.
- ii) Maximum tension in the cross feeders at switching stations under worst conditions.
 - 1. For spans less than 18m.100Kgf.
 - 2. For spans more than 18m.200Kgf.
- iii) Maximum tension in longitudinal feeders running parallel to the track at the switching stations under worst conditions1500Kgf.
- iv) Tension in anchored overhead equipment in case of sectioning and paralleling stations. -200Kgf.

d) Deflection of Gantry Masts.

Deflection under the permanent loads (as an average temperature of 35 deg.C without wind) at the top of the fabricated structures of mast shall be limited to the one eightieth ($1/80^{\text{th}}$) of its height above foundation.

e) Anchor mast.

Masts of the gantry at which feeder or overhead equipment will be anchored at the switching stations shall normally be provided with suitable guys, but struts not be permitted.

f) Chairs and Brackets.

Chairs, brackets and supporting steel work carrying potential transformers, lightning arrestors, insulators etc. shall be made of fabricated steel and be mounted on the main or auxiliary gantry preferably by means of clamps to avoid drilling of mast section.

g) Uprights and Fencing Posts.

Uprights carrying operating handles of isolators and fencing posts shall be made from steel sections, viz. channels, angles or joints, either single or fabricated.

2.3.12.1 STEEL SECTION AND SPECIFICATION.

The rolled steel joists, plates, channels, flats, angles and other rolled steel sections and rivets if any used in execution of the contract shall be of Quality Gr. – A and shall conform I.S.I. Specification No.2062 of or its latest revision for structural steel. The steel sections shall be free from blisters, scales, laminations or other such defects. No filling or plugging of defective steel section will be permitted. No joints either welded or bolted type shall be provided in any of the members.

2.3.13 DRAWINGS AND DESIGNS:

1. The structure shall be fabricated from rolled steel section plates and bars generally in accordance with the drawings referred to in Annexure.

The dimensions shown in the structure drawings are in metric system. In the event of equivalent metric size steel sections being not available, the Contractor may use the nearest rationalized size of steel sections with the prior approval of Central Railway. When the use of alternate steel sections re approved, the resulting increase in weight up to 5% on overall quantum of work is permitted, for which payment will be made by the Purchaser. Over and above 5% increase in over all weight permitted as above, in case of any increase in weight is involved, it will be to the account of the Contractor. The Purchaser will not be liable to make payments on this account.

2.3.14 WORKMANSHIP:

Unless otherwise approved the main angles, channels and joists used in the fabrication of structures shall be as shown in the drawing and all holes shall be drilled to templates. The back angles and light steel sections may be sheared to gauge and shall be accurately drilled or punched to templates. All parts shall be carefully cut and holes shall be cut and holes accurately drilled so that when the members are in position the holes shall be truly opposite each other for accurate assembly of the various sections. For the purpose of calculating structure weight, the actual length sued in fabricating the structures will be taken into consideration which excludes wastages, if any, while cutting/shearing the rolled steel sections. The drilling, punching, cutting and bonding of all fabricated steel work shall be such as to prevent any possibility of irregularity occurring to introduce difficulty of erection of steel assembly in the field. Built members shall, when finished, be true and free from all kinds of twists or open joints and the material shall, when finished, be true and free from all kinds of twists or open joints and the material shall not be defective or strained in any way. All lattice work on the main structures shall be riveted/welded together; Main members should be bolted together. No rivets or bolts shall be used in tension, except where specifically approved by the Railway. No bolt hole shall be more than 8 mm larger than the diameter of the bolt.

2.3.15 DESPATCHOF STRUCTURE:

1. The manufactures shall assemble the complete structure in a horizontal position before dispatch from their works as may be required by the Railway for inspection.
1. The structure shall be dispatched in sections of approved sizes and where possible shall be bundled with similar sections and tied securely for safe transit. As for as possible, full capacity of the wagon should be utilized to avoid under loading.

2.3.16 GALVANISATION:

The galvanization may be carried out as per the RDSO's specification. The minimum average weight of zinc coating of 1000 grams / sq. mtr i.e. for non-polluted zone

2.3.17 Setting of structures:

The value of setting of mast/structures shall be painted on each mast/structures. In addition track level should also be marked on steel structures.

P A R T - I I

C H A P T E R - I V

EQUIPMENTS, COMPONENTS AND MATERIALS

PARA NO. SUBJECT

- 2.4.1 General
- 2.4.2 Compliance with Standard Specification
- 2.4.3 Quality Assurance.
- 2.4.4 Proto-type Tests.
- 2.4.5 Inspection and Tests.
- 2.4.6 Test Certificate.
- 2.4.7 Bulk Manufacture
- 2.4.8 Inter-changeability
- 2.4.9 Technical Specifications
- 2.4.10 Nomenclature and Marking
- 2.4.11 Steel work and Protection against Rust.
- 2.4.12 Bracket Assembly Components
- 2.4.13 Droppers
- 2.4.14 Insulators
- 2.4.15 End Fittings and Splices.
- 2.4.16 Electrical connections for overhead equipments
- 2.4.17 Terminal connections for other equipments
- 2.4.18 Regulating equipment
- 2.4.19 Head span construction
- 2.4.20 Isolator
- 2.4.21 Insulation level.
- 2.4.22 Busbars (at switching stations, Booster stations and Gentries)
- 2.4.23 Cabling.
- 2.4.24 Literature for equipments.

P A R T - II

C H A P T E R _ IV

EQUIPMENTS COMPONENTS & 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. This chapter does not cover structure and foundations, which are dealt with in Part-II, Chapter-II and III. In general based on the specifications issued by various bodies, such as Indian Standard Institutions, British Standards Institution etc specifications have been issued by the Purchaser. Such specifications may be bought separately from the office of the Purchaser. All these specifications are included in the set of drawings and specifications referred in Para 1.1.10.

2.4.2 COMPLIANCE WITH STANDARD SPECIFICATION:

In the technical specifications of equipments, components and materials, references are made to the following standard specifications:

- i. International Electro-technical commission (abbreviated as (IEC)) publication.
- ii. British Standards (abbreviated as BS)
- iii. Indian Standards (abbreviated as IS)

2.4.3 QUALITY ASSURANCE: The provisions of Part-I for quality assurance will apply, including facilities to be provided by the manufacturer (Para 1.2.25).

2.4.4 PROTO-TYPE TESTS.

- a) Fittings, components and materials: All the fittings, components and materials to be supplied by the contractor in terms of this contract, the requisite number of proto-types of components shall be supplied free of cost to the Purchaser for tests and approval. The test will be conducted to a laboratory selected by the Purchaser.
- b) Equipments: This comprise inspection and tests conducted on the first equipment of a specified manufacturer, which the Purchaser considers sufficient to prove that the design is in conformity with the specification, at the manufacturer's factory. The type test shall be conducted on each equipment as indicated in the individual specifications referred to in Para 2.4.1 above in the presence of the purchaser's representative. The Contractor shall arrange to get these tests conducted at his own cost.
- c) Responsibility: Any testing and approval by the Purchaser of prototypes shall in no way absolve the Contractor of his responsibility under the terms of the contract for the equipment supplied and erected.
- d) Exemption from Proto-type tests: If proto-type samples of equipments, components or fittings of any manufacture have already been approved in connection with the electrification of other sections of Indian Railways on the 25 kV, 50 Hz single phase A.C. system, proto-type samples of such equipments components or fittings will be exempted from the tests. Supply of bulk quantities shall, however, be effected only after the Purchaser's prior approval is obtained in writing.

- e) The results of proto-type tests will be communicated to the contractor as expeditiously as possible any delay in this respect will be ground for extension of time for completion under Para 1.2.45.

2.4.5 INSPECTION AND TESTS: These comprise inspection and tests conducted at the manufacturer's factory for ensuring quality of manufactured items as part of the Quality Assurance programme.

2.4.6 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 prototype tests. Three copies of the routine tests carried out on each equipment shall also be furnished, after the equipment is passed by the Purchaser's representative for inspection (See Para 1.2.25).

2.4.7. BULKMANUFACTURE: Bulk manufacture may be under taken only after specific written approval of the Purchaser or his representative has been obtained indicating that tests on the prototype are satisfactory. Where proto-types have already been approved in connection with manufacture may proceed after exemption from proto-type tests is received from the Purchaser in writing.

2.4.8 INTER-CHANGEABILITY: All equipments, components and fittings shall be interchangeable and supplies shall be in accordance with the Purchaser's designs unless otherwise specifically approved by him. Components such as fuses indication lamps etc. should be replaceable with substitutes available indigenously, as far as possible.

2.4.9 TECHNICAL SPECIFICATION: The following specifications (latest revision) will govern the supply and testing of important materials components and equipments:-

Structural Steel:	IS: 226 – 1975, IS:2062 Gr.A (Latest), IS:800/1984, IS: 808 -1964 & IS:808(Pt.-I-1978), IS: 808 (Pt.II)/1978, (Pt-III)/1979 (Pt-V)/1976, (Pt-VI)/1976
Tensile testing:	IS:1731 – 1971, IS-2004 – 1978, IS:1608-1972 for steel products etc.
Welding:	IS:816-1969
Disc Insulator:	IS:731-1971, IS:3100-1980, IS:3188-1980
Dropper wire:	IS:282-1982
Annealed cu. jumper wire:	IS:434(Pt-I)-1964
All Aluminum conductor:	IS:398 (Pt-I-1974) (Pt.I-1976)
Material for aluminum tubular bus bar:	IS:5002-1981
Dimensions for al. tubular busbar:	IS:2673-1979
Galvanized stay stranded:	IS:2141-1979
PVC insulated cables:	IS:1554(Pt-1)1976
Tin bronze castings:	IS:306 – 1968
Aluminum bronze casting:	IS:3091 – 1965
Malleable iron casting:	IS:2108 – 1977
Grey iron castings:	IS:210 – 1978
Aluminum castings:	IS:617 – 1975
Copper strip for formed fittings:	IS:1897 – 1985
Cadmium copper conductor:	ETI/OHE/50(8/83) with A&C slip no. 1 & 2 of

	10/88 (4/85) & (8/85) or latest amendment.
Contact wire:	ETI/OHE/42 (11/83) with A&C slip No. 1 & 2 of (4/85) and (8/85).
Annealed stranded copper conductors for Jumper:	ETI/OHE/3(1/83) with A&C slip no. 2 of Feb 85.
Copper busbar:	RE/30/OHE/5(11/60)
Structural steel tubes:	ETI/OHE/11(5/89)
Hot dip galvanization of steel masts latest revision, 1000 gm/sq. mtr (Rolled and fabricated) for non-polluted zone :	ETI/OHE/13(4/84)
Hot dip galvanization of tubes & fittings For non-polluted zone:	ETI/OHE/23(4/84) or its latest revision.
Stainless steel wire rope:	TI/SPC/OHE/WR/1060 and latest amendments.
25 KV solid core insulator including those for polluted zones:	TI/SPC/OHE/INS/007 and latest amendments.
25 KV single and double pole isolator:	ETI/OHE/16(1/94) with latest amendment.
Bolts, nuts and washers:	ETI/OHE/18(4/84) with amendment 3(9/87)
Aluminum alloy section & tube:	ETI/OHE/21(9/74)
Standard drawings for traction overhead equipment:	RE/OHE/25(3/66)
Enamelled steel plates:	ETI/OHE/33(8/85) or its latest revision.
Galvanized steel wire:	ETI/OHE/36(12/73)
Fittings for 25 kV 50 Hz. AC Traction Equipment:	ETI/OHE/49(5/84) with A&C slip no.1 of Sept.85, No.2 of (6/86), 3 of (7/88) and 4 of (8/89)
Cadmium copper conductor for OHE Traction:	ETI/OHE/50 (8/83) with A&C slip No.1 of Oct 88, Amend 5 (10/92)
25 KV Potential Transformer:	TI/SPC/PSI/PT/0990, A&C Slip No. – 8 or latest.
Three pulley type regulating equipment:	TI/SPC/OHE/ATD/OO60
Bimetallic (Al. Cu) Strip:	ETI/OHE/55(5/85)
Section insulator assembly:	ETI/OHE/27 (8/84)

NOTE: Unless otherwise specified, the latest amendments to the specification shall be used.

2.4.10 NOMENCLATURE AND MARKING:

- a) 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 an/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 manufacture shall be specified in 'As erected' drawings for identification.

2.4.11 STEEL WORK AND PROTECTING AGAINST RUST:

- a) Galvanizing: All ferrous materials and fittings shall be hot dip galvanized according to the specification ETI/OHE/13 (4/84) with latest amendment.
- b) Some components or parts may with the approval of the Purchaser, be protected only by paint and parts so 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 latest amendment or any other method approved by the Purchaser. The contractor shall, in all such cases obtain prior permission from the Purchaser before carrying out repair.

2.4.12 (See Para 2.1.22) BRACKET ASSEMBLY COMPONENTS:

- a) Arrangements for Normal OHE: The arrangements of the different fittings and structural components of bracket assemblies are as per RDSO's drawings.
- b) Bracket: Bracket tubes shall be of seamless cold drawn or electric resistance weld steel complying with ETI/OHE/11 (5/89) with an insulator near the support. The length of the tubes shall be such that there is a free length of about 200 mm beyond the catenary suspension bracket to facilitate adjustment during track maintenance (See Para 2.6.10(b)).
- c) Tubular Stay Arm; Steel tubes with adjustable steel rods shall be used for tubular stay arm of all bracket assemblies.
- d) Register arm: The register arm shall also be electrical resistance weld or cold drawn steel tube of proper dimensions duly formed. It shall be suspended by a dropper from the catenary suspension clamp/bracket tube. A hook and eye arrangement shall be used at the bracket end to permit free movement in every direction.
- e) Steady Arm: Steady arm shall normally be fitted in all assemblies for overhead equipment in running. The steady arm shall be of light alloy BFB section arranged to work always in tension, in accordance with ETI/OHE/21 (9/74) steady arms of secondary tracks may be of solid galvanized steel rod. Bent steady arms of aluminum tube conforming in specification ETI/OHE/21 (9/74) shall be used for neutral section overlap and in the central mast of a 4 span insulated overlap.
- f) Bracket for unregulated tramway type equipment: Brackets provided on cantilever masts for tramway type unregulated equipment shall normally span two tracks and the contact wires carried on V type clamps suspended from a span wire. The span wire shall be provided with a turnbuckle at only one end.

2.4.13 DROPPERS:

- a) General Designs: The droppers shall generally be so designed as shown in standard drawings and made of copper wire about 5 mm. diameter conforming to IS:282, and shall be attached to the catenary 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 designs.
- b) Loading: The droppers shall be able to withstand a vertical load of 200 kg. At the point of attachment to the contact wire and the clip shall not slide under a horizontal load of 120 kgf.
 - c) The permissible tolerance in the overall length of a dropper will be +/- 5mm.

2.4.14 INSULATORS:

- a) All insulators except those on return conductors and earth wire shall be of the solid core type. Disc insulators shall be used on return conductors and earth wires or other locations as desired by the Purchaser. All solid core insulators shall confirm to TI/SPC/OHE/INS/007 LATEST.
- b) Inter changeability: For free inter-changeability only the followings types of insulators shall be used. While the shapes of the insulators may vary slightly from those shown in the drawing, the essential dimension 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 Tone Insulators: These will be used at all places for cut-in and terminal insulation including those in additional catenary/earth wire.
 - iv. Solid core post Insulators: These will be used at all places for supporting isolator mechanisms, busbars, jumpers etc of 25 KV.
 - v. Disc Insulators: Clevis type 255 mm disc insulators will be used for return conductor, suspension and for earth wire cut in insulator (as per IS:731 latest).
 - vi. 11 KV Post Insulators: These will be used at all places for supporting busbars. Jumpers etc. in conjunction with return conductor return feeders.

2.4.15 ENDING FITTINGS & SPLICES:

- a) 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 of 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 (5/84). 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 wires.
- 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 to 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 thefts or railway accidents.
- d) Strength of assembled fittings: The strength of fittings assembled with appropriate conductors or wires shall be not less than that of the conductor or wire itself.

- e) Additional termination wires: Cadmium copper stranded wire of 65 sq. mm nominal section or 37/2.1mm (as used in head span construction) may be used as additional terminating wires for extending single and double conductors respectively, if termination of the nearest structure is not feasible.

2.4.16 ELECTRICAL CONNECTION FOR OHE:

- a) All electrical connections between conductors shall be made by parallel clamps. The general arrangements of connections are as per RDSO drawings.
- b) Jumpers: Coppers jumpers shall be of any of the following:
 - i. Large jumper of annealed copper in accordance with the specification ETI/OHE/3(1/83) LATEST.
 - ii. Small jumper of annealed flexible copper conductor in accordance with the specification BS: 4102, IS: 434 – Pt-I OF 1970 or its latest revision or equivalent IS standard.
- c) Bus bars: Aluminum bus bars wherever used shall be of 36/20mm tubing (See 2.4.29) Aluminum tubular bus bars shall be made of alloy to IS:5082-1981. The tolerance on diameter and thickness shall be as per IS: 673-1979.
- d) Feeders: Feeders shall also be of 150 Sq. mm. copper conductor.
- e) Return conductor: Deleted.

2.4.17 TERMINAL CONNECTORS FOR EQUIPMENTS:

Isolators, Interrupter, Potential Transformers line indication type, Lightning Arrestor, Fuse Switch, Booster Transformer and L.T. supply Transformer shall be supplied by the Purchaser along with the terminal connectors suitable for taking jumper/bus bar as required. However, Alloy strips shall be provided by the Contractor for bimetallic connections wherever required.

2.4.18 REGULATING EQUIPMENT: Shall be as per latest specification.

General:

- a) deleted.
- b) Conductor 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 limited with a fixed top.
- c) Reduction ratio: Reduction ratio in the arrangement used shall be five for winch type and three in case of three-pulley type.

2.4.19 HEADSPAN CONSTRUCTION: See also Para 2.1.21 and 2.3.6)

- a) Size & Factor of Safety: All span wires used in head span construction shall be of stranded cadmium copper conductor 65sq.mm or 139sq.mm cross section. All the wires shall be designed with a factor of safety of not less than 4 under the most unfavorable condition.
- b) Turn Buckles: Each span wire shall be equipped with a turnbuckle 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 section.

2.4.20 ISOLATORS:

25kV Isolator switches shall comply with specification as indicated in Para 2.4.9.or latest.

2.4.21 INSULATION LEVEL:

Interrupters, Potential Transformer line indication type, 42kV Lightning arrestors and other equipment shall be suitable for insulation levels indicated in the relevant specifications.

2.4.22 BUSBARS:

- 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 tube caps, wherever the tubular bus bars are required to be bent, the radius of the bend shall be not less than 200 mm.
- c) Joints: The Joints in bus bars shall be mechanically and electrically sound so that the temperature rise under normal working conditions does not exceed 40 degree C for an ambient temperature of 65 deg. C.
- d) All aluminum joints shall be thoroughly cleaned and applied 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.

2.4.23 CABLING:

- a) Cable for LT supply - 230V AC supply from LT supply transformer at switching stations shall be brought and terminated on the LT AC distribution board in the remotecontrol cubicles at the switching stations by 110V 25 sq. mm aluminum two core PVC insulated; PVC sheathed and steel armoured heavy duty cable conforming to IS:1554 (Part-I) 1976.
- b) Control & Indication - All other cables for control and indication at switching stations shall be 1100V grade PVC insulated and sheathed un-armoured (heavy duty) complying with IS: 1554 (Part-I) 1976. The cables shall be provided as indicated in the Table below:

Purpose	Run	Circuit voltage	Core size & material	No. of cores.
Control and indication of interrupters.	From each interrupter to terminal board	110V/DC	2.5sq.mm	1
Catenary indication	From each PT line indication type to terminal board	110V/AC	2.5sq.mm	2
Heater supply for interrupter control mechanism cabinet	i) From each interrupter to interrupter.			
	ii) From each interrupter to fuse box	230V, AC	4.0 sq.mm alu.	2
	iii) From fuse box to distribution board.			
Battery supply	i) 110V battery charger to 110V battery			
	ii) 110V battery to 15A DC fuse box.	110V DC	2.5sq.mm copper	2
	iii) 15A DC fuse box to terminal board			

- Note: i) In case of feeding posts which are located within the traction sub-station premises, the cables shall be run from individual equipment and terminated inside the sub-station control room.
- ii) Notwithstanding the sizes of cables given above, the tenderer shall assure himself that the various cables would suit the ratings of equipment offered by him.
- c) Specification. The cables shall be resistant to decay, abrasion, acids, alkalies and other corrosive materials. All indoor wiring on wall shall be clamped neatly on teak wood battens fixed to the wall by means of wall plugs/wood pegs. The cables run layout at typical switching station is shown in the relevant drawing already included in Annexure-I

2.4.24 LITERATURE FOR EQUIPMENT: The Contractor shall within 2 months of issue of Letter of Acceptance of Tender, supply 2 copies of detailed schedule, catalogues and drawings of all parts of the equipments.

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PART - II
CHAPTER -V
DESIGNS AND DRAWINGS

PARA No.	SUBJECT
2.5.1	General
2.5.2	Contractor's drawings
2.5.3	Standards for drawings
2.5.4	Basic designs.
2.5.5	Standard drawings, employment schedule, etc.
2.5.6	Particulars designs and working drawings for OHE. Purchaser's pegging plans.
2.5.7	Submission of drawing and schedules.
2.5.8	Completion of drawing and design.
2.5.9	Addresses

PART – II

CHAPTER -V

DESIGNS AND DRAWINGS

2.5.1 GENERAL:

- a) This chapter deals 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, and
- c) In all drawings, as far as possible only such symbols as are in international use, shall be used.

2.5.2 a) Contractor's Drawings:

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, switching stations, booster transformer stations and LT supply transformer stations in an expeditious and economic manner.

b) Responsibility:

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, switching stations, booster transformer stations and LT supply transformer stations in an expeditious and economic manner.

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 basic designs and drawings shall conform to Specification RE/OHE/53 (6/88) / RDSO' drawing.

2.5.4 a) Basic Designs: Where the Contractor adopts designs and drawings conforming to standard designs, drawings and specifications of Research Designs & Standards Organization, Manak Nagar, Lucknow - 226011 (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, drawing and employment schedules and satisfy himself that those are correct and the latest approved drawings, before use. Within two months of the issue of Letter of Acceptance of Tender, the Contractor shall intimate 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 Para 1.2.23 shall be followed for approval of basic designs. The Contractor, for his use and reference shall obtain reproducible transparent film (50 microns) each of such standard basic arrangement, component and fittings drawings and employment schedules from Chief Electrical Engineer, Railway Electrification, Allahabad - 211 001, on payment as per the prescribed rates.

b) Deviations: Normally deviations from the standard drawings of the Purchaser will not be accepted. However, in exceptional cases where the Contractor desires to suggest improvements as a result of his experience or other development he shall justify his proposal with supporting explanatory notes.

c) Deleted.

2.5.5 STANDARD DRAWINGS EMPLOYMENT SCHEDULES ETC:

a) In cases where standard designs, drawings or employment schedules do not cover requirement of special locations 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 proposals.

2.5.6 PARTICULAR DESIGNS & WORKING DRAWINGS FOR OHE:

- (a) The pegging plans for sections to be equipped indicating the type of overhead equipment, locations of masts and other general particulars prepared on the basis of the latest survey will be furnished by the Contractor.
- (b) Layout Plans: [Provisional Layout Plans]. The Contractor shall prepare and submit overhead equipment layout plans incorporating the following information:
 - i) The run of wires in different thickness or color in special cases and terminations.
 - 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.
 - vi) List of infringements.
 - vii) Kilometer numbers and type of structures.
 - viii) Location and numbers of switches.
 - ix) Schematic sectioning diagram drawn to a convenient scales showing section insulator, number of switches, elementary sections and connections to switches and switching stations.
 - x) Table giving reference on approved profile drawings, feeder layout plans and other relevant drawings.
 - xi) Any other information as instructed by the ENGINEER.
- c) 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 structures until normal height of contact wire and encumbrances are restored.
- d) Cross Section Drawings: While the layout plans are being finalized, the Contractor shall submit for approval, in-so-far as yards between outermost points and crossings 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 proforma, 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 as such location and necessary details for anchor foundation will be submitted.

PARTICULAR DESIGNS & WORKING DRAWINGS FOR OHE:

e) CROSS SECTION FOR THE OPEN ROUTE SECTION.

Sl. No.	1	2	3	4	5	6	7	8	9	10	11	12	13
LOCATION NO.													
CHAINAGE													
D	SETTING DISTANCE IN 'M'												
E	STEP DISTANCE IN 'M'												
T	DISTANCE IN 'M'												
A	F.B.M. CODE												
I	SOIL TYPE & PRESSURE												
L	FOUNDATION TYPE& SIZE												
S	MAST SIZE & LENGTH IN 'M'												
	MAST EMBEDDED LENGTH 'M'												
	REVERSE DEFELCTION (CM)												
	SUPER MAST LENGTH (M)												
	CROSS ARM LENGTH (M)												
	ANY OTHER INFORMATION AS INSTRUCTED BY ENGINEER												
	ANY OBSTRUCTION												

f) Final Layout Plans:After all the cross section drawings in a section covered by one layout plan are finalized and foundations are cast, 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 connections shall also be incorporated. In open line section the Contractor shall submit structure erection particulars in the

typical Proforma as given below separately for each mains line track in addition to particular details as indicated in the Proforma for cross-section drawings. Modification

to this Proforma, if found necessary will be finalized at the time of making structure erection drawings.

2.5.7. SUBMISSION OF DRAWINGS & SCHEDULES:

- a) The submission of drawing and designs for approval shall be done in the manner indicated in the Para 1.2.23.
- b) The contractor shall supply the sufficient copies of the approved drawing as required by the purchaser for distribution/reference purpose.
- c) Supply of requisite number of copies of all Drawings (Initially-3 copies, duly approved- 6 copies, 4 copies for EIG application, and as erected -6 copies along with RTF and soft copy in 2 DVD, along with digitalization of all including SWR, sectioning diagram.

2.5.8 COMPLETION DRAWING &SCHEDULE:.

After completion of works, 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 tubes, 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 **Six sets**, one of which shall be transparencies of linen or film reproduction or any other durable material approved by the Purchaser, **along with soft copies in two DVDs.**

2.5.9 ADDRESSES:

Addresses to which designs and drawings should be submitted are indicated in Part-I, Chapter-II (1.2.6).

PART - II
CHAPTER - VI
ERECTION AND INSTALLATION OF EQUIPMENTS
SECTION-1: PRINCIPLES

PARA NO.	SUBJECT
2.6.1	Scope
2.6.2	Method of erection
2.6.3	Sectioning
2.6.4	Inspection
2.6.5	Measurement
2.6.6	Bolts Nuts etc.
2.6.7	Damage to galvanizing painting
2.6.8	Foundations
2.6.9	Masts and Structures
2.6.10	Overhead Equipments
2.6.11	Isolators
2.6.12	Bus bars and connects
2.6.13	Deleted
2.6.14	Tolerances
2.6.15	Supplementary Instructions.
2.6.16	Deleted
2.6.17	Deleted
2.6.18	Deleted
2.6.19	Deleted
2.6.20	Wiring procedure
2.6.21	Deleted
2.6.22	Erection of Brackets
2.6.23	Deleted

2.6.24 Deleted

2.6.25 Deleted

2.6.26 Stinging Catenary

2.6.27 Tensioning of Catenary

2.6.28 Clamping the Catenary

2.6.29 Droppering

2.6.30 Stringing of Contact Wire

2.6.31 Tensioning of Contact wire

2.6.32 Deleted.

2.6.33 Final Adjustment

2.6.34 Concluding Remarks.

PART - II
CHAPTER - VI
ERECTION AND INSTALLATION OF EQUIPMENTS
SECTION-1 : PRINCIPLES

2.6.1 SCOPE :

This Chapter deals with the methods of erection and installation of traction equipment, including casting of foundations and erection of structure.

2.6.2 METHOD 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 equipments 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 tracks and on the inner rail of the first outer track from the center of the formation in the case of an even number of tracks. Structures on curves shall be located in the radial off set of the location as determined.

2.6.6 BOLTS, NUTS, ETC:

All bolts, nuts, locknuts, screws, locking plates and split/cotter pins etc. shall 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 sections of equipments to the Purchaser for inspection and testing.

2.6.7 DAMAGE TO GALVANISING/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 in spite of all care taken, the damaged part of component shall be put up for inspection, to obtain permission from the Purchaser to carry out repair as per Para 2.4.11 (c).

2.6.8 FOUNDATION:

- a) 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 of foundations.
- b) **Location:** The location of each foundation or anchor blocks 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) **Methods of Installation:** The Contractor shall adopt mechanized method (concrete mixer) for installation 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 masts or structures in the same operation as casting of foundations or 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 on anchor blocks along

sidethetrack may be done up to length of 1 to 1.2 m and depth of 0.8 to 1 m without shoring, provided and excavated hole is concreted immediately and not left over night. Shoring shall otherwise be done unless the hole is refilled with soil and tamped. In case the length of excavation is 1 to 1.2 m and depth of excavation for foundations and anchor blocks along side 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. All waterlogged 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 by the Contractor and approved by the Purchaser shoring/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 hour) and their edges cemented to the foundation blocks. Prior to doing so, water should be filled in the core holes so as to assist in curing. The date of casting should be inscribed on the foundation block. In case of platform areas and level crossing, the core holes 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 excavated earth should be removed the foundation block. The excavated earth should be removed well clear of the area so as to avoid the mixing up with the track ballast or any obstruction to the track drains. In case of cuttings, the earth drains 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 of 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 determining crushing strength after 7 days or 28 days curing as required. Testing shall be arranged by the Purchaser at his own cost.
- f) **Anchor Blocks:** 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 masts/structure is loaded with equipment. 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 necessity of chipping of concrete.
- h) Conduits for cables should be embedded in the foundation blocks, wherever required to avoid consequent chipping off and breaking of the foundation blocks.

2.6.9 MASTS & STRUCTURES ERECTION:

- a) In case of 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 the 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 infringes the Schedule of Dimensions 1676 gauge printed in metric units in 1973.
- 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 traction overhead equipment which would ensure good speed and quality erection, is included in Section-2 of 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 string 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 catenary suspension bracket is at least 150 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 completed sections of equipment for inspection and testing.
- d) **Stringing of Catenary:** Care shall be taken to avoid kinking or bird 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 and shall be of the swivelling type to permit 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 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 at the 'no load tension' (See Section-2 of this Chapter) 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.
- e) **Stringing of 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 dropper 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.
- f) **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.
- g) **Clipping of Droppers:** The droppers shall be clipped on to 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.
- h) **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 35 deg. C before it is connected to the overhead equipment and put into action. The installation of the devices shall be such as to permit free, easy and unobstructed movement of the counter-weight.

- i) **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 the structures other than those supporting traction overhead equipments.
- j) **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 not 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.
- k) **Anti-wind Clamp:** Anti-wind clamp shall be provided as per RDSO's standard drawing.
- l) **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 jumper shall be adequate to avoid any disturbance to overhead equipment to restraint in the relative movement of conductors but the jumpers should not be excessively long. The end of jumpers shall be tinned including the portion inside the first parallel clamp.

Separation between OHE: In erection, the physical separation required between overhead equipments and bracket assemblies on the same structure as insulated overlaps shall be ensured.

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 equipments.

Adjustment at turn-outs, etc: Careful adjustment of equipment shall be made on equipment at turn-outs, crossovers, diamond crossings, overlaps in 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 effected smoothly.

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 wires. Endeavour 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 BUSBARS AND CONNECTIONS: Bus bars and connections shall be neatly shaped and bent to give a good appearance.

2.6.13 EARTHING: The earthing shall be done as per code of practice for bonding.

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 +/- 50 mm as measured along the appropriate rail (See Para 2.6.5).

The cumulative error of measurement of all spans in a kilometer shall be not more than 1000 mm.

b) Setting of Structures: The setting of structure shall not be less than that included in the appropriate cross-section drawings, specially those with the minimum setting of 2.36m 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 : \pm 20mm will be permitted on the height of contact wire at points of supports as shown in the relevant structures erection drawings, except under over line structures where no tolerance will be permitted.

d) Stagger :Generally \pm 20 mm will be permitted for stagger.

e) Dropper length : \pm 5 mm will be permitted for dropper length.

f) Dropper Location : \pm 100 mm 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 required to be improved.

2.6.16 to 2.6.19 Deleted.

2.6.20 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 adjustment of overhead equipment immediately before energization and commissioning is virtually eliminated.

2.6.21 Deleted

2.6.22 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 straight 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.

2.6.23 to 2.6.25 Deleted

2.6.26 STRINGING CATENARY: The catenary is initially terminated in the ending clamp of the temporary arrangement at one end of tension length. The catenary is then paid out from the reel of the wiring trolley [of contractor] 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.

2.6.27 TENSIONING OF CATENARY:

The catenary is strained upto 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 dynamo-meter, and terminated at the tension. point. For this, the ambient temperature shall be deemed to be the temperature registered by a thermo-meter tied to a length of catenary wire 3 to 4 metres 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 of sag with the help of levelling gauge 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 metres, and situated on either side of anti-creep and the termination points. The value of sag measured by this method should be within 5% of the critical value for the corresponding stringing tension, and the temperature at the time of this measurement. In case the discrepancy is more, the tension should be adjusted again and sag rechecked 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.

2.6.28 CLAMPING THE CATENARY:

The catenary is clamped on the brackets placed at right angles to the track (See Note 2 under para 2.6.34).

2.6.29 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 set 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.

2.6.30 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 put on the wiring trolley [of contractor] and supported on the pulleys hung from droppers or on hooks until the terminating point at the other end of the tension length is reached. In curves, the contact wire shall be registered or 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.

2.6.31 TENSIONING OF CONTACTWIRE: 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.

2.6.32 Deleted.

2.6.33 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 turn buckles. The equalizer plate is kept 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 staffer and register arm clearance.

2.6.34 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 turn buckle 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 a dynamometer:
 - ii) No traffic block is required for this operation; and
 - iii) It obviates the necessity 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 in Para 2.6.27.

3. If it is difficult to obtain a separate traffic block for stringing contact wire, the wire may be paid out at the same time, as catenary with the following precautions.
 - i) The contact wire is run and should not be suspended from the independent pulleys hooked on to 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 to the brackets.
 - iii) The tension in the contact wire before termination should be about 1,500kgf. 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 catenary and the tension is adjusted as indicated in para 2.6.31.

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 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 stall would have to be detailed for shifting the dropper clips which in attendant with risk of damage to the contact wire.

5. Before the temporary arrangement is removed a reference mark should be made in 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****INSPECTION AND TESTING**

Para No.	SUBJECT
2.7.1	Scope
2.7.2	Overall performance
2.7.3	Responsibility
2.7.4	Test on overhead Equipment
2.7.5	Deleted.
2.7.6	Earthing
2.7.7	Detailed Procedure for Test.

PART - II

CHAPTER - VII

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 L.T. supply transformer stations as provided in Part-I.

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, with out mechanical shocks prejudicial sparks (See Para 2.1.10) 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, Chapter-II, III and IV. Any testing and acceptance by the Purchaser of overall performance shall be subject to the general terms of guarantee which shall continue to be valid as provided for in Part-I, Chapter-II.

2.7.4 TESTS ON OHE GENERAL:

- (a) 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 specifications.

INSULATION.

- (b) The strength of the insulation and the di-electric strength of the entire equipment as installed shall be tested with a 2500V Megger.

TESTS ON THE CONTINUITY.

The electrical continuity of the line and the existence of bad contacts, if any, will be tested with a Megger.

ELECTRICAL IMPEDENCE.

- (d) The electrical impedance of individual of elementary sections in relation to one another shall also be tested with a Megger.

SWITCHES.

- (e) All isolators shall be tested for smooth and trouble free operation.

TENSION DEVICES.

- (f) All automatic tensioning devices installed shall be tested for sensitive functioning and adjustment.

STAGGER AND HEIGHT.

- (g) The stagger and height of contact wire over the entire section of completed overhead

equipment and the clearances 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 are shown in Part-II, Chapter-VI.

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 under section insulators, particularly those which are likely to be frequently traversed.

MECHANICAL BEHAVIOUR.

- (h) The mechanical behavior of the entire equipment shall be tested at various speeds under normal pantographs pressure without energizing the overhead equipment.

ENERGISING.

- (i) If the overhead equipment, after being subjected to the above tests in an unenergised condition, is found to be satisfactory, it will be energised with the normal 25 KV A.C. supply.
- (j) Tests shall be conducted to check if the current 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. Current 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 Deleted.

2.7.6 EARTHING.

- a) Earth wires will be checked for continuity and electrical isolation every 1000 m approx.
- b) Clearance between out-of-run wires and earth wires of overhead equipment and signals shall be checked.
- c) Earth resistance shall be measured separately for each earth electrode. In the case of inter-connected earth electrodes, the net resistance of the inter-connected electrodes shall also be measured.

2.7.7 DETAILS PROCEDURE FOR TESTS:

The detailed procedure for inspection and testing will be furnished to the contractor. The contractor shall submit the results of tests in the proforma, which will be furnished by the Purchaser, in quadruplicate.

FORMS OF TENDER

While submitting the offer tenderer shall follow strictly the Special instruction and Guidelines for submitting e-tenders as per CAO(C)CSMTs office letter No.EW/187/R/465/JV-II, dated 23.12.2020. (Page 3 to 20 of tender document)

TENDERER'S SCHEME OF WORK AND TIME SCHEDULE

OVERHEAD EQUIPMENT

MONTHS

Issue of preliminary layouts and site allocation:

Submission of layout plans for walkouts and approvals :

Approval of layout plans :

Preparation and submission of drawings for approval :

Approval of drawings :

Ordering of steel work on the purchaser :

Bulk order for materials :

Detailed ordering of materials :

Foundation installation :

Delivery of steel work :

Steel work erection :

Delivery of materials :

Wiring and testing :

Guarantee period :

FORM FOR AGREEMENT

AN AGREEMENT made this day of Two Thousand and Twenty between the President of India acting in the premises through the Chief Electrical Engineer (C)/ Dy.Chief Electrical Engineer(C) Bhusawal or his Successor of the Ministry of Railways, Railway Board (hereinafter referred to as “the Purchaser”) of the one part and Messrs (Herein after referred to as “the Contractor”) of the other part.

Whereas in response to a call for Tenders for “**Design, manufacture, supply of associated equipments, erection, testing & commissioning of 1 No. 132kV/55kV (2×25kV System) Scott Connected transformer TSS & Bay modification work at Pachora TSS, along with 2 No. of Sectioning & Paralleling Post (SP) and 4 No. of Sub-sectioning & Paralleling Post (SSP) In Connection With Gauge Conversion Work From Pachora-Jamner in Bhusawal division of Central Railway.**”

as per Tender paper **E-Tender No.BSL.LC.Tender.11.2026**. Hereto, the Contractor has submitted a Tender as per tender schedule here to and whereas the said Tender of the Contractor has been accepted as per copy of Letter of Acceptance of Tender No.....dated..... complete with enclosures at the accepted rates and agreed deviations from Tender No. as per tender schedule hereto and at an estimated contract value of Rs.....(Rupees.....only).

Now this Agreement witness that in consideration of the premises and the payment to be made by the Purchaser to the Contractor provided for herein below the Contractor shall supply all equipments and materials and execute and perform all works for which the said Tender of the Contractor has been accepted, strictly according to the various provision in tender schedule hereto and upon such supply, execution and performance to the satisfaction of the Purchaser, the Purchaser shall pay to the Contractor at the several rates accepted as per the said tender schedule and in terms of the provisions therein.

In witness whereof the parties have hereinto set and subscribed their respective hands and/or seals the day, month and year respectively mentioned against their respective signatures.

Signed and delivered at
by Shrifor and on behalf of
M/s.....the Contractor
within named in the presence of :

(Signature of the Contractor)

1. Signature :

Name in Block Capitals:

Address:

2. Signature :

Name in Block Capitals :

Address :

Signed and declared at Bhusawal for and on behalf of the President of India by Shri
.....

(Signature)

1. Signature :

Name in Block Capitals:

Address :

2. Signature :

Name in Block Capitals :

Address:

CENTRAL RAILWAY
VENDER MANDATE FORM FOR RBI-EFT

1: NAME OF THE PARTY -----

2: ADDRESS _____

TEL.NO. & FAX -----

CELL NO.-----

3: PARTICULARS OF BANK ACCOUNT:-----

I) BANK NAME:-----

II) BRANCH NAME: -----

III) BANK OF TELEPHONE NO.-----

IV) NINE DIGIT CODE NO. TO THE BANK & BRANCH AS APPEARING ON THE MICR
 CHEQUE ISSUED BY THE BANK

IFSC Code: -----

PAN Number: -----

V) ACCOUNT TYPE WITH CODE: -----

VI) ACCOUNT NO AS APPEARING ON THE CHEQUE BOOK -----

4: DECLARATION BY THE PARTY

I hereby declare that the particulars given above are correct and complete, if the transaction is delayed or not effect at all for reasons of incomplete or incorrect information the User institution the i.e. Central Railway will not be held responsible. I have under old the scheme and agree to discharge the responsibility expected of me as a participant under the scheme.

Date:

Signature of the supplier/contractor

5: Certified that the particulars furnished above are correct as per our orders.

BANK'S STAMP

Signature of the Authorized official from the bank.

GUARANTEE BOND FOR PERFORMANCE GUARANTEE

[on Rs.500/- Stamp Paper]

In consideration of the President of India (hereinafter called “the Government”) 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 the work of(hereinafter called “the said Agreement”) of “ Performance Guarantee ” for the due fulfillment (by the said Contractors) of the terms and conditions contained in the said Agreement, [Part-I, Chapter-I, Clause-1.1.10.4, Page-23], on production of a irrevocable Bank Guarantee amounting to 5% of the contract value i.e. for Rs.....Only (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 Government an amount not exceeding Rs.....Only, against any loss or damage caused to or suffered or would be caused to or suffered by the Government by reason of any breach by the said Contractor(s) of any of the terms or conditions contained in the said Agreement.

We, (indicate the name of the bank)undertake to keep this Performance Guarantee in force till the satisfactory completion of the work and the maintenance period is over.

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 Government stating that the amount claimed is due by way of loss or damage caused to or would be caused to or suffered by the Government by reason of 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.....

We, (indicate the name of the bank) undertake to pay to the Government any money so demanded notwithstanding 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 being absolute and unequivocal.

The payment so made by us under this bond shall be a valid discharge of our liability for payment there under and the Contractor(s)/Supplier(s) shall have no claim against us for making such payment.

We, (indicate the name of the 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 dues of the Government under or by virtue of the said Agreement have been fully paid and its claims satisfied or discharged or till (Office/Department) Ministry of certified that the terms and conditions of the said Agreement have been fully and properly carried out by the said Contractor(s) and accordingly discharges this performance 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.

We, (indicate the name of the bank)further agree that the Government 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 extend time of performance by the said Contractor(s) from time to time or to postpone for any time or from time to time any of the powers exercisable by the Government against the said Contractor(s) and to forbear or enforce any of the terms and conditions relating to the said agreement and we shall not be relieved from our liability by reason or any such variation, or extension being granted to the said Contractor(s) or for any forbearance, act or omission on the part of the Government or any indulgence by the Government to the said Contractor(s) or by any such matter or thing whatsoever which under the law relating to sureties would, but for this provision, have effect of so relieving us.

This guarantee would not be discharged due to the change in the constitution of the Bank or the Contractor(s)/Supplier(s).

We, (indicate the name of the bank)lastly undertake not to revoke this guarantee during its currency except with the previous consent of the Government in writing.

Dated :day of 2026.

SIGNATURE AND NAME OF BANK

SEAL OF BANK

STANDING INDEMNITY BOND FOR “ON ACCOUNT PAYMENTS”

We M/s. Hereby undertake that we hold at our stores depot/s atfor and on behalf of the President of India acting in the premises through the Dy. Chief Electrical Engineer(Const.) Central Railway, Bhusawal (hereinafter referred to as “the Purchaser”) and as his property in trust for him all materials listed in tender schedule for “**Design, manufacture, supply of associated equipments, erection, testing & commissioning of 1 No. 132kV/55kV (2×25kV System) Scott Connected transformer TSS & Bay modification work at Pachora TSS, along with 2 No. of Sectioning & Paralleling Post (SP) and 4 No. of Sub-sectioning & Paralleling Post (SSP) In Connection With Gauge Conversion Work From Pachora-Jamner in Bhusawal division of Central Railway.**” which “on account payments” have been made to us not exceeding Rs.....against the contractor for vide Letter of Acceptance of Tender No..... dated..... and materials handed over to us by the Purchaser as per Annexure-A of Tender for the purpose of execution of the said Contract. Until such time the materials are duly erected or otherwise handed over to him.

We shall be entirely responsible for the safe custody and protection of the said materials against all risk till they are duly delivered as erected equipment to the Purchaser, or as he may direct otherwise and shall indemnify the Purchaser against any loss, damage or deterioration whatsoever in respect of the said materials while in our possession and against disposal of surplus materials. The said materials shall at all times be open to inspection by any officer authorized by the Dy. Chief Electrical Engineer(Const.) Central Railway, Bhusawal.

Should any loss, damage or deterioration of materials occur or surplus materials disposed off and refund becomes due the Purchaser shall be entitled to recover from us the full cost as per prices included in tender Schedule and in respect of other materials as indicated in Part-I. Chapter-II, para-1.2.42 and also compensation for such loss or damage if any along with the amount to be refunded without prejudice to any other remedies available to him by deduction from any sum due or any sum which at any time hereafter becomes due to us under the said or any other Contract.

Dated thisday of2026.

for and on behalf of

Messrs -----

Signature of witness :

Name of witness :
(in Block Letters)
Address

Annexure

**FORMAT FOR AFFIDAVIT TO BE SUBMITTED BY TENDERER ALONGWITH THE
TENDER DOCUMENTS:**

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 tender Notice No. _____ of (----- Railway), 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 tender 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 railway Administration 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 alongwith 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, alongwith 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:

Date :

**** 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.**

CERTIFICATE OF OFFER

From: M/s

To,
 The President of India,
 Acting through the Dy.ChiefElectrical Engineer (Construction),
 Central Railway, Bhusawal.

Dear Sir,

Sub: Tender No.BSL.LC.Tender.11.2026, for the work of “**Design, manufacture, supply of associated equipments, erection, testing & commissioning of 1 No. 132kV/55kV (2×25kV System) Scott Connected transformer TSS & Bay modification work at Pachora TSS, along with 2 No. of Sectioning & Paralleling Post (SP) and 4 No. of Sub-sectioning & Paralleling Post (SSP) In Connection With Gauge Conversion Work From Pachora-Jamner in Bhusawal division of Central Railway.**”

(i) I/We offer and agree to execute the above work at _____ % above / at par / _____ % below (in figure) _____ % above / at par / _____ % below (in words) the Railway’s estimated total cost of Rs. _____ /- (Rupees _____) only as indicated in tender schedule of rates (SOR).

Tenderer shall not quote for individual item.

(The tenderer (s) shall quote a common percentage rate for all schedule / all items. In case the tenderer (s) quote different rates for various schedule/item such offer shall summarily be rejected. Percentage rates to be quoted both in figures & words)

- (ii) I/We also agree to carry out new item, not included in tender schedule but directly incidental to the work, if required at the latter stage, up to maximum par value, which is lower of Rs. 50,000/- or 10% of contract value, at the same terms and conditions as quoted for the main schedule.
- (iii) It is certified that I/We have inspected the site of work & acquainted myself/ourselves with local conditions.
- (iv) I/We have carefully gone through the Specifications, Special Conditions etc. attached with the tender documents.
- (v) I/We undertake to keep this offer valid for period indicated in “Tender Form” from the date of opening of tender and further not to revoke the same before the expiry of such period.

Seal of the Firm

Signature of tenderer
 Date: _____

ANNEXURE**COMPLETION CERTIFICATE****Name of Organization:**

Postal Address, Phone No., Email ID, Fax No.

Letter No.

Date:

1	Name of work	
2	Contract Agreement (C/A) No. and date	
3 (i)	Name of Firm with address	
(ii)	In case of JV Name and % share of individual firm	
4	Original value of contract agreement	
5	Date of award of Contract	
6	Has the work physically been completed in all respect as per contract agreement?	
7	If yes, then actual date of physical completion	
8	Total payment made in above contract till the date of issue of certificate	
9	Value of contract as completed final value if final bid paid	
10	In case of composite work: Scope of work covered in the Agreement such as Earth work, RCC/PSC/Steel/ Composite Bridge, ROB/Flyover, concrete structures.	

I hereby certify that above mentioned work has been physically completed in all respect as per contract agreement. Performance of the contractor while executing the work had been satisfactory.

(Signature)
Name and Designation of Officer
Mobile No. of officer
Seal of officer

TENDERER'S DECLARATION FORM

The President of India

Acting through the
Dy. Chief Electrical Engineer (C), C.Rly, Bhusawal.

I/We M/s have read the contents of the Tender Document, including various conditions to tender attached hereto and hereby agree to abide by the said conditions. I/We also agree to keep this Tender open for acceptance for a period of **60** days from the date fixed for opening the same and in default thereof I/We will be liable for forfeiture of full amount of my/our "Earnest Money".

1. I/We offer to do the work for **"(Name of work)"** at percent above/below/at par with the Central Railway USSOR 2011 and / or for NS items mentioned in the attached schedule and hereby bind myself/ourselves to complete the work in ----- (No. of months in figures & words) **months including monsoon** from the date of issue of letter of acceptance of the tender. I/We also hereby agree to abide by the Indian Railways General Conditions of Contract April 2022 with up to date corrections and to carry out the work accordingly to the specifications laid down by the Railway for the present contract.
2. The full amount of earnest money has been paid online through net Banking / Payment Gateway.
3. I fully understand that, the full value of the earnest money shall stand forfeited without prejudice to any other rights or remedies if:-
 - (a) I/we do not execute the contract documents within seven days after receipt of notice issued by the Railway that such documents are ready, and
 - (b) I/we do not commence the work within fifteen days after receipt of orders to that effect.
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.
5. I/We also agree that in the event of my/our failure to execute the contract document as hereinbefore provided or commence the work within the prescribed period after issue of letter of acceptance of the tender, the Railway may be entitled to determine that I/We have abandoned the contract and thereupon my/our tender and acceptance thereof may be treated as cancelled and the Railway shall be entitled to forfeit the full amount of earnest money and recover the damages for such default.
6. I/We have not tampered / modified the tender forms in any manner. In case the document is found to be tampered / modified, I/We understand that my/our tender is liable to be rejected and full earnest money deposit will be forfeited and I/we am/are liable to be banned from doing business with Railways and / or prosecuted.

Date:

Contractors address:

Signature of Contractor
**(To be signed by the Authorised Signatory/
POA holder of Tenderer / JV firm)**

Date:-----

Signature of Witnesses:

(1)-----

(2)-----

*ANNEXURE - 'I'***Particulars of Tenderers**

1. Full name of Contractor/ Construction firm	
2. Year of establishment of Firm	
3. Registered Head Office Address, Telephone no, Fax no, E-mail address.	
4. Branch office Address, Telephone no, Fax no, E-mail address	
5. Details of Constitution of firm, names of Partners/ Executives/Power of Attorney holders, etc.	
6. Particulars of Registration with Government/ Semi-Govt Organization, Public Sector Undertaking & Local Bodies etc.	

Signature of Tenderer(s)

TENDERER

Dy.CEE (C) BSL

ANNEXURE - 'III'

Detailsofworksosimilarnaturephysicallycompletedinallrespectaspercontractagreementinlastthre
eandcurrentfinancialyearason date.....

SN	Name of work	Name of organization for whom work physically completed	Type of organization for whom work executed	Contract Agreement No. & Date	Original value of contract agreement	Final value of contract as completed	Payment received till opening of present tender (On account/final bill)	Time taken for completion of work		Principal feature of the work in brief
								Date of award of contract	Date of actual completion	
1	2	3	4	5	6	7	8	9	10	11
1.										
2.										

Note:-

- (i) Above detail should be given only for works which have been physically completed in all respects. Part completed work shall not be considered.
- (ii) Certificate from Private individual for whom such works are executed shall not be considered for eligibility of tenderers.
- (iii) The tenderers should attach self attested copy of certificate issued by the organizations for whom the work was carried out in the proforma as per Annexure-IV.
- (iv) Not more than five certificates should be attached.
- (v) In column 4 type of organization is to be mentioned viz Central/ State Governments/Public Sector Undertaking/Public Funded Institutions/Municipal Bodies/Railways Siding owners/Concessionaire.

ANNEXURE - 'IV'**LIST OF WORKS ON HAND**

Sr No	Name of Work	Name of Organization for whom executed and Contract awarding authority	Contract agreement No and date of Award	Approx Value of contract			Date of Commencement	
				Agreement Value	Payment received	Aprox balance to be received	Scheduled	Actual
1	2	3	4	5	6	7	8	9

Date of Finish		Period of completion		% age Progress		Reasons for Delay, if any	Main features of the work	Remarks
Scheduled	Expected	Scheduled	Expected	Physical	Financial			
10	11	12	13	14	15	16	17	18

Note:

(i) Supporting documents/certificates (duly attested) from the organisations with whom worked/are working should be enclosed.

(ii) Certificate from private individuals for whom such works are executed/ being executed shall not be accepted.

Signature of Tenderer(s)

ANNEXURE - 'VI'**LIST OF PERSONNEL/ORGANISATION AVAILABLE ON HAND AND PROPOSED TO BE ENGAGED FOR THE SUBJECT WORK**

Sr. No.	Name & Designation	Qualification	Professional Experience	Remarks

Note- Supporting documents should be attached

I hereby certify that no retired Engineer/Gazetted Officer of the Railways who has retired within 2 years of date of submission of tender and has not obtained permission of competent authority has been engaged by me/our firm. I also certify that none of my relative is engaged in Engineering Department in Central Railway.

Signature of Tenderer(s)

*ANNEXURE -'VII'*A. LIST OF PLANT & MACHINERY (OWNED) AVAILABLE ON HAND AND PROPOSED TO BEINDUCTED ON THE SUBJECT WORK

Sr. No.	Particulars of equipments	No. of units	Kind/Make	Capacity	Age and condition	Remarks

B. LIST OF PLANT & MACHINERY PROPOSED TO BE HIRED FOR THE WORK

Sr. No.	Particulars of equipments	No. of units	Capacity	Remarks

Signature of Tenderer(s)

*ANNEXURE - 'X'***DECLARATION FOR SITE VISIT**

I/We hereby solemnly declare that I/We visited the sites of work personally and have made myself/ourselves fully conversant of the conditions therein and in particular the following:

- (i) Topography of the area
- (ii) Soil strata at site of work
- (iii) Sources and availability of construction materials
- (iv) Rates for construction materials, water, electricity including all local taxes, royalties, octroi, etc
- (v) Availability of local labour (both skilled and unskilled) and relevant labour rates and labour laws
- (vi) Existing roads, approaches, pathways to site of work
- (vii) Space for stacking of materials, stores, office etc
- (viii) Availability and rates of private land, etc required for various purposes
- (ix) Trees, shrubs, bushes, debris etc required to be removed for site clearance
- (x) Need of dewatering/pumping etc
- (xi) Climatic conditions and availability of working days and working hours
- (xii) Frequency/pattern of rail traffic, electrified tracks, road traffic etc
- (xiii) Availability of rail/road traffic block
- (xiv) Law and order situation.
- (xv) Any other condition, which may affect rates.

I/We have quoted my/our rates for various items in the tender schedule taking into account all the above factors likely to be encountered during execution of work. I/We shall not be entitled for any claim against Railway on account of above factors.

Signature of Tenderer(s)

(Tender schedule to be read in cognizant with the explanatory note of tender documents) Annexure

Central Railway

Dy.CEE(C)s Office BSL

Name of Work:-Design, manufacture, supply of associated equipments, erection, testing & commissioning of 1 No. 132kV/55kV (2×25kV System) Scott Connected transformer TSS & Bay modification work at Pachora TSS, along with 2 No. of Sectioning & Paralleling Post (SP) and 4 No. of Sub-sectioning & Paralleling Post (SSP) In Connection With Gauge Conversion Work From Pachora-Jamner in Bhusawal division of Central Railway.

Part-1- Schedule for 2X25 KV Scott Connected TSS (Single Line) & Bay modification work at Pachora TSS

S N	Item Description	Unit	Qty	Unit Rate		Cost for Scott Connected TSS		
				Material	Erection	Material	Erection	Total
1	Design & drawing of traction sub station	Each	1.00	-	2,40,177.00	-	2,40,177.00	2,40,177.00
2	Design & drawing of feeding post(Pahur FP & Pachora FP) .	Each	2.00	-	63,918.00	-	1,27,836.00	1,27,836.00
3	Supply & Erection of 25 KV DO fuse switch assembly.	Nos	2.00	11,791	853	23,582.00	1,706.00	25,288.00
4	Supply & Erection of 132kV termination with disc insulator & adjustor.	Nos	30.00	19,826.00	636.00	5,94,780.00	19,080.00	6,13,860.00
5	Supply & Erection of 132 kV termination with disc insulator & without adjustor.	Nos	30.00	18,779.00	636.00	5,63,370.00	19,080.00	5,82,450.00
6	Supply and erection of 50 kV termination without adjuster complete with disc insulators.	each	4.00	13,683.00	554.00	54,732.00	2,216.00	56,948.00
7	Supply without insulator and erection of materials for termination of copper cross feeder with gantries.	Nos	8.00	7,096.00	1,477.00	56,768.00	11,816.00	68,584.00
8	Supply and installation of 250 AH, 110 V low maintenance lead acid (LMLA) batteries set with 2	Set	2.00	6,36,401.00	18,871.00	12,72,802.00	37,742.00	13,10,544.00

	nos. of suitable battery charger (1 set = 1 battery set & 2 nos. battery charger). battery charger. Battery make -EXIDE							
9	Transportation & Erection of 13 Mtrs.(52/60KG) release long Rails from nominated place with in 10 KM area to works site.	Set	4.00	-	8,495.00	-	33,980.00	33,980.00
10	Supply & Erection of 132 KV/2x55KV, 60/84/100MVA, ONAN/ONAF, three phase scott connection Traction Power Transformer	Nos	2.00	11,49,02,317.00	12,57,951.00	22,98,04,634.00	25,15,902.00	23,23,20,536.00
11	Concrete for foundation and trench in hard soil.	cum	88.04	4,688.00	2,764.00	4,12,731.52	2,43,342.56	6,56,074.08
12	Concrete for foundation and trench in rock.	cum	88.04	4,833.00	3,539.00	4,25,497.32	3,11,573.56	7,37,070.88
13	Concrete for foundation other than hard soil and rock.	cum	704.35	4,698.00	2,038.00	33,09,036.30	14,35,465.30	47,44,501.60
14	Reinforced concrete for foundation & trench	cum	80.69	5,481.00	2,492.00	4,42,261.89	2,01,079.48	6,43,341.37
15	Reinforced concrete for cable trench covers.	Sqm	215.75	1,845.00	839.00	3,98,058.75	1,81,014.25	5,79,073.00
16	Reinforced brick work for baffle wall	cum	38.40	5,318.00	1,729.00	2,04,211.20	66,393.60	2,70,604.80
17	Plastering of brick work.	Sqm	213.50	87.00	83.00	18,574.50	17,720.50	36,295.00

1 8	Supply and spreading of gravel / ballast in the switch area	cum	546.45	1,617.00	17.00	8,83,609.65	9,289.65	8,92,899.30
1 9	Insulator for cross feeder	set	16.00	3,619.00	-	57,904.00	-	57,904.00
2 0	Supply & Erection of 25kV Support/post Insulator	Nos	26.00	7,776.00	340.00	2,02,176.00	8,840.00	2,11,016.00
2 1	Supply & Erection of 50/55 KV Support Insulator.	Nos	4.00	14,163.00	1,306.00	56,652.00	5,224.00	61,876.00
2 2	Supply and erection of 132 Kv Support insulator	Nos	6.00	26,763.00	1,306.00	1,60,578.00	7,836.00	1,68,414.00
2 3	Supply & erection of galvanization steel structure including Traction mast, main masts, fabricated steel other than mast , SPS , Tower gantries ,portal, supporting structures & small part steel work.	MT	125.63	1,35,237.00	6,201.00	1,69,89,824.31	7,79,031.63	1,77,68,855.94
2 4	Supply & erection of earth electrode	Nos	74.00	3,661.00	2,472.00	2,70,914.00	1,82,928.00	4,53,842.00
2 5	Supply and erection of earth bus 75x8 mm. MS strip laid in the ground.	Meters	442.00	341.00	141.00	1,50,722.00	62,322.00	2,13,044.00
2 6	Supply and erection of earth bus 75x8 mm. MS strip laid exposed.	Meters	1224.00	341.00	101.00	4,17,384.00	1,23,624.00	5,41,008.00
2 7	Supply & Erection of 8/6 SWG GI wire for earthing	Meters	130.00	35.00	32.00	4,550.00	4,160.00	8,710.00
2 8	Supply & Erection of 32 mm dia earth rod for earth mat	Meters	2272.75	525.00	41.00	11,93,193.75	93,182.75	12,86,376.50

29	Supply , erection and termination of earth screen wire of size 19/2.5mm.	Meters	780.00	372.00	30.00	2,90,160.00	23,400.00	3,13,560.00
30	Supply and erection fencing panel at substation for TSS	Metre	329.50	2,561.00	134.00	8,43,849.50	44,153.00	8,88,002.50
31	Supply & erection of fencing up right.	MT	3.95	91,778.00	5,996.00	3,62,523.10	23,684.20	3,86,207.30
32	Supply and erection gates	Metre	16.50	2,432.00	413.00	40,128.00	6,814.50	46,942.50
33	Supply & erection of anti climbing device at substation..	Metre	329.50	257.00	13.00	84,681.50	4,283.50	88,965.00
34	Supply, laying and fixing of heavy duty ISI marked 'B' class GI pipe of 3.65mm wall thickness and 50mm dia to be laid along the wall or floor with proper galvanized clamps/ through the wall or undernaeth the floor in cement concrete as per explanatory note.	Metre	24.00	181.00	20.00	4,344.00	480.00	4,824.00
35	Supply (without Insulator) and Erection of 25 kV, 2000 Amp. Double Pole Isolator without Earthing Blade Assembly (Manually Operated)	Nos	18.00	1,02,478.00	5,401.00	18,44,604.00	97,218.00	19,41,822.00
36	Supply (without Insulator) and Erection of 25 kV, 2000 Amp. Double Pole Isolator without Earthing	Nos	1.00	1,67,906.00	5,401.00	1,67,906.00	5,401.00	1,73,307.00

	Blade Assembly (Motorized).							
37	Supply & Erection of 50/55 kV Double pole isolator(With insulator).	Nos	4.00	1,48,786.00	6,512.00	5,95,144.00	26,048.00	6,21,192.00
38	Supply & Erection of 132 KV Triple pole Isolator without earthing heel (Manually operated assembly with insulator).	Nos	3.00	1,81,908.00	9,768.00	5,45,724.00	29,304.00	5,75,028.00
39	Supply & Erection of 132 KV Triple pole Isolator with earthing heel (Manually operated assembly with insulator).	Nos	2.00	2,38,551.00	11,872.00	4,77,102.00	23,744.00	5,00,846.00
40	Extra for Supply & Erection of earthing blade assembly for 132 KV Triple pole 1250Amp isolator.	Nos	2.00	43,056.00	1,402.00	86,112.00	2,804.00	88,916.00
41	Supply, erection of 50 kV Berismis AAAC Conductor of size 36 mm dia(768 sqmm).	Mtrs	334.00	902.00	55.00	3,01,268.00	18,370.00	3,19,638.00
42	Supply & Erection of 132 kV/66kV/25kVconnectors, bus splices & TEE Connectors etc. required for commissioning of TSS as per explanatory note.	Each	496.00	3,664.00	63.00	18,17,344.00	31,248.00	18,48,592.00
43	supply and erection of Aluminium jumper	each	140.00	3,008.00	402.00	4,21,120.00	56,280.00	4,77,400.00
44	Supply and erection of 50/39mm tubular aluminium busbar.	Meters	650.00	1,153.00	107.00	7,49,450.00	69,550.00	8,19,000.00

4 5	Supply, erection of ACSR Zebra Conductor of size 28.62 mm dia.	Meters	309.00	724.00	154.00	2,23,716.00	47,586.00	2,71,302.00
4 6	Supply and erection of copper strip for equipment earthing.	Metre	130.40	1,050.00	124.00	1,36,920.00	16,169.60	1,53,089.60
4 7	Supply and Erection of copper cross feeder wires (37/2.25 mm HDBC) across the track at SP/SSP/FP/BT locations	KM	0.12	20,28,872.00	5,082.00	2,43,464.64	609.84	2,44,074.48
4 8	Supply and erection of large copper jumper 160 sqmm cross feeder/isolator and OHE.	Nos	12.00	16,054.00	602.00	1,92,648.00	7,224.00	1,99,872.00
4 9	Supply & Erection of 12.3 MVA , 55 KV/27.5 KV , 50HZ Auto Transformer with bushing and oil and other equipments as per RDSOspec. suitable for 2 x25KV AT feedingsystem.	Nos	4.00	1,21,51,347.00	4,43,070.00	4,86,05,388.00	17,72,280.00	5,03,77,668.00
5 0	Supply & erection of control & relay panel incorporating Numerical type protective relays for TSS suitable for Scott connected Power Transformer	Nos	1.00	2,06,98,798.00	27,483.00	2,06,98,798.00	27,483.00	2,07,26,281.00
5 1	Supply, erection, testing and commissioning 25 KV Double pole, vacuum type circuit breaker(2000A) with interlocking .	Nos	8.00	9,99,683.00	13,868.00	79,97,464.00	1,10,944.00	81,08,408.00

5 2	Supply, erection, testing and commissioning 25 KV vacuum double pole type interruptor	Nos	3.00	9,96,323.00	8,996.00	29,88,969.00	26,988.00	30,15,957.00
5 3	Supply & Erection of 132 KV Triple pole SF-6 Circuit breaker with interlock.	Nos	2.00	16,01,330.00	22,883.00	32,02,660.00	45,766.00	32,48,426.00
5 4	Supply & Erection of 50/66kV Double Pole SF-6Circuit Breaker	Nos	4.00	5,56,615.00	15,255.00	22,26,460.00	61,020.00	22,87,480.00
5 5	Supply, erection, testing and commissioning 25 KV current transformer(1500-750/5A)	Each	8.00	1,10,715.00	2,251.00	8,85,720.00	18,008.00	9,03,728.00
5 6	50 KV CT(1500-750/5A)	Nos	8.00	1,24,119.00	3,415.00	9,92,952.00	27,320.00	10,20,272.00
5 7	Supply & Erection of 132 KV current transformer.	Nos	6.00	3,71,879.00	3,546.00	22,31,274.00	21,276.00	22,52,550.00
5 8	Supply, erection, testing and commissioning 25 KV potential transformer (PT)Type-I	Nos	6.00	85,932.00	1,100.00	5,15,592.00	6,600.00	5,22,192.00
5 9	27.5 kV /110 V potential transformer (type-II)(52 kV insulation class)	Nos	4.00	85,932.00	1,100.00	3,43,728.00	4,400.00	3,48,128.00
6 0	Supply & Erection of 132 KV potential transformer.	Nos	6.00	2,13,643.00	3,546.00	12,81,858.00	21,276.00	13,03,134.00
6 1	Supply & Erection of Lightning Arrestors 42 KV rating for 25 KV side.	Nos	6.00	44,248.00	1,021.00	2,65,488.00	6,126.00	2,71,614.00

6 2	Supply & Erection of 60kV Lightning arrester with accessories.	Nos	8.00	1,06,572.00	2,579.00	8,52,576.00	20,632.00	8,73,208.00
6 3	Supply & Erection of 132 KV lightning arrester(110kvLA)	Nos	12.00	1,89,276.00	2,645.00	22,71,312.00	31,740.00	23,03,052.00
6 4	Supply and installation of 240 V, AC distribution board.for TSS	Nos	1.00	95,577.00	1,751.00	95,577.00	1,751.00	97,328.00
6 5	Supply & Erection of 110V DC distribution board	Nos	1.00	50,390.00	1,246.00	50,390.00	1,246.00	51,636.00
6 6	Supply, installation of PVC insulated and sheathed copper unarmoured cable size 7 core 2.5 sqmm.	Meters	3700.00	333.00	30.00	12,32,100.00	1,11,000.00	13,43,100.00
6 7	Supply, installation of PVC insulated and sheathed copper unarmoured cable size 10 core 2.5 sqmm.	Meters	550.00	465.00	32.00	2,55,750.00	17,600.00	2,73,350.00
6 8	Supply, installation of PVC insulated and sheathed copper unarmoured cable size 4x4 sqmm.	Meters	400.00	313.00	32.00	1,25,200.00	12,800.00	1,38,000.00
6 9	Supply, installation of PVC insulated and sheathed copper unarmoured cable size 2x4 sqmm.	Meters	4500.00	177.00	32.00	7,96,500.00	1,44,000.00	9,40,500.00
7 0	Supply, installation of PVC insulated and sheathed copper unarmoured cable size 2x2.5 sqmm.	Meters	2200.00	123.00	26.00	2,70,600.00	57,200.00	3,27,800.00

7 1	Supply Laying , testing and commissioning of Al. XLPE Cable 2 core 300 Sq.mm	Meter s	145. 00	1,510.00	54.00	2,18,950.00	7,830.00	2,26,780.00
7 2	Supply & Erection of 25 KV/240V (LT), 50KVA Auxiliary transformer oil filled type with complete accessories as per latest RDSO Spec.	Nos	2.00	2,87,044	12,498	5,74,088.00	24,996.00	5,99,084.00
7 3	Supply & Erection of Fire buckets 10Ltrs	Each.	6.00	552.00	-	3,312.00	-	3,312.00
7 4	Supply & Erection Fire bucket stands for 3 Buckets.	Each.	2.00	3,681.00	-	7,362.00	-	7,362.00
7 5	Supply & Erection of MS angle iron for supporting cable	Kg	1832 .06	94.00	9.00	1,72,213.64	16,488.54	1,88,702.18
7 6	Supply & Erection of various type of Indication Board and caution boards, safety Board, TSS Name Board, key Box, trilingual, Shock Treatment Chart, Stretcher and T&P Etc.,	Set	1.00	2,69,944.0 0	22,048.00	2,69,944.00	22,048.00	2,91,992.00
7 7	Fault Locator panel for TSS including two numbers of Calculating Unit (CU) and two numbers of Measuring Unit (MU)	Nos	1.00	46,34,053. 00	2,43,897.0 0	46,34,053.00	2,43,897.00	48,77,950.00

7 8	Fault Locator wall mount rack for OFC hut	Nos	1.00	2,64,803.00	13,937.00	2,64,803.00	13,937.00	2,78,740.00
7 9	Supply and erection of Control & LED Indication panel for operation of motorised isolator	Nos	1.00	16,850.00	2,094.00	16,850.00	2,094.00	18,944.00
8 0	Supply & Erection of check metering panel with 2PT+set of 3 phase (ABT Meter).	Nos	1.00	9,87,005.00	69,474.00	9,87,005.00	69,474.00	10,56,479.00
8 1	Supply & Erection of approved Make "Dry chemical powder" type fire extinguisher 5Kgs capacity confirming to latest IS:2171.	Each	4.00	3,988.00	48.00	15,952.00	192.00	16,144.00
8 2	Supply and Erection of 25kV Support Insulator & Tie rod insulator.	Each	18.00	-	39,539.00	-	7,11,702.00	7,11,702.00
	Total For TSS (2X25KV) Single Line (Part-A)					37,27,47,644.57	1,09,37,048.46	38,36,84,693.03
1	Supply (without Insulator) and Erection of 25 kV, 2000 Amp. Single Pole Isolator without Earthing Blade Assembly (Manually Operated)	each	4.00	1,13,883.00	4,975.00	4,55,532.00	19,900.00	4,75,432.00
2	Shunt capacitor 2400 kVAR at 25 kV	each	4.00	5,19,367.00	36,619.00	20,77,468.00	1,46,476.00	22,23,944.00

3	Supply and erection of CR panel for shunt capacitor bank for 2x25 kV TSS. This includes mounting of instrument and relays supply, erection, wiring/ cabling of tubing and commissioning of instrument panel as per RDSO SPEC NO TI/SPC/PSI/PROTCT /7100(07/2012) with A&C slip No 1 or latest	each	4.00	41,30,642.00	27,483.00	1,65,22,568.00	1,09,932.00	1,66,32,500.00
4	Series reactor for low loss	each	4.00	8,89,328.00	35,263.00	35,57,312.00	1,41,052.00	36,98,364.00
5	Supply, erection, testing and commissioning 25 KV Double pole, vacuum type circuit breaker(2000A) with interlocking .	Nos	2.00	9,99,683.00	13,868.00	19,99,366.00	27,736.00	20,27,102.00
6	Supply, erection, testing and commissioning 25 KV current transformer(200-100/5 A) (For compensation equipment)	each	4.00	88,669.00	3,721.00	3,54,676.00	14,884.00	3,69,560.00
7	27.5 kV /110 V potential transformer (type-II)(52 kV insulation class)	Nos	4.00	85,932.00	1,100.00	3,43,728.00	4,400.00	3,48,128.00
8	Supply & Erection of Lightning Arrestors 42 KV rating for 25 KV side.	Nos	4.00	44,248.00	1,021.00	1,76,992.00	4,084.00	1,81,076.00
	Total cost of PQCE for TSS (Part-B)					2,54,87,642.00	4,68,464.00	2,59,56,106.00

	Grand Total cost for TSS(Part A + Part B)					39,82,35,286 .57	1,14,05,512.46	40,96,40,799.03
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Part-2- Schedule for SCADA works								
Sl. No	Item Description	Unit	Quantity	Supply	Erection	Total Supply	Total Erection	Total
1	Supply, Erection, Testing & commissioning of RTU's (as per latest RDSO specifications) at							
(a)	TSS	each	1	16,99,500	1,28,750	16,99,500	1,28,750	18,28,250
(b)	SP/SSP	each	7	14,93,500	1,13,300	1,04,54,500	7,93,100	1,12,47,600
2	Modification/up gradation, testing & commissioning in existing standard SCADA software at RCC Equipments for configuration, integration/ hooking up of additional RTUs of adjacent section with master station i.eRCC,TSS,SP and SSP.	job	2	-	2,75,000	-	5,50,000	5,50,000
Total of RTUs and SCADA modifications Items				3193000	517050	1,21,54,000	14,71,850	1,36,25,850

Part-3- 2nos. 2X25 KV SP (Single Line)								
SN	Item Description	Unit	Qty	Unit Rate		Cost for SSP		
				Material	Erection	Material	Erection	Total
1	Design & drawing of SP station	Each	2	-	82,785.00	-	1,65,570.00	1,65,570.00
2	Supply and erection of 50 kV termination with adjuster complete with disc insulators.	Each.	4	14,873.00	554.00	59,492.00	2,216.00	61,708.00
3	supply without insulator and erection of 9 Tonne Suspension insulator . Porcelain	No's	32	1,594.00	636.00	51,008.00	20,352.00	71,360.00
4	Supply without insulator and erection of materials for	Each	16	7,096.00	1,477.00	1,13,536.00	23,632.00	1,37,168.00

	termination of copper cross feeder with gantries.							
5	Supply and Erection of 110V , 150AH , low maintenance Lead Acid Batteries set with 2 No's of suitable Battery Chargers	Set	4	2,46,315.00	18,871.00	9,85,260.00	75,484.00	10,60,744.00
6	Transportation & Erection of 13 Mtrs.(52/60KG) release long Rails from nominated place with in 10 KM area to works site.	MT	6	-	8,495.00	-	50,970.00	50,970.00
7	Concrete for foundation and trench in hard soil.	cum	88	4,688.00	2,764.00	4,12,544.00	2,43,232.00	6,55,776.00
8	Concrete for foundation and trench in rock.	cum	88	4,833.00	3,539.00	4,25,304.00	3,11,432.00	7,36,736.00
9	Concrete for foundation and trench in other than hard soil and rock.	cum	705.00	4,698.00	2,038.00	33,12,090.00	14,36,790.00	47,48,880.00
10	Reinforced concrete for foundation & trench	cum	48.000	5,481.00	2,492.00	2,63,088.00	1,19,616.00	3,82,704.00
11	Reinforced concrete for cable trench covers.	cum	150	1,845.00	839.00	2,76,750.00	1,25,850.00	4,02,600.00
12	Supply and spreading of gravel / ballast in the switch area	cum	224	1,617.00	17.00	3,62,208.00	3,808.00	3,66,016.00
13	Supply of 9 Tonne insulator	Nos	32	3,619.00	-	1,15,808.00	-	1,15,808.00
14	Insulator for cross feeder	No's	16	3,619.00	-	57,904.00	-	57,904.00

15	Supply and erection of 25KV support insulators.	Nos	80	7,776.00	340.00	6,22,080.00	27,200.00	6,49,280.00
16	Supply & erection of galvanization steel structure including Traction mast, main masts, fabricated steel other than mast ,SPS , Tower gantries ,portal, supporting structures & small part steel work.	MT	97	1,35,237.00	6,201.00	1,31,17,989.00	6,01,497.00	1,37,19,486.00
17	Supply & erection of earth electrode as per IS 3043 or RDSO specification.	Nos	36	3,661.00	2,472.00	1,31,796.00	88,992.00	2,20,788.00
18	Supply and erection of earth bus 75x8 mm. MS strip laid in the ground.	Metre	274	341.00	141.00	93,434.00	38,634.00	1,32,068.00
19	Supply and erection of earth bus 75x8 mm.MS strip laid exposed.	Metre	764	341.00	101.00	2,60,524.00	77,164.00	3,37,688.00
20	8/6 SWG GI wire for earthing.	Metre	15	35.00	32.00	525.00	480.00	1,005.00
21	32 mm dia MS rod for earth mat.	Metre	1000	525.00	41.00	5,25,000.00	41,000.00	5,66,000.00
22	Supply & erection of earth screen wire of size 19/2.5mm.	Metre	350	372.00	30.00	1,30,200.00	10,500.00	1,40,700.00
23	Supply and erection fencing panel at substation for SP	Metre	238	2,561.00	134.00	6,09,518.00	31,892.00	6,41,410.00
24	Supply & erection of fencing up right.	MT	2.6	91,778.00	5,996.00	2,38,622.80	15,589.60	2,54,212.40

25	Supply and erection of gates	Metre	10	2,432.00	413.00	24,320.00	4,130.00	28,450.00
26	Supply & erection of anti climbing device at substation..	Metre	260	257.00	13.00	66,820.00	3,380.00	70,200.00
27	Supply, laying and fixing of heavy duty ISI marked 'B' class GI pipe of 3.65mm wall thickness and 50mm dia to be laid along the wall or floor with proper galvanized clamps/ through the wall or undernaeth the floor in cement concrete as per explanatory note.	Metre	40	181.00	20.00	7,240.00	800.00	8,040.00
28	Supply (without Insulator) and Erection of 25 kV, 2000 Amp. Double Pole Isolator without Earthing Blade Assembly (Manually Operated)	Nos	14	1,02,478.00	5,401.00	14,34,692.00	75,614.00	15,10,306.00
29	Supply (without Insulator) and Erection of 25 kV, 2000 Amp. Double Pole Isolator without Earthing Blade Assembly (Motorized).	Nos	2	1,67,906.00	5,401.00	3,35,812.00	10,802.00	3,46,614.00
30	38.25 mm dia(865 mm ²) AAC Bull conductor	Metre	140	547.00	17.00	76,580.00	2,380.00	78,960.00
31	Supply and erection 25KV system	Each	232	3,664.00	63.00	8,50,048.00	14,616.00	8,64,664.00

	connectors, bus splices & TEE Connectors etc. required for commissioning of SP.							
32	supply and erection of an aluminium jumper	Nos	40	3,008.00	402.00	1,20,320.00	16,080.00	1,36,400.00
33	Supply and erection of 50/39mm tubular aluminium busbar.	Metre	168	1,153.00	107.00	1,93,704.00	17,976.00	2,11,680.00
34	Supply and erection of copper strip for equipment earthing.	Metre	61	1,050.00	124.00	64,050.00	7,564.00	71,614.00
35	Supply and erection of Copper jumper (50 mm)	Nos	40	321.00	602.00	12,840.00	24,080.00	36,920.00
36	Supply and Erection of copper cross feeder wires (37/2.25 mm HDBC) across the track at SP/SSP/FP/BT locations	km	0.24	20,28,872.00	5,082.00	4,86,929.28	1,219.68	4,88,148.96
37	Supply and erection of large copper jumper 160 sqmm cross feeder/isolator and OHE.	Each	32	16,054.00	602.00	5,13,728.00	19,264.00	5,32,992.00
38	Supply & Erection of 16.5 MVA auto transformer as per spec	Nos	6	1,42,94,301.00	4,63,350.00	8,57,65,806.00	27,80,100.00	8,85,45,906.00
39	Supply and erection of C&R panel incorporating Numerical type protective relay	Nos	2	66,36,609.00	27,483.00	1,32,73,218.00	54,966.00	1,33,28,184.00

	for SP suitable for 2x25 kV system							
40	Supply, erection, testing and commissioning 25 KV Double pole, vaccum type circuit breaker with interlocking .	Nos	6	9,99,683.00	13,868.00	59,98,098.00	83,208.00	60,81,306.00
41	Supply, erection, testing and commissioning 25 KV vacuum double pole type interruptor .	No's	4	9,96,323.00	8,996.00	39,85,292.00	35,984.00	40,21,276.00
42	55KV Double pole SF6 Circuit Breaker	Nos	4	5,56,615.00	15,255.00	22,26,460.00	61,020.00	22,87,480.00
43	Supply, erection, testing and commissioning 25 KV potential transformer (PT)(type-1)	Nos	8	85,932.00	1,100.00	6,87,456.00	8,800.00	6,96,256.00
44	42 KV Lightening Arrester	Nos	8	44,248.00	1,021.00	3,53,984.00	8,168.00	3,62,152.00
45	Supply and installation of 240V, AC distribution board for control room	Nos	4	95,577.00	1,751.00	3,82,308.00	7,004.00	3,89,312.00
46	Supply and installation of PVC insulated and sheathed copper unarmoured cable size 7 core 2.5 sqmm.	Metre	1760	333.00	30.00	5,86,080.00	52,800.00	6,38,880.00
47	Supply and installation of PVC insulated and sheathed copper unarmoured cable size 2x4 sqmm.	Metre	1530	177.00	32.00	2,70,810.00	48,960.00	3,19,770.00

48	Supply and installation of PVC insulated and sheathed copper unarmoured cable size 2x2.5 sqmm.	Metre	720	123.00	26.00	88,560.00	18,720.00	1,07,280.00
49	Supply Laying , testing and commissioning of Al. XLPE Cable 2 core 70 Sq.mm		150	219.00	27.00	32,850.00	4,050.00	36,900.00
50	Supply ,filtration, erection , testing and commissioning of 25 KV/240V, 10 KVA Auxiliary transformer oil filed type with complete accessories as per RDSO Spec. ETI/PSI/15(08/20 03) or latest.	Nos	4	82,579.00	12,498.00	3,30,316.00	49,992.00	3,80,308.00
51	Supply, Erection, testing and commissioning of 25 KV DO fuse switch Assembly.	Each.	4	11,791.00	853.00	47,164.00	3,412.00	50,576.00
52	Supply of insulator for 25 kV DP 2000 A isolator	Set	16	39,539.00	-	6,32,624.00	-	6,32,624.00
53	Supply and Erection of approved make "Dry Chemical Powder" type Fire extinguisher 5 Kg.Capacity.	Each	4	3,988.00	48.00	15,952.00	192.00	16,144.00
54	Supply and Erection of Fire buckets stand with 4 nos bucket each Capacity 9 Ltr including locking arrangement.	Set	4	2,697.00	146.00	10,788.00	584.00	11,372.00

55	Supply,fabrication,painting and fixing of MS angle iron for supporting cable.	Kg	1093	94.00	9.00	1,02,742.00	9,837.00	1,12,579.00
56	Supply and Erection of various type of indication boards and caution boards and T & P	Set	2	2,69,944.00	22,048.00	5,39,888.00	44,096.00	5,83,984.00
57	Supply of 25KV SP Isolator Amp(motorised)	No's	8	1,86,684.00	0.00	14,93,472.00	-	14,93,472.00
58	Erection of 25KV SP Isolator Amp(motorised)	No's	8	0.00	17,136.00	-	1,37,088.00	1,37,088.00
59	Supply and erection of Control & LED Indication panel for operation of motorised isolator	Nos	10	16,850.00	2,094.00	1,68,500.00	20,940.00	1,89,440.00
60	Supply, Installation, Testing and Commissioning of fault Locator Panel for SP including two numbers of measuring unit (MU)	Nos	2	26,95,316.00	1,41,859.00	53,90,632.00	2,83,718.00	56,74,350.00
61	Supply, Installation, Testing and Commissioning of fault Locator wall mount rack for OFC hut.	Nos	2	2,64,803.00	13,937.00	5,29,606.00	27,874.00	5,57,480.00
	Total For 2nos SP (2X25KV) Single Line					14,92,64,370.08	74,51,319.28	15,67,15,689.36

Part-4- Schedule for 4nos. 2X25 KV SSP (Single Line)								
SN	Item Description	Unit	Qty	Unit Rate		Cost for SSP		
				Material	Erection	Material	Erection	Total
1	Design & drawing of SSP station	Each	4.00	-	82,785.00	-	3,31,140.0	3,31,140
2	Supply and erection of 50 kV termination with adjuster complete with disc insulators.	each	8.00	14,873.00	554.00	1,18,984.0	4,432.0	1,23,416
3	supply without insulator and erection of 9 Tonne Suspension insulator	No's	64.00	1,594.00	636.00	1,02,016.0	40,704.0	1,42,720
4	Supply without insulator and erection of materials for termination of copper cross feeder with gantries.	Each	32.00	7,096.00	1,477.00	2,27,072.0	47,264.0	2,74,336
5	Supply and Erection of 110V , 150AH , low maintenance Lead Acid Batteries set with 2 No's of suitable Battery Chargers	Set	8.00	2,46,315.00	18,871.00	19,70,520.0	1,50,968.0	21,21,488
6	Transportation & Erection of 13 Mtrs.(52/60KG) release long Rails from nominated place with in 10 KM area to works site.	Set	8.00	-	8,495.00	-	67,960.0	67,960
7	Concrete for foundation and trench in hard soil.	cum	159.12	4,688.00	2,764.00	7,45,954.6	4,39,807.7	11,85,762
8	Concrete for foundation and trench in rock.	cum	159.12	4,833.00	3,539.00	7,69,027.0	5,63,125.7	13,32,153

9	Concrete for foundation and trench in other than hard soil and rock.	cum	1272.96	4,698.00	2,038.00	59,80,366.1	25,94,292.5	85,74,659
10	Reinforced concrete for foundation & trench	cum	81.00	5,481.00	2,492.00	4,43,961.0	2,01,852.0	6,45,813
11	Reinforced concrete for cable trench covers.	cum	236.00	1,845.00	839.00	4,35,420.0	1,98,004.0	6,33,424
12	Supply and spreading of gravel / ballast in the switch area	cum	448.80	1,617.00	17.00	7,25,709.6	7,629.6	7,33,339
13	Insulator for cross feeder	nos	64.00	3,619.00	-	2,31,616.0	-	2,31,616
14	Supply of 9 Tonne insulator	each	64.00	3,619.00	-	2,31,616.0	-	2,31,616
15	Supply and erection of 25KV support insulators.	Nos	64.00	7,776.00	340.00	4,97,664.0	21,760.0	5,19,424
16	Supply & erection of galvanization steel structure including Traction mast, main masts, fabricated steel other than mast , SPS , Tower gantries ,portal, supporting structures & small part steel work.	MT	183.88	1,35,237.00	6,201.00	2,48,67,379.6	11,40,239.9	2,60,07,619
17	Supply & erection of earth electrode as per IS 3043 or RDSO specification.	Nos	64.00	3,661.00	2,472.00	2,34,304.0	1,58,208.0	3,92,512
18	Supply and erection of earth bus 75x8 mm. MS strip laid in the ground.	Metre	508.00	341.00	141.00	1,73,228.0	71,628.0	2,44,856

19	Supply and erection of earth bus 75x8 mm. MS strip laid exposed.	Metre	1468.00	341.00	101.00	5,00,588.0	1,48,268.0	6,48,856
20	Supply of 8/6 SWG GI wire for earthing	Metre	30.00	35.00	32.00	1,050.0	960.0	2,010
21	32 mm dia MS rod for earth mat.	Metre	2000.00	525.00	41.00	10,50,000.0	82,000.0	11,32,000
22	Supply & erection of earth screen wire of size 19/2.5mm.	Metre	700.00	372.00	30.00	2,60,400.0	21,000.0	2,81,400
23	Supply and erection fencing panel at substation for SSP	Metre	477.23	2,561.00	134.00	12,22,186.0	63,948.8	12,86,135
24	Supply & erection of fencing upright.	MT	5.20	91,778.00	5,996.00	4,77,245.6	31,179.2	5,08,425
25	Supply and erection of gates	Metre	18.30	2,432.00	413.00	44,505.6	7,557.9	52,064
26	Supply & erection of anti climbing device at substation.	Metre	500.00	257.00	13.00	1,28,500.0	6,500.0	1,35,000
27	Supply, laying and fixing of heavy duty ISI marked 'B' class GI pipe of 3.65mm wall thickness and 50mm dia to be laid along the wall or floor with proper galvanized clamps/ through the wall or undernaeth the floor in cement concrete as per explanatory note.	Metre	80.00	181.00	20.00	14,480.0	1,600.0	16,080
28	Supply (without Insulator) and Erection of 25 kV, 2000 Amp. Double Pole Isolator	Nos	16.00	1,02,478.00	5,401.00	16,39,648.0	86,416.0	17,26,064

	without Earthing Blade Assembly (Manually Operated)							
29	Supply (without Insulator) and Erection of 25 kV, 2000 Amp. Double Pole Isolator without Earthing Blade Assembly (Motorized).	Nos	4.00	1,67,906.00	5,401.00	6,71,624.0	21,604.0	6,93,228
30	38.25 mm dia(865 mm2) AAC Bull conductor	Metre	272.00	547.00	17.00	1,48,784.0	4,624.0	1,53,408
31	Supply and erection 25KV system connectors, bus splices& TEE Connectors etc. required for commissioning of SSP as per explanatory note.	Each	312.00	3,664.00	63.00	11,43,168.0	19,656.0	11,62,824
32	Supply and erection of 50/39mm tubular aluminium busbar.	Metre	400.00	1,153.00	107.00	4,61,200.0	42,800.0	5,04,000
33	supply and erection of an aluminium jumper	Each	32.00	3,008.00	402.00	96,256.0	12,864.0	1,09,120
34	Supply and erection of copper strip for equipment earthing.	Metre	120.80	1,050.00	124.00	1,26,840.0	14,979.2	1,41,819
35	Supply and erection of Copper jumper (50 mm)	Nos	16.00	321.00	602.00	5,136.0	9,632.0	14,768
36	Supply and Erection of copper cross feeder wires (37/2.25 mm HDBC) across the track at SP/SSP/FP/BT locations	km	0.48	20,28,872.00	5,082.00	9,73,858.6	2,439.4	9,76,298

37	Supply and erection of large copper jumper 160 sqmm cross feeder/isolator and OHE.	Each	64.00	16,054.00	602.00	10,27,456.0	38,528.0	10,65,984
38	Supply Erection, testing and commissioning of 16.5 MVA, 54 KV/27KV50 Hz Auto Transformer with bushing CT oil and other equipment as per RDSO specification suitable for 2x25KV AT feeding system.	Nos	8.00	1,42,94,301.00	4,63,350.00	11,43,54,408.0	37,06,800.0	11,80,61,208
39	Supply and erection of C&R panel incorporating Numerical type protective relay for SSP suitable for 2x25 kV system	Nos	4.00	66,36,609.00	27,483.00	2,65,46,436.0	1,09,932.0	2,66,56,368
40	Supply, erection, testing and commissioning 25 KV Double pole, vacuum type circuit breaker with interlocking .	Nos	8.00	9,99,683.00	13,868.00	79,97,464.0	1,10,944.0	81,08,408
41	Supply, erection, testing and commissioning 25 KV vacuum double pole type interrupter .	No's	8.00	9,96,323.00	8,996.00	79,70,584.0	71,968.0	80,42,552
42	Supply, erection, testing and commissioning 25 KV potential transformer (PT)(type-1)	Nos	16.00	85,932.00	1,100.00	13,74,912.0	17,600.0	13,92,512
43	42 KV Lightning Arrester	Nos	16.00	44,248.00	1,021.00	7,07,968.0	16,336.0	7,24,304

44	Supply and installation of 240 V, AC distribution board for control room	Nos	8.00	95,577.00	1,751.00	7,64,616.0	14,008.0	7,78,624
45	Supply installation of PVC insulated and sheathed copper unarmoured cable size 7 core 2.5 sqmm.	Metre	2080.00	333.00	30.00	6,92,640.0	62,400.0	7,55,040
46	Supply installation of PVC insulated and sheathed copper unarmoured cable size 2x4 sqmm.	Metre	2380.00	177.00	32.00	4,21,260.0	76,160.0	4,97,420
47	Supply installation of PVC insulated and sheathed copper unarmoured cable size 2x2.5 sqmm.	Metre	1180.00	123.00	26.00	1,45,140.0	30,680.0	1,75,820
48	Supply Laying , testing and commissioning of Al. XLPE Cable 2 core 70 Sq.mm	Metre	300.00	219.00	27.00	65,700.0	8,100.0	73,800
49	Supply , filtration, erection , testing and commissioning of 25 KV/240V, 10 KVA Auxiliary transformer oil filled type with complete accessories as per RDSO Spec. ETI/PSI/15(08/2003) or latest.	Nos	8.00	82,579.00	12,498.00	6,60,632.0	99,984.0	7,60,616
50	Supply, Erection, testing and commissioning of 25 KV DO fuse switch Assembly.	each	8.00	11,791.00	853.00	94,328.0	6,824.0	1,01,152

51	Supply of insulator for 25 kV DP 2000 A isolator	No.	20.00	39,539.00	-	7,90,780.0	-	7,90,780
52	Supply & Erection of approved Make "Drychemical powder" type fire extinguisher 5Kgs capacity conforming to latest IS:2171.	Each	8.00	3,988.00	48.00	31,904.0	384.0	32,288
53	Supply of Fire buckets stand with 4 nos bucket each Capacity 9 Ltr including locking arrangement.	Set	8.00	2,697.00	146.00	21,576.0	1,168.0	22,744
54	Supply, fabrication, painting and fixing of MS angle iron for supporting cable.	Kg	1828.84	94.00	9.00	1,71,911.0	16,459.6	1,88,371
55	Supply and erection of various type of Indication Board and caution boards, safety Board, TSS Name Board, key Box, trilingual, Shock Treatment Chart, Stretcher and T&P Etc.,	Set	4.00	2,69,944.00	22,048.00	10,79,776.0	88,192.0	11,67,968
56	Supply of 25KV SP Isolator Amp(motorised)	No's	16.00	1,86,684.00	0.00	29,86,944.0	-	29,86,944
57	Erection of 25KV SP Isolator Amp(motorised)	No's	16.00	0.00	17,136.00	-	2,74,176.0	2,74,176
58	Supply and erection of Control & LED Indication panel for operation of motorised isolator	Nos	20.00	16,850.00	2,094.00	3,37,000.0	41,880.0	3,78,880

59	Supply, Installation, Testing and Commissioning of fault Locator Panel for SSP including one number of measuring unit (MU)	Nos	4.00	20,33,309.00	1,07,016.00	81,33,236.0	4,28,064.0	85,61,300
60	Supply, Installation, Testing and Commissioning of fault Locator wall mount rack for OFC hut.	Nos	4.00	2,64,803.00	13,937.00	10,59,212.0	55,748.0	11,14,960
						22,41,56,190.51	1,18,93,379.36	23,60,49,569.87

Total of TSS Schedule(Part I)	398235286.57	11405512.46	409640799.03
Total of SCADA Schedule (Part-2)	12154000.00	1471850.00	13625850.00
Total of SP Schedule (Part-3)	149264370.08	7451319.28	156715689.36
Total of SSP Schedule (Part-4)	224156190.51	11893379.36	236049569.87
Total Tender cost of (TSS+SCADA+SP+SSP)	783809847.16	32222061.10	816031908.26

Note:i) Tenderer should quote their separate % rate on each schedule on the Certificate of Offer.

ii) Tenderer shall quote percentage Below/At PAR/Above of the Railway's estimated cost on each schedule.

iii) Rates quoted should be inclusive of all taxes & duties.

iv) **All insulators to be Porcelain use.**

Signature of the Contractor
with Seal

Dy.ChiefElectricalEngineer(Construction)
Central Railway, Bhusawal.

ANNEXURE

The purchaser will supply only the following items to the contractor from any of their depots in Bhusawal Division. The contractor has to load, lift, unload and transport the above material from the depot to the site of work at his own cost.

LIST OF THE ITEMS TO BE SUPPLIED BY PURCHASER TO THE CONTRACTOR.				
Sr.No.	Description	R.I.No.	Qty.,	Place of Supply
1	107 Sq. mm. Hard grooved copper contact Wire	-	Full quantity	Any Depot in BSL Division.
2	65 Sq. mm. Cadmium Copper Catenary Wire.	-	Full quantity	
3	130 Sq. mm Large Span Wire.	-	Full quantity	
4	'AT' cables.	-	Full quantity	
5	Partly supplied steel qty.	-	Partly Qty.	At BSL, Manmad, Nandgaonor Jalgaon depot.
NOTES:				
1	The price against various items of Schedule of rates shall be exclusive of the cost of supply of the above.			
2	All the fasteners whether stainless steel or otherwise required for fittings and components shall be Supplied by the contractor.			
3	All the left out / balance / defective material to be returned to the purchaser at Railway Depot, Bhusawal/Manmad/Parel in Mumbai.			

Dy.Chief Electrical Engineer (Construction)
Central Railway, Bhusawal.

“END OF TENDER DOCUMENT”