



Dedicated Freight Corridor Corporation of India Ltd.
A Govt. of India Undertaking
(Ministry of Railways)

Name of Work:- “Design, manufacture, supply, installation, testing and commissioning of Microprocessor based Electronic Interlocking (EI) system at CONCOR MMLP/PFT Siding as per RDSO Specification No. RDSO/SPN/192/2019 Version 2 with latest amendment for execution of indoor and outdoor Signalling work which includes excavation of trench, laying of cables, casting of foundations of MACLS Signals & apparatus cases, erection /installation of MACLS signals, fixing & wiring of track circuits & point machines, centralized operation of points & signals etc as per RE standard along with Indoor & outdoor system design for telecom installations including supply (part), testing & commissioning of OFC & 6-Quad cable– for Interlocking of Swarupganj CONCOR MMLP/PFT siding and commissioning of requisite interface between MMLP/PFT Siding and Existing Signal Interlocking (EI System) at DFCC New Swarupganj Station & Civil construction work of additional rooms at DFCC New Swarupganj Station.”

SINGLE PACKET OPEN E-TENDER
NOT TRANSFERABLE

(Participation through e-Tender only)

Visit: www.ireps.gov.in its link at www.dfccil.com
(Help desk of IREPS: 011-23761525)

Feb 2025

Dedicated Freight Corridor Corporation of India Ltd.
A 1, Circular Road, Near SP GRP Office,
Kundan Nagar, Ajmer - 305001

Signature Not
Verified

Digitally signed by
KANTI KUMAR
THAKUR
Date: 2025.02.19
18:34:59 IST
Reason: IREPS-CRIS
Location: New Delhi

CHECK LIST

CHECK LIST OF ITEMS TO BE COMPLIED BY TENDERER(S) BEFORE SUBMITTING THEIR TENDERS. THE TENDERER(S) SHALL ENSURE THAT THE FOLLOWING ARE COMPLIED BEFORE SEALING THE TENDER DOCUMENT:-

S N	Description	Done or Not
1.	Rates have been quoted for All schedules on Basic Cost in terms of percentage in Rate sheet.	
2	Declaration regarding Sole Proprietor/Partnership firm/LLP/Registered Society & Trust /Limited Company/JV Firms as per Annexure II, IX, X, XI, XII, XIII, XIV, XV, XVII, XVIII, XX, XXI, XXII, XXIII, XXIV, XXV, XXVI and XXVII.	
3	Declaration regarding no relative being employed on DFCCIL as Annexure-XXXVIII has been filled.	
4	Address for correspondence has been given at Section 2 Para 2.2, and Envelope has been addressed accordingly.	
5	Tenderer's General information filled up in Annexure -I <u>with attached documents/proof page marked/indicated.</u>	
6	All the Annexures from Annexure -I to Annexure -XXXVIII properly filled up and relevant documents attached and <u>indicated in Annexures, where asked.</u>	
7	Earnest Money Deposit as per NIT/ Clause No. 5.1.2 of Section-4 has been attached.	
8	Company seal should be put.	
9	The tender shall be accompanied with the following: -	
	(i) Copy of Earnest Money Deposit as per NIT/ Clause No. 5.1.2 of Section-4 has been attached.	
	(ii) Attested copies & Certificate of documents towards fulfilling of Eligibility Criteria by the Tenderer(s) as <u>per Tender Notice.</u>	
	(iii) Partnership deed/ resolution as applicable have been <u>attached.</u>	
	(iv) Power of Attorney as applicable has been attached.	
	(v) Any other relevant documents have been attached.	
10	The tender document shall be sealed in a cover properly. Any loose paper/ documents separately shall not be considered as part of tender offer.	
11	RATES TO BE QUOTED ON RATE SHEET ONLINE ONLY.	

**Dedicated Freight Corridor Corporation of India Ltd.
A 1, Circular Road, Near SP GRP Office,
Kundan Nagar, Ajmer - 305001**

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**Format for forwarding letter by Tenderer(s)
(On letter head of firm/company)**

To,

Chief General Manager, DFCCIL, A-1, Circular Road, Ajmer.

Name of Work:- “Design, manufacture, supply, installation, testing and commissioning of Microprocessor based Electronic Interlocking (EI) system at CONCOR MMLP/PFT Siding as per RDSO Specification No. RDSO/SPN/192/2019 Version 2 with latest amendment for execution of indoor and outdoor Signalling work which includes excavation of trench, laying of cables, casting of foundations of MACLS Signals & apparatus cases, erection /installation of MACLS signals, fixing & wiring of track circuits & point machines, centralized operation of points & signals etc as per RE standard along with Indoor & outdoor system design for telecom installations including supply (part), testing & commissioning of OFC & 6-Quad cable– for Interlocking of Swarupganj CONCOR MMLP/PFT siding and commissioning of requisite interface between MMLP/PFT Siding and Existing Signal Interlocking (EI System) at DFC New Swarupganj Station & civil construction work of additional rooms at DFCC New Swarupganj Station.”

Ref:

I/We..... have read the various conditions of tender attached hereto and hereby agree to a Tenderer by the said conditions. I also agree to keep this tender single packet open tender 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 my/our “Bid Security (Earnest Money Deposit)”. I/We offer to do the work as set out in the Tender Document. I/We also agree to a Tender by the General Conditions of the Contract and to carry out the work according to the special conditions as laid down by the DFCCIL Administration for the execution of present contract.

1. A sum of Rs. (Rs.only) is being submitted as Bid Security (Earnest Money Deposit) in the form of Bankers cheque/Demand drafts/FDR from Nationalized/Indian scheduled commercial banksdatedissued by(Name & Branch of Bank).The value of the Bid security (Earnest Money)shall stand forfeited without prejudice to any other rights or remedies if:

I/We do not execute the contract agreement within 7(seven) days of receipt of notice by the DFCCIL Administration that such documents are ready.

OR

I/We do not commence the work within 15 days after receipt of orders to that effect.

OR

After submitting my/our tender, if I/were resile from my/our offer or modify the terms and conditions thereof in a manner not acceptable to the DFCCIL.

2. I/We agree to give the Performance Guarantee (PG) in a form of irrevocable bank guarantee/ FDR issued by any Scheduled Bank amounting to 5 % of the contract value to the DFCCIL within 21 days from the date of issue of letter of acceptance and before signing of the agreement.
3. Until a formal agreement is prepared and executed acceptance of this tender shall constitute a binding contract between us subject to the modifications, as may be mutually

agreed to, between us and indicated in the letter of acceptance or my/our offer for the work.

Signature of Witness.....

Name & Address of witness

Signature of Tenderer(s)/Contractor.....

Contractor's Address

Instructions to bidders for Online bidding

General: - Submission of Online Bids is mandatory for this Notice Inviting Tender. E - Tendering is new methodology for conducting Public Procurement in a transparent and secured manner. Supplier /Vendors will be the biggest beneficiaries of this new system of procurement. For conducting electronic tendering, DFCCIL has decided to use the portal (<https://www.ireps.gov.in>).The tenderer/bidders must have Class-III Digital Signature Certificate & must be registered on IREPS portal. Only registered tenderer/bidders can participate on e-Tendering. All relevant documents must be uploaded at the time of participating in e-Tendering.

Instructions: -

1. Online Bidding Methodology:

Online Bid System

2. Broad outline of activities from Bidders perspective: -

- a. Procure a Digital Signing Certificate (DSC)
- b. Register on Electronic Tendering System (ETS) (IREPS Portal)
- c. Create Users and assign roles on ETS
- d. View Notice Inviting Tender (NIT) on (ETS)
- e. Download Official copy of Tender Documents from ETS.
- f. Clarification to Tender Documents on ETS - Query to DFCCIL (Optional) - view response to queries posted by DFCCIL through addenda.
- g. Bid Submission on ETS: Prepare & arrange all documents/paper for submission of bid online and tender fees & EMD deposit on offline/RTGS.
- h. Attend Public Online Tender Opening Event (TOE) on ETS.
- i. Post TOE clarification on ETS (Optional). Respond to DFCCIL's post –TOE queries.

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

Note 1:- It is advised that all the documents to be submitted (See section 2 & 3 of tender document)are kept scanned and converted to PDF format in a separate folder on your computer before starting online submission. The price bid (Excel Format) may be downloaded and rates may be filled appropriately. This file may also be saved in a secret folder on your computer.

Note2:-While uploading the documents it should be ensured that the file name should be the name of the document itself.

3. Digital Certificate:

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

4. Registration:

The Tender documents can be downloaded from the website: <https://www.ireps.gov.in> and to be submitted in the e - format. Cost of the Tender Documents and Bid Security have to be submitted to DFCCIL's office, Ajmer in the form of Pay Order, Demand Draft, Banker's Cheque & FDR, as per address given in the BID Documents before the schedule date & time of submission of the tender otherwise the Bid will not be considered. Amendments, if any, to the tender document will be notified in the above website as and when such amendments are notified. It is the responsibility of the bidders who have downloaded the tender documents from the website to keep themselves a breast of such amendments before submitting the tender documents.

Intending bidders are requested to register themselves on IREPS portal through <https://www.ireps.gov.in> for obtaining user – ID and password by paying vendor registration fee and processing fee for participating in the above-mentioned tender.

'Vender Manual' containing the detailed guidelines for E-Tendering is available on www.ireps.gov.in.

5. DFCCIL has decided to use process of E- Tendering for inviting this tender and thus the physical copy of the tender documents would not be sold/accepted.
6. To participate in E-tender, it is mandatory for Tenderer (S) to get themselves registered on IREPS portal and to have user ID & Password. Payment of registration fee can be done through <https://www.ireps.gov.in>.

DFCCIL Contact- 1	Sh. Kanti Kumar Thakur, APM/S&T/AII
Telephone/Mobile No.	9001823332
E-mail ID	kkthakur@dfcc.co.in ,
DFCCIL Contact- 2	Sh. Anil Kumar Choyal, GM/S&T/AII.
Telephone/Mobile No.	8955900658
E-mail ID	anilkchoyal@dfcc.co.in

7. DOCUMENTS ESTABLISHING BIDDER'S ELIGIBILITY AND QUALIFICATION AS PER BID: -

The bidder shall furnish, as part of his bid document establishing the bidders' eligibility. All these documents should be numbered and should be signed by bidder in each page.

7(a) Tender fee and EMD have to be deposited through e-payment only. The tender processing fees as per applicable rate payable through the e- payment gateways to IREPS portal is Non-refundable. Payments against this tender towards tender document cost and earnest money are to be done before the schedule date & time of submission of the tender otherwise the Bid will not be considered.

7(b) Tender documents (s) in original, duly filled in should be signed by bidder or his Authorize

representative along with seal on each page. All corrections and overwriting must be initialed with date by the bidder or his authorized representative.

7(c) Copy of PAN

- 70 The authenticated copy of registered partnership deed and registration of the firm from registrar of firm in case of partnership firm.
- 71 In case of proprietorship firm bidder will submit an affidavit, attested by Notary Public that “I am a sole proprietor of the firm _____” in case of proprietorship firm on Non judicial stamp paper of Rs.500.00.
- 72 Bidder’s profile duly filled in, as per section -3 of tender document.
- 73 Power of Attorney.
- 74 Article of association and memorandum in case of private/public limited company.
- 75 Copy of E.P.F. registration.
- 76 Copy of ESIC Certificate.
- 77 Copy of GST registration no.
- 78 Certificate for non near relative in DFCCIL.
- 79 In case tender fee and EMD are paid through e-payment, then scanned copy of receipt duly indicating UTR number is to be uploaded.

Note: - Any discrepancy found in the downloaded tender document submitted by the bidder compared to uploaded tender document, the tender document uploaded by the DFCCIL will be treated as valid and any changes (found in the tender document submitted by the bidder) at any stage, will be treated as fraud done to the DFCCIL, and will be liable to cancellation of agreement done (if any) & appropriate action will be taken against the bidder.

8.0 The following ‘FOUR KEY INSTRUCTIONS for BIDDERS’ must be assiduously adhered to:

1. Obtain individual Digital Signing Certificate (DSC or DC) well in advance of your first tender submission deadline on ETS.
2. Register your organization on ETS well in advance of your first tender submission deadline on ETS.
3. Get your organization’s concerned executive strained on ETS using online training module well in advance of your tender submission deadline on ETS.
4. Submit your bids well in advance of tender submission deadline on ETS (DFCCIL should not be responsible for any problem arising out of internet connectivity issues).

Method for submission of bid documents

In this TENDER the bidder has to participate in e-bidding online. Bid Documents submitted physically offline shall not be considered/ entertained.

Note: The Bidder has to upload the Scanned copy of all above documents during online Bid submission.

9.0 System of Quoting rates

As per the instructions given on IREPS portal website i.e. www.ireps.gov.in

10.0 Modification / Withdrawal of bids:

- (i) The Bidder may modify/ withdraw its e- bid after submission prior to the Bid Due Date & time. No Bid shall be modified / withdrawn by the Applicant on or after the Bid Due Date &time.
- (ii) Any alteration/ modification in the Bid or additional information supplied subsequent to the Bid Due Date, unless the same has been expressly sought for by the Authority, shall be disregarded.
- (iii) For modification of e-bid, applicant has to detach its old bid from e-tendering portal and upload / resubmit digitally signed modified bid.
- (iv) For withdrawal of bid, applicant has to follow the instructions given on IREPS portal website i.e. www.ireps.gov.in
- (v) **Other instructions**
For further instructions, the vendor should visit the web portal (<https://www.ireps.gov.in>), and login to it and upload documents of bid.

Important Note: It is strongly recommended that all authorized users of Supplier organizations should thoroughly peruse the information provided under the relevant links, and take appropriate action.

Section:1Notice for Inviting Tender (NIT)

1	E-Tender No.	DFCC/AII/S&T/CONCOR PFT /2025/01
2	Name of Work	“Design, manufacture, supply, installation, testing and commissioning of Microprocessor based Electronic Interlocking (EI) system at CONCOR MMLP/PFT Siding as per RDSO Specification No. RDSO/SPN/192/2019 Version 2 with latest amendment for execution of indoor and outdoor Signalling work which includes excavation of trench, laying of cables, casting of foundations of MACLS Signals & apparatus cases, erection /installation of MACLS signals, fixing & wiring of track circuits & point machines, centralized operation of points & signals etc as per RE standard along with Indoor & outdoor system design for telecom installations including supply (part), testing & commissioning of OFC & 6-Quad cable– for Interlocking of Swarupganj CONCOR MMLP/PFT siding and commissioning of requisite interface between MMLP/PFT Siding and Existing Signal Interlocking (EI System) at DFCC New Swarupganj Station & Civil construction work of additional rooms at DFCC New Swarupganj Station.”
3	Estimated Cost of Work	Rs.7,90,07,822.02/- (Rs. Seven Crores Ninety Lakh Seven Thousand Eight Hundred Twenty Two and Eighty Paise Only) inclusive of GST.
4	Completion Period	09 (Nine) Months.
5	Type of BID	Open E-Tender Single Packet
6	Tender Fee	Rs.10,000/- (Rs. Ten Thousand only) + 18 % GST 11,800/- to be paid online through payment gateway provided at www.ireps.gov.in Or MSEs registered with a body specified by ministry of MSME for the item tendered are exempted from submission of cost of document, for which, the tenderers will have to upload the exemption certificate on the E-Tender Portal.
7	Earnest Money Deposit (EMD) (Tender Security)	Rs. ₹ 5,45,000/- OR Bid Security Declaration In lieu of Earnest Money: Contractor to submit Bid Security Declaration as per attached Format (Annexure-XI of Tender Document) in lieu of Earnest Money. Tenders received without Bid Security Declaration shall be summarily rejected.
8	Download bid documents from	15:00 Hrs. of 19.02.2025 on www.ireps.gov.in .
09	Download of bid documents up to	15:00 Hrs. of 20.03.2025 on www.ireps.gov.in .
10	Last date & time of online receipt of bid	15:00 Hrs. of 20.03.2025 on www.ireps.gov.in .
11	Date and time of Online opening of bid	15:30 Hrs. of 20.03.2025 www.ireps.gov.in .
12	Validity of offer	90 days from the date of opening of tender.

13	Address for Communication	Office of the Chief General Manager, Dedicated Freight Corridor Corporation of India Ltd. A 1, Circular Road, Near SP GRP Office, Kundan Nagar, Ajmer - 305001 Tel: 0145-2970462. Website: www.dfccil.com E-mail:-dfccil.ajmer@hotmail.com
14	Help Desk for E-Tendering	For any clarification, help and registration for E-Tendering & matter relating to Digital Signature, contact at Help desk of www.ireps.gov.in and phone 0145-2970462
15	Availability of Tender Documents	The Tender documents can be downloaded from www.ireps.gov.in Tenderer who wishes to view free Notification and Tender Documents can visit www.ireps.gov.in DFCCIL may issue Addendum (s)/Corrigendum (s) to the Tender document, if any, which shall be issued at least seven days in advance of date of opening of tender and placed on the website www.ireps.gov.in only.

Note:1 Tender documents should be downloaded from the website address <https://www.ireps.gov.in>. Payment of EMD & Tender Document fee, in respect of e- tendering, should be accepted through net banking or payment gateway only, before the schedule date and time of submission of the tender otherwise the Bid will not be considered/shall be summarily rejected.

Note: - Fixed Deposit Receipt (FDR) will not be accepted as EMD for tender invited on IREPS (e-tender portal). The tender document are also available on official website of DFCCIL i.e. www.dfccil.com

1. No tender document will be available offline. Downloading tender documents online and submission of tender online is mandatory for this tender.
2. No request for extension of the Tender Due Date shall be considered.
3. The Offer shall be valid for 90 days from the date of opening of the tender, and extended further if required from time to time. The Contractor cannot withdraw their offer within the period of validity/extended validity lest liable for forfeiture of Earnest Money Deposit (Tender Security).
4. Notice Inviting Tender (NIT), Tender Document and Corrigendum/Addendum if any, will be posted on the E Tendering website www.ireps.gov.in Tenderers are advised to complete all submission related work well before Time and Date for Submission of Tender Online. Any request for modification in the time/date of submission of tender due to tenderer's failure to submit his offer, will not be accepted.
5. Any further addendum/Corrigendum for this tender will be posted in DFCCIL tendering portal website <https://www.ireps.gov.in> only. Interested bidders are advised to check website regularly for any Addendum/Corrigendum.

**Chief General Manager
DFCCIL-Ajmer.**

Section:2 Invitation of Tenders (IFB)

Dear Sir,

.....
.....

Chief General Manager, DFCCIL, A-1, Circular Road, Ajmer, for and on behalf of DFCCIL invites, Tenders in Single Packets Open E-Tender system, from the tendering firms for hiring of vehicles.

2.1 KEY DETAILS OF THE TENDER ARE AS UNDER-

1	E-Tender No.	DFCC/AII/S&T/CONCOR PFT /2025/01
2	Name of Work	“Design, manufacture, supply, installation, testing and commissioning of Microprocessor based Electronic Interlocking (EI) system at CONCOR MMLP/PFT Siding as per RDSO Specification No. RDSO/SPN/192/2019 Version 2 with latest amendment for execution of indoor and outdoor Signalling work which includes excavation of trench, laying of cables, casting of foundations of MACLS Signals & apparatus cases, erection /installation of MACLS signals, fixing & wiring of track circuits & point machines, centralized operation of points & signals etc as per RE standard along with Indoor & outdoor system design for telecom installations including supply (part), testing & commissioning of OFC & 6-Quad cable– for Interlocking of Swarupganj CONCOR MMLP/PFT siding and commissioning of requisite interface between MMLP/PFT Siding and Existing Signal Interlocking (EI System) at DFC New Swarupganj Station & Civil construction work of additional rooms at DFCC New Swarupganj Station.”
3	Estimated Cost of Work	Rs.7,90,07,822.02/- (Rs. Seven Crores Ninety Lakh Seven Thousand Eight Hundred Twenty Two and Eighty Paise Only) inclusive of GST.
4	Completion Period	09 (Nine) Months.
5	Type of BID	Open E-Tender Single Packet
6	Tender Fee	Rs. 10,000/- (Rs. Ten Thousand only) + 18 % GST i.e 11,800/- to be paid online through payment gateway provided at www.ireps.gov.in Or MSEs registered with a body specified by ministry of MSME for the item tendered are exempted from submission of cost of document, for which, the tenderers will have to upload the exemption certificate on the E-Tender Portal.

7	Earnest Money Deposit (EMD) (Tender Security)	Rs. ₹ 5,45,000/- OR Bid Security Declaration In lieu of Earnest Money: Contractor to submit Bid Security Declaration as per attached Format (Annexure-XI of Tender Document) in lieu of Earnest Money. Tenders received without Bid Security Declaration shall be summarily rejected.
8	Availability of Bid documents from	15:00 Hrs. of 19.02.2025 on www.ireps.gov.in .
9	Download of bid documents up to	15:00 Hrs. of 20.03.2025 on www.ireps.gov.in .
10	Last date & time of online receipt of bid	15:00 Hrs. of 20.03.2025 on www.ireps.gov.in .
11	Date and time of Online opening of bid	15:30 Hrs. of 20.03.2025 www.ireps.gov.in .
12	Validity of offer	90 days from the date of opening of tender.
13	Address of Communication	Office of the Chief General Manager, Dedicated Freight Corridor Corporation of India Ltd. A 1, Circular Road, Near SP GRP Office, Kundan Nagar, Ajmer - 305001 Tel: 0145-2970462, E-mail: dfccil.ajmer@hotmail.com Website: www.dfccil.com
14	Help Desk for E-Tendering	For any clarification, help and registration for E-Tendering & matter relating to Digital Signature, contact at Help desk of www.ireps.gov.in and phone 0145-2970462
15	Availability of Tender Documents	The Tender documents can be downloaded from www.ireps.gov.in Tenderer who wishes to view free Notification and Tender Documents can visit www.ireps.gov.in DFCCIL may issue Addendum (s)/Corrigendum (s) to the Tender document, if any, which shall be issued at least seven days in advance of date of opening of tender and placed on the website www.ireps.gov.in only.

Payment of EMD & Tender Document fee, in respect of e-tendering, should accepted through net banking or payment gateway only, before the schedule date and time of submission of the tender otherwise the Bid will not be considered/shall be summarily rejected.

Note: - Fixed Deposit Receipt (FDR) will not be accepted as EMD for tender invited on IREPS (e-tender portal).

2.1.1 Tender documents should be downloaded from the website address <https://www.ireps.gov.in>. Tender documents shall also be available on the official website of DFCCIL i.e. www.dfccil.com.

SECTION:3**Information and Instructions to Tenderer(s)****3.1 INFORMATION**

- 3.1.1 E-Tender has been invited under 'single packet system.
- 3.1.2 The tenderer(s) can download the Bid document online from the website address <https://www.ireps.gov.in> as per the date & timing mentioned in SECTION –I of the bid document.
- 3.1.3 Tender document are also available on DFCCIL's official website i.e. www.dfccil.com.
- 3.1.4 Payment of EMD & Tender Document fee, in respect of e-tendering, should be accepted through net banking or payment gateway only, before the schedule date and time of submission of the tender otherwise the Bid will not be considered and shall be summarily rejected.
Alternatively, tender fee and EMD can also be deposited by RTGS before the last date and time of submission of online bid. In such case, no documents are required to be deposited physically in the tender box. Scanned copy of RTGS receipt, duly indicating UTR number should be uploaded online along with the tender. Details of DFCCIL/Ajmer bank account for making payment by RTGS are as under:

Name	CGM DFCCIL Ajmer
Bank account number	309801010900234
IFSC code	UBIN0546836
Bank Name	Union Bank of India
Bank Branch	Moti Bagh, New Delhi

- 3.1.5 The entire bid document shall be scanned & uploaded online on the website. The hard copy of those pages should be scanned after sign and stamp. Tender document shall be accompanied with the scanned copies of Bid deposit in proper form, document about the status of the firm such as Partnership Deed etc. Power of Attorney; documents in support of the of Tender(s), all documents mentioned in Annexure-I.
- 3.1.6 All tender shall be uploaded in accordance with the instruction contained in these documents (hereinafter called as tender document). Non-Compliance with any of the instruction set forth herein above is liable to result in the tender being rejected.
- 3.1.7 A firm shall submit only one offer against the E-Tender. In case, a firm submits more than one Tender, such a firm will be disqualified.
- 3.1.8 In preparing the Proposal, Tenderer (s) are expected to examine all terms and conditions included in the document. Failure to provide all requested information will be at own risk of the Tenderer(s) and will result in rejection of the proposal submitted by the Tenderer(s).
- 3.1.9 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 DFCCIL reserves the right to reject such tender at any stage.

- 3.1.10 The proposal shall contain no inter-lineation or overwriting, except as necessary to correct errors made by the firm itself. Any such corrections must be initialed by the person or persons who sign(s) the Proposals.
- 3.1.11 While quoting the online rates in bid sheet provided on www.ireps.gov.in Tender(s) are expected to take into account the requirement and conditions of the tender documents.
- 3.1.12 A master copy of the document downloaded from the website mentioned above shall be kept in the office of the tender inviting authority. In case of any discrepancy between the tender document downloaded from the website and the master copy, the later shall prevail and shall be binding on the Tenderer(s). The offer received shall be deemed to have been submitted on the document as uploaded and appearing in the website mentioned above whose master copy is kept in the office of the tender inviting authority and the agreement shall also be prepared on the basis of master document kept in the office of tender inviting authority.
- 3.1.13 The Tenderer(s) downloading the documents from internet must keep themselves updated through the website from which the tender document is downloaded regarding corrigenda, if any, to the notice inviting tender or the tender document, which shall be uploaded in the same website and also published in newspapers. The offers received without such corrigenda published shall be liable to be rejected.
- 3.1.14 Any willful changes/deletion/addition in printing carried out in the tender documents shall be viewed very seriously, whether detected at the time of opening/award of tender or after award of work and the same may result in penal action including banning of further business with the defaulting Tenderer(s). In addition, the Tenderer(s) are liable to be prosecuted for the same as per law.
- 3.1.15 The Tenderer(s) whether a sole proprietor, a limited company or a partnership firm, if they want to act through agent or individual partner/partners should submit along with the tender or at a later stage, a power of attorney duly stamped and authenticated by a Notary Public, or by Magistrate in favor of the specific person whether he/they be partner/partners of the firm or any other person specifically authorizing him/them to submit the tender, sign the agreements, receive money, witness measurements, sign measurement books, compromise, settle, relinquish any claim or claims preferred by the firm and sign "No Claim Certificate" and refer all or any disputes to arbitration.
- 3.1.16 Priorities of Documents:
The several documents forming the contract are to be taken as mutually explanatory of one another. If any inconsistency of discrepancy is found in the documents, DFCCIL shall issue any necessary clarification or instruction. For the purpose of interpretation, the priority of documents shall be accordance with the following sequence:
- a) The letter of acceptance.
 - b) The contract agreement (if completed).
 - c) The notice inviting tender / instructions to Tenderers.
 - d) Special condition of Contract (SCC).
 - e) General conditions of Contract (GCC).
 - f) Bill of Quantities.

3.2 SUBMISSION OF TENDER

- 321 All Tenders shall be submitted through online mode only at www.ireps.gov.in. Tender submitted by any other mode will not be accepted.
- 322 Venue of submission of tender: - No tender will be accepted/received offline or in any office.
- 323 The mandatory seal & signed on all pages should be submitted online not later than date and timings mentioned as in NIT in SECTION-1 of the tender document.
- 324 Tender fee & EMD need to be submitted online only before the last date and time as mentioned in the NIT of the tender documents.
- 325 Any tender and Tender fee & EMD received late are liable to be rejected summarily.

3.3 TENDER OPENING

- 331 Date and Time of online opening of the tender: -As indicated in the NIT in Section- 1 of tender document.
- 332 The Tenders submitted/received after the time and date fixed for receipt of Tenders as set out in the documents are liable to be rejected.
- 333 Conditional tenders are liable to be rejected straightway. DFCCIL reserves the right to reject such tenders summarily without assigning any reasons whatsoever.
- 334 If the date of opening is declared as holiday then the tender shall be accepted up to 15.00 hrs of the next working day and the same will be opened at 15.30 hrs on the same day i.e. next working day.
- 335 On the date specified in the tender notice, the rates of all tenders(s) will be available online.

3.4 GENERAL INFORMATION

- 341 Tender document is non-transferable. Tenders received from Tenderer(s) in whose name Tender Document has been issued shall only be considered.
- 342 No extension in the Tender Due Date shall be considered on account of internet speed or any technical fault.
- 343 Issuance of Tender documents will not automatically mean that such parties are considered qualified.
- 344 The agency will be awarded initially work for period specified vide clause 2.2 of tender document.
- 345 DFCCIL reserves the rights to modify, expand, restrict, scrap, and re-float the tender without assigning any reasons.

3.5 VALIDITY OF PROPOSAL

- 351 The Tenderer(s) shall keep their offer open for a minimum period of 90 days from the date of opening of the Tender, being extended further if required by mutual agreement from time to time. Any contravention of the above condition shall make the Tenderer(s) liable for banning from submission of bids in any works/Service Tender issued by DFCCIL for a period of 12 months from the date of such banning done on e-platform IREPS, as per Bid Security Declaration.

3.6 TENDER FEE

- 3.6.1 Cost of tender fee as per clause 2.2 of the tender document is to be submitted/deposited online only through payment gateways on <https://www.ireps.gov.in>, before the scheduled date and time of submission of the tender.
- 3.6.2 Offers without valid tender fee before the scheduled date and time of submission of the tender will be summarily rejected.
- 3.6.3 Tender processing fee as per applicable rates on IREPS Portal., payable through the e-payment gateways is non-refundable.
- 3.6.4 All Micro and Small Enterprises (MSEs) who are having Udyog Aadhaar Memorandum shall be given all benefits towards Tender Fee and Earnest Money (EMD)interms of Railway Board Letter No.2010/RS/(G)/363/1 dated 31.03.2016

3.7 EARNEST MONEY

- 3.7.1 The tenderer (s) must submit the Bid Security Declaration in a prescribed format (Annexure-XXXV) along with their offer.
- 3.7.2 The Tenders received without Bid Security Declaration in the manner given in the format shall be summarily rejected.
- 3.7.3 All Micro and Small Enterprises (MSEs) who are having Udyog Aadhaar Memorandum shall be given all benefits towards Tender Fee and Earnest Money (EMD) in terms of Railway Board Letter No.2010/RS/(G)/363/1 dated 31.3.2016 The bidders who fail to submit Udyog Aadhaar Memorandum (UAM) number shall not be able the benefits available to MSEs as contained in public procurement policy for MSEs order 2012 issued by MSME and as per Corporate Office, DFCCIL letter No. HQ/GGM/Admin/MSME dated 28.03.2018.

3.8 ELIGIBILITY CRITERIA

- 3.8.1 The tenderer must submit the documents in favour of fulfilling the eligibility criteria. Tenders submitted without these documents shall be summarily rejected.
- 3.8.2 The eligibility criteria have been defined under General Conditions of Contract of the bid document. Documents should be submitted online.

3.9 FIRM DETAILS, SIGNATURE OF TENDERS & DOCUMENTARY PROOF

- 3.9.1 The Tender must contain the full name, designation and complete address of place of business of the person(s) signing the Tender. Tenderer(s) shall furnish “TENDER'S GENERAL INFORMATION” as per (Annexure-I).
- 3.9.2 The Tender shall be signed by individual or individuals legally authorized to enter into commitments on behalf of the Tenderer(s). Any individual or individuals signing the Tender Documents or other documents connected therewith should specify whether he is signing-
- a) As a Sole Proprietor of the firm or Attorney of the Sole Proprietor; or
 - b) As a Partner or Partners of the firm; or
 - c) As a Director, Manager or Secretary in a Limited Company etc.
- 3.9.3 The Tenderer(s)/s whose tender is accepted will be required to appear at the Office of The Chief General Manager, DFCCIL A-1, Circular Road, Near SP GRP Office, Kundan Nagar, Ajmer 305001, in person or in case of firm or corporation, a duly authorized representative shall appear to execute the Contract Documents within 7 days after notice that the contract has been awarded to him and Contract Documents are ready for signature. 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 accompanying the tender shall stand forfeited.

3.10 PRICE BASIS, CURRENCIES & LANGUAGE OF TENDER

- 3.10.1 Tenderer(s)'s have to quote a single flat percentage above or below (in both words & figures) the rates given in schedule. This flat percentage will be applicable for all the items in schedule.

- 3.102 Rates are inclusive of labour, material, all statutory taxes and obligations of Central Govt. and State Govt. / local bodies as applicable at the time of the opening of the tender, unless otherwise specified separately in this tender document. The Tender prices shall be in Indian rupees only.
- 3.103 Taxes, if any, levied after opening of the tender will be borne by DFCCIL & reimbursed after production of documents in proof of having submitted the same. General Conditions of Contract & Special Conditions of Contract, Schedule of approximate quantities & Rate sheet may be referred for further details.
- 3.104 Rates are to be quoted both in figures and words. In case of any discrepancy in rates between figures and words, the rates quoted in words will prevail over rates quoted in figure.
- 3.105 All information in the Tender shall be in English and Hindi only. Failure to comply with these requirements will render the Tender liable for rejection.

3.11 PROPOSAL EVALUATION

- 3.11.1 A single stage procedure shall be adopted in evaluating the proposals.
- 3.11.2 The Evaluation Committee appointed by DFCCIL shall carry out its evaluation on the basis of their responsiveness to the Terms of Reference, applying the evaluation criteria.
- 3.11.3 The proposal of the Tenderer(s) will be assessed only based on the information/documents submitted along with the tender. However; DFCCIL reserves the right to seek clarification from the Tenderer(s), if the evaluation committee considers it necessary for proper assessment of the proposal. The clarification will be sought through fax / e-mail and the Tenderer(s) will be required to submit clarification in the stipulated time period. The clarification received within stipulated time period will be taken into consideration for evaluation of the technical proposal
- 3.11.4 The Proposals shall be opened publicly in the presence of the Tenderer(s)' representatives who choose to attend. The name of the Tenderer(s), the proposed prices shall be read aloud and recorded after opening the proposal. The Client shall prepare minutes of the public opening.

3.12 AWARD OF CONTRACT

- 3.12.1 The DFCCIL will issue a letter of Acceptance to the successful Tenderer.
- 3.12.2 Until a formal agreement is prepared and executed acceptance of this tender shall constitute a binding contract between DFCCIL and Tenderer subject to the modifications, as may be mutually agreed to and indicated in the letter of acceptance.
- 3.12.3 The successful Tenderer will be required to execute the Contract Agreement within 7 days of receipt of notice by the DFCCIL Administration that such document is ready, as per conditions mentioned in Tender Document, General Conditions of Contract (Section4) and Special Conditions of Contract (Section5).
- 3.12.4 The successful firm / Tenderer with whom the contract is signed shall commence the assignment within 15 days from the date of issue of acceptance letter.
- 3.12.5 All expenses in drawing up the agreement and the cost of stamp duty if any shall be borne by the contractor.

3.13 CONFIDENTIALITY

- 3.13.1 Information relating to evaluation of proposals and recommendations concerning awards shall not be disclosed to the Tenderer(s) who submitted the proposals or to other persons not officially concerned with the process.

3.14 CHECK LIST

3.14.1 The Tenderer(s) is requested to submit the tender documents and attachments as per the details specified in the Tender document. Any deviation/omission from above will be as per Tenderer(s)'s own risk.

The Tenderer(s) are requested to duly fill in the checklist. The checklist is only a reminder of certain important items, to facilitate the Tenderer(s). This, however, does not relieve the Tenderer(s) of its responsibility to make sure that his proposal is otherwise complete in all respects.

Section:4 General Conditions of Contract (GCC):

- 1.1 **DFCCIL (Ministry of Railways)** Standard General Conditions of Contract, Unified Standard Specifications (IRUSS Works and Materials) and CPWD Specifications 2019 Vol I & II of as amended/corrected up to latest correction slips, copies of which can be seen in the office of CGM/Ajmer on payment of prescribed charges.
As per Clause No.1.01 vi, vii, viii, ix of 1stsheet& 1(d) of tender form 2nd sheet Annex.I Part-I of GCC-2022, with up-to-date correction slip.
- 1.2 Schedule of Rates, CPWD Rates Vol I, II as amended / corrected up to latest correction slips, IR specifications/Guidelines updated with correction slips, relevant BIS codes updated with correction slips, copies of which can be seen in the office of CGM/Ajmer on payment of prescribed charges.
As per Clause No. 1.01 vii, x, xi of 1st sheet &1(e) of tender form 2nd sheet Annex.I Part-I of GCC-2022, with up-to-date correction slip, with up-to-date correction slip
- 1.3 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.
As per Clause No. 1(f) of tender form 2nd sheet Annex.I Part-I of GCC-2022, with up-to-date correction slip.
- 2.0 **Drawings for the Work:** The Drawing for the work can be seen in the office of the CGM/Ajmer 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.
As per Clause No. 2 of tender form 2nd sheet Annex.I Part-I of GCC-2022.
- 3.0 **Tender Form** embodies the contents of the contract documents either directly or by reference, e- Tender Forms shall be issued free of cost to all tenderers.
As per Clause No.3 of Part-I of GCC-2022, with up-to-date correction slip
- 3.1 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.
As per Clause No. 1.2 (n) of Part-I of GCC-2022, with up-to-date correction slip
- 3.2 The Tenderer(s) shall quote his / their rates as a percentage above or below the Schedule of Rates of North Western Railway except where he/they are required to quote item rates and must tender for all the items shown in the Schedule of approximate quantities attached. The quantities shown in the attached Schedule are given as a guide and are approximate only and are subject to variation according to the needs of DFCCIL. The DFCCIL does not guarantee work under each item of the Schedule. The tenderer(s) shall quote rates / rebates only at specified place in Tender Form supplied by DFCCIL. 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.
As per Clause No. 3 of tender form 2ndsheet Annex. I Part-I of GCC-2022, with up-to-date correction slip.
- 4.0 Tenders containing erasures and / or alterations of tender documents are liable to be rejected. Any correction made by tenderer(s) in his/their entries must be attested by him /them.
As per Clause No. 4 of tender form 2ndsheet Annex. I Part-I of GCC-2022, with up to date correction slip.
- 5.0 **EARNEST MONEY**
- 5.1 For the subject tender, the Earnest Money deposit shall be ₹ 5,45,000/- and shall be governed

by Para 5.1.1/ 5.1.2 below.

5.1.1 In case the Earnest Money Deposit for the tender is NIL, following conditions shall be fulfilled. These instructions shall be followed for all works & service tenders on DFCCIL/Indian Railways, published on or after 18:00 hrs of 16.01.2021 and shall be valid for all the tenders issued till 31.12.2021 (including 31.12.2021).

- (i) Tender shall select and sign the online Bid Security declaration as on the IREPS.
- (ii) In case, the tenderer withdraw the bid within bid validity period or if awarded the tender and on being called upon to submit the Performance Guarantee/Performance Security fail to submit the same within the stipulated time period mentioned in tender documents or on being called upon to sign the contract agreement fail to sign the same within stipulated period mentioned in tender documents, the bidder shall be banned from submission of bids in any Works/ Service Tender issued by Indian Railways for a period of 12 months from the date of such banning done on e-platform IREPS.
- (iii) The banning shall be as per the decision of Competent Authority and banning shall be effective w.e.f. date and time when same is done on IREPS by 'department Admin'.
- (iv) The defaulting bidder shall be banned as per the provision made in IREPS in case partnership firm/JV is banned, all members of partnership firm including firm/ all constituents of JV including JV shall be banned from submission of bids and details of all shall be uploaded on IREPS.
- (v) It is responsibility of Tender Committee or Direct Acceptance Authority (in case of direct acceptance), for the tenders invited on IREPS or otherwise, to check up on IREPS, whether the bidder is banned or not from bidding on the date of closing of tender.
- (vi) Whenever a bidder is banned or banning is revoked, a system generated SMS as well as email shall be sent to bidder. Full details related to banning will also be available to IREPS registered firms through their IREPS account.
- (vii) If the bidder is banned for submission of bids on the date of closing of tender, such bid, even if received, shall be treated as invalid while evaluating the bids.
- (viii) If a bidder is banned for submission of bids on the request of bidder in writing to tender calling authority, ban can be revoked by the Authority who had banned the bidder earlier, on submission to DFCCIL by bidder (including Start-ups, 100% Govt. owned PSUs & Labour Cooperatives), an amount equivalent to FULL Earnest Money Deposit that would have been worked out by DFCCIL for that tender as per existing instructions on the date of inviting tenders if Earnest Money Deposit would have been taken in place of Bid Security Declaration while inviting tenders. (ix) On receipt of request from bidder for revocation of ban on submission of bids, the Authority who had banned the bidder from submission of bids, shall intimate in writing to bidder the amount the bidder has to deposit with
- (ix) DFCCIL. Bidder in turn shall deposit the required amount in DFCCIL earnings and submit the receipt for the same.
- (x) Revocation shall be automatic on expiry of banned period. However, in case revocation is done before expiry of banned period, the banning shall stand revoked w.e.f. date & time when the same is done on IREPS by Department Admin.

Railway Board Letter no 2020/CE-I/CT/3E/GCC/Policy dated 30.12.20

5.1.2 In case the Earnest Money Deposit for the tender is applicable, the below instructions shall be applicable and the copy of letter of approval of competent authority for the EMD shall be uploaded along with the tender.

- (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. The earnest money shall be as under: Value of the Work Earnest Money Deposit (EMD)

For works estimated to cost up to Rs. 1 Crore	2% of the estimated cost of the work
For works estimated to cost more than Rs. 1 crore	Rs. 2 lakh plus ½% (half percent) of the excess of the estimated cost of work beyond Rs. 1 crore subject to a maximum of Rs. 1 crore

Note :

- (i) The earnest money shall be rounded off to the nearest Rs. 100. This earnest money 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 earnest money deposit detailed above.
- (iii) 100% Govt. owned PSUs shall be exempted from payment of earnest money deposit detailed above.
- (iv) Labour Cooperative Societies shall deposit only 50% of above earnest money deposit 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 DFCCIL.
- (c) If his tender is accepted this earnest money mentioned in sub clause (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 Earnest Money of other Tenderers shall, save as herein before provided, be returned to them, but DFCCIL shall not be responsible for any loss or depreciation that may happen thereto while in their possession, nor be liable to pay interest thereon.

As per Clause No. 5 – 1 (c) of Part-I of GCC-2022, with up-to-date correction slip

- 5.1.2.2 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 90 days beyond the bid validity period.

As per Clause No. 5 – 2 of Part-I of GCC-2022, with up-to-date correction slip

- 5.1.2.3 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 before closing date for submission of bids (Le. 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.
 - 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 DFCCIL 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.

As per Clause No. 5 – 3 of Part-I of GCC-2022, with up-to-date correction slip

5.1.2.4

- (a) The tender must be accompanied by a sum of ₹ 5,45,000/- as Earnest Money deposited in cash through e-payment gateway or as mentioned in tender documents, failing which the tender shall not be considered. Any firm recognized by Department of Industrial Policy and Promotion (DIPP) as ‘Startups’ (on submission of Registration Certificate issued by appropriate authority) and 100% Govt. owned PSUs shall be exempted from payment of Earnest Money. Labour Cooperative Societies shall deposit only 50% of the earnest money.
- (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 resile from his offer or modify the terms and conditions thereof in a manner not acceptable to CGM Amer. 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 DFCCIL Ajmer.
- (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 Deposit or 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.

As per Clause No. 6 of Tender Form (second sheet) Annex.I of Part-I of GCC 2022, with up-to-date correction slip

- 6.0 **Rights of the Railway to deal with Tender:** The authority for the acceptance of the tender will rest with the DFCCIL. 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 DFCCIL to assign reasons for declining to consider or reject any particular tender or tenders.

As per Clause No. 7 of Tender Form (second sheet) Annex.I of Part-I of GCC 2022, with up-to-date correction slip

- 6.1 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 DFCCIL reserves the right to reject such tender at any stage.

As per Clause No. 8 of Tender Form (second sheet) Annex. I of Part-I of GCC 2022, with up-to-date correction slip

- 6.2 If any partner(s) of a partnership firm expires after the submission of its tender or after the acceptance of its tender, the DFCCIL 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 DFCCIL shall deem such tender as cancelled / contract as terminated under clause 61 of the Standard General Conditions of Contract.

As per Clause No. 9 of Tender Form (second sheet) Annex. I of Part-I of GCC 2022, with up to date correction slip

7.0 SYSTEM OF TENDERING

- 7.1 **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 for contract valuing more than **Rs. 10 crores** or as advised by Railway Board time to time by updated policy guide lines.

For Works and Service tenders of value more than Rs. 50 Cr., the **Clause no. 25.0** of Electronic Reverse Auction will be applicable

As per (a) Clause No. 7A of Part-I of GCC 2022, with up-to-date correction slip

- 7.2 **Single Packet Tender-:** In case of tenders costing less than Rs. 10 Crore single packet tender system will be followed and technical & financial offer of the tenderer/s shall be opened and evaluated at the same time.

- 7.3 Tenderer should submit the offer with due diligence after going through the tender documents.

- 7.4 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.

As per Clause No. 7C of Part-I of GCC 2022, with up-to-date correction slip.

- 7.5. 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.

As per Clause No. 7D of Part-I of GCC 2022, with up-to-date correction slip

- 7.6 **Clarification of Bids:** To assist in the examination, evaluation & comparison and prequalification of the Tender, the DFCCIL 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 DFCCIL shall not be entertained or considered. The DFCCIL 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 DFCCIL request for clarification, the bid shall be evaluated as per the documents submitted along with the bid.

As per Clause No. 7E of Part-I of GCC 2022, with up-to-date correction slip

- 8.0 **Execution of Contract Document:**

The tenderer whose tender is accepted shall be required to appear in person at the office of CGM/Ajmer or if tenderer is a firm or Corporation; a duly authorized representative shall appear and execute the contract agreement within seven days of notice from DFCCIL that the Contract Agreement is ready. The Contract Agreement shall be entered into by DFCCIL only after submission of valid Performance Guarantee by the Contractor. Failure to do so shall constitute a breach of the agreement affected by the acceptance of the tender. In such cases the DFCCIL may determine that such tenderer has abandoned the contract and there upon his tender and acceptance thereof shall be treated as cancelled and the DFCCIL shall be entitled to forfeit the full amount of the Earnest Money 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.

As per clause No. 8 of Part-I of GCC-2022, with up-to-date correction slip.

8.1 After submission of valid performance guarantee, the contract agreement shall be entered into between DFCCIL/Ajmer and the tenderer, whose tender is accepted.

9.0 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 / HUF/Company / Joint Venture (JV) / Registered Society / Registered Trust / LLP etc. The tenderer(s) shall enclose the attested copies of the constitution of their concern, authorized signatory and copy of PAN Card along with their tender as per proforma given in Annexure I (mandatory). Tender shall be submitted and 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 maybe.
- (ii) The various documents to be submitted by the tenderer are as per clause 14 (ii) of the GCC 2022, the tenderer shall ensure submission of mandatory document as listed in para 16 below along with the offer.
- (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 etc. shall be neither asked nor considered, if not submitted. Further, no Suo moto cognizance of any document available in public domain (i.e., on internet etc.) or in DFCCIL'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 / Partnership firm etc. shall be considered only where permissible as per the tender conditions.
- (vi) The DFCCIL will not be bound by any change in the composition of the firm made subsequent to the submission of tender. DFCCIL may, however, recognize such power of attorney and changes after obtaining proper legal advice, the cost of which will be chargeable to the Contractor.

As per Clause No. 14 of Tender Form (second sheet) Annex. I of Part-I of GCC-2022, with up to date correction slip.

10.0 The tenderer whether sole proprietor / a company or a partnership firm / 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.

As per Clause No. 15 of Tender Form (second sheet) Annex. I of Part-I of GCC-2022, with up to date correction slip.

11.0 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 DFCCIL / 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

THEN

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 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 gazette rank or retired Gazetted officer working before his retirement in the Engineering or any other department of any of the DFCCIL/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 on the list of approved Contractors, have a relative(s) or in the case of proprietorship firm/ partnership firm/ company / joint venture (JV) / registered society / registered trust/ LLP/ HUF 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 one or more of his

shareholder(s) or a relative(s) of the shareholder(s) employed in gazetted capacity in the Engineering or any other department of the DFCCIL /Railway, the authority inviting tenders shall be informed of the fact at the time of submission of tender, failing which the tender may be disqualified/rejected or if such fact subsequently comes to light, the contract may be rescinded in accordance with provision in clause 62 of standard general conditions of contract.

Note: If information as required as per 11 (a), (b), (c) above has not been furnished, contract is liable to be dealt in accordance with provision of clause 62 of Standard General Condition of Contract.

As per Clause No. 16, of Tender Form (second sheet) Annex. I of GCC-2022, with up-to-date correction slip.

12.0 **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 endeavor 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.

As per Clause No. 4 of Part-I of GCC-2022, with up-to-date correction slip.

13.1(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 in accordance with the provisions of Clause-37 of the General Conditions of Contract for the completion of works to the entire satisfaction of the Engineer. (As per Clause No. 6 (a)(i) of G.C.C. 2022 Part-I with up-to-date correction slip)

(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. Tenderer(s) will ensure that full benefit of Input Tax Credit (ITC) likely to be availed by them is duly considered while quoting rates. (As per Clause No. 6 (a) (ii) of G.C.C. 2022 Part-I with up-to-date correction slip)

(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 DFCCIL 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. (As per Clause No. 6 (a) (iii) of G.C.C. 2022 Part-I with up-to-date correction slip)

(iv) In case the successful tenderer is not liable to be registered under CGST/IGST/UTGST/SGST Act, the DFCCIL shall deduct the applicable GST from his/their bills under reverse charge mechanism (RCM) and deposit the same to the concerned authority.

As per Clause No. 6(a)(iv) of Part-I of GCC-2022, with up-to-date correction slip.

(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 invoice is issued by Contractor ;

No-filing of GST returns;

Non-payment of GST collected from DFCCIL 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.

As per Clause No. 6(a)(v) of Part-I of GCC-2022, with up-to-date correction slip.

- 13.1(B) When work is tendered for by a firm or company, the tender shall be digitally signed by the individual legally authorized to enter into commitments on their behalf.

As per Clause No. 6(b) of Part-I of GCC-2022, with up-to-date correction slip

- 13.1(C) In E-tender, all submissions of documents are to be uploaded on web-site. There may be last minute hic-cups and delay in uploading the Documents and payment of Earnest Money etc.

Tenderers/Prospective bidders are advised to upload their offer well in time. DFCCIL will not be responsible for any delay/non submission of offer due to any reason whatsoever.

- 13.1(D) The DFCCIL 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.

As per Clause No. 6 (c) of Part-I of GCC-2022, with up-to-date correction slip.

- 13.2 The tenderers shall submit a copy of certificate stating that all their statements/documents submitted along with bid are true and factual. Standard format of the certificate to be submitted by the bidder is enclosed as **Annexure-II**. In addition to Annexure-II, in case of other than Company / Proprietary firm. Annexure -II(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 the above certificate(s) 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.

As per Clause No. 6.1 of Part-I of GCC-2022, with up-to-date correction slip.

14.0 **RIGHT OF DFCCIL TO DEAL WITH TENDERS**

- 14.1 If, the **DFCCIL** decides to negotiate, in view to bring down the rates, the tenderer, who is called for negotiation, shall furnish the following form of declaration before commencement of the negotiation:

I/we do declare that in the event of failure of the contemplated negotiations relating to Tender No. dated..... Opened on.....my original tender shall remain open for acceptance on its original terms and conditions up to the date specified in the tender or the date extended by mutual agreement from time to time.

- 14.2 **The tenderer/s are required to quote his/their rates as % (percentage)Above/Below /At Par in figures on IREPS while submitting his/their offer.**

15.0 **ELIGIBILITY CRITERIA**

15.1.1 Technical Eligibility Criteria

- (a) The tenderer must have successfully completed or substantially completed any of the following 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, each costing not less than the amount equal to 60% of advertised value of the tender.

- (b) (i) 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 of the following 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 each component of tender, OR

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

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

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

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

- (b) (iii) 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 CGM/Ajmer in writing.

However, if required in tender documents by way of Special Conditions, a formal Agreement duly notarized, 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 fulfillment 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 DFCCIL.

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 CGM/Ajmer in writing.

As per Clause No. 10.1 of Tender Form (second Sheet) of Annex. I of Part-I of GCC2022, with up-to-date correction slip.

Work of similar nature means:

Any EI Supply, Installation, Testing, Commissioning Signaling work.

OR

Any EI Alterations Signaling work.

OR

Any CTC/TMS work.

Work of similar nature for Civil Engineering Building Works means:

Construction of building on framed RCC structure of minimum G+2 storey

Special Technical Compliance:

(i) While bidding, bidder should submit the authorization of RDSO approved source (OEM or it's RDSO approved source) from which the EI is being taken. (Mandatory)

(ii) While bidding in the tender for EI works, the tenderer must take OEM/its RDSO approved Indian partner's authorized breakup of numbers of each cards/modules & accessories (Annexure: TS-11 & TS-10). (Mandatory)

(iii) After award of the contract, MOU with the same RDSO approved source whose authorization is taken at the time of bidding covering supply of the equipment of EI, installation, testing and commissioning of EI by the same RDSO approved source including after sale support required during the warranty period and beyond warranty period, before supply of equipment is undertaken. (Undertaking)

(RB's letter no. 2013/Sig./01/(pt.) Dup dtd. 19.11.2020.)

15.1.2 Technical Eligibility Criteria for JV ('a' or 'b' mentioned hereunder):

For Works without composite components

The technical eligibility for the work as per para 15.1 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 15.1 above, shall have technical capacity of minimum 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 10% of advertised value of the tender'.

For works with composite components

The technical eligibility for major component of work as per para 15.1 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 15.1 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 15.1 above, shall have technical capacity of minimum 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 10% of cost of any component of work mentioned in technical eligibility criteria.

Note for clause 15.1.2:

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.

As per Clause No. 17.15.1 of Tender Form (second Sheet) of Annex. I of Part-I of GCC2022, with up-to-date correction slip

15.2 **Financial Eligibility Criteria:** The tenderer must have minimum average annual contractual turn over 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-VIII, along with copies of Audited Balance Sheets duly certified by the Chartered Accountant/ Certificate from Chartered Accountant duly supported by Audited Balance Sheet.

As per Clause No. 10.2 of Tender Form (second Sheet) of Annex. I of Part-I of GCC2022, with up-to-date correction slip.

15.2.1 **Financial Eligibility for JV-** Criteria: The JV shall satisfy the requirement of "Financial Eligibility" mentioned at para 15.2 above.

The "financial capacity" of the lead partner of JV shall not be less than 51% of the financial eligibility criteria mentioned at para 15.2 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

As per Clause No. 17.15.2 of Tender Form (second Sheet) of Annex. I of Part-I of GCC2022, with up-to-date correction slip

15.3 **Bid Capacity:** The tender/technical bid will be evaluated based on bid capacity formula detailed as **Annexure D**.

As per Clause No. 10.3 of Tender Form (second Sheet) of Annex. I of Part-I of GCC-2022, with up-to-date correction slip.

15.3.1 **Bid Capacity for JV-**The JV shall satisfy the requirement of "Bid Capacity" requirement mentioned at para 15.3 above. The arithmetic sum of individual "Bid capacity" of all the members shall be taken as JV's "Bid capacity" to satisfy this requirement.

As per Clause No. 17.15.3 of Tender Form (second Sheet) of Annex. I of Part-I of GCC2022, with up-to-date correction slip

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

As per Clause No. 10.4 of Tender Form (second Sheet) of Annex. I of Part-I of GCC-2022,

with up-to-date correction slip.

15.5 The NIT cost of the tender is **Rs. 7,90,07,822.02/-** for the Technical Eligibility Criteria.

The similar nature of work defined is OR Components and the similar nature of work defined as below

1. for..... Cost/schedule
2. for..... Cost/schedule
3. for..... Cost/schedule

Note- To evaluate the technical eligibility of tenderer, only components of work as stipulated in tender documents for evaluation of technical eligibility as laid down in clause 15.1.1/ 15.1.2 above, shall be considered

2. Secondary Components-Special Condition: Not Applicable in this Tender.

(i) **‘To be submitted along with the offer’** - Following Secondary Components are being defined as special condition/ requirement to this tender with respective similar nature of work as below, for which the tenderer shall submit a formal agreement duly notarized, legally enforceable in the court of law, executed by tenderer with the subcontractor for the laid down secondary component(s) of work proposed to be executed by the subcontractor(s), for considering subletting of that scope of work of the secondary component, along with the offer, failing which offer shall be summarily rejected.

The tenderer shall also submit the documents in favour of the financial condition as laid down in clause 7 of Part-II Standard General Condition of Contract for the secondary component along with the offer, failing which offer shall be summarily rejected.

1. for Cost/schedule
2. for Cost/schedule
3. for Cost/schedule

(ii) **‘To be ensured before execution’**- The scope of work covered in the below defined secondary components shall be either executed by tenderer himself / the subcontractor (fully by any one or jointly i.e. partly by tenderer and remaining through subcontractor), provided the tenderer himself/ the subcontractor fulfills the laid down eligibility Criteria for the secondary components (fully by any one or jointly i.e. partly by tenderer and remaining through subcontractor), with prior approval of CGM/Ajmer in writing.

- 1..... for Cost/schedule
- 2..... for Cost/schedule
- 3..... for Cost/schedule

(iii) Eligibility Criteria for the Secondary Components- At least one successfully completed similar nature work (as defined above), costing not less than 35% value of work of the secondary component, in last 5 years through a works contract directly given to him by a Govt. Department; or by a 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, 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 authorized by the Public Listed Company to issue such certificates.

In case, 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. The details shall be furnished as per Performa in the annexure III, IIIA, IVA, IV-B, IV-C for five years (as applicable) along with the tender.

- (iv) *Note*- the concerned field unit shall clearly specify the similar nature of work for the NIT and the secondary components in the blank space (if applicable) (clearly write Not Applicable if not applicable) for the particular tender, at the time of processing the NIT*

As per Clause No. 10.1(b) (iii) of Tender Form (second Sheet) of Annex.I of Part-I and clause 7 of part II of Standard General Condition of Contract 2022, with up-to-date correction slip.

15.6 Note to Para 15

- (i) Certificate issued by Chartered Accountants based on the audited balance sheets will also be accepted. (as per Annexure-VIII)

- (ii) The criteria for completed works and substantially completed shall be as under:

Entire work has to be completed in all respects as per contract agreement. Part completed work shall not be considered.

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.

- (iii) Completion certificate from following organizations shall only be considered:

- (a) The work(s) should have been directly awarded to the tenderer by Govt. Organization / Semi Govt. Organization/ Public Sector Undertaking / Autonomous bodies/ Municipal Bodies/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 opening of tender

The credentials of a wholly owned subsidiary of a parent company will also be considered in respect of works mentioned above if tender is submitted by the parent company.

- (b) Completion certificate should be as per proforma given in Annexure- IV-A or IV-B or IVC, as applicable or in the format containing all information required as per the Annexure- IV-A or IV-B or IV- C

- (c) Work experience certificate issued by Public listed company shall 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 a copy of final/last bill paid by company in support of above work experience certificate.

Details of works physically completed should be submitted in the proforma as per 'Annexure-III'.

- (iv) The total value of similar nature of work completed during the qualifying period and not the payments received within qualifying period alone, should be considered.

In case, the final bill of similar nature of work has not been passed and final measurements have not been recorded, the paid amount including statutory deduction is to be considered. If final measurements have been recorded and work has been completed with negative variation, then also the paid amount including statutory deduction is to 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 should be considered for judging eligibility.

- (v) The total value of similar nature of work completed during the qualifying period and not the payments received within qualifying period alone, should be considered.

In case, the final bill of similar nature of work has not been passed and final measurements have not been recorded, the paid amount including statutory deduction is to be considered. If final measurements have been recorded and work has been completed with negative variation, then also the paid amount including statutory deduction is to 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 should be considered for judging eligibility.

- (vi) The amount given at Sr. No. 11 in proforma vide Annexure-IV for the completion certificate will be the value of completed work, if nomenclature of work as given in completion certificate matches with similar nature work.
- (vii) The amount mentioned at Sr. No. 12 in 'Annexure-IV' for the completion certificate shall be the value of completed work if the nomenclature of completed work includes additional components of work which are not matching with similar nature of works.
- (viii) Certificate from private individuals for whom such works are executed shall not be considered for eligibility.
- (ix) Conditional tenders are liable to be rejected straight away. DFCCIL reserves the right to reject such tenders summarily without assigning any reasons whatsoever.
- (x) The total value of similar nature of work completed during the qualifying period and not the payments received within qualifying period alone, should be considered.

In case, the final bill of similar nature of work has not been passed and final measurements have not been recorded, the paid amount including statutory deduction is to be considered. If final measurements have been recorded and work has been completed with negative variation, then also the paid amount including statutory deduction is to 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 should be considered for judging eligibility.

- (xi) The amount given at Sr. No. 11 in proforma vide Annexure-IV for the completion certificate will be the value of completed work, if nomenclature of work as given in completion certificate matches with similar nature work.
- (xii) The amount mentioned at Sr. No. 12 in 'Annexure-IV' for the completion certificate shall be the value of completed work if the nomenclature of completed work includes additional components of work which are not matching with similar nature of works.
- (xiii) Certificate from private individuals for whom such works are executed shall not be considered for eligibility

As per Note under Clause No. 10.1 of Tender Form (second Sheet) of Annex. I of Part-I of GCC2022, with up-to-date correction slip.

- (xiv) Conditional tenders are liable to be rejected straight away. Railway reserves the right to reject such tenders summarily without assigning any reasons whatsoever.

- 15.7 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.

As per Clause No. 10.5 of Tender Form (second Sheet) of Annex. I of Part-I of GCC2022, with up-to-date correction slip.

15.8 Explanation for clause 15 (clause 15.1 to 15.6) - 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 0.3×0.2 * 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 15 GCC April 2022 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.]

As per Explanation for Para 10 of the Tender Form (Second Sheet) including Para 10.1 to 10.5 - Eligibility Criteria of GCC-2022, with up-to-date correction slip

- 16.0 **The list of documents to be uploaded by the tenderer(s) for this tender.**
- 16.1 Following documents are common for all types of firm i.e. Sole proprietorship, Partnership, Limited Liability Partnership Firm, Registered Society/ Trust, Limited Company or JV.
 - (a) Firm details as per proforma given in **Annexure-I (Mandatory)**.
As per Clause No. 14 (i) of Tender Form of Part-I of GCC-2022, with up-to-date correction slip
 - (b) A Copy of the Certificate as per proforma given in **Annexure-II (Mandatory) and Annexure-II(A)**.
As per Clause No. 6.1 of Tender Form of Part-I of GCC-2022, with up-to-date correction slip.
 - (c) (i) List of similar nature of works physically completed in all respects during last 7 years, ending last day of month previous to one in which tender is invited, shall be submitted as per Proforma given in **Annexure-III / Annexure III(A) (in case of composite works)**

Mandatory for works

- (i) directly awarded by Govt./Semi Govt./Public sector undertaking / Autonomous bodies /Municipal bodies/ Railways Siding owners /

- (ii) Concessionaire (to whom the work is awarded by DFCCIL/Indian Railways/CPWD/NHAI/PWD/State Road Development Corporation on PPP/DBFOT or any other mode)
- (iii) 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 opening of tender

Note: Works under item (ii) are to be submitted only for tenders costing Rs.50.00 Cr. and above

As per Clause No.10.1 (a) Tender Form (second Sheet) of Annex.I of Part-I of GCC2022, with up-to-date correction slip.

- (c) (ii) Details of work of similar nature successfully completed during last seven years, ending last day of month previous to the one in which tender is invited as per Performa given in **Annexure III (Mandatory)**

In case of tender having composite nature of work having distinct components (bifurcated with defined Primary Components in the tender schedule) and having separate schedule for each component, as per Performa given in **Annexure-III-A, (Mandatory in case of tender for composite nature of work)**

As per Clause No. 10.1(b)(ii) Tender Form (second Sheet) of Annex.I of Part-I of GCC2022,with up-to-date correction slip.

- (d) Attested copy of Completion Certificate of works mentioned in para (c) above from the Organizations with whom they worked as per proforma given in **Annexure-IV-A or IV-B or IV-C** as applicable.

(Mandatory)

As per Clause No. 11(i) Tender Form (second Sheet) of Annex.I of Part-I of GCC2022, with up-to-date correction slip.

- (e) In case, the **Secondary Component(s)** has/have been defined as special condition/ requirement to this tender in 2 (i) of clause 15.5 above, with special condition (i) ***‘to be submitted along with the Offer’*** tenderer shall submit

- (i) Details of works of similar nature (defined for the Secondary Component), successfully completed executed by tenderer himself / the subcontractor (fully by any one or jointly i.e. partly by tenderer and remaining through subcontractor) during last five years, ending last day of month previous to the one in which tender invited as per Performa in Annexure III, IIIA (for five years) (bifurcated as per components of tender schedule).

- (ii) Attested copy of Completion Certificate of works mentioned in para (c) above from the Organizations with whom they worked as per performa given in **Annexure-IV-A or IV-B or IV-C** as applicable.

- (iii) Tenderer shall submit a formal agreement duly notarized, legally enforceable in the court of law, executed by tenderer 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 as per performa given in Annexure XXXIV.

Mandatory in case of secondary components are defined in the tender with special condition ‘for submission along with the Offer’.

As per Clause No. 10.1(b)(iii) Tender Form (second Sheet) of Annex. I of Part-I and clause 7(a) (ii) of part II of Standard General Condition of Contract-2022, with up-to-date correction slip.

Note: In case, completion certificate is issued by public listed company (Annexure IV C). Following documents regarding the **Public listed company** are required to be submitted along with the certificate **(Mandatory)**

- (i) Details of Average Annual turnover of the public listed company in last three financial years excluding current financial year (should be 500 Cr and above) issued by Chartered Accountant. These details need to be submitted as per the proforma of Annexure VIII.
- (ii) The copy of the documents regarding listing in the National stock exchange or Bombay stock exchange with details of status of listing as on date of opening of tender, duly self-attested.
- (iii) The copy of document of incorporation/ registration of the Public listed company (should be at least 5 years prior to date of opening of tender), duly self-attested.
- (iv) The copy of document regarding Person Authorized by the Public listed Company to issue such certificate, duly self-attested.
- (v) Tenderer shall also submit 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 a copy of final/last bill paid by the public listed company in support of above work experience certificate duly self-attested.
- (f) List of works on hand, existing commitments and balance amount of ongoing works as per format given in '**Annexure-V duly verified by Chartered Accountant to evaluate bid capacity of the tenderer (Mandatory for tender value more than Rs. 20 crores)**

As per Clause No.10.3 Tender Form (second Sheet) of Annex.I of Part-I of GCC-2022, with up-to-date correction slip.

- (g) A statement showing construction works executed and payment received during the previous three financial years and the current financial year (up to date of inviting tender), taking into account the completed as well as work in progress as per **Annexure-XIX** on the letter head of Chartered Accountant, to evaluate bid capacity of the tenderer (**Mandatory for tender value more than Rs. 20 Crores**)

As per Clause No.10.3 Tender Form (second Sheet) of Annex. I of Part-I of GCC2022, with up-to-date correction slip.

- (h) List of plants & Machinery available on hand (own) and proposed to be inducted (own and hired to be given separately) for the subject work in **Annexure-VI**.

As per Clause No.11(iii) Tender Form (second Sheet) of Annex. I of Part-I of GCC2022, with up-to-date correction slip.

- (i) List of Personnel, Organization available on hand and proposed to be engaged for the subject work in **Annexure -VII**.

As per Clause No.11(iii) Tender Form (second Sheet) of Annex. I of Part-I of GCC2022, with up-to-date correction slip.

- (j) In case Earnest money for the tender is NIL as per para 5.1.1 above, Tenderer shall sign and submit the online Bid Security Declaration (Mandatory only in case Earnest Money is defined as NIL).

In case submission of Earnest Money is mentioned in Para 5.1.2 above- Earnest Money should be in proper form. Earnest money should be submitted by the tenderer only through net banking or payment GATEWAY in favour of CGM, DFCCIL Ajmer (**Mandatory only in case earnest money is prescribed for the tender**). **In case the tenderer is:**

- (k) Any firm recognized by Department of Industrial Policy and Promotion (DIPP) as 'Startups' – shall be exempted from payment of Earnest Money deposit and shall submit certified copy of the registration/ Valid document issued by DIPP (mandatory if applicable) (ii)100% Govt. owned PSUs- shall be exempted from payment of Earnest Money deposit and shall submit certified copy of the registration/ Valid document issued by the relevant Ministry (mandatory if applicable). (iii) Labour Cooperative Societies – shall deposit only 50% of the Earnest Money Deposit and shall submit certified copy of the registration/ Valid document issued by the relevant Ministry/ Labour commission (mandatory if applicable).

As per Clause No. 5 (1) (a) and 5 (2) of Part-I of GCC-2022, with up-to-date correction slip.

- (l) Contractual Receipts for the last three years and current financial year with supporting documents required as per **Annex.VIII (Mandatory.)**

As per Clause No.10.2 and 11(ii) Tender Form (second Sheet) of Annex.I of Part-I of GCC2022, with up-to-date correction slip.

- (m) Self attested copy of Permanent Account Number (PAN) issued by Income Tax Department. **As per Clause No.14(i) Tender Form (second Sheet) of Annex.I of Part-I of GCC-2022, with up-to-date correction slip.**

- (n) **Not Applicable**

- (o) The tenderers are required to submit the information and particulars regarding retired Railway Engineer(s)/Officer(s) of the Gazetted rank and regarding Relative(s) employed in Gazetted capacity on North Western Railway/ DFCCIL as per proforma given in Annexure **XXIII. (Mandatory).**

As per Clause No. 16, Tender Form (second Sheet) of Annex.I of Part-I of GCC-2022, with up-to-date correction slip).

- 16.2 In addition to Para 16.1 above certain more documents are to be submitted by tenderers as per status of their firms and are **mandatory**. These documents are listed below

16.2.1 For Sole Proprietorship firm

- a) Affidavit as per proforma given of **Annexure –IX** (duly executed on stamp paper and notarized).
- b) Special power of Attorney to be submitted by sole proprietor firm as per proforma given in **Annexure XIV** (duly registered with the Registrar or notarized). (Not required if tender documents are submitted by proprietor himself as per (a)above)

As per Clause No. 14 (ii) (a), 15 Annex. I of Part-I of GCC 2022, with upto date correction slip.

16.2.2 For HUF (Hindu Undivided Family)

- (a) Affidavit as per proforma given of **Annexure –XXIX** (duly executed on stamp paper and notarized).
- (b) Special power of Attorney to be submitted by the HUF as per proforma given in **Annexure XXX** (duly registered with the Registrar or notarized). (Not required if tender documents are submitted by Karta of the HUF, himself as per (a) above)

As per Clause No. 14 (ii) (b) &15 Annex. I Part-I of GCC 2022, with upto date correction slip

16.2.3 For Partnership firm

- (a) A copy of Partnership Deed (Notarized or duly registered with the Registrar prior to date of tender opening as per the Indian Partnership Act)
- (b) Special Power of attorney to be submitted by Partnership firm in favour of the individual to sign the tender on behalf of the firm and create liability against the firm as per proforma given in **Annexure-XIII** (duly registered with the Registrar or notarized). (Required even if one or more partners are authorized in Partnership deed itself to sign on behalf of the firm as given in (a) above.
- (c) Declaration by the newly formed partnership firm as per proforma given in **Annexure-XXXI.** (mandatory if tenderer is newly formed partnership firm)
- (d) Declaration by the existing partnership firm as per proforma given in **Annexure-XXXII.** (mandatory if tenderer is an existing partnership firm)

- (e) With respect to the declaration above, in case of Newly formed partnership firm has/ have as one or more partner(s) from previous propriety firm(s) or dissolved previous partnership firm(s) or LLP firm or split previous partnership firm(s) or LLP firm, Existing partnership firm (a) joining of new one or more partner(s) in the existing partnership firm, (b) quitting of new one or more partner(s) from the existing partnership firm–

Following additional documents are required to be furnished (mandatory as applicable)

- a Details of previous Propriety firm / Partnership Firm/ LLP firm as per annexure-I
 b A copy of previous partnership Firm (Notarized or duly registered with the Registrar)
 c Affidavit as per proforma given of Annexure –IX for previous Propriety firm (duly executed on stamp paper and notarized).
 d Copy of previous LLP agreement and certificate of incorporation.
 e Dissolution deed/ splitting deed of the previous partnership deed or LLP agreement (in case of dissolution of previous partnership firm/ LLP firm)
 f Proof of surrender of previous PAN no (in case of dissolution of previous partnership firm,
 g LLP firm or propriety firm)
 h Documents for the technical, financial criteria, bid capacity as claimed w.r.t. such partner(s) joining the new/ existing partnership firm, as per para 16.1 (c), (d), (f), (g), (k) above

As per Clause No. 14(ii)(c), 15, 18 & explanation to Clause 10.1 to 10.5 of Annex. I Part-I of GCC-2022, with up-to-date correction slip).

16.2.4 For Company registered under Companies Act 2013.

- a) Copy of Memorandum of association/ Articles of Association of Company.
 b) Copy of Certificate of Incorporation
 (c) Copy of resolution passed by Board of Directors authorizing its Director/Employee to deal with tender on behalf of company
 (d) Special Power of Attorney/ Authorization issued by the Company (backed by the resolution of Board of Directors) in favour of the individual to sign the tender, sign the MOU/ JV agreement on behalf of the company and create liability against the Company, as per proforma given in **Annexure-XV** (duly registered with the Registrar or notarized). (Required even if tender documents are submitted by the authorized/ power of attorney holder himself as per (c) above)
 (e) Declaration regarding constitution of the Company, for merging of another company, details required for the entire period for last seven years as per proforma given in **Annexure-XXXIII**. (mandatory)
 (f) Following additional documents are required to be furnished (mandatory in case of merger with another company)
 (1) Details of company getting merged as per annexure I
 (2) Copy of Memorandum of Association/ Articles of Association of the Company getting merged
 (3) Copy of certificate of incorporation of previous company getting Merged
 (4) Resolution by the Board of Directors for the Merger of the company(s) with the tenderer
 (5) Proof of surrender of previous PAN no

Document for the technical, financial criteria, bid capacity as claimed w.r.t. such Company(s) joining the new/Existing Company as per para 16.1 ©, (d), (f), (g), (k) above.

As per Clause No. 14 (ii)(e), 15 & explanation to Clause 10.1 to 10.5 of Annex. I Part-I of GCC-2022, with up-to-date correction slip

16.2.5 For LLP Firm Registered under LLP Act 2008

- (a) A copy of LLP Agreement.
 - (b) A copy of certificate of Incorporation and
 - (c) A copy of resolution passed by partner of LLP firm for submitting tender by LLP firm and to deal with tender on behalf of the firm as per proforma given in **Annexure-XXI**.
 - (d) Special Power of Attorney/ Authorization issued by LLP firm in favour of the individual to sign the tender on behalf of the LLP firm and create liabilities against the LLP as per proforma given in **Annexure-XXV** (duly registered with the Registrar or notarized). (Required even if tender documents are submitted by the authorized/ power of attorney holder himself as per (c) above)
 - (e) Declaration by the newly formed LLP firm as per proforma given in **Annexure-XXXI**. (mandatory if tenderer is newly formed partnership firm)
 - (e) Declaration by the existing LLP firm as per proforma given in **Annexure-XXXII**. (mandatory if tenderer is an existing partnership firm)
 - (f) With respect to the declaration above, in case of
 - (a) Newly formed LLP firm has/ have as one or more partner(s) from previous propriety firm(s) or dissolved previous partnership firm(s) or LLP firm or split previous partnership firm(s) or LLP firm, Existing LLP firm (a)joining of new one or more partner(s)in the existing LLP firm,
 - (b) quitting of new one or more partner(s)from the existing LLP firm–
- Following additional documents are required to be furnished (mandatory as applicable)
- (1) Details of previous Propriety firm / Partnership Firm/ LLP firm as per annexure-I
 - (2) A copy of previous partnership Firm (Notarized or duly registered with the Registrar)
 - (3) Affidavit as per proforma given of Annexure –IX for previous Propriety firm (duly executed on stamp paper and notarized).
 - (4) Copy of previous LLP agreement and certificate of incorporation.
 - (5) Dissolution deed/ splitting deed of the previous partnership deed or LLP agreement (in case of dissolution of previous partnership firm/ LLP firm)
 - (6) Proof of surrender of previous PAN no (in case of dissolution of previous partnership firm, LLP firm or propriety firm)
 - (7) Documents for the technical, financial criteria, bid capacity as claimed w.r.t. such partner(s) joining the new/ existing partnership firm, as per para 16.1 (c), (d), (f), (g), (k) above.

As per ClauseNo.14(f), 15 & explanation to Clause 10.1 to 10.5 Part-I of GCC2022, with up-to-date correction slip

16.2.6 For Registered Society & Registered Trust

- (a) A copy of the certificate of registration.
- (b) A copy of Deed of Formation.
- (c) A copy of Special Power of Attorney/ Authorization in favour of the individual to sign the tender and create liabilities against the Registered Society/ Trust as per proforma given in **Annexure-XXII** (duly registered with the Registrar or notarized). (Required even if tender documents are submitted by the authorized/ power of attorney holder himself as per (a), (b)above)

As per Clause No. 14(g), 15 Annex. I Part-I of GCC-2022, with up-to-date correction slip

16.2.7 For JV firm Following documents are mandatorily to be submitted by constituents of the JV firm depending upon their status

As per clause no. 14(d), 17.0 Annex.I Part-I, GCC-2022, with up-to-date correction slip

- a) Memorandum of Understanding of JV as per pro forma given in **Annex. X** (duly executed on stamp paper and notarized)

As per clause No. 17.6, 17.12 of Annex.I Part-I of GCC-2022, with up-to-date correction slip.

16.2.7.1 Documents mandatory for Sole Proprietorship firm participating as member of JV

- (a) Affidavit as per proforma given of **Annexure –IX** (duly executed on stamp paper and notarized).

- (b) Special Power of Attorney to be submitted by Sole Proprietor participating as member of JV firm as per proforma given in **Annexure-XII** (duly registered with the Registrar or notarized) (Not Required if MOU/JV agreement is signed by the sole Proprietor himself as per (a)above).

As per Clause No.15 Annex.I of Part-I GCC-2022, with up-to-date correction slip.

16.2.7.2 Documents mandatory for HUF (Hindu Undivided Family) participating as member of JV

- (a) Affidavit as per proforma given of **Annexure –XXIX** (duly executed on stamp paper and notarized).

- (b) Special Power of Attorney to be submitted by HUF participating as member of JV firm as per proforma given in **Annexure-XII** (duly registered with the Registrar or notarized) (Not required if MOU/JV agreement is signed by the Karta of HUF himself as per (a) above).

As per Clause No. 17.14.2, 15 Annex. I of Part-I GCC-2022, with up-to-date correction slip.

16.2.7.3 Documents mandatory for partnership firm participating as member of JV

- (a) Copy of Partnership Deed (duly registered with the Registrar or notarized prior to date of tender opening as per the Indian Partnership Act.).

- (b) Copy of letter of consent of all the Partners or individual authorized by partnership firm to enter into JV Agreement as per proforma given in **Annex-XI** (duly executed on stamp paper).

(c)Special Power of attorney to be submitted by Partnership firm in favour of the individual to sign the tender, to sign the MOU/JV agreement on behalf of the Partnership Firm and to create liability against the firm as per proforma given in **Annexure-XVIII** (duly registered with the Registrar or notarized). (Required even if MOU/JV agreement is signed by one or more partners authorized in Partnership deed, letter of consent to sign on behalf of the firm is given in (a), (b) above)

As per Clause 17.14.1, 15 & 18.2 of Annex.I Part-I GCC-2022, with up-to-date correction slip

16.2.7.4 Documents mandatory for Company participating as member of JV

- a) A Copy of Memorandum of Association/ Articles of Association of Company.

- b) A Copy of certificate of Incorporation

- c) A Copy of resolutions passed by Board of Directors of the Company permitting the Company to enter into a JV agreement, to be submitted as per **Annexure-XVII**.

- (d) Special Power of Attorney/ Authorization issued by the Company (backed by the Resolution of Board of Directors) in favour of the individual to sign the tender, to sign the MOU/JV agreement on behalf of the company and create liability against the Company, as per proforma given in **Annexure-XII** (duly registered with the Registrar or notarized). (Required even if MOU/JV agreement is signed by the authorized/ power of attorney holder himself as per (c)above)

As per Clause No. 17.14.3, 15 of Annex.I Part-I GCC-2022, with up-to-date correction slip

16.2.7.5 Documents mandatory for LLP Firm participating as member of JV

- (a) A copy of LLP agreement.
- (b) A copy of Certificate of incorporation
- (c) A copy of Resolution passed by the partners of LLP firm permitting the firm to enter into a JV agreement to be submitted as per proforma given in **Annexure-XXIV**
- (d) Special Power of Attorney/ Authorization issued by LLP firm (backed by resolution of partners) in favour of the individual to sign the tender, sign the MOU/ JV agreement on behalf of the LLP firm and create liabilities against the LLP firm as per proforma given in **Annexure XX** (duly registered with the Registrar or notarized). (Required even if MOU/JV agreement is signed by the authorized/ power of attorney holder himself as per (c) above)

16.2.7.6 Documents mandatory for Registered Society and Trust participating as a Member of JV

- (a) A copy of Deed of Formation
- (b) A copy of certificate of Registration.
- (c) A copy of Resolution passed by the executive members of Registered Society/Trust permitting the registered society/Trust to enter into a JV agreement as per proforma given in **Annexure XXVI**.
- (d) Special Power of Attorney/ Authorization issued by the registered society/ trust (backed by resolution of partners) in favour of the individual to sign the tender, to sign the MOU/ JV agreement and create liabilities against the Registered Society/ Trust as per proforma given in **Annexure-XXVII** (duly registered with the Registrar or notarized). (Required even if tender documents are submitted by the authorized /power of attorney holder himself as per (c) above)

16.2.7.7 Note to Para 16

1. The tenderers shall submit a certificate stating that they are not liable to be disqualified and all their statements/documents submitted along with bid are true and factual. Standard format of the certificate to be submitted by the bidder is enclosed as Annexure-II as mentioned in clause No. 16.1(b). In addition to Annexure-II, in case of other than Company /Proprietary firm Annexure-II A shall also be submitted by each member of a partnership firm/ Joint Venture (JV) / Hindu Undivided Family/ 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 by which they/he is qualifying the Qualifying Criteria mentioned in the Tender Document.

As per Clause No. 11(iv) Annexure 1 part I of GCC-2022, with up-to-date correction slip

1. 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.
2. The DFCCIL reserves the right to verify all statements, information and documents submitted by the bidder in his tender offer, and the bidder shall, when so required by the Railway, make available all such information, evidence and documents as may be necessary for such verification.
3. Any such verification or lack of such verification by the DFCCIL shall not relieve the bidder of its obligations or liabilities hereunder nor will it affect any rights of the DFCCIL thereunder.
- 3.1 In case of any wrong information submitted by tenderer, the contract shall be terminated, Earnest Money Deposit (EMD) (if applicable as per para 5.1.2 above), Performance Guarantee (PG) and Security Deposit (SD) of contract forfeited and agency barred for doing business on entire Indian Railways for 5(five) years.
- 3.2 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. Earnest Money Deposit (EMD) (if

applicable as per para 5.1.2 above),

Performance Guarantee and Security Deposit available with the DFCCIL 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 up to two years.

As per Clause No. 11(v), 11(vi) Annexure 1 part I of GCC-2022, with up-to-date correction slip

4. No post tender submission of documents shall be permitted in respect of tender. However, only clarification can be called for by DFCCIL in respect of any part / document submitted by the tenderer which shall be responded to by the tenderer within 10 working days of the date of issue of such letter for clarifications, failing which the offer shall be dealt with as per available documents.
5. The documents mentioned 'mandatory' in clause No. 16 above are required to be uploaded by the contractor with tender document. If any of these documents is not uploaded along with the tender, the offer shall be summarily rejected
6. In addition to above Tenderer have to certify that neither I /We (name of the sole Proprietor firm/ Partnership Firm/Limited Company/ LLP/Registered Society/Trust / JV firm) nor any of the partner or partnership firm/ LLP /Member of Registered Society/ Trust / Constituent of JV firm including partner of partnership firm in JV has/ have been black listed or debarred by DFCCIL/Railway or any other Ministry /Department/ Public Sector Undertaking of the Government of India/ any State from participation in tenders/contract on the date of opening of bids either in our individual capacity or in any firm in which we are partners.

17.0 Participation of Partnership Firms in works tenders

The partnership firm shall be governed as per Clause No. 18.1 to 18.11 of Tender Form (second Sheet) Annex. I Part-I of GCC-2022, with up-to-date correction slip.

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

As per Clause No. 17 of Tender form second sheet Annex. I of Part-I of GCC-2022, with up-to-date correction slip

- 18.2 JV firms will be permitted participation in tender costing rupees more than Rs. 10 crores.
- 18.3 Separate identity/name shall be given to the Joint Venture Firm

As per Clause No. 17.1 of Tender form second sheet Annex.I of Part-I of GCC-2022, with up-to-date correction slip

- 18.4 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 up to 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%.

As per Clause No. 17.2 of Tender form second sheet Annex.I Part-I of GCC-2022, with up-to-date correction slip

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

As per Clause No. 17.3 of Tender form second sheet Annex.I Part-I of GCC-2022, with up-to-date correction slip

- 18.6 The tender form shall be obtained 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.

Earnest Money Deposit (EMD) (if applicable as per para 5.1.2 above), as per para shall be deposited by JV or authorized person of JV through e-payment gateway or as mentioned in tender document.

As per Clause No. 17.4, 17.5 of Tender form second sheet Annex. I Part-I of GCC2022, with up-to-date correction slip

- 18.7 A copy of Memorandum of Understanding (MOU) duly executed by the JV members on stamp paper shall be submitted by the JV Firm along with the tender. The complete details of the members of the JV Firm, their share and responsibility in the JV Firm etc. particularly with reference to financial, technical and other obligations shall be furnished in the MOU. (The MOU format for this purpose is enclosed as Annexure-X in this document)

As per Clause No. 17.6 of Tender form second sheet Annex.I Part-I of GCC-2022, with up-to-date correction slip

- 18.8 Once the tender is submitted, the MOU shall not be modified/ altered/ terminated during the validity of the tender. In case the tenderer fails to observe/comply with this stipulation, the full Earnest Money Deposit (EMD) (if applicable as per para 5.1.2 above), is liable to be forfeited.

As per Clause No. 17.7 of Tender form second sheet Annex.I Part-I of GCC-2022, with up-to-date correction slip

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

As per Clause No. 17.8 of Tender form second sheet Annex.I Part-I of GCC-2022, with up-to-date correction slip

- 18.10 Similarly, after the contract is awarded, the constitution of JV firm shall not be allowed to be altered during the currency of contract except when modification become inevitable due to succession laws etc. and in any case the 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.

As per Clause No. 17.9 of Tender form second sheet Annex. I Part-I of GCC-2022, with up-to-date correction slip

- 18.11 On award of contract to a JV firm a single Performance Guarantee shall be submitted by the JV firm 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 firm and no splitting of guarantees amongst the members of the JV firm shall be permitted

As per Clause No. 17.10 of Tender form second sheet Annex.I Part-I of GCC-2022, with up-to-date correction slip

- 18.11.1 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 along with 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 DFCCIL 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 DFCCIL shall be entitled to forfeit the full amount of the Earnest Money Deposit and other dues payable to the Contractor under this contract. The entity so registered, in the registered documents, shall have, inter alia, following Clauses as below:

As per Clause No. 17.11 of Tender form second sheet Annex. I Part-I of GCC-2022, with up-to-date correction slip

- 18.11.2 Joint and Several Liability – Members of the entity to which the contract is awarded, shall be jointly and severally liable to the Employer DFCCIL (PSU under Ministry of Railways) 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 DFCCIL during the course of execution of the contract or due to non-execution of the contract or part thereof.

As per Clause No. 17.11.1 of Tender form second sheet Annex. I Part-I of GCC-2022, with up-to-date correction slip

- 18.11.3 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.

As per Clause No. 17.11.2 of Tender form second sheet Annex. I Part-I of GCC-2022, with up-to-date correction slip)

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

As per Clause No. 17.11.3 of Tender form second sheet Annex. I Part-I of GCC-2022, with up-to-date correction slip

- 18.13 Authorized Member – Joint Venture members shall authorize one of the members on behalf of the Joint Venture Firm to deal with the 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 firm.

As per Clause No. 17.12 of Tender form second sheet Annex. I Part-I of GCC-2022, with up-to-date correction slip

- 18.14 No member of the Joint Venture Firm 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 employer DFCCIL in respect of the said tender/contract.

As per Clause No. 17.13 of Tender form second sheet Annex. I Part-I of GCC-2022, with up-to-date correction slip

- 18.15 All the Members of JV shall certify that they are not black listed or debarred by DFCCIL, Railways or any other Ministry / Department / PSU (Public Sector Undertaking) of the Govt. of India/ State Govt. from participation in tenders/contract on the date of opening of bids either in their individual capacity or as a member of the JV Firm in which they were/are members.

As per Clause No. 17.14.4 of Tender form second sheet Annex. I Part-I of GCC-2022, with up-to-date correction slip

- 18.15.1 **Credentials & Qualifying Criteria**

Technical and financial eligibility of the JV firm shall be adjudged based on satisfactory fulfillment of the following criteria as laid down in clause 15.1 & 15.2 above:

As per Clause No.17.15 of Tender form second sheet Annex.I Part-I of GCC-2022, with

up-to-date correction slip

19.0 The tenderer shall submit the original copies of the documents as per Annexure II, IX, X, XI, XII, XIII, XIV, XV, XVII, XVIII, XX, XXI, XXII, XXIII, XXIV, XXV, XXVI and XXVII as applicable for Sole Proprietor/Partnership firm/LLP/Registered Society & Trust /Limited Company/JV Firms as and when required by the DFCCIL for the verification. If the required documents are not submitted by the tenderer or any discrepancy between the scanned uploaded documents and original documents then the offer of the tenderer will be summary rejected and the action will be taken as per the various provisions of Affidavit to be submitted by the tenderer as per Annexure-II.

20.0 The Earnest Money deposited by the Contractor with his tender will be retained by the DFCCIL as part of security for the due and faithful fulfillment of the contract by the Contractor. The Security Deposit shall be 5% of the contract value.

20.1 Security Deposit may be deposited by the Contractor before release of first on account bill in cash or Term Deposit Receipt issued from Scheduled Bank, 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 DFCCIL 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.

Further, in case of contracts having value equal to or more than Rs. 50 crore (Rs Fifty crore) the Security Deposit may be deposited as Bank Guarantee Bond also, issued by a scheduled bank after execution of contract documents, but before payment of 1st on account bill. Provided further that the validity of Bank Guarantee Bond shall be extended from time to time, depending upon extension of contract granted in terms of Clause 17 of the Standard General Conditions of Contract.

Further, in case Security Deposit has been submitted as Term Deposit Receipt/Bank Guarantee Bond in full amount, the Earnest Money deposited by the Contractor with his tender will be returned by the DFCCIL.

Note: After the work is physically completed as certified by competent authority, Security Deposit recovered from the running bills of a Contractor can be returned to him, if he so desires, in lieu of Term Deposit Receipt/irrevocable Bank Guarantee for equivalent amount from Scheduled Bank, to be submitted by him.

As per Clause No. 16. (1) Part-II of GCC-2022, with up-to-date correction slip

20.2 **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 GM/S&T that DFCCIL has No Claim on Contractor and
- (c) Maintenance Certificate issued, on expiry of the maintenance period as per clause 50 (1), in case applicable.

As per Clause No. 51. (1) and 16.2(i) Part-II of GCC-2022, with up-to-date correction slip

20.3 **Forfeiture of Security Deposit:** Whenever the contract is rescinded as a whole under clause 62 (1) of GCC, the Security Deposit already with DFCCIL under the contract shall be forfeited. However, in case the contract is rescinded in part or parts under clause 62 (1) of GCC, the Security Deposit shall not be forfeited.

As per Clause No. 16.2(ii) Part-II of GCC-2022, with up-to-date correction slip

21.0 No interest shall be payable upon the Earnest Money and Security Deposit or amounts payable to the Contractor under the Contract, but Government Securities deposited in terms of Sub Clause 16. (4)(b) of GCC2022 with up to date correction slip will be payable with interest

accrued thereon.

As per Clause No. 16.3, Part-II of GCC-2022, with up-to-date correction slip

22.0 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 up to 60 days from the date of issue of LOA may be given by the Authority who is competent to sign the contract agreement. However, a penal interest of 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 DFCCIL, 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 DFCCIL shall be entitled to forfeit Earnest Money Deposit (if applicable as per para 5.1.2 above), and other dues payable against that contract subject to maximum of PG amount. In case a tenderer has not submitted Earnest Money Deposit 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..
- (i) A deposit of Cash;
 - (ii) Irrevocable Bank Guarantee;
 - (iii) Government Securities including State Loan Bonds at 5% below the market value;
 - (iv) Deposit Receipts, Pay Orders, Demand Drafts and Guarantee Bonds. These forms of Performance Guarantee could be either of the State Bank of India or of any of the Nationalized Banks;
 - (v) Guarantee Bonds executed or Deposits Receipts tendered by all Scheduled Banks;
 - (vi) Deposit in the Post Office Saving Bank;
 - (vii) Deposit in the National Savings Certificates;
 - (viii) Twelve years National Defense Certificates;
 - (ix) Ten years Defense Deposits;
 - (x) National Defense Bonds and
 - (xi) Unit Trust Certificates at 5% below market value or at the face value whichever is less. Also, FDR in favour of **CGM/DFCCIL-Ajmer** (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 up to 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 60days.
- (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/GM S&T shall not make claim under the Performance Guarantee except for amounts to which the President of India is entitled under the contract (not withstanding and/or without prejudice to any other provisions in the 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 GM/S&T/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 GM/S&T/Engineer.
 - (iii) The Contract being determined or rescinded under clause 62 of the GCC.

As per Clause No.16. (4), Part-II of GCC-2022, with up-to-date correction slip

23 MEASUREMENTS OF WORKS

23.1 Measurement of works by DFCCIL:

The contractor shall be paid for the works at the rates in the accepted Schedule or Rates and for extra works at rates determined under Clause 39 of these Conditions on the measurements taken by the Engineer/ GM/S&T or the Engineer's / GM/S&T's representative in accordance with the rules prescribed for the purpose by the DFCCIL. The quantities for items the unit of which in the accepted Schedule of Rates is 100 or 1000 shall be calculated to the nearest whole number, any fraction below half being dropped and half and above being taken as one, for items the unit of which in the accepted Schedule of Rates is single, the quantities shall be calculated to two places of decimals. Such measurements will be taken of the work in progress from time to time and at such intervals as in the opinion of the Engineer/ GM/S&T 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/GM/S&T or the Engineer's /GM/S&T'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/GM/S&T or the Engineer's / GM/S&T'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/ GM/S&T to be incorrect the Contractor shall be liable to pay the actual expenses incurred in measurements.

(As per Clause No. 45 (i), Part-II of GCC-2022, with up-to-date correction slip)

23.2 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 DFCCIL. 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/ GM/S&T.

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 notwithstanding 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 DFCCIL'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/GM/S&T 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/ GM/S&T 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/ GM/S&T shall recover liquidated damages equal to 10% of claimed gross bill value.
- (ii) On any next occasion of noticing any exaggerated/false measurement, DFCCIL 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) of Part-II of GCC 2022.

The detailed procedure for recording of measurements, provisional payment, test check, final payment etc. shall be as per para 1316 A of the Indian Railway Code for Engineering Department / DFCCIL policy.

As per Clause No. 45 (ii), Part-II of GCC-2022, with up-to-date correction slip

Note 'Contractor's authorized engineer' shall mean a graduate engineer or equivalent, having more than 3-year experience in the relevant field of construction work involved in the contract, duly approved by DFCCIL's GM/S&T/Ajmer.

As per Clause No. 1(1)(q), Part-II of GCC-2022, with up-to-date correction slip

23.3 **(Measurement of works by authorized representative) shall be applicable only for those contracts where specifically mentioned in additional special conditions of contract.**

24 **PAYMENT OF CONTRACTUAL WORKS-**

24.1 **"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/GM/S&T he has executed in terms of the contract. All payments due on the Engineer's/Engineer's Representative's /GM/S&T/ GM/S&T's representative's certificates of measurements or Engineer's/ GM/S&T'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 PART-II of GCC 2022, 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/ GM/S&T may by any certificate make any correction or modification in any previous certificate which shall have been issued by him and that the Engineer/ GM/S&T may withhold any certificate, if the works or any part thereof are not being carried out to his satisfaction.

As per Clause No. 46. (1) Part-II of GCC-2022, with up-to-date correction slip

24.2 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/ GM/S&T/ GM/S&T'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.

As per Clause No. 46(3) Part-II of GCC-2022, with up-to-date correction slip

24.3 Rounding off Amounts: - The total amount due on each certificate shall be rounded off to the nearest rupee, i.e. sum less than 50 paise shall be omitted and sums of 50 paise and more up to ₹1 will be reckoned as ₹ 1.

As per Clause No. 46.2 Part-II of GCC-2022, with up-to-date correction slip

25.0 Final Payment: On the Engineer's/GM/S&T's certificate of completion in respect of the works, adjustment shall be made and the balance of account based on the Engineer/GM/S&T or the Engineer's/GM/S&T's representative's certified measurements or Engineer's/GM/S&T's certified "contractor's authorized engineer's measurements" of the total quantity of work executed by the Contractor up to 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/GM/S&T enclosing either a full account in detail of all claims he may have on the DFCCIL in respect of the works or having delivered No Claim Certificate and the Engineer/GM/S&T 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 DFCCIL for or in the respect of damage or loss by from or in consequence of the works, have been satisfied agreeably and in conformity with the contract.

As per Clause No. 51. (1) of Part-II GCC-2022, with up-to-date correction slip.

25.1.1 INSTRUCTIONS OF MODE OF PAYMENT IN WORKS TENDERS OR SERVICE TENDER THROUGH LETTER OF CREDIT (LC)

25.1.2 For all the tenders having advertised cost of Rs. 10 lakh or above, the contractor shall have the option to take payment from DFCCIL /Railway through a letter of credit (LC) arrangement.

25.1.3 This option of taking payment through LC arrangement has to be exercised in IREPS (Indian Railway Electronic procurement System - the e-application on which tenders are called by DFCCIL/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.

- 25.1.4 The option so exercised, shall be an integral part of the bidder's offer.
- 25.1.5 The above option of taking payment through 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.
- 25.1.6 In case tenderer opts for payment through LC following shall be the procedure to deal release of payment through LC:
- (a) The LC shall be a sight LC,
 - (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.
 - (c) Union Bank Of India, Moti Bagh, New Delhi will be the branch for issue of LCs based on online requests received from DFCCIL Finance for tenders opened in financial year 2024-25. UBI branches where the respective DFCCIL Unit has its Account (local UBI 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.
 - (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 finalized by the Engineer in consultation with the contractor on the basis of expected progress of work.
 - (e) The LC terms and conditions shall inter-alia indemnify and save harmless the DFCCIL from and against all losses, claims and demands of every nature and description brought or recovered against the DFCCIL 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 DFCCIL on this account shall be considered as reasonable compensation and paid by contractor.
 - (f) The LC terms and conditions shall inter-alia provide that DFCCIL will issue a Document of Authorization (format enclosed as **Annexure- 'B'**) after passing the bill for completed work, to enable contractor to claim the authorized amount from their bank.
 - (g) The acceptable, agreed upon document for payments to be released under the LC shall be the Document of Authorization.
 - (h) The Document of Authorization shall be issued by the DFCCIL Finance Office against each bill passed by DFCCIL.
 - (i) On issuance of Document of Authorization, a copy of Document of Authorization shall be posted on IREPS for download by the contractor. A digitally signed copy of Document of Authorization shall also be sent by DFCCIL Finance Office to DFCCIL's bank (Local UBI Branch).
 - (j) The contractor shall take print out of the Document of Authorization 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.
 - (k) The payment against LC shall be subject to verification from DFCCIL's Bank (Local UBI Branch).
 - (l) The contractor's bank (advising bank) shall submit the documents to the DFCCIL's Bank (Local UBI Branch).
 - (m) The DFCCIL's bank (issuing bank) shall, after verifying the claim so received with reference to the digitally signed Document of Authorization received from DFCCIL Finance Office, release the payment to contractor's bank (advising bank) for crediting the same to contractor's

account.

- (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.
- (o) The LC shall be closed after the release of final payment including PVC amount, if any to the contractor.
- (p) The release of performance guarantee or security deposit shall be dealt directly by DFCCIL with the contractor i.e., not through LC.

26.0 For opening of LC, executive department shall make a request letter to concerned Finance Department on a format, placed as **Annexure-‘A’**.

26.1 GUIDELINES FOR ELECTRONIC REVERSE AUCTION FOR WORKS, SERVICE CONTRACTS:

- a) Selection criteria for tender cases of Works and Services proposed through Reverse Auction (eRA) route:
- b) Following method of purchase through Reverse Auction shall be adopted for Works and Service tenders valued more than Rs. 50 Cr. in each case.
- c) The process of procurement through Reverse Auction shall be followed only in case of tenders where there are at least three technically eligible offers.

26.2 Financial Bids in single currency/parameter only shall be allowed.

- a) Procedure for award of contracts through Reverse Auction
- b) The procedure discussed herein shall be fully implemented through IREPS. Any reference to Reverse Auction in these instructions shall imply–RA.
- c) Conduct and reporting of Reverse Auction shall be as per **Annexure-C**.

26.2.1 The essential technical and commercial parameters will be specified in a transparent manner in the tender document. No deviation to such essential Technical & Commercial conditions shall be permitted to the tenderer(s) in the electronic bid form.

a) **Technical Bid and Initial Price Offer:**

- b) In case of Works and Services related tenders, e-RA shall be adopted only for those cases where evaluation is on the basis of single parameter/currency.
- c) Bidder shall be simultaneously required to electronically submit a Technical & Commercial Bid and Initial Price Offer. The offers found eligible for award of contract/meeting eligibility criteria shall be categorized as Qualified for Award of Contract for the purpose of e-RA.
- d) Offers not complying with essential technical & commercial requirements of the tender shall be declared as Ineligible for award of contract.

26.2.2 Initial Price Offer of only those bidders categorized as Qualified for Award of contract shall be opened and tabulated by system separately.

a) **Financial Bid**

Financial Bid shall comprise of Final Price Offer obtained through Reverse Auction. Following conditions and procedure shall be followed in selection of bidders for conduct of Reverse Auction:

- b) Selection of vendors for Reverse Auction for award of Contract in Works and Services tenders:

Number of tenderers Qualified for Award Of contract/ Bulk	Number of tenderers to be selected for Reverse Auction.	Remarks

order		
< 3	NIL*	The bids disallowed from participating in the Reverse Auction shall be the highest bidder(s) in the tabulation of Initial Price Offer. In case the highest bidders quote the same rate, the Initial Price Offer received last, as per time log of IREPS, shall be removed first, on the principle of last in first out, by IREPS system itself.
3 to 6	3	
More than 6	50% of Vendors Qualified for Bulk Order/ award of contract (rounded off to next higher integer).	

Note:

- (i)* If the number of tenderers qualified for Award of Contract is less than 3 RA shall not be done and tender may be decided on the basis of Initial Price Offer(s).
- (ii) Make in India criteria: All bidders eligible for benefits under Public Procurement (Preference to Make in India) Order – 2017, found Qualified for Award of Contract and are within the specified range of price preference of lowest Initial Price Bid shall be permitted to participate in the Reverse Auction, irrespective of their interse ranking on the basis of Initial Price Bid. Such bidders shall be over and above the number of vendors selected for Reverse Auction, as per Para 26.2.2 above. During Reverse Auction process, bidders shall not be allowed to bid a rate higher than the lowest Initial Price Offer.

Annexure-‘A’

(Clause No 25.1.1 General Instructions to Tenderers)

Request letter from Executive branch to Finance Office for opening of LC

Office of DFCCIL

No.....

Date.....

The CGM,
DFCCIL-Ajmer.

Sub: Opening of LC

Ref: Supply Order / Contract Agreement No.

It is requested to open a sight LC against the above referred or 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 CGM/Ajmer.

(Signature)

Name.....

Designation.....

(Official Seal)

(Clause No. 25.1.6(f) of General Instructions to Tenderer)

LCDA No. (18 DIGIT IPAS GENERATED NO.)

Dated:

DOCUMENT OF AUTHORIZATION

Reference: (i) Works Contract/ Supply Contract No.....dated.....

(ii) Inland Letter of Credit No..... Dated.....

This document is issued against contract No.....(FROM IREPS)

..... DATED..... FOR WORK OF

(DESCRIPTION OF WORK FROM IREPS)

The beneficiary of the aforementioned Letter of Credit M/s (NAME AND VENDOR CODE)..... (Vendor Code..... as per IREPS) Is entitled to receive payment aggregating INRSSS (FROM ABSTRACT OF BILL PASSED) ... Out of total LC amount of INR Against the first/second* commercial Invoice No. Dated..... for INR raised against the above contract from Union Bank of India..... 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: sass.....

LC balance after this payment:

(Signature of authorized DFCCIL authority)

Name

Designation

Official Seal

(Clause No. 26.2.2(a) of General Instructions to Tenderers)

Procedure for Conduct and Reporting of R.A.

1. The tendering authority shall solicit bids through an invitation to the electronic Reverse Auction to be published or communicated in accordance with the provisions similar to procurement.
2. Depending upon the nature of item/work/service and complexity of case on hand, following shall be indicated in the tender for e-RA itself.
 - (a) Initial e-RA period: This shall be the initial time interval for e-RA, e-RA shall be open for this duration.
 - (b) Auto extension period: In case any offer is received in the time period equal to auto extension period before close of initial e-RA period, the e-RA shall be extended for time equal to auto extension period from the time of last bid. There shall be no upper limit on number of auto extensions. When no offer is received in the last auto extension period, e-RA shall close.
 - (c) Minimum decrement in percentage of value of the last successful bid.
3. Date and time for start of e-RA shall be communicated to qualified tenderers by the convener after evaluation of the Technical Bids.
4. After submission of Initial Price Bid, tenderers will not be allowed to revise the taxes and other levies.
5. During auction period, identities of the participating tenderers will be kept hidden.
6. Minimum admissible bid value will be last bid value minus minimum decrement as specified by the tendering authority before starting of reverse auction.
7. Starting point for reverse auction shall be the lowest initial Price Bid of the Tenderer eligible for award of contract.
8. After close of the RA, tabulation of last (minimum) bids received from all the tenderers will be generated and made visible to DFCCIL and participating tenderers. DFCCIL users can also view the bidding history in chronological order.
9. Bidders not be allowed to withdraw their last offer.
10. L-1 will be defined as the lowest bid obtained after the closure of R.A. session for Goods Works and Services tenders.

ANNEXURE –D

(Reference -Para 10.3 & 17.15.3 of Tender Form (Second Sheet) of Annexure I of ITT of GCC 2022)

TENDERER'S CREDENTIALS (BID CAPACITY)
_____ DFCCIL

For tenders costing more than Rs 20 crore wherein eligibility criteria includes bid capacity also the tenderer will be qualified only if their 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. (Annexure XIX)

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

B = Existing commitments and balance amount of ongoing works with the tenderer as per the prescribed proforma of Railway/DFCCIL 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 the tender. (Annexure V)

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.

SPECIAL CONDITIONS OF CONTRACT (GENERAL)

- 1.0 These special conditions and the work schedule shall govern the works to be executed under this contract in addition to and/or in part supersession of the General Conditions of Contract-2022 and Standard Specifications as laid down in the Indian Railways Unified Standard Specifications (Works and Material) -2010 / 2020, CPWD Specifications 2019 Vol I & II as amended/ updated by correction Slips on or before the opening of tender. **As per Clause No. 1.01 Part-I of GCC-2022, with up-to-date correction slip**
- 2.0 **Order of Precedence of Documents:** In a tender/contract, in case of any difference, contradiction, discrepancy, with regard to Conditions of tender/contract, Specifications, Drawings, Bill of quantities etc., forming part of the tender/contract, the following shall be the order of precedence:
 - i) Letter of Award
 - ii) Schedule of Items, Rates &Quantities
 - iii) Special Conditions of Contract
 - iv) Technical Specifications as given in tender documents
 - v) Drawings
 - vi) Indian Railways Standard General Conditions of Contract
 - vii) Indian Railways Unified Standard Specifications (Works and Material) updated with correction slips issued up to date of opening of tender
 - viii) IR Specifications/Guidelines
 - ix) Relevant B.I.S. Codes

As per Clause No. 1.01 Part-I of GCC-2022, with up-to-date correction slip

- 3.0 Any special condition stated by the tenderer(s) in the covering letter submitted along with the tender shall be deemed as part of contract to such extent only as have explicitly been accepted by the DFCCIL.

4.0 USE OF DFCCIL LAND

- 4.1 Use of DFCCIL land required by the contractor(s) for constructing temporary offices, quarters, hutments etc. for the staff and for storing materials etc. would be permitted to him/them free of charge by DFCCIL, if available. The location of these offices, hutments, stores etc., will be subject to the approval of the engineer or his authorized representative.

The land will be restored to DFCCIL by the contractor(s) in the same condition as when taken over or in vacant condition as desired by the engineer, after completion of the work or at any earlier day, as specified by the Engineer. The failure to do so will make the contractor(s) liable to pay the cost incurred by the DFCCIL for getting possession of land.

- 4.2 The tenderer(s) shall also acquaint himself /themselves with the availability of land, working space for his/their works etc. The DFCCIL will not acquire any land for the purpose of movement of vehicles of the Contractor/s for executing the work by the contractor/s.

5.0 USE OF PRIVATE LAND

The Contractor will have to make his/their own arrangements for use of private land, outside DFCCIL limits for due fulfillment of contract or for borrow pits, approaches, etc., directly with the land owners or local authority and to pay such rents if any as are payable as may be mutually agreed upon between them.

6.0 FIGURES, DIMENSIONS ETC.

Figures, dimensions and drawings shall supersede measurements by scale and drawing to larger scale shall take precedence over those to a smaller scale. Special dimensions or directions in the specification shall supersede all else.

7.0 PLEA OF CUSTOM

The plea of custom prevailing will not on any account be permitted as excuse for an infringement of any of the conditions of the contract or specifications

8.0 TAXES

The accepted rates should be deemed to include all taxes direct or indirect Including

Income Tax leviable under Central/State or Local Bodies Act or Rules, Octrois, Tolls, Royalties, Seigniorages, Cess and similar imposts that may be prevailing from time to time in respect of land, structures and all materials supplied in the Performance of this Contract.

9.0 The Building and Other Construction workers (Regulation of Employment and conditions of service) Act, 1996 and the Building and Other Construction Workers Welfare Cess Act, 1996: The tenderers for carrying out any construction work must get themselves Registered with the Registering Officer under section 7 of the "Building and other construction workers act, 1996" and rules made there to by the concerned state Govt. and submit certificate of Registration issued from the Registering Officer of the concerned State Govt. (Labour Department). The Cess shall be deducted from contractor's Bills as per provision of Act.

10.0 DEDUCTION OF INCOME TAX AT SOURCE

In terms of new section 194 inserted by the Finance Act 1972 in the Income Tax Act 1961, the DFCCIL shall at all the time arranging payment to the contractor sub-contractor (in case of sub-contractor only when the DFCCIL responsible for payment of the consideration to him under the contract) for carryout any work (including supply of labour for carryout the work under the contract) be entitled to deduct income tax at source or income comprised in the sum of such payments. The deduction towards income tax to be made at source from the payments due to non-residents shall continue to be governed by section 195 of the Income Tax Act, 1961.

11.0 ROYALTIES AND PATENT RIGHTS

The contractor shall defray the cost of all royalties, fees and payment in respect of patents, patent rights and licenses which may be payable to patentee, license or other person or corporation and shall obtain all necessary licenses. In case of any breach (whether willfully or inadvertently) by the contractor of this provision, the contractor shall indemnify the DFCCIL and its officers, servants, representatives against all claims, proceedings, damages, cost, charges, acceptance, loss and liability which they or any of them, may sustain, incur or be put to by reason or inconsequence of directly or indirectly or any such breach and against payment of any royalties, damages or other monies which the DFCCIL may have to make to any person or paid in total to patent rights in respect of the users of any machine, instrument, process, articles, matters of thing constructed, manufactured, supplied or delivered by the contractors to his order under this contract.

12.0 NOTICE TO PUBLIC BODIES

The Contractor(s) shall give to the municipality, police and other authorities all notices that may be required by law and obtain all requisite licenses for temporary obstructions, enclosures and pay all fees, taxes and charges, which may be leviable on account of his operations in

executing the contract. He should make good any damage to adjoining premises whether public or private and supply and maintain any lights, etc., required at night.

13.0 **DAMAGE BY ACCIDENTS, FLOODS OR TIDES**

The contractor shall take all precautions against damage from accident, floods or tides. No compensation shall be paid to the contractor for his plant or material lost or damaged by any cause whatsoever. The contractor shall make good the damages at his cost to any structure or part thereof by any cause during the course of the work.

15.0 **SERVICE ROADS**

The Contractor/s will be permitted to make use of existing service roads, or service roads constructed by the DFCCIL for its use free of cost. New service roads required by the contractor/s either near the work site or elsewhere within or outside DFCCIL limits for carriage of materials or for any other purpose whatsoever, will have to be constructed and maintained by the contractor/s at his/their own cost. For the purpose of construction of service roads on Railway land, permission will be given free of charge.

If any land other than railway land is necessary to be acquired or to be entered upon, permission to enter in the land will have to be arranged by the contractor/s at his/ their cost. The contractor/s will not prefer any claim, whatsoever on this account. The Railway, however, reserves the right to make use of such service roads as may be constructed by the contractor/s without payment of any charges.

16.0 **EMERGENCY WORKS**

In the event of any accident or failure occurring in, on or about the work or arising out of or in connection with the construction, completion or maintenance of the works, which in the opinion of the Engineer requires immediate attention, the DFCCIL may bring its own workmen or other agency to execute or partly execute the necessary work or carry out repairs if the Engineer considers that the contractor/s is/are not in a position to do so in time and charge the cost thereof, which will be determined by the CGM/Ajmer , to the contractor.

17.0 **Maintenance of Works:**

17.1 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 DFCCIL or other persons legally entitled thereto whenever required by the Engineer so to do, all losses, damages, costs and expenses they or any of them may incur or be put or be liable to by reasons or in consequence of the operations of the Contractor or of his failure in any respect.

(As per Clause No. 47 Part-II of GCC-2022, with up-to-date correction slip)

17.2 **Certificate of Completion of Works:** As soon as in the opinion of the Engineer/GM/S&T, the work has been completed and has satisfactorily passed any final test or tests that may be prescribed, the Engineer/GM S&T 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 DFCCIL against the contract concerned. The Engineer /GM S&T 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/GM/S&T and occupied or used by the DFCCIL. When any such certificate is given in respect of part of a work, such part shall be considered as completed and the period of maintenance of such part shall commence from the date of completion mentioned in the completion certificate issued for that part of the work.

As per Clause No. 48(1) Part-II of GCC-2022, with up-to-date correction slip

17.2.1 **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/GM/S&T 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/GM/S&T 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 DFCCIL/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/GM/S&T 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.

As per Clause No. 40A Part-II of GCC-2022, with up to date correction slip

17.3 **Final Supplementary Agreement:** After the work is completed or otherwise concluded by the parties with mutual consent and taken over by the DFCCIL as per terms and conditions of the contract agreement and there is unequivocal no claim on either side under the contract other than mentioned in item 4 of Annexure XIV, the parties shall execute the final supplementary agreement as per Annexure XIV of the GCC2022

As per Clause No. 48(3) Part-II of GCC-2020, with up-to-date correction slip

17.4 **MAINTENANCE PERIOD**

(a) For Supply, consultancy and hiring items. The maintenance period is limited to date of completion of work.

All works other than mentioned in clause 17.4 (a) above,

(b) The tenderer(s) shall be required to maintain the work effectively for a period of one year from the date of completion **as per Clause 47** of the General Conditions of Contract -2022 and no part refund of Security Deposit shall be permitted during the maintenance period mentioned above.

17.5 **Maintenance Certificate:** The Contract shall not be considered as completed until a Maintenance Certificate, if applicable shall have been signed by the Engineer/GM/S&T stating that the works have been completed and maintained to his satisfaction. The Maintenance Certificate shall be given by the Engineer/GM/S&T 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/GM/S&T, and full effect shall be given to this Clause notwithstanding the taking possession of or using the works or any part thereof by the DFCCIL.

The Competent Authority to issue above Maintenance Certificate shall normally be the authority who is competent to sign the contract. 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 DFCCIL against the contract concerned.

(As per clause No. 50(1) Part-II of GCC-2022, with up-to-date correction slip)

18.0 INSTRUCTIONS/DIRECTIVES OF THE ENGINEER'S REPRESENTATIVE

- 18.1 The contractor shall at all times, execute the contract work only in the presence and under the supervision of the Engineer's Representative or a DFCCIL employee specifically appointed on his behalf. No work under the contract shall, therefore, be commenced by the contractor without the express permission of the Engineer's representative.
- 18.2 The contractor shall always execute the work under this contract in strict compliance with the instructions/directives by the Engineer's/ GM/S&T's representative. Any act of non-compliance with the instruction/directives issued by the Engineer's/GM/S&T's representative shall be considered as a default of the contractor where after the DFCCIL shall be free to take further appropriate action as provided in the contract for dealing with such defaults of the contractors. The decision of the Engineer-in-charge/ GM/S&T whether there has been an act of noncompliance with the instruction/directives of the Engineer's / GM/S&T's representative for the purpose of this clause shall be final and conclusive.
- 18.3 The instructions/directives by the Engineer's/GM/S&T's representative shall not, however, absolve the contractor of his responsibility or reduce his responsibility in any manner whatsoever in regards to maintaining at all times the safe working conditions at the work site.
- 18.4 Any instructions or approval given by the Engineer's/GM/S&T's representative to Contractor in connection with the works shall bind the Contractor as though it had been given by the Engineer/GM/S&T provided always as follows:
- (a) Failure of the Engineer's/GM/S&T's representative to disapprove any work or materials shall not prejudice the power of the Engineer/GM/S&T 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.

As per Clause No. 21.0 Part-II of GCC-2022, with up-to-date correction slip

19.0 NON-COMPLIANCE WITH THE INSTRUCTIONS / DIRECTIVES OF THE ENGINEER'S REPRESENTATIVE

- 19.1 The contractor shall always comply with the instructions/directives issued by the Engineer's/ GM/S&T's representative from the time to time. In the event of any non-compliance with such instructions/directives, apart from and in addition to other remedies available to the DFCCIL as specified herein above the Engineer's/GM/S&T's representative may employ at the works DFCCIL's workmen with necessary equipment as considered appropriate and adequate by him to provide the requisite conditions for the safe and unhampered movement of DFCCIL traffic. The decision of the Engineer's/GM/S&T's representatives in regard to the need of appropriateness and adequacy of the deployment of the DFCCIL Workmen with necessary equipment shall be final and conclusive.
- 19.2 When the DFCCIL workmen with necessary equipment are deployed in the above manner, recovery at the following rate shall be made from the contractor's dues under this contract or any other money of the contractor available with the DFCCIL under this contract. The recovery for the total DFCCIL Workmen Hours employed at the rate of Rs. 100/- (Rupees Hundred only) per Workmen-Hour irrespective of the type and grade of the DFCCIL Employee actually employed. The aggregate period of the Workman-Hours for the above recoveries shall be reckoned from the time the DFCCIL Workmen are actually deployed at the work site till the

work is completed to the satisfaction of the Engineer's/GM/S&T's Representative whose decision in this regard shall be final and conclusive.

19.3 During the above-mentioned period of suspension of work, the contractor shall not in any manner attempt to carry out any work at the work site. Any such attempt of the contractor shall be deemed to be an unauthorized work on the work site. For such acts, the contractor shall then be liable for further appropriate action under the relevant provisions of the Indian Railway Act.

20.0 **WARRANTY**

The Contractor(s) shall warrant the materials supplied under this contract to be free of any defects in material and workmanship under ordinary use and warranty should be of 3yrs from date of commissioning.

21.0 **SHIFTING OF ELECTRICAL/TELEGRAPH WIRES**

In some stretches, high-tension grid towers /electric telegraph/telephones wires or posts etc. are to be shifted. It is expected that the electric lines/towers will be shifted in good time but in case, there is any delay on this account suitable extension in date of completion will be considered and given to the contractor for only the effected portion and no compensation whatsoever in this respect or due to the delay thus caused will be payable and contractor has to adopt such methods of execution of earthwork so as not to cause any damage to existing structure lines etc.

22.0 **HANDING OVER OF SITE FOR WORK**

The entire land required for this work is available. However, DFCCIL may not hand over the entire land required for completion of this work for making bank/cutting or excavation to the contractor(s) due to any unavoidable reasons. Land may be handed over in different stretches, which may not be continuous. Contractor(s) will be required to carry out the work in available stretches. If some stretch of land cannot be handed over to the contractor for borrowing earth or making bank/cutting within the contract period then suitable extension will be granted only for the affected portion without any payment of extra claim to the contractor.

23.0 **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. (**Authority Clause No. 23 Part-II of GCC-2022, with up-to-date correction slip**)

24.0 **MODE AND TERMS OF PAYMENT**

24.1 All payments will normally be made only for finished works on the basis of mode and terms of payments agreed upon and provided in the contract.

24.2 **MANNER OF PAYMENT**

Payment to the contractor will be made through Electronic Fund Transfer (EFT) for payment of running and final bills. The tenderer (s) will also fill the **Annexure-I** indicating the bank account number, name of bank and bank specific code number (MICR/IFSC) as enclosed.

The conditions and **Annexure-I** will be part of the tender document.

24.3 For the contractor (other than certain exempted categories) having aggregate turnover more than Rs. 5 crores in any one of the proceeding financial in last three years shall comply with E-invoicing provision and thus any e-invoice issued by such suppliers shall mandatorily have a Quick Response code (Q.R.) encompassing the requisite particulars. (Authority: Rly Bd's letter No. 2016.AC/II/01/06/CRIS dated 17.12.2020)

25.0 **ACCIDENT/NATURAL CALAMITIES**

25.1 Vehicle and equipment of the contractor can be drafted by DFCCIL Administration in case of

accidents/natural calamities involving human lives.

25.2 For payment purpose, the item may be operated as New Non-Schedule (NS Item) as per existing norms and powers delegated.

25.3 Contractor may submit list of vehicles and equipment available with him.

26.0 **MOBILIZATION ADVANCE** (For Contract Value Rs. 25 Crores and Above)

26.1 Stage-I: -5% of Contract Value on signing of the contract agreement.

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

The 1st stage of advance shall be payable immediately after signing of contract documents. The 2nd stage of advance shall be payable at the time of mobilization, after submission of a utilization certificate by the contractor that the Stage 1 advance has been properly utilized in the contract.

26.2 The advance shall carry an interest at the rate to be decided by Railway Board /DFCCIL and communicated at the beginning of every financial year, to be applicable for the tenders to be opened in that financial year.

26.3 The Mobilization Advance Clause shall be restricted only for high value tenders of Rs. 25 crore and above.

26.4 The Mobilization Advance except, those against machineries and equipment's shall be payable against an irrevocable Bank Guarantee (Bank Guarantee, FDRs, KVPs, NSCs) of at least 110% of the value of sanctioned advance amount (covering principal plus interest). The bank guarantee shall be from a Nationalized Bank in India of State Bank of India in a form acceptable to the DFCCIL.

(a) **For works costing less than Rs. 50.00Crore**

The mobilization shall be granted against irrevocable bank guarantee which will be released only after full Mobilization advance with interest will be recovered.

(b) **For works costing Rs. 50.00 Crore &above.**

Mobilization advance can be granted against several bank guarantees. Individual Bank Guarantee can be refunded after the amount mentioned in the part B.G. has been recovered along with interest. BG will not be accepted in more than 5 parts. However, amount of each BG shall not be less than Rs. 1Cr.

26.5 **Method of Recovery of Interest**

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 affected) 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.

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;

26.6 **Advances for accelerating progress of the work during course of execution of Contract-**

This advance is to be decided on the merits of each case and shall be restricted to a maximum of 5% of contract value. This is to be granted by the CGM/Ajmer for contracts where the progress of the contract work has been as per milestones/targets laid down and no extension to date of completion of the contract has been given on contractor's account.

26.7 **Advances in Exceptional Cases –**

The power to grant advances in exceptional cases upto a maximum of Rs. 20 lacs in respect of

even contracts of value less than Rs. 25 crores, considered absolutely essential, depending on the merits of each case and circumstances in each situation, lies with CGM/Ajmer. **Advance Correction slip no 56 for Indian railway Code for Engineering Department dated 05.03.2019.**

27.0 STAGE PAYMENT ON SUPPLY OF STEEL IN WORKS CONTRACT (For contract value Rs. 15.00 crores & above)

Stage payment for steel physically brought by the contractor to the site (even before its actual use in work) can be made subjected to following conditions:

- (i) The material shall be strictly in accordance with the contract specifications.
- (ii) The material shall be delivered a site and properly stored under covered sheds in measurable stacks.
- (iii) The quantities of materials shall be brought to the site only in such installments that would facilitate smooth progress of work and consumed in reasonable time.
- (iv) Proper accountal in the material register to be maintained in the prescribed format at the site for the receipt and use of the material.
- (v) Ownership of such material shall be deemed to rest with the Railways for which the contractor should submit an indemnity bond in prescribed format.
- (vi) Before releasing the stage payment, the contractor shall insure the material at his own cost in favour of DFCCIL against theft, damages, fire etc.
- (vii) Stage payment in all such cases shall not be more than 75% of the rate of steel awarded in the contract. The balance payment shall be released only after the material is actually consumed in the work.
- (h) The price variation claim for steel would continue to be governed as per extant PV clause and with reference to delivery at site.

28.0 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

As per Clause No. 17(c) Part-II of GCC-2022, with up-to-date correction slip

29.0 Contractor shall provide suitable manpower to Engineer in Charge /GM/S&T or his representative at all times during currency of the contract for assisting him in giving layout of work, carrying out quality checks, taking measurements and other associated activities for effective supervision of work.

30.0 DEPLOYMENT OF QUALIFIED ENGINEERS AT WORK SITES BY THE CONTRACTOR (As per Clause No.26-A of G.C.C. 2022 Part-II with up-to-date correction slip)

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

30.2 In case the contractor fails to employ the Engineer, as aforesaid in Para 30.1, he shall be liable to pay liquidated damages at the rates, as prescribed in the tender document penalty at the rates, as may be prescribed by the DFCCIL/Ministry of Railways (Para 30.4) through separate instructions from time to time for the default period for the provisions, as contained in Para

30.1.

30.3 No. of qualified Engineers required to be deployed by the Contractor for various activities contained in this works contract shall be as under:

- (i) For tenders costing below Rs.50.00 Cr.
 - 1) Graduate Engineer – Minimum 1Nos.
 - 2) Diploma Engineer – Minimum 1Nos.
- (ii) For tenders costing Rs.50.00 Cr. and above.
 - 1) Graduate Engineer – Minimum 2Nos.
 - 2) Diploma Engineer – Minimum 2Nos.

30.4 In case the contractor fails to employ the Qualified Engineer, as aforesaid in Para 30.1 above, he, in terms of provisions of Clause 30.2 to the Conditions of Contract, shall be liable to pay an amount of Rs. 40,000/- and Rs. 25,000/- for each month or part thereof for the default period for the provisions, as contained in Para 30.3 above respectively.

31.0 **PRICE VARIATION CLAUSE: Not Applicable in this Tender**

(As per Clause No. 46 A of GCC 2022 with up-to-date correction slip)

For this contract, the PVC shall be paid as Contract as mentioned in 46A-7 of part II-of GCC-2022 for calculation of price variation. ****Applicability**

Price Variation Clause (PVC) shall be applicable only in tender having advertised value above Rs. 2 Crores. 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/DFCCIL 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 2022, unless applicability of PVC and 'Base Month' has been specially agreed, while fixing the rates of such extra item(s).

For calculation of price variation, cut-off date quarter for running bills/final bills will be as under:

- (a) In case of running bill, the date of measurement recorded in MB, shall be considered. If measurement date are more than one, then 1st date of measurement recorded in MB will be considered.
- (b) In case of final bill, the date of completion or 1stdate of measurement recorded in MB, whichever is earlier, will be considered.
- (c) **Base Month:** Clause No. 46-A.2 of GCC-2022, with up-to-date correction slip. The Base Month for 'Price Variation Clause' shall be taken as 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.

(d)

Validity: (Clause No. 46-A.3 of GCC-2022, with up-to-date correction slip)

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

- i. Payment/recovery for increase/decrease in GST on works contract or imposition/removal of any tax/cess on Works Contract as per Clause37 of Part-II of Standard General Condition of Contract 2022

- ii. Payment/recovery for overall market situation as per Price Variation Clause given hereunder.
(As per Clause No. 46 A of part II of GCC 2022 with up-to-date correction slip)
*Note**- the concerned field unit shall clearly specify the type of contract in which the PVC shall be payable for the particular tender, at the time of processing the NIT itself.*

32.0 **Communications to be in Writing:**

All notices, communications, reference and complaints made by the DFCCIL or the Engineer/GM/S&T or the Engineer's/GM/S&T's Representative or the Contractor inter-se concerning the works shall be in writing or email 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. **(As per Clause No. 4 Part-II of GCC-2022, with up-to-date correction slip)**

33.0 **Assignment or subletting of the contract: (As per Clause No. 7 Part-II of GCC-2022, with up-to-date correction slip)**

In case contractor intends to subcontract part of work, he shall submit a proposal in writing seeking permission of GM/S&T for the same. While submitting the proposal to DFCCIL, 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 DFCCIL 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 DFCCIL.

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/DFCCIL.

(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/ GM/S&T.

(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/GM/S&T.
- (f) The Contractor shall indemnify DFCCIL against any claim of subcontractor.
- (g) The Contractor shall release payment to the Sub-contractor(s) promptly and shall endeavor 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.

33.0 VARIATION IN EXTENT OF CONTRACT–

- (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 earth work 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).

(As per Clause No. 42 (2)(i) Part-II GCC-2022, with up-to-date correction slip)

34.1 Rates for Extra Items of Works:

- (a) Standard Schedule of Rates (SSOR) Items: Any item of work carried out by the Contractor on the instructions of the Engineer/ GM/S&T 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)"/ "Schedule of Rates of DFCCIL" modified by the tender percentage as accepted in the contract for that chapter of Standard Schedule of Rates (SSOR).

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/GM/S&T and Contractor, in as short a period as possible after the need for the special item has come to the notice. In case the Contractor fails to attend the meeting after being notified to do so or in the event of no settlement being arrived at, the DFCCIL shall be entitled to execute the extra works by other means and the Contractor shall have no claim for loss or damage that may result from such procedure.

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)" / "Schedule of Rates of DFCCIL"

ii. Analysis of Rates for “Delhi Schedule of Rates issued by CPWD (DSR)”

iii. Market Analysis

As per Clause No. 39. (1) Part-II GCC-2022, with up to date correction slip

35.0 EXTENSION OF TIME WITH LIQUIDATED DAMAGE (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 of **Part-II of GCC-2022**, the DFCCIL may, if satisfied that the works can be completed by the Contractor within reasonable short time thereafter, allow the contractor for further extension of time (Proforma at Annexure-VII) as the Engineer may decide. On such extension the DFCCIL will be entitled without prejudice to any other right and remedy available on that behalf, to recover from the Contractor as agreed damages and not by way of penalty for each week or part of the week, a sum calculated at the rate of Liquidated Damages as decided by the Engineer/GM/S&T between 0.05% to 0.30% of 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 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.

Provided further, that if the DFCCIL is not satisfied that the works can be completed by the Contractor and in the event of failure on the part of the contractor to complete the work within further extension of time allowed as aforesaid, the DFCCIL shall be entitled without prejudice to any other right or remedy available in that behalf, to appropriate the contractor's Security Deposit and rescind the contract under Clause 62 of **Part-II of GCC-2022** Standard General Conditions of Contract, whether or not actual damage is caused by such default.

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.

As per Clause No. 17(B) Part-II of GCC 2022 with up to date correction slip

36.0 Quarterly Statement of Claims: The Contractor shall prepare and furnish to the Engineer/GM/S&T 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/GM/S&T 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.

As per Clause No. 43(1) Part-II GCC-2022, with up to date correction slip

37.0 Settlement of disputes – Indian Railway Arbitration & Conciliation Rules

37.1 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 " GM/S&T" or "CGM, DFCCIL Ajmer" 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/GM/S&T. GM/S&T or CGM, DFCCIL Ajmer 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/ GM/S&T, 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.

As per Clause No. 63 Part-II of GCC 2022, with up to date correction slip

- 37.2 **Matters Finally Determined by the DFCCIL:** All disputes and differences of any kind whatsoever arising out of or in connection with the contract, whether during the progress of the work or after its completion and whether before or after the determination of the contract, shall be referred by the Contractor to the CGM/Ajmer and the CGM/Ajmer 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 2022 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 DFCCIL authority, thereon shall be final and binding on the Contractor; provided further that 'excepted matters' shall stand specifically excluded from the purview of the Dispute Adjudication Board (DAB) and Arbitration.

As per Clause No. 63.1 Part-II of GCC-2022, with up-to-date correction slip

37.3 **DEMAND FOR ARBITRATION**

Demand for arbitration shall be govern and deal as per clause No. 64 Part-II of GCC-2022, with up-to-date correction slip. Subject to the provisions of the aforesaid Arbitration and Conciliation (Amendment) Act 2021 and the rules there under and any statutory modifications thereof shall apply to the arbitration proceedings under this clause.

- (i) Provision of Clauses 63 and 64 of the General Conditions of contract will be applicable only for settlement of claims of disputes between the parties for values less than or equal to 20% of the original value of the contract agreement and when the claims and disputes are of value more than 20% of the original value of the contract agreement, provisions of Clauses 63 & 64 and other Clauses of the General Conditions of Contract will not be applicable and arbitration shall not be a remedy for settlement of such disputes.
- (ii) The contractor shall not be entitled to ask for reference to arbitration before the completion of the work assigned to him under this contract. The contractor shall seek reference to arbitration to settle the disputes only once within the ambit of condition (i) above.
- (iii) These special conditions (i) & (ii) above shall prevail over existing Clauses 63 and 64 of the "General Conditions of the Contract".
- (iv) If there is any dispute arisen between the parties with respect to this agreement, then any

application or suit shall be initiated only in the court with the local limits, falling under the jurisdiction of the CGM/Ajmer and both the parties shall be bound by this clause.

- (v) For settlement of disputes between one Government Departments and the other or between the Government Department and Public Sector undertaking the following special conditions shall be applicable. “In the event of any dispute or difference between the parties hereto, such dispute or condition shall be resolved amicably by mutual consultation through the good offices of empowered agencies of the Government. If such resolution is not possible, then the unresolved dispute or difference shall be referred to arbitration of an arbitrator to be nominated by Secretary, Department of Legal Affairs (Law Secretary) in terms of office Memorandum No.55/3/1/75/CF dated 19-12-75 issued by the Cabinet Secretariat (Department of Cabinet Affairs) as modified from time to time. The arbitration and Conciliation Amended Act 1996 (amendment 2021), or the arbitration clause contained in the General Conditions of Contract shall not be applicable to the arbitration under this clause. The award of the Arbitrator shall be binding upon parties in the dispute, provided however; any party aggrieved by such award may make further reference for setting aside or revision of the award to Law Secretary whose decision shall bind the parties finally and conclusively”.

38.0 HANDLING VITIATION DURING VARIATION IN CONTRACT QUANTITIES

In partial modification of existing instructions, it has been decided that as a result of variations, a contract shall be considered “vitiating” only when, the following percentage variation in contract value between tenderers are noticed to have been exceeded.

SN	Value of contract	Percent diff bet. Present contractor and new L1 as a result of variation. (Percentage shall be calculated with base as the revised contract quantities multiplied by the rates of the present contractor).
1.	Small value contracts (Tender value less than Rs. 50 lakh)	10
2	Other than small value contracts (Tender Value equal to or more than Rs. 50 lakh).	5

- 38.1 When the percentage difference between present Contractor and new L-1 is noticed as becoming beyond the values specified above, the following action shall be taken.
- 38.1.1 The railway administration should immediately examine whether it is practicable to bring in a new agency to carry out the extra quantity of work keeping in view the progress of the work in accordance with the original contract and the nature and layout of the work. If it is found that there will be no serious practical difficulty in meeting the additional quantity of work done by another agency, then fresh tenders for the extra quantity may be invited otherwise negotiating the rate with the existing contractor for arriving at a reasonable rate for the additional quantities of work, may be adopted.
- 38.2 The above shall be regulated as under:
- (a) The case shall be decided by the tender accepting authority (competent for the revised quantity) and shall not be treated as a case of single tender. The provisions of Railway Board letter No. 2007/CE.I/CT/18/Pt. XII dated 31.12.2010 hereby gets superseded.
- (b) These instructions will be similarly applicable to earning contracts with H-1, H-2 Substituted for L- 1, L-2 and so on.
- (c) Executives while executing the work shall make all efforts to ensure that no Vitiating takes place in normal circumstances. Vitiating should be an exception Rather than a routine affair. Efforts should be made to invite bids on the basis of Percentage above/below/at Par.

- (d) Vitiation should always be computed with respect to the items, rates, quantities and conditions as available at the time of Tender Opening and subsequent changes/ additions by way of new items will not be counted for computing Vitiation.
- 39.0 All the Provisions as illustrated in clause 54 to 60 of GCC 2022, related to 'Labour' shall have to be complied with, by the contractor.
- (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 2022. 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/GM/S&T or Engineer's/ GM/S&T'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."

(As per Clause No. 55(c) Part-II GCC-2022, with up-to-date correction slip)

- 40.0 **Provisions of "The Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Act, 1996" and "The Building and Other Construction Workers' Welfare Cess Act, 1996":**

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

(As per Clause No. 55(D) Part-II GCC-2022, with up to date correction slip)

- 41.0 **Provision of Workmen's Compensation Act:**

In every case in which by virtue of the provisions of Section 12 Sub-Section (1) of the Workmen's Compensation Act 1923, DFCCIL is obliged to pay compensation to a workman directly or through petty Contractor or subcontractor employed by the Contractor in executing the work, DFCCIL will recover from the Contractor the amount of the compensation so paid, and, without prejudice to the rights of DFCCIL/Railway under Section 12 Sub-section (2) of the said Act, DFCCIL 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 DFCCIL full security for all costs for which DFCCIL might become liable in consequence of contesting such claim.

(As per Clause No. 57 Part-II GCC-2022, with up-to-date correction slip)

42.0 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.

(As per Clause No. 59. (9) Part-II GCC-2022, with up-to-date correction slip)

43.0 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/GM/S&T, 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.100crores, the Contractor shall submit a detailed time programme to the Engineer/ GM/S&T 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/GM/S&T, 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/GM/S&T shall be entitled to rely upon the programme when planning

their activities.

If, at any time, the Engineer/GM/S&T 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.

As per Clause No. 19.(3) Part-II of GCC-2022, with up to date correction slip)

44.0 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/GM/S&T and shall proceed with the same with due expedition and without delay. The Contractor shall establish a quality control mechanism before execution of the work,

- (i) Contractor shall submit a QAP "Quality Assurance Plan" for the scope of work to be executed. The QAP shall be submitted within 15 days of the issue of LoA and which shall be approved by the /GM/S&T/Engineer In charge. The QAP shall extensively include the organization, duties and responsibilities, procedures, inspections, documentation and quality control mechanism including sampling and testing of Materials, test frequencies, standards, acceptance criteria, testing facilities, reporting, recording and interpretation of test results, approvals, check list for site activities, and proforma for testing and calibration in accordance with the Specifications and Standards etc.
- (ii) Prior to the commencement of any construction activity, a method statement, proposed to be adopted for executing the Work shall be submitted to Engineer in Charge/GM/S&T. The method statement shall include details of material acceptance, execution procedures, checks at various levels, quality parameters, equipment/ machineries, quality assurance, quality control measures, traffic management, inspection checklist, documentation and remedial works etc.

As per Clause No. 19. (2) of Part-II GCC-2022, with up-to-date correction slip)

45.0 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/GM/S&T according to the instructions and directions which the Contractors may from time to time receive from the Engineer/GM/S&T. The materials may be subjected to tests by means of such machines, instruments and appliances as the Engineer/GM/S&T may direct and wholly at the expense of the Contractor.

As per Clause No. 27. (1) of Part-II GCC-2022, with up-to-date correction slip)

46.0 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.

(As per Clause No. 51-A of Part-II GCC-2022, with up-to-date correction slip)

47.0 Post Payment Audit:

It is an agreed term of contract that the DFCCIL reserves to itself the right to carry out a post-payment audit and/ or technical examination of the works and the Final Bill including all supporting vouchers, abstracts etc. and to make a claim on the Contractor for the refund 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

As per Clause No. 51. (2) of Part-II GCC-2022, with up-to-date correction slip).

SAFETY PRECAUTIONS**MEASURES TO BE ENSURED PRIOR TO START OF WORK**

The contractor shall not start any work without the presence of DFCCIL supervisors at site.

The methodology in detail for execution of the work at site shall be approved by Engineering/S&T/Electrical in charge of the organization executing the work and copies of the same shall be available with contractor's supervisor, DFCCIL Supervisor, Exec /Sr. Exec / (Engg./S&T/Electrical), APM/Dy.PM (Engg./S&T/Electrical) of the section in whose jurisdiction the work falls.

Name and address of the contract assigned to execute the work.

- i) Name of the Contractor's supervisor
- ii) Name of the Exec/Sr. Exec. DFCCIL/other organizations who are going to be site in charge/in charge of worksite.
- iii) List of the number(s) of individual vehicle(s)/ machineries, names and license particulars of the driver(s) proposed to be used by contractor.
- iv) Information regarding location, duration and timings during which the vehicles/machinery are planned to be plied/worked.
- v) The supervisors and operators of the contractor proposed to be deployed at work site which is close to the running track, shall be imparted training by the DFCCIL trainer at contractor own cost about the safety measures to be adopted while working in the vicinity of running track. Further competency certificate to the individual supervisors/operator shall be issued as in Annexure-A by an officer not below the rank of APM/Dy.PM, who is in charge of site. No supervisor/operator of the contractor shall work or allowed to work in the vicinity of running track who is not possession of valid competent certificate.
- vi) Survey of site by supervisor of contractor and DFCCIL to assess the precautions to be taken at site for working of trains and materials required for protection.
- vii) Written advice to sectional APM/Dy.PM about the detailed planning of work including protection of track and safety measures proposed to be adopted. viii) A copy of the approved methodology (to be approved by engineer in charge) proposed to be adapted by the contractor with a view to ensure safety of trains passengers and workers. ix) Assurance that the methods and arrangements are actually available at site before start of the work and the contractors' supervisors and the workers have clearly understood the safety aspects and requirement to be adapted/followed while executing the work.
- x) An assurance register has been kept at site duly signed by both DFCCIL supervisor as well as by the contractor supervisor as a token of their having understood the safety precautions to be observed at site.

No work shall which is to be done near running track shall commence unless permitted by sectional APM/Dy.PM.

Supplementary site-specific instructions, wherever considered necessary shall be issued by the GM/S&T/Engineer in Charge

Check list given in **Annexure-V** of Compendium of instructions on Safety at Work Sites 31.03.2014 shall be used to ensure that all the requisite measures have been taken before start of work.

2.0 PLYING OF ROAD VEHICLES AND WORKING OF MACHINERIES CLOSE TO

RUNNING TRACKS

- (i) Normally, the road vehicles shall be run or machinery shall be worked so as not to come closer than 6.0m from center line of nearest running track.
- (ii) The land strip adjacent to running tracks, where road vehicle is to ply or machinery is to work, shall be demarcated by lime in advance in consultation with the DFCCIL's Supervisor. Wooden pegs at interval not exceeding 75mts shall be provided along the line marking as permanent marks. The road vehicles shall ply or machinery shall work so as not to infringe the line of demarcation. Demarcation of the land shall be done as per **Annexure II-A**. Compendium of instructions on Safety at Work Sites 31.03.2014.
- (iii) If a road vehicle or machinery is to work closer to 6.0m due to site conditions or requirement of work, following precautions shall be observed.
 - a. In no case the road vehicle shall run or machinery shall work at distance less than 3.5m from center line of track.
 - b. Demarcation of land shall be done by bright colored ribbon/nylon cord suspended on 120 cm high wooden/bamboo posts at distance of 3.5 m from center line of nearest running track. Sensors with horns shall be provided as per **Annexure II-B** of Compendium of instructions on Safety at Work Sites 31.03.2014.
 - c. Presence of an authorized DFCCIL's representative shall be ensured before plying of vehicle or working of machinery.
 - d. DFCCIL's Supervisor shall issue suitable caution order to Drivers of approaching train about road vehicles plying or machineries working close to running tracks. The train drivers shall be advised to whistle freely to warn about the approaching train. Whistle boards shall be provided wherever considered necessary.
 - e. Lookout men shall be posted along the track at a distance of 800m from such locations who will carry red flag and whistles to warn the road vehicle/machinery users about the approaching trains. Lookout man shall be deputed as per **Annexure-III-A** of Compendium of instructions on Safety at Work Sites 31.03.2014.
 - f. On curves where visibility is poor, additional lookout men shall be posted.
- (iv) **If vehicle/machinery is to be worked closer to 3.5m from running track.**
Under unavoidable conditions, if road vehicles is to ply or machinery is to work closer to 3.5m due to site conditions or requirement of work, following precautions shall be observed:
 - a. Plying of vehicles or working of machinery closer to 3.5m of running track shall be done only under protection of track. Traffic block shall be imposed wherever considered necessary. The site shall be protected as per provisions of Para No. 806 & 807 of P-Way Manual as case maybe.
 - b. Presence of a DFCCIL's Supervisor shall be ensured at work site.
 - c. DFCCIL's Supervisor shall issue suitable caution order to Drivers of approaching train about road vehicles plying or machineries working close to running tracks. The train drivers shall be advised to whistle freely to warn about the approaching train.
- (v) **Precaution to be taken while reversing road vehicle alongside the track.**
The location where vehicle will take a turn shall be demarcated duly approved by DFCCIL's representative. The road vehicle driver shall always face the DFCCIL/Railway track during the course of turning/reversing his vehicle. Presence of an authorized DFCCIL/Railway representative shall be ensured at such location.
- (vi) Road vehicle shall not be allowed to run along the track during night hours generally. In unavoidable situations, however, vehicles shall be allowed to work during night hours only in the presence of an authorized DFCCIL's representative and where adequate lighting

arrangements are made and where adequate precautions as mentioned earlier have been ensured.

- (vii) Road vehicles/machinery/plant etc. when stabled near running tracks shall be properly secured against any possible roll off and always be manned even during off hours.

3.0 EXECUTION OF WORKS CLOSE TO OR ON RUNNING LINES

Any work close to or on running tracks shall be executed under the presence of a Railway's Supervisor only.

- (i) **Precaution to be taken to ensure safety of trains while execution of work close to the running line or on running lines.**
- a) Contractor has deputed trained supervisors in required number at worksites duly certified by APM/Dy.PM In charge of the works.
 - b) Drivers of vehicle/operators of the machines have been briefed about the safety and precautions to be taken while moving / working close to traffic.
 - c) Contractor shall ply road vehicles/working of machinery only between sunset and sunrise. In case of emergency where it is necessary to work during night hours sufficient lighting shall be ensured in the complete work area for the safety of public and passengers. Also, additional staff shall be posted as necessary for night working and taking safety precautions.
 - d) The contractor shall not change the approved vehicle/machinery and driver/operator for working at site. Contractor shall not induct any new vehicle/machinery and driver/operator without prior written approval of APM/Dy.PM and the list of such changes with numbers of individual vehicle, name and license particulars of the driver shall be given to APM/Dy.PM of the section.
 - e) Contractor shall ensure that road vehicle/machinery ply/work in a way so that these do not infringe the line of demonstration.
 - f) Lookout men with required safety equipment shall be posted where necessary.
 - g) In unusual circumstances, where operator apprehends danger to track while working truck/machinery near running track, following action shall be taken.
 - a) The contractor/supervisor/vehicle operator immediately advice the situation to railway official/officials of the organization executing the work and assist him/them in protecting the track.
 - b) Protection shall be done as done for other emergencies
 - h) Individual vehicle/machinery shall not be left unattended at site of work. If it is unavoidable and becomes necessary to stable the road vehicle/machinery at site near the running track, these shall be properly secured against any possible roll off and always be manned even during non-working hours. In addition, the road vehicle / machinery should be stabled parallel to track only so that incase of failure of any securing arrangement, it may not roll towards the track.
 - i) All temporary arrangements required to be made during execution of work shall be made in such a manner that moving dimensions do not infringe. Necessary checks shall be exercised by site in charge from time to time.
 - j) While inspecting the worksite check list given in **Annexure VI** of Compendium of instructions on Safety at Work Sites 31.03.2014 shall be used to ensure that all the requisite measures have been taken during the execution of work.
 - k) During the hours of night, lamps of temporary indicators which are not of reflective type should be lit at sun-set and kept burning till sun rise, where trains run at night.
- (ii) **Precaution to be taken to ensure safety of electrical/signal/ telephone cables while excavating near tracks.**

- a) Particular care shall be taken to mark the locations of buried electrical/signal/telephone cables on the plans jointly with S & T/Electric supervisor and also at site so that these are not damaged during excavation.
- b) Copy of the cable plan should be given to the contractor's authorized representative before handing over the site to start the work.
- c) Due care shall be taken to ensure that any part of the equipment or machinery or temporary arrangement does not come close to cables while working.
- d) Joint procedure order No. 17/2013 as mentioned in the **Annexure-VII** of compendium of instructions on safety at work site issued by DFCCIL Office shall be followed for undertaking digging work in the vicinity of underground signaling, electrical and telecommunication cables.

(iii) Precaution to be taken during execution of works requiring traffic blocks.

- a) Any work, which infringes the moving dimensions or causes discontinuity in the track any activity making the existing track unsafe for passage of trains etc. shall be started only after the traffic block has been imposed, DFCCIL servant in charge of the work is present at the worksite, engineering signals are exhibited at specified distance and flagmen are posted with necessary equipment to man them etc.
- b) Before closing the work, the track shall be left with the proper track geometry so that the trains run safely and flagmen are kept in the night with safety and track protection equipment to patrol the stretch and take action to protect the track, if so warranted and inform the DFCCIL supervisors.
- c) After completion of work the released sleeper and fittings should be properly stacked away from the track to be kept clear of moving dimensions.
- d) Block shall be removed only when all the temporary arrangement, machineries, tools, plants etc. have been kept clear of moving dimensions.

(iv) Precaution to be taken during execution of works during night.

The work close to running line, generally, shall be carried out only during day hours. At locations, however, where night working is unavoidable, proper lighting arrangement should be made. The Engineering indicator boards shall be lighted during night hours as per the provisions of IRPWM. The staff deputed for night working should have taken adequate rest before deploying them in night shift. We can specify duration of night shift from 20.00 hrs to 04.00 hrs. All other safety precautions applicable for day time work should be strictly observed during night working.

(v) Precautions to be taken to ensure safety of workers while working close to running lines.

- a) Any work close to or on running tracks shall be executed under the presence of a DFCCIL's supervisor only.
- b) Precaution to be taken to ensure safety of trains while execution of work close to the running line or on running lines.
 - i) Such works shall be planned and necessary drawings particularly with regard to infringement to moving dimensions shall be finalized duly approved by competent authority before execution of work. The work shall be executed only as per approved procedure and drawings.
 - ii) All temporary arrangements required to be made during execution of work shall be made in such a manner that moving dimension do not infringe.
 - iii) Suitable speed restriction shall be imposed or Traffic block shall be ensured as required.
- iv) The site shall be protected as per provisions of Para No. 806 & 807 of P.Way Manual as case maybe.

- v) Necessary equipment for safety of trains during emergency shall be kept ready at site.
- c) A 'first aid kit' shall always be kept ready at site.
- (vi) **Precaution shall be taken for safety of public or passengers, while executing works at locations, used by passengers and public.**

The worksite shall be suitably demarcated to keep public and passengers away from work area. Necessary signage boards such as "Work in progress. Inconvenience is regretted" etc. shall be provided at appropriate locations to warn the public/ passengers. Adequate lighting arrangement of worksite wherever required shall be done to ensure safety of public/passengers during night.

- (vii) **Precaution to be taken before stacking materials alongside the track to ensure that safety of trains is not affected.**

The following precautions shall be taken before stacking the materials along the track for stacking of ballast, rails, sleepers etc.

- a) The sites for material stacking should be selected in advance in such a manner as to ensure that no part of the material to be stacked is infringing the Standard Moving Dimensions. A plan of proposed stacking locations be made and signed jointly by an authorized DFCCIL's representative and contractor's representative.
- b) The selected locations shall be marked by lime in advance.
- c) Presence of an authorized DFCCIL's representative while unloading and stacking shall be ensured.
- d) The material shall be stacked in such a height so as to not to infringe SOD in case of accidental roll off.

- (viii) **Precaution for handling of departmental material trains**

Instructions for working of material trains are contained in Chapter XII of IRPWM which should be brought to the notice of the supervisors and other staff working on the material trains. In addition to this, following precautions should be taken:

- (a) Issue of 'fit to run' certificate.
As per Para 1207 before a material train is allowed to work, the complete rake should be examined by the Mechanical staff and a 'fit to run' certificate issued to the Guard.
- (b) As per Para 1208 of IRPWM, a qualified Engineering official should be deputed on the train to ensure working of the material train as the Guard is not qualified to carry out such duties like Supervising of loading and unloading of materials.
- (c) As per Para 1204 of IRPWM, the material train should not be permitted to work during the period of poor visibility due to fog, storm or any other cause except with the permission of the APM/Dy.PM/EN Working of the material trains carrying labour should not be permitted between sunset and sunrise except in an emergency.
- (d) While unloading rail panels by the side of the running track, placement of the panels, clear of the maximum moving dimensions should be ensured.
- (e) Unloading of rail panels should be done by a team of trained staff under the active supervision of competent Supervisor/Officer.
- (f) Before unloading of rail panels, site should be prepared by way of leveling/removing extra ballast, if any, from the crib and shoulder with the objective to ensure requisite lateral and vertical clearances so as to prevent slippage of rail panels due to vibration during the passage of trains.
- (g) Reasonably adequate block should be asked and provided for unloading of the material and the work should be done preferably in day light to avoid shortcut in haste which may infringe the safety requirements.

(ix) SAFETY ASPECTS TO BE OBSERVED WHILE WORKING IN OHE AREA

- a) No electrical work close to running track shall be carried out without permission of railway representative.
- b) A minimum distance of 2m has to be maintained between live OHE wire and body part of worker or tools or metallic supports etc.
- c) No electric connection etc. can be tapped from OHE.
- d) Authorized OHE staff should invariably be present when the relaying work or any major work is carried out.
- e) Power block is correctly taken and 'permit to work' is issued.
- f) The structure bonds, track bonds, cross bonds, longitudinal rail bonds are not disturbed and
- g) If disconnected for the work, they are reconnected properly when the work is completed.
- h) The track level is not raised beyond the permissible limit during the work.

4.0 PROTECTION OF TRACK DURING EMERGENCY

- (i) Action to be taken when a contractor's supervisor or vehicle operator apprehends any unusual circumstances likely to infringe the track and endanger safe running of trains.**
At any time if a contractor's supervisor or vehicle operator observes any unusual circumstances likely to infringe the track and apprehend danger to safe running of track, he shall take immediate steps to advise a Railway official of such danger and assist him in protection of track.

The track shall be protected as under. One person shall immediately plant a red flag (red lamp during night) at the spot and proceed with all haste in the direction of approaching train with a red flag in hand (red lamp during night) and plant a detonator on rail at a distance of 600m from the place of obstruction of BG track (400m for MG track) after which he shall further proceed for not less than 1200m from the place of obstruction from BG track (800m for MG track) and plant three detonators at 10m apart on rails. After this he shall display the red flag (red lamp during night) at a distance of 45m from the detonators.

Attempts shall also be made to send an advice to nearest Railway station about the incident immediately. Protection of the track shall be done as per **Annexure-IV** of the Compendium of instructions on Safety at Work Sites 31.03.2014

- (ii) Action to be taken if train is seen approaching to site of danger and there is no time to protect the track as per guidelines mentioned above.**

In such a case the detonators shall be planted on rails immediately at distance away from place of danger as far as possible and attention of driver of approaching train shall be invited by whistling, waving the red flag vigorously, gesticulating and shouting.

- (iii) Action to be taken if more than one track is obstructed.**

- a. In case of single line protection as above shall be done in both the directions from place of danger.
- b. In case of double line or multiple lines, if other tracks are also obstructed, the protection as above shall be done for other track also.
- c. The protection shall be done in that direction and on that track first on which train is likely to arrive first.
- d. The Contractor's Supervisors, Operators and lookout men shall be properly explained about the direction of trains on running tracks.

- (iv) Equipment required for protection of track.**

Minimum compliment of protection equipment i.e. 10 detonators, 4 red hand flags, 4 red hand

lamps, 4 banner flags and whistles etc. shall always be kept ready at worksites for use in case of emergency. DFCCIL will arrange to provide detonators, whereas Contractor shall arrange other equipment at his own cost.

(v) Arrangement of lookout men and competency required for lookout man to warn labour about approaching train.

- a. Contractor will provide lookout men.
- b. The lookout men shall be properly trained in warning to staff at worksite about approaching train.
- c. Only those lookout men shall be provided at site who have been issued with a competency certificate by the Railway's Supervisor.
- d. In case, it is felt necessary to provide lookout men by Railway, the charges for the same as fixed by Railway Administration shall be recovered from Contractor.

5.0 TRAINING TO SUPERVISORS AND OPERATORS OF CONTRACTOR

The Supervisors and Operators of the contractor proposed to be deployed at work site, which is close to the running track, shall be imparted mandatory training by the DFCCIL at site free of cost about the safety measures to be adopted while working in the vicinity of running track. Engineer-in charge of the work shall decide the scale, extent & adequacy of training. In case training is imparted at a recognized Railway training institute, the charges for the same, as decided by Railway, shall be recovered from contractor. A competency certificate to this effect to the individual Supervisor/Operator shall be issued as per **Annexure**-as given below a Railway Officer not below the rank of Assistant Officer. No Supervisor/Operator of the Contractor shall work or allowed to work in the vicinity of running track that is not in possession of valid competency certificate.

All the labour, materials, tools, plants etc. except detonators, required for ensuring safe running of trains shall be provided by Contractor at his own cost. Wherever lookout men are provided by DFCCIL, charges at the rate of Rs. 500/- per man day shall be recovered from Contractor.

6.0 SPECIAL CONDITIONS FOR WORKING OF ROADCRANES

To ensure safe working of road cranes used in works in connection with provision of ROB/RUB/Subways, following items shall invariable be ensured before putting the cranes to use:

- i) No machine shall be selected to do any lifting on a specific job until its size and characteristics are considered against the weights, dimensions and lift radii of the heaviest and largest loads.
- ii) The contractor shall ensure that a valid Certificate of Fitness is available before use of Road Cranes.
- iii) Contractors should utilize the services of any competent person as defined in Factories Act, 1948 and approved by Chief Inspector of Factories.
- iv) The laminated photocopies of fitness certificate issued by competent persons, the operators' photo, manufacturer's load chart and competency certificate shall always be either kept in the operator cabin or pasted on the visible surface of the lifting appliances.
- v) All lifting appliances including all parts and gears thereof, whether fixed or movable shall be thoroughly tested and examined by a competent person once at least in every six months or after it has undergone any alterations or repairs liable to affect its strength or stability.

7.0 Contractor shall indemnify DFCCIL against any loss/damage to public property, travelling public, railway or his own staff due to his (contractor's) negligence. In case there is any mishap, a fact-finding inquiry will be conducted by DFCCIL. A show cause notice will be issued to the

contractor, in case he is prima-facie held responsible. Contractor's reply to show cause notice will be considered by the GM/S&T/Engineer in Charge before taking final decision. In case contractor is found responsible for the mishap, recovery from him will be affected for only tangible direct losses.

Note: For detailed instructions regarding safe working at works site, the compendium of instructions on safety at work site issued by DFCCIL office shall be referred.

Annexure-A

Competency Certificate

Certified that Shri _____ Supervisor/Operator of M/s. _____ has been trained and examined in safety measures to be followed while working in the vicinity of running railway track for the work _____. His knowledge has been found satisfactory and he is capable of supervising the work safely.

This certificate is valid only for the work mentioned in this certificate only.

Signature and designation of the officer

ESTABLISHING SITE OFFICE AND SITE LABORATORY

1.0 SITE OFFICE-

The Contractor shall establish the camp office at site 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 & laborers in or about the execution of any of these works as are careful and skilled in the various trades. The Camp office shall be completely equipped for office working with provision of sufficient T&Ps, Office Equipment, accessories including advance version of PCs, printer, Fax, mail, phone etc and also with facilities like sitting, drinking water etc. The area of the office and facilities required must be sufficient enough to ensure effective office working at site office itself without any difficulties and issues. Suitable site on railway land, if conveniently available, may be allowed to the contractor for setting up the site office, site laboratory, either free of charge or on such terms and conditions that may be prescribed by Railways.

2.0 SITE LABORATORY-

The site laboratory shall be established and maintained by the contractor as for effective implementation of the QAP and approved method statements of particular activities, all the equipment shall be properly calibrated at all times. The other requirements like water tank, generator etc shall also be maintained.

A well-qualified, competent and knowledgeable Laboratory supervisor shall be deputed at the site laboratory to conduct all the required tests, checks at the specified frequencies and keep proper record, documentation in soft as well as hard registers.

The equipment required for periodic quality checks and test to be conducted at laboratory and in field shall be maintained in the project. All the required machines, T&Ps, consumables, testing facilities shall be maintained in the site laboratory as required as per relevant Code, Manuals, RDSO guidelines, specification of USSOR, Contract Agreement etc. A brief list of the equipment to be kept at the laboratory are listed as under for guidance, however, the Engineer-in-charge is free to maintain any additional equipment, T&Ps as deemed necessary due to site specific requirements

Equipment for Concrete Test in Field Laboratory

Equipment for Earthwork Test in Field Laboratory

3.0 RECORD KEEPING AND DOCUMENTATION

The following records are to be maintained by the contractor for the works as detailed below. In addition, Engineer-in charge is free to maintain any additional records as deemed necessary due to site specific requirements. These records with all pages serially numbered should have the basic information like name of work, agreement No., Agency, Location, etc. on their covers / first page.

NAME OF THE RECORD	TO BE MAINTAINED FOR
site order book	all works
daily progress register	
hindrance register	
technical register	
material passing register	
cement consumption register	all cement involving works
reinforcement steel accountal register	all rcc/psc works and mcc works with temperature reinforcement
reinforcement steel consumption register	
field tests for sand	all cement involving works
field tests for C A	all concrete involving works
field test for cement	all cement involving works

field test for steel	all steel involving works
slump test	all concrete involving works
concrete cube testing register	all concrete involving works
pile passing register	for buildings and structures with pile founds
shuttering passing register	all concrete involving works
permeability of concrete	major bridges
stressing record of PSC girder	PSC girder bridges
Record of grouting of cable ducts.	PSC girder bridges
level books	Earthwork in formation/projects
soil test reports for fill materials	
soil test reports for blanketing materials	
Earthwork compaction register	
CBR test reports	Earthwork in formation (for 25t+ axle load only) and road works as per agreement
Ballast Register	Ballast supply
Stressing Register	PSC work
Cable profile Register	
Structural Steel Register	
Rivet, HSFG check register	Steel Structure Work
Camber register	
Metallizing and painting Register	
Inspection Note and Compliance register	All works

- 4.0 The tests required to be conducted outside the Site established laboratory shall be got done through NABL accredited laboratory/ Government Engineering college only. The contractor shall inform regarding the name, details and accreditation documents of the particular laboratory in writing and seek approval of the Engineer in charge of work, well in advance. Engineer in charge shall accord approval of the particular laboratory lab, after ensuring testing equipment, records keeping, competency of staff etc. of the laboratory.

IMPORTANT CODAL PROVISIONS

1.0 Important Codal Provisions to be followed IS 456:2000,IS 800:2007 and other IS codes for other building material and construction

2.0 Earthwork

Not required for S&T works hence deleted.

3.0 QUALIFYING AND QUALITY ASSURANCE TESTS(Mandatory)

Not required for S&T works hence deleted.

4.0 REINFORCED CEMENT CONCRETE

Not required for S&T works hence deleted.

5.0 FORM WORK (CENTERING AND SHUTTERING)

Not required for S&T works hence deleted.

6.0 BRIDGE WORKS: SUPERSTRUCTURE-STEEL

Not required for S&T works hence deleted.

7.0 SPECIFICATIONS FOR SUPPLYING AND STACKING STONE BALLAST

Not required for S&T works hence deleted.

8.0 Training of Personnel DFCCIL & Contractors Engineers (Applicable for Tenders costing above Rs.20Cr.):

To achieve good quality work, a good working knowledge and experience is required. Practical training in important field of work covering major items included in scope of work in the subject tender (such as concreting, steel fabrication, earthwork as per GE-0014 specification etc.) should be imparted by the contractor at his own cost through trainer duly approved by concerned Chief Engineer/C to all engineers i.e. Contractor's and DFCCIL. What constitutes the major items of the work will be decided by the Engineer in Charge in consultation with the contractor. No extra payment will be made to the contractor on this account.

ANNEXURE-I

(Para 16.1(a) of General Instructions) & clause No. 14 (i), (ii) Part-I of GCC- 2022, with up-to-date correction slip

Full name of the firm	:
Registered Head Office Address	:
Branch Office in India (If any)	:
Constitution of firm (whether Sole proprietorship firm/Partnership firm/ Limited Company/Joint Venture (JV)/Registered Society/ Registered Trust /LLP/HUF etc.)	:
Bank account details of the firm i.e. Account No., name of bank and bank specific code number (MICR & IFSC) to facilitate electronic payment	
Detail of PAN of the firm	
E Mail ID	

I/we declare that the is not blacklisted or debarred by Railways/DFCCIL or any other

Ministry / Department of Govt. of India from participation in tender on the date of opening of bids, either in individual capacity or as a member of the partnership firm or JV in which HUF was / is a partner/member. I/ We are aware that concealment / wrong information in regard to above shall make the contract liable for determination under Clause 62 of the General Conditions of Contract.

Note:

1. Please enclosed-
 - (i) Attested copy/copies of the constitution of their firm (ii) Copy of PANCARD.
2. Tender document has to be signed by such persons as may be legally competent to sign on behalf of the firm, company, association, HUF, LLP, trust or society as the case may be.

Date:

Signature of Tenderer/s With Seal

ANNEXURE-II

(Para 16.1(b) of General Instructions) & clause No. 6.1 & 11(iv) Part-I of GCC-2022, with up to date correction slip

FORMAT FOR CERTIFICATE TO BE SUBMITTED / UPLOADED BY TENDERER ALONG WITH THE TENDER DOCUMENTS

I..... (*Name and designation*) ** appointed as the attorney/ authorized signatory of the tenderer ,M/s..... (*hereinafter called the tenderer*) for the purpose of the Tender documents for the work

As per the tender No..... of DFCCIL, do here by 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/DFCCIL 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 DFCCIL/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 certificate submitted by us are found to be forged/false at any time during process for evaluation of tenders, it shall lead to forfeiture of the Bid Security and may also lead to any other action provided in the contract including banning of business for a period of upto 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 certificate submitted by us are found to be false/forged 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 and may also lead to any other action provided in the contract including banning of business for a period of upto 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 fulfill 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.

ANNEXURE-IIA

(Para 16.1(b) of General Instructions) & clause No. 6.1 & 11(iv) Part-I of GCC-2022, with up to date correction slip

(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/DFCCIL 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 CONSTUITUENT FIRM/CONSTITUENT PARTNETR

Place:

Dated:

** The contents in Italics are only for guidance purpose. Details as appropriate are to be filled in suitably by tenderer.

“ANNEXURE -III”

(Para 16.0(c)(i) of General Instructions) & Clause No. 10.1(a) and explanation to clause 10-part I Second Sheet of GCC 2022

Details of works of similar nature physically completed in all respect/ substantially completed as per contract agreement during last seven years, ending last day of month previous to the one in which tender is invited

S N	Name of work	Name of organization for whom physically completed	Type of organization for whom work executed	CA No. & Date	Original value of CA	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	

Date:

Signature of Tenderer/s With Seal:

Note:

- (i) Above detail should be given only for works which have been physically completed in all respects/ substantially completed, for the similar nature work defined in clause 15.1.1 & 15.5 above. Part completed work shall not be considered.

Note: As per explanation Explanation for Para 10 of the Tender Form (Second Sheet) including Para 10.1 to 10.5 - Eligibility Criteria;

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.

- (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-A, IV-B, IV-C as applicable.
- (iv) 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/ Public listed company.
- (v) In case of JV firm, these details are also required for all the members of the JV firm for one similar single work for a minimum of 10 % of advertised value of the tender (for works without composite components).
- (vi) No technical and financial credentials are required for tenders having value up to Rs.50 lakhs.
- (vii) 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.
- (viii) 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.
- (ix) If a part or a component of work is completed but the overall scope of contract is not completed, this work shall not be considered for fulfillment of technical credentials even if the cost of part completed work/component is more than required for fulfillment of credentials.
- (x) In case a work is considered similar in nature for fulfillment of technical credentials, the overall cost of that work including PVC amount if any shall be considered and no separate evaluation for each component of that work shall be made to decide eligibility.
- (xi) For col no 7, the value of final bill including PVC amount-if paid, or otherwise in case final bill is pending the contract cost in last approved variation statement plus PVC amount paid or cumulative amount paid up to last on-account bill including PVC amount and statutory deductions whichever is less, shall be considered as the completion cost of work.
- (xii) In case, the Secondary Component(s) has/ have been defined in clause 15.5 above, the details of successfully completed works of similar nature (that defined for the Secondary Component), executed by tenderer himself / the subcontractor (fully by any one or jointly i.e. partly by tenderer and remaining through subcontractor) during last five years, shall also be submitted in above performa.

Attested copy of Completion Certificate of works mentioned in para (c) above from (xiii) the Organizations with whom they worked as per performa given in **Annexure-IVA or IV-B or IV-C** as applicable.

Annexure III-A

As per clause No. 16.1(c) (ii) of General Instruction above, Clause No. 10.1b (ii), and explanation to clause 10 of Part I of GCC-2022

Details of work of similar nature successfully completed/ substantially completed during last seven years, ending last day of month previous to the one in which tender invited and detailed in Annexure III (bifurcated as per components of tender schedule) to be submitted by tenderer along with Annexure–III in case of tender having composite nature of work.

Description of components/ component as per tender schedule, executed in different contracts	Name of work under which components (mentioned in column II) executed	S.N. of Annexure three, where other details of this work mentioned	Payment received under these components till last day of month previous to the one in which tender is invited i	Percentage of amount received under these components equal to advertised value of tender	Percentage of advertise value of tender amount required as per technical eligibility criteria under these components			Remark
					Three works costing not less than 30% of advertise value	Two works costing not less than 40% of advertise value	One works costing not less than 60 % of advertise value	
II	III	IV	V	VI	VII	VIII	IX	X
All components (A, B, C, D, E -) executed in single contract								
More than one component executed in single contract								
Only one component executed in single contract								

Date:

Signature of Tenderer/s With Seal

Note:

- (i) Component wise details mentioned above for the similar nature work defined for the various components in clause 15.5 above, should be supported by completion certificate submitted

under Annexure- IV-A, IV-B, IV-C. In case of JV firm, these details are also required for all the members of the JV firm for one similar single work for a minimum of 10 % of cost of any component of work in separate sheet (for work with composite components).

- (ii) No technical and financial credentials are required for tenders having value up to Rs. 50lakhs.
- (iii) 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.
- (iv) 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.
- (v) If a part or a component of work is completed but the overall scope of contract is not completed, this work shall not be considered for fulfillment of technical credentials even if the cost of part completed work/component is more than required for fulfillment of credentials.
- (vi) In case a work is considered similar in nature for fulfillment of technical credentials, the overall cost of that work including PVC amount if any shall be considered and no separate evaluation for each component of that work shall be made to decide eligibility.
- (vii) For col 5 - The value of final bill including PVC amount-if paid, or otherwise in case final bill is pending the contract cost in last approved variation statement plus PVC amount paid or cumulative amount paid up to last on-account bill including PVC amount and statutory deductions whichever is less, shall be considered as the completion cost of work.
- (viii) In case, the Secondary Component(s) has/ have been defined in clause 15.5 above, the details of successfully completed works of similar nature (that defined for the Secondary Component), executed by tenderer himself / the subcontractor (fully by any one or jointly i.e. partly by tenderer and remaining through subcontractor) during last five years, shall also be submitted in above performa.
- (ix) Attested copy of Completion Certificate of works mentioned in para (c) above from the Organizations with whom they worked as per performa given in **Annexure-IV-A or IV-B or IV-C** as applicable.

ANNEXURE-IV(A)

(Para 16.1 (d) and Para 15.6 (iii) (b) 15 of General Instructions) Clause No. 11(i), and explanation to clause 10 of part I of GCC2022)

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	Name of Firm with address	
4	Nature of entity (Sole Prop. /Partnership firm/company/Joint Venture firm/Registered Society /registered Trust etc.)	
5(i)	In case of Partnership firm/JV/..... Name and % share of individual partners/members.	
(ii)	In case of Sole Proprietorship, the name of sole proprietor	
6.	Original value of contract agreement.	
7	Completion Cost of Work	
7.1	in case final payments have been made- Contract Cost in last approved variation statement plus PVC amount paid	
7.2	in case final bill is pending -	
(i)	the contract cost in last approved variation statement plus PVC amount paid	
(ii)	cumulative amount paid up to last on-account bill including PVC amount and statutory deductions	
8.	Date of award of contract	
9.	Has the work physically been completed in all respect as per contract agreement? (Yes / No)	
10 (i)	If yes, then actual date of physical completion.	
(ii)	Whether extension to DOC given with penalty or without penalty	
11	Total payment made in above contract till the date of inviting of present tender along with financial year –wise break-up	
11.1	Total payment made in above contract till the date of inviting of present tender along with financial year –wise break-up (Without PVC amount)	
12	In case of composite work: (See note (vii) below) Payment made for relevant distinct component of the work, out of total payment made under Sr. No. 7 above.	
12.1	In case final payments for the component have been made- Cost of component in contract in last approved variation statement plus PVC amount paid	
12.2	In case final bill is pending -	
(i)	The Cost of component in contract in last approved variation statement plus PVC amount paid	
(ii)	Cumulative amount paid for the component up to last on account bill including PVC amount and statutory deductions	
13	Performance of Contractor (Satisfactory/Unsatisfactory)	

- (i) Submission of false certificates by tenderer shall lead to, forfeiture of EMD (if applicable), and other action including penal action (Annexure-II).
- (ii) Copy of certificate duly self-attested shall be submitted along with tender document.
- (iii) Payment made as indicated in above certificate (At Sr. No. 11/ Sr. No. 12) will be considered

as value of completed work/ substantially completed works for the purpose of eligibility under special technical criteria.

- (iv) Above format is for guidance only. Any certificate containing information asked for shall be considered.
- (v) In case of JV firm, these details are also required for all the members of the JV firm for one similar single work for a minimum of 10 % of advertised value of the tender (for works without composite components).
- (vi) In case of JV firm, these details are also required for all the members of the JV firm for one similar single work for a minimum of 10 % of cost of any component of work in separate sheet (for work with composite components).
- (vii) Only those works will be treated as composite works which consist of more than one distinct component of work such as Civil Engg. Works, S&T work, Electrical work, OHE work etc. and there is separate schedule for each such distinct components in the tender documents.
- (viii) No technical and financial credentials are required for tenders having value upto Rs. 50lakhs.
- (ix) 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.
- (x) 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.
- (xi) If a part or a component of work is completed but the overall scope of contract is not completed, this work shall not be considered for fulfillment of technical credentials even if the cost of part completed work/component is more than required for fulfillment of credentials.
- (xii) In case a work is considered similar in nature for fulfillment of technical credentials, the overall cost of that work including PVC amount if any shall be considered and no separate evaluation for each component of that work shall be made to decide eligibility.
- (xiii) For S N 7 & 12 -The value of final bill including PVC amount-if paid, or otherwise in case final bill is pending the contract cost in last approved variation statement plus PVC amount paid or cumulative amount paid up to last on-account bill including PVC amount and statutory deductions whichever is less, shall be considered as the completion cost of work/component.
- (xiv) In case, the Secondary Component(s) has/ have been defined in clause 15.5 above, the Attested copy of Completion Certificate of works executed by tenderer himself / the subcontractor (fully by any one or jointly i.e. partly by tenderer and remaining through subcontractor) during last five years, shall also be submitted in above performa.

ANNEXURE-IV-(B)

(Para 16.1 (d) and Para 15.6 (iii) (b) of General Instructions) Clause No. 11(i), and explanation to clause 10 of part I of GCC2022)

COMPLETION CERTIFICATE

(If the work is awarded by Concessionaire)

Name of Concessionaire:

Address and Contract details i.e. Phone No. FAX, e-mail.

Letter No.

Date: -.....

1.1	Name of work /Project executed by the Concessionaire	
1.2	Name and Address of Authority which awarded work to the Concessionaire.	
1.3	Name of work awarded by the Concessionaire to the firm.	
2.	Contract Agreement (C/A) No. and date	
3.	Name of Firm with address	
4.	Nature of entity (Sole Prop. /Partnership firm/company/Joint Venture firm/Registered Society /registered Trust etc.)	
5. (i)	In case of Partnership firm/JV/..... Name and % share of individual partners / members.	
(ii)	In case of Sole Proprietorship, the name of sole proprietor	
6.	Original value of contract agreement.	
7	Completion Cost of Work	
7.1	in case final payments have been made- Contract Cost in last approved variation statement plus PVC amount paid	
7.2	in case final bill is pending -	
(i)	the contract cost in last approved variation statement plus PVC amount paid	
(ii)	cumulative amount paid up to last on-account bill including PVC amount and statutory deductions	
8.	Date of award of contract	
9.	Has the work physically been completed in all respect as per contract agreement?	(Yes / No)
10 (i)	If yes, then actual date of physical completion.	
(ii)	Whether extension to DOC given with penalty or without penalty	
11.	Total payment made in above contract till the date of opening of present tender along with financial year –wise break-up	
11.1	Total payment made in above contract till the date of inviting of present tender along with financial year –wise break-up (Without PVC amount)	
12	In case of composite work: (See note (vii) below) Payment made for relevant distinct component of the work, out of total payment made under Sr. No. 7 above.	
12.1	in case final payments for the component have been made- Cost of component in contract in last approved variation statement plus PVC amount paid	
12.2	in case final bill is pending -	
(i)	the Cost of component in contract in last approved variation statement plus PVC amount paid	
(ii)	cumulative amount paid for the component up to last on account bill including PVC amount and statutory deductions	
13.	Performance of Contractor (Satisfactory/Unsatisfactory)	

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 of Authorized Person of the Concessionaire with Seal
And Mobile No. of Issuing Person.

Note:

- (i) Submission of false certificates by tenderer shall lead to, forfeiture of EMD (if submitted as per para 5.1 above), and other action including penal action (Annexure-II).
- (ii) Copy of certificate duly self-attested shall be submitted along with tender document.
- (iii) Payment made as indicated in above certificate (At Sr. No. 9/ Sr. No. 10) will be considered as value of completed work for the purpose of eligibility under special technical criteria.
- (iv) Above format is for guidance only. Any certificate containing information asked for shall be considered
- (v) A self-attested copy of LOA and concessionaire agreement executed between concessionaire & Authority at Sr. No 1 above shall be submitted along with this completion certificate.
- (vi) In case of JV firm, these details are also required for all the members of the JV firm for one similar single work for a minimum of 10 % of advertised value of the tender (for works without composite components).
- (vii) In case of JV firm, these details are also required for all the members of the JV firm for one similar single work for a minimum of 10 % of cost of any component of work in separate sheet (for work with composite components).
- (viii) Only those works will be treated as composite works which consist of more than one distinct component such as Civil Engg. Works, S&T work, Electrical work, OHE work etc. and there is separate schedule for each such distinct components in the tender documents
- (ix) No technical and financial credentials are required for tenders having value upto Rs. 50 lakhs
- (x) 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.
- (xi) 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.
- (xii) If a part or a component of work is completed but the overall scope of contract is not completed, this work shall not be considered for fulfillment of technical credentials even if the cost of part completed work/component is more than required for fulfillment of credentials.
- (xiii) In case a work is considered similar in nature for fulfillment of technical credentials, the overall cost of that work including PVC amount if any shall be considered and no separate evaluation for each component of that work shall be made to decide eligibility.
- (xiv) For S N7 & 12 -The value of final bill including PVC amount-if paid, or otherwise, In case final bill is pending the contract cost in last approved variation statement plus PVC amount paid or cumulative amount paid up to last on-account bill including PVC amount and statutory deductions whichever is less, shall be considered as the completion cost of work/ component.
- (xv) In case, the Secondary Component(s) has/ have been defined in clause 15.5 above, the Attested copy of Completion Certificate of works executed by tenderer himself / the subcontractor (fully by any one or jointly i.e. partly by tenderer and remaining through subcontractor) during last five years, shall also be submitted in above performa.

ANNEXURE-IV-(C)

(Para 16.1 (d) and Para 15.6 (iii) (b), 15.6 (iii) (c) of General Instructions) Clause No. 11(i), and explanation to clause 10 of part I of GCC2022)

COMPLETION CERTIFICATE

(If the work is awarded by Public listed company)

Name of the public listed company

Address and Contract details i.e. Phone No. FAX, e-mail.

Letter No.....Date: -.....

1.1	Name of work /Project	
1.2	Name and Address of the public listed company	
1.3	Number as incorporated/ registered in the National stock exchange or Bombay stock exchange	
1.4	Date of getting listed in NSE/BSE (document to be attached as per note (vi) below).	
1.5	Average Annual turnover of the public listed company in last three financial years excluding current financial year. (details to be attached as per proforma in annexure VIII as per note(vii) below)	
2.	Contract Agreement (C/A) No. and date	
3.	Name of Firm with address	
4.	Nature of entity (Sole Prop./Partnership firm/company/Joint Venture firm/Registered Society /registered Trust etc.)	
5(i)	In case of Partnership firm/JV/..... Name and % share of individual partners/members.	
(ii)	In case of Sole Proprietorship, the name of sole proprietor	
6.	Original value of contract agreement.	
7	Completion Cost of Work	
7.1	in case final payments have been made- Contract Cost in last approved variation statement plus PVC amount paid	
7.2	in case final bill is pending -	
(i)	the contract cost in last approved variation statement plus PVC amount paid	
(ii)	cumulative amount paid up to last on-account bill including PVC amount and statutory deductions	
8.	Date of award of contract	
9.	Has the work physically been completed in all respect as per contract agreement?	(Yes / No)
10 (i)	If yes, then actual date of physical completion.	
(ii)	Whether extension to DOC given with penalty or without penalty	
11.	Total payment made in above contract till the date of opening of present tender along with financial year –wise break-up	
11.1	Total payment made in above contract till the date of inviting of present tender along with financial year –wise break-up (Without PVC amount)	
12	In case of composite work: (See note (vii) below) Payment made for relevant distinct component of the work, out of total payment made under Sr. No. 7 above.	
12.1	in case final payments for the component have been made- Cost of component in contract in last approved variation statement plus PVC amount paid	
12.2	in case final bill is pending -	
(i)	the Cost of component in contract in last approved variation statement	

	plus PVC amount paid	
(ii)	cumulative amount paid for the component up to last on account bill including PVC amount and statutory deductions	
13	Performance of Contractor (Satisfactory/Unsatisfactory)	

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.

Date

Signature & Name of Person Authorized by the Public listed Company with Seal and Mobile No. of Issuing Person.

Note:

Following documents regarding the **Public listed company** are required to be submitted along with the certificate (**Mandatory**)

1. Details of Average Annual turnover of the public listed company in last three financial years excluding current financial year (should be 500 Cr and above) issued by Chartered Accountant. These details need to be submitted as per the proforma of Annexure VIII.
 2. The copy of the documents regarding listing in the National stock exchange or Bombay stock exchange with details of status of listing as on date of opening of tender, duly self-attested.
 3. The copy of the document of incorporation/ registration of the Public listed company (should be at least 5 years prior to date of opening of tender), duly self-attested.
 4. The copy of document regarding Person Authorized by the Public listed Company to issue such certificate, duly self-attested.
 5. 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 a copy of final/last bill paid by the public listed company in support of above work experience certificate duly self-attested.
- (i) The certificate shall not be taken into consideration if any of the above conditions, prerequisites is not fulfilled or required supporting mandatory documents are found deficient.
 - (ii) Submission of false certificates by tenderer shall lead to, forfeiture of EMD (if submitted as per para 5.1.2 above) and other action including penal action(Annexure-II).
 - (iii) Above format is for guidance only. Any certificate containing required information asked for shall be considered
 - (iv) In case of JV firm, these details are also required for all the members of the JV firm for one similar single work for a minimum of 10 % of advertised value of the tender (for works without composite components).
 - (v) In case of JV firm, these details are also required for all the members of the JV firm for one similar single work for a minimum of 10 % of cost of any component of work in separate sheet (for work with composite components).
 - (vi) Only those works will be treated as composite works which consist of more than one distinct component such as Civil Engg, Works, S&T work, Electrical work, OHE work etc. and there is separate schedule for each such distinct components in the tender document
 - (vii) 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.

- (viii) 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.
- (xi) If a part or a component of work is completed but the overall scope of contract is not **completed**, this work shall not be considered for fulfillment of technical credentials even if the cost of part completed work/component is more than required for fulfillment of credentials.
- (x) In case a work is considered similar in nature for fulfillment of technical credentials, the overall cost of that work including PVC amount if any shall be considered and no separate evaluation for each component of that work shall be made to decide eligibility.
- (xi) For col 7 & 12 -The value of final bill including PVC amount-if paid, or otherwise in case final bill is pending the contract cost in last approved variation statement plus PVC amount paid or cumulative amount paid up to last on-account bill including PVC amount and statutory deductions whichever is less, shall be considered as the completion cost of work/ component.
- (xii) In case, the Secondary Component(s) has/ have been defined in clause 15.5 above, the Attested copy of Completion Certificate of works executed by tenderer himself / the subcontractor (fully by any one or jointly i.e. partly by tenderer and remaining through subcontractor) during last five years, shall also be submitted in above performa.

ANNEXURE-V

(Para 16.1 (e) of General Instructions) (**Clause No.10.3** and explanation to clause 10 of Part-I of GCC-2022, with up-to-date correction slip)

LIST OF AWARDED WORKS UNDER EXECUTION AND/OR WORK AWARDED BUT NOT YET STARTED TILL DATE OF OPENING OF TENDER

(Mandatory for tenders more than Rs. 20 Cr value wherein eligibility criteria include Bid Capacity also, to evaluate Bid Capacity of tenderer)

SN	Name & place of work	Organization for whom work is being carried out	Date of award of contract, Contract Agreement No. & Date	Original cost of work /Revised Cost (up to latest corrigendum)	Date of Completion (Original/ Extended)	Payment Received till Date of opening of present tender	Balance amount of the work to be executed	Balance period of work to be executed	'B' Value of work to be done in 'N' years (See note below)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8) (5)-(7)	(9)	(10)
1									
2									
3									
4									
								Total	

Date

Signature of Chartered Accountant

Signature of Tenderer/s with seal

NOTE:

- (a) This statement should be submitted duly verified by Chartered Accountant.
- (b) In case of no works in hand, a 'NIL' statement should be furnished duly verified by chartered Accountant.
- (c) In case of JV firm, the details of works with each member of JV is required to be submitted duly verified by Chartered Accountant.
- (d) 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**.
- (e) N for column 10 –Number of years prescribed for completion of work for which bids has been invited.
- (e) 'B' is the value of existing commitments and balance amount of ongoing works with the tenderer to be completed in next 'N' years.
- (f) For N equal or more than column (9), Value of 'B' will be same as column (8)
- (g) For contracts not having any defined part financial /physical completion stages/milestones, and $N < \text{column (9)}$ then the value of 'B' will be as per formula $B = (8) * N / (9)$

- (h) In case part financial / physical completion stages / milestone is defined in the contract's value of 'B' shall be calculated accordingly.
- (i) No technical and financial credentials are required for tenders having value upto Rs. 50lakhs

ANNEXURE-VI

(Para 16.1 (h) of General Instructions and **Clause No.11(iii) Annex.I of Part-I of GCC-2022**,with up-to-date correction slip.

LIST OF PLANTS & MACHINERY AVAILABLE ON HAND AND PROPOSED TO BE INDUCTED (OWN AND HIRED TO BE GIVEN SEPARATELY) FOR SUBJECT WORK.

SN	Particulars of Plants/Machinery	No. of Unit	Kind and make	Capacity	Age & Conditions	Owned by firm	Proposed to be purchased	
							Date of placing order	Likely date of receipt
1	2	3	4	5	6	7	8	9
1								
2								
3								
4								
5								
6								
7								

Note:

- (a) Indicate clearly, whether (i) Owned by firm, or (ii) To be purchased by firm giving date of placing order and likely date of receipt.
- (b) Optimum Plants and Machineries required to be deployed during execution of work.
- (i) Earthwork in formation of New Line / Doubling/ Gauge Conversion Project: Poclain, JCB, Vibratory Roller, Grader, Dumpers, Tractors, Water tank etc.
- (ii) Concreting work for bridge work: Concrete pump, Transit mixer as per requirement, Batching plant of suitable capacity, JCB, Needle vibrator 60/40 mm etc.
- (iii) Machinery for Signal Foundation casting, Trenching works for S&T cable laying etc.
- (iv) Tools and Plant for installation work including measuring instrument to be used in the work.

Signature of Tenderer/s

Dated:.....

ANNEXURE-VII

(Para 16.1 (h) of General Instructions) **Clause No.11 (iii) Annex.I of Part-I of GCC-2022**, with up to date correction slip.

LIST OF PERSONNEL ORGANIZATIONS AVAILABLE ON HAND AND PROPOSED TO BE ENGAGED FOR THE SUBJECT WORK.

Sr. No.	Name & Designation	Qualification	Professional experience	Remarks
1.	2	3	4	5
1				
2				
3				
4				
5				
6				
7				
8				

Signature of Tenderer/s

Dated:.....

ANNEXURE-VIII

(Para 16.1 (k) of General Instructions)

Clause No.10.2 and 11(ii) Annex.I of Part-I of GCC-2022,with up-to-date correction slip (ON THE LETTER HEAD OF CHARTERED ACCOUNTANT)

To,

Chief General Manager, DFCCIL-Ajmer

Sub: - Contractual receipts of M/s (Name of firm)

It is to certify that contractual receipts of M/s..... (Name of firm) during current financial year and preceding three financial years upto date of inviting of tender as extracted from audited balance sheets are as under:

Sr. No.	Financial year	Contractual Receipts	*Extracted from Source document (Audited balance sheet/certificate issued by the employer/ client / Tax deduction at source certificate)
1.	Current year (Say A)		
2.	A-1		
3.	A-2		
4.	A-3		

*In case the Audited balance sheet is not available for the current financial year and/or immediate preceding financial year then the contractual receipts extracted from certificate issued by the employer/ client/ Tax deduction at source certificate, shall be considered for evaluation of the financial capacity of the tenderer.

Yours sincerely,

Date:...

(Name & Sign. Of Authorized Signatory)

Seal of firm

Registration No: -

E-Mail:-

Phone:-

FAX:

-

Note: Client certificate from other than Govt Organization should be duly supported by Form 16A/26AS generated through TRACES of Income Tax Department of India.

(Para 9.0 (ii) of General Instructions)

CERTIFICATE

(For sole proprietorship firm / Sole proprietorship firm participating as member of JV)

I..... (Indicate Name of Sole prop) S/o..... (Full address of Sole prop) Proprietor of M/s..... (Indicate Name of Proprietary firm) situated at (Full address of Sole prop firm) do hereby solemnly affirm & declare as under:

1. That I, who is submitting the tender on behalf of the **SOLE PROPRIETOR** is the **Proprietor** of the firm working in the name & style of M/s.....

(Indicate Name – Proprietary firm) at

Deponent Signature and Seal

VERIFICATION

I, the above-named deponent do hereby solemnly affirm & verify that the contents of my above affidavit are true & correct. Nothing has been concealed and no part of it is false.

Deponent

Signature and Seal

Place: -

Date:-

Note: - The stamp duty shall be governed by the provision of the Law relating to stamp in Force in that State at the time when such AFFIDAVIT is being executed. Affidavit shall be affirmed before the Notary Public.

ANNEXURE-X

(Para 16.2.6 (a) of General Instructions) Clause No. 17.6, 17.12 of Annex.I Part-I of GCC-2022, with up-to-date correction slip)

MEMORANDUM OF UNDERSTANDING FOR JV

(The Memorandum of Understanding shall be submitted in following format on the non-judicial stamp of Rs.500/- duly notarized by Notary Public)

NOW THIS Memorandum of Understanding is executed at (Name of Place) on this date (DD/MM/YY) between M/s (Name of first constituent and address) as the first party represented by Shriand M/s..... (Name of 2nd constituent and address) represented by Shri _____ As the second party and so on 3rd, 4th&5th subsequent parties. (The expression and words of first and second and other shall mean and include their heir's successors, assigns, nominees, execution, administrators and legal representatives respectively).

WHEREAS all the parties are engaged mainly in the business of execution of Railway Signal and Telecommunication Engineering and general contracts for various Government Departments and organizations.

AND WHEREAS the parties herein above mentioned are desirous of entering into a joint venture for carrying out civil engineering and/or subject contract works in connection with Tender No. (Name of work) _____ "As mutually decided between members of Joint Venture Agreement.

1. That we M/s..... (JV firm) on behalf of all members of this joint venture agreement agreed that M/s..... will be "Lead Partner" of this Joint Venture.
2. That under this MOU, the work will be done jointly by M/sThe first party and M/sthe second and so onin the name and style of (Name) (Joint venture firm).
3. That we JV firm M/s on behalf of all the members of JV firm shall be legally liable, severally and jointly responsible/ liable for the satisfactory/ successful execution/ completion of the works including maintenance period in all respects and in accordance with terms and conditions of the contract.
4. That we M/s _____ JV firm On behalf of all the members of the JV firm to which the contract is awarded, shall be jointly and severally liable to the Employer (DFCCIL) for execution of the project in accordance with General and Special Conditions of the Contract. The JV members shall also be liable jointly and severally for the loss, damages caused to the DFCCIL during the course of execution of the contract or due to non-execution of the contract or part thereof.
5. M/s (Name of Lead Firm) of JV firm shall be the lead member of the JV firm who shall have a majority% share of interest in the JV firm. The other (One/Two) members shall have following share :-M/s _____ (Name of Second Firm) have % and M/s _____ (Name of Third Firm if any) have% share of interest in the JV Firm.
6. That this JV 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.
7. That we all the Joint Venture members authorize Mr./Ms.....one of the members on behalf of the JV firm to deal with the 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/ correspondence with respect to the contract would be sent to this authorized member _____ (Name & Address) of the JV firm. In case the offer is submitted by the person other than those who is appointed as above and there is difference between the name of the person authorized as above

and the person who digitally submitted the offer then our offer shall be deemed to be summarily rejected.

- 8. That no member of the JV 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 employer (DFCCIL) in respect of the said tender/contract.
- 9 That we all the members of the JV certify that we have not been black listed or debarred by Railways, DFCCIL or any other Ministry/Department /PSU (Public Sector Undertaking) of the Govt. of India/ State Govt. from participation in tenders/contract in the past either in our individual capacity or as a member of the JV firm or partnership firm in which they were members/partners. I/ We are aware that concealment / wrong information in regard to above shall make the contract liable for determination under Clause 62 of the General Conditions of Contract.
- 10. That this Joint Venture MOU shall in all respect be governed by and interpreted in accordance with Indian Laws.

Now the parties have joined hands to form this MOU on this date _____ (DD/MM/YY) with reference to and in confirmation of their discussions and understanding brought on record on date _____ (DD /MM/YY).

In witness thereof all/both the above-named parties have set their respective hands on this MOU on the day, month and year first above mentioned, in the presence of the following witnesses:

- 1. First party (authorized signatory)
- 2. Second party (authorized signatory)
- 3. Third party (if any) (authorized signatory)

With Seal of parties

Witnesses with name & full address:

- 1.....
- 2.....

Date.....

Place.....

NOTE: - Should MOU be in more than one separate page, each page shall be Signed by the authorized signatory.

Annexure –XB

(Para 15.2, 16.2.7 of General Instructions & Para 10.2 & 17.15.2 of Tender Form (Second Sheet) of Annexure I of GCC-2022, with up-to-date correction slip)

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)

(Para 16.2.7.3(b) of General Instructions) Clause No. 17.14.1 of Annex. I Part-I GCC2022)

“LETTER OF CONSENT”

(To be submitted by Partnership Firm participating as member of JV)

We the following partners of M/s..... (Indicate name of firm)

- (1) (2)
- (3) (4)
- (5) (6)

Having its office at hereby give our consent on behalf of M/s.....(Indicate name of firm) in favour of Mr(Indicate name of Partner), whose specimen signature are appended below, for entering into Joint Venture Agreement with M/s..... (Indicate name of other firm’s) having office at..... in connection with T. No. _____Name of work..... to sign & execute the MOU, JV agreement and all other required documents pertaining to above said tender on behalf of firm.

We have read the contents of this letter of consent & accept the same and we hereby agree to and ratify all acts, deeds & things of them or any documents executed by the said partner in the scope of this letter of consent on behalf of firm.

This letter of consent is made at on

Name & Signature of Partner/s (Signature of Sh. _____)

- 1.
- 2.
- 3.
- 4.

Date:

Place:

Seal of the Firm

Note: The stamp duty of Rs. 500/- or shall be governed by the provision of the Law relating to stamp in force in that State at the time.

Annexure-XII

(Para 16.2 of General Instructions) & clause No. 17.14.2, 17.14.3 ©and cl.15 of Annex I Part-I of GCC-2022, with up-to-date correction slip

SPECIAL POWER OF ATTORNEY

(To be submitted by Private/Limited Companies, Sole Proprietor or HUF participating as member of JV)

BE IT KNOWN to all that I (Indicate name of Director/ Sole Prop.)
..... at the Company/Proprietary firm/HUF
(Indicate Name of Company / Sole Proprietary firm/HUF)..... having its office at
..... do hereby for and on behalf of the said Company/Proprietary firm/HUF
appoint Sh..... S/o Shriage..... (Indicate Name of Nominee with full
address) of the Company/Prop. Firm/HUF as our Attorney, whose specimen signature are
appended below to execute the MOU/ JV Agreement & all other required documents with
M/s..... (Indicate Name of other Co. /Prop. firm)situated
.....at.....in connection with the
following tender invited by DFCCIL Ajmer : -

“T.No.....

Name of work.....”

We/ I have read the content of this Special Power of Attorney & accept the same, and we/ I hereby agree to ratify & confirm & do hereby ratify & confirm all acts, deeds & things lawfully done or caused to be done by our said Attorney.

In witness where of I..... (Indicate name of Director/ Sole Prop/ Karta.) Of
M/s.....(Indicate name of Co. / Prop. Firm/HUF) the above-named
Director / Proprietor has executed this Power of Attorney.

For M/s.....

(Sign.of Shri.....)

(Sign &Seal.....)

Place...

Date: -.....

The stamp duty shall be governed by the provision of the Law relating to stamp in force in that State at the time when such Power of Attorney is being executed. The Power of Attorney shall duly registered with registrar or notarized.

(For private/ limited company as member of JV- the annexure XII is required even if MOU/JV agreement is signed by the authorized/ Power of attorney holder himself as per the Copy of Resolution)

(For sole proprietor firm/HUF as member of JV- Not required if MOU/JV agreement is signed by the proprietor of the sole proprietor firm/ karta of HUF himself)

Annexure-XIII

(Para 16.2.3 (b) of General Instructions) & clause No. 14 (a)(ii), 15 Annex I Part-I of GCC-2022, with up-to-date correction slip

**SPECIAL POWER OF ATTORNEY
(For Partnership Firms only)**

BE IT KNOWN to all that we (1).....(2).....
(3).....(4).....(5)..... all the partners
of the firm..... having its registered office at.....
do hereby, for and on behalf of the said firm appoint Shri..... (Name &
designation) Special Attorney of the said firm and authorize the said
Shri..... (name), whose specimen signature are appended below, to do all
or any of the following acts deeds and/or things on behalf of the said firm and to represent the
firm in respect for the tender No.(Name of
work).....invited by DFCCIL Ajmer.

1. To appear before office of DFCCIL Ajmer related to the process of tendering for the above said tender.
2. To procure/download the tender documents for the above said tender.
3. To digitally sign the above said tender document and for uploading the offer on www.ireps.gov.in for the said Tender. In case the offer is submitted by the person other than those who is appointed as above and there is difference between the name of the person authorized as above and the person who digitally submitted the offer then our offer shall be deemed to be summarily rejected.
4. To attend meetings and submit clarifications including negotiations, if any, called by DFCCIL-Ajmer.
5. To sign the agreement and other relevant documents & receive payment on behalf of firm,
6. To co-ordinate measurement through contractor’s authorized engineer, witness measurement, sign measurement books on behalf of firm.
7. To compromise, settle, relinquish any claim(s) preferred by the firm, sign no claim certificate and refer all or any disputes to arbitration.

We/ I have read the content of this Special Power of Attorney & accept the same and We/I hereby agree to ratify & confirm & do hereby ratify & confirm all acts, deeds & things lawfully done or caused to be done by our said Attorney.

Executants Partner

(Signature of Sri.....)

(Name &signature)

- 1.....
- 2.....
- 3.....
- 4.....

DATE.....

Place:-

Seal of Firm

Seal of Firm

Note:-The stamp duty shall be governed by the provision of the Law relating to stamp in force in that State at the time when such Power of Attorney is being executed. The Power of Attorney shall duly registered with registrar or notarized.

(Required even if one or more Partners are authorized in the Partnership Firm to sign on behalf of the Firm)

Annexure-XIV

(Para 16.2.1 (b) of General Instructions) & clause No. 15 Annex I Part-I of GCC-2022, with up to date correction slip

SPECIAL POWER OF ATTORNEY

(For Sole Proprietor Firm only)

BE IT KNOWN to all that I Sole Proprietor of the firmhaving its registered office at..... do hereby, for and on behalf of the said firm appoint Shri..... (Name& designation with full address) Special Attorney of thesaid firmandauthorize _____ the said Shri.....(name) whose specimen signature are appended below, to do all or any of the following act's deeds and/or things on behalf of the said firm and to represent the firm in respect for the tender No..... (Name of work) invited by DFCCIL-Ajmer.

1. To appear before office of DFCCIL-Ajmer related to the process of tendering for the above said tender.
2. To procure/download the tender documents for the above said tender.
3. To digitally sign the above said tender document and for uploading the offer on www.ireps.gov.in for the said Tender.
4. To attend meetings and submit clarifications including negotiations, if any, called by DFCCIL-Ajmer.
5. To sign the agreement and other relevant documents & receive payment on behalf of firm,
6. To co-ordinate measurement through contractor's authorized engineer, witness measurement, sign measurement books on behalf of firm.
7. To compromise, settle, relinquish any claim(s) preferred by the firm, sign no claim certificate and refer all or any disputes to Arbitration Tribunal.

I have read the content of this Special Power of Attorney & accept the same and I hereby agree to ratify & confirm & do hereby ratify & confirm all acts, deeds & things lawfully done or caused to be done by our said Attorney.

(Signature with name of Power of attorney Holder)

(Name & signature of sole proprietor)

Dated.....

Place.....

(Seal of Firm)

Note: The stamp duty shall be governed by the provision of the Law relating to stamp in force in that State at the time when such Power of Attorney is being executed. The Power of Attorney shall duly registered with registrar or notarized.

(Not required if tender is uploaded by Proprietor himself)

Annexure-XV

(Para 16.2.4 (d) of General Instructions) & clause No. 14(c) (ii) and 15 of Part-I of GCC-2020, with up-to-date correction slip

**SPECIAL POWER OF ATTORNEY
(For Private/Limited companies only)**

BE IT KNOWN To all that (Name of firm) having its registered office at..... do hereby, for and on behalf of the firm appoint Shri..... (Name & designation) Special Attorney of the said firm and authorize the said Shri..... (name) whose specimen signatures are appended below, to do all or any of the following acts deeds and/or things on behalf of the said firm and to represent the firm in respect for the tender No..... (Name of work) _____ invited by DFCCIL-Ajmer.

1. To appear before office of DFCCIL-Ajmer related to the process of tendering for the above said tender.
2. To download the tender documents for the above said tender.
3. To digitally sign the above said tender document and for uploading the offer on www.ireps.gov.in for the said Tender.
4. To attend meetings and submit clarifications including negotiations, if any, called by DFCCIL-Ajmer.
5. To sign the agreement and other relevant documents & receive payment on behalf of Company,
6. To co-ordinate measurement through contractor authorized engineer, witness measurement, sign measurement books on behalf of Company.
7. To compromise, settle, relinquish any claim(s) preferred by the firm, sign no claim certificate and refer all or any disputes to arbitration.

We have read the content of this Special Power of Attorney & accept the same and we hereby agree to ratify & confirm & do hereby ratify & confirm all acts, deeds & things lawfully done or caused to be done by our said Attorney.

(Signature of Shri)

Authorized signatory of the firm

Dated.....

Place.....

Seal of Firm

Note:- The stamp duty shall be governed by the provision of the Law relating to stamp in force in that State at the time when such Power of Attorney is being executed. The Power of Attorney shall duly registered with registrar or notarized. Required even if tender documents are submitted by the authorized/ power of attorney holder himself as per resolution passed by Board of Directors

ANNEXURE-XVI**MODEL FORM OF BANK GUARANTEE BOND FOR PG**

Chief General Manager, DFCCIL-Ajmer.

1. In consideration of the President of India acting through.....(hereinafter called “the Government”) having agreed to exempt (Name & address).....(hereinafter called “the said Contractor(s)”) from the demand, under the terms and conditions of an Agreement dated ----- made between-----and..... for --- ----- (hereinafter called “the said Agreement”), of Performance Guarantee for the due fulfillment by the said Contractor(s) of the terms and conditions contained in the said Agreement, on production of a bank Guarantee for Rs.------(Rupeesonly)we,----- (hereinafter referred to as “the Bank” at the request of (cont ractor(s) do hereby undertake to pay to the Government an amount not exceeding Rs.....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.
2. We ____ (indicate the name of the bank) and our local branch at (name, address and branch code of local branch) 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 of conditions contained in the said Agreement or by reason of the contractor(s) failure to perform the said Agreement. Any such demand made on the bank shall be conclusive as regards the amount due and payable by the Bank under this guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding Rs. -----
3. We under-take to pay to the Government any money so demanded notwithstanding any dispute or disputes raised by the contractor(s)/supplier (s) in any suite 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.
4. We ____ (Indicate the name of bank) an dour local branch at -----(name, address and branch code) further agreed with the guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance/of the said Agreement and that it shall continue to be enforceable till all the dues of the 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 ____ certifies 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 guarantee. Unless a demand or claim under this guarantee is made on in writing on or before the _____ we shall be discharged from all liability under this guarantee thereafter.
5. We ____ (Indicate the name of bank) and our local branch(name, address and branch code of local branch) further agree with the government 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 post opens for any time or from time to time any of the powers exercisable by the Government against the said, Contractor(s) and to further or enforce any of the terms and conditions relating to the said agreement and we shall

not be relieved from our liability by reason of any such variation, or extension being granted to the said Contractor(s) or for any forbearance, act or commission on the part of the Government or any indulgence by the Government to the said Contractor(s) or any such matter or thing whatsoever which under the law relating to sureties would, but for this provision, have effect of so relieving us.

6. This guarantee will not be discharged due to the change in the constitution of the bank or the contractor(s)/Supplier(s).
7. We (indicate the name of bank) and our local branch at. (Name, address and branch code of local branch at Jaipur) lastly undertake not to revoke this guarantee during its currency except with the previous consent of the Government inwriting.

Dated the-----day of ----- 2024

For _____ (indicate the name of bank) and our local branch(Name, address and branch code of local branch)

ANNEXURE-XVII

(Para 16.2.7.4 (c) of General Instructions & Clause No. 17.14.3 (a) of Annex.I Part-I of GCC-2022, with up-to-date correction slip)

SPECIMEN BOARD’S RESOLUTION OF A PRIVATE/LIMITED COMPANY FOR ENTERING INTO JV WITH OTHER ENTITIES

Extract from the minutes of meeting of Board of Directors of the company held on.....
(Date) at the office of the company situated at.....
(Address of the company).

RESOLVEDTHAT(Name of the company)have decided to participate for the said tender for the work of.....
(Name of the work) in joint venture with M/s..... (Name of the other Firm/Firms or company/companies with addresses) in name and style of the JV firm.....(Name of the Joint Venture firm).

FURTHER RESOLVEDTHAT Shri.....(Name and designation of authorized person of the company) is hereby authorized to execute & sign all necessary documents for submission of tender documents, JV Agreement and any documents in connection with present tender on behalf of company etc. For the above-mentioned work on behalf of the company.

Signed by Managing Director/Director/ Company Secretary Of the Company

Note:

1. Stipulations in the above specimen Board’s Resolution are for guidance only. Companies can incorporate other stipulation /stipulations relevant with the tender and formation of JV, if required.
2. The above Annexure should be executed on the Letter Head of the company.

Annexure-XVIII

Clause No. 16.2.7.3(b) of General Instructions & Clause No. 17.14.1 (c) and 15 of Annex.I Part-I of GCC-2020, with up-to-date correction slip

SPECIAL POWER OF ATTORNEY

(For Partnership Firms participating as a member of JV only)

We the following partners of M/s (Indicate name of firm)

- (1).....2.....
- 3.....4.....
- 5.....6.....

Having its office athereby give our consent on behalf of M/s.....(Indicate name of firm) in favour of Mr.(Indicate name of Partner), whose specimen signature are appended below, for entering into Joint Venture Agreement with M/s..... (Indicate name of other firm's) Having office at..... in connection with T. No.....Name of work..... to sign & execute the MOU, JV agreement and all other required documents pertaining to above said tender.

We have read the content of this Special Power of Attorney & accept the same and we hereby agree to ratify & confirm & do hereby ratify & confirm all acts, deeds & things lawfully done or caused to be done by our said Attorney.

Executants Partner

(Signature of Sri.....)

(Name &signature)

DATE.....

1.....

2.....

Place

3.....

4.....

Seal of Firm

Seal of Firm

Note:The stamp duty shall be governed by the provision of the Law relating to stamp in force in that State at the time when such Power of Attorney is being executed. The Power of Attorney shall duly registered with registrar or notarized. Required even if MOU/JV agreement is signed by one or more partners authorized in the Partnership Firm as per the Partnership deed, letter of consent.

ANNEXURE-XIX**Clause No. 16.1(f) of General Instructions & Clause No. 10.3 Annex.I Part-I of GCC-2022, with up-to-date correction slip****(ON THE LETTER HEAD OF CHARTERED ACCOUNTANT)**

(Mandatory and applicable for tenders valuing more than Rs 20 Cr to calculate Bid Capacity of tender

for value of A)

To

Chief General Manager DFCCIL-Ajmer.

Sub: -Construction works executed and payment received

It is to certify that construction works executed and payment received through construction works of M/s (Name of firm) during the previous three financial years and the current financial year (up to date of inviting tender), as extracted from, Balance sheet/ certificate **issued by the employer/ client**, Form 16, Form 26AS etc. are as under:

Sr. No.	Financial year	Work executed And Payment received through construction works
1.	Current year (Say A)	
2.	A-1	
3.	A-2	
4.	A-3	

Yours Sincerely,

Date: ...
Registration No:

(Name & Sign. Of Authorized Signatory) Seal of firm

E-Mail:

Note :

- (a) In case of JV firm details of construction works executed by each member of JV is required to be submitted
- (b) In case, the tenderer/s failed to submit the above statement (for tenders valuing more than 20 Cr) along with offer, their/his offer shall be considered as incomplete and will be rejected **summarily**.

Annexure –XX

Clause No. 16.2.7.5(d) of General Instructions & Clause No. 14(f)(iii) and 15 of Annex.-I Part-I of GCC-2022, with up to date correction slip

SPECIAL POWER-OF-ATTORNEY (For LLP Firm incorporated under LLP Act)

KNOW ALL MEN BY THESE PRESENTS: WHEREAS M/S..... (Name of LLP & LLPIN number) is a LLP Firm registered under the LLP Act, 2008, and having its registered office at(hereinafter called the ' LLP').

AND WHEREAS by its resolution No _____ passed in the meeting held on..... of the Partners of the LLP (LLP name) have decided to participate in the tender No. _____

_____ invite
d by DFCCIL-Ajmer for the work namely“ _____”

I.....(name and designation) the authorized representative of M/S.....(name of LLP) duly authorized in this behalf by aforesaid resolution do hereby irrevocably constitute, nominate, appoint and authorize Mr./Ms.__(designation)_(address) _____&Mr./ Ms./Mr./Ms.__(designation)_(address)_____who is/are presently holding the above-mentioned position in the LLP as our true and lawful attorney (hereinafter referred to as “Attorney”) of the LLP to jointly or severally exercise all or any of the following powers for and on behalf of M/S..... (name of LLP & LLPIN number) in respect of the aforesaid tender Invited by the DFCCIL-Ajmer:

1. To appear before office of DFCCIL-Ajmer related to the process of tendering for the above said tender.
2. To download the tender documents for the above said tender.
3. To digitally sign the above said tender document and for uploading the offer on www.ireps.gov.in for the said Tender.
4. To attend meetings and submit clarifications including negotiations, if any, called by DFCCIL-Ajmer.
5. To sign the agreement and other relevant documents & receive payment on behalf of firm,
6. To co-ordinate measurement through contractor authorized engineer, witness measurement, sign measurement books on behalf of firm.
7. To compromise, settle, relinquish any claim(s) preferred by the firm, sign no claim certificate and refer all or any disputes to arbitration

The LLP agrees and undertakes that in the event of any change in the constitution of the LLP, the rights and obligations of the LLP shall continue to be in full force without any effect thereof. The LLP undertakes that it shall not cancel or amend this power of Attorney without obtaining previous written consent of DFCCIL-Ajmer.

AND the LLP hereby agrees that all acts, deeds or things lawfully done by the said Attorneys or either of them under the authority of this power shall be construed as acts, deeds and things done by the LLP and the LLP hereby undertakes to confirm and ratify all and whatsoever the said Attorneys or either of them shall lawfully do or cause to be done by virtue of the powers hereby given.

IN WITNESS WHEREOF this deed has been signed and sealed by Sh _____

WITNESSES:

Signature Name:
Address:

Signatures of authorized representative & Seal
of LLP: authorized representative

Name of (Executants): Designation:

Signature Name:

Address:

Specimen Signatures of Attorney Holder(s) in token of acceptance:

(1) Name Signature.....

(2) NameSignature.....

Executed and Signed before me on this.....day of.....At (place).

(Seal and signature of Notary Public)

Note:The stamp duty shall be governed by the provision of the Law relating to stamp in force in that State at the time when such Power of Attorney is being executed. The Power of Attorney shall duly registered with registrar or notarized. Required even if tender documents are submitted by the authorized/ power of attorney holder himself as per resolution passed by Partners of the LLP.

Annexure -XXI

Clause No. 16.2.4(d) of General Instructions & Clause No. 14(f) (iii) Annex.I Part-I of GCC-2020, with up-to-date correction slip

Partner’s Resolution of LLP Firm incorporated under LLP Act for submitting Tender by LLP firm (To be printed on Firm’s letter head)

EXTRACT OF THE RESOLUTION PASSED AT THE MEETING OF THE PARTNERS OF ___ (LLP Name) having LLPIN _____ of 20..... (Hereinafter referred to as LLP) HELDON (Date) _____ AT (Address) _____ Whereas the Board has been described about NIT No. _____ issued by DFCCIL-Ajmer for the

work name “_”. Partners discussed the matter and after discussion following resolution was passed:

RESOLVED THAT the LLP (LLP name) shall participate in the above tender

Resolved further that the LLP/Partners authorize(s), Mr./Ms. & Mr./Ms. _____ (name and designation) of the LLP, to jointly or severally sign and submit all the necessary papers, letters, forms, quotes, bids etc., negotiate, discuss, agree to make any amendments, alterations or modifications thereto and to make representations, submit papers, affidavits and to do any other act and complete requisite formalities on behalf of the LLP in connection with completion of aforesaid tender work and to enter into liability against the LLP.

Resolved further that LLP/Partners authorize(s) Mr./Ms. _____ (Name and Designation) of the LLP to execute Power of Attorney in terms of this resolution in favour of Mr./Ms. _____ & Mr./Ms. Named.

The acts done and documents executed by such above named authorized person(s) shall be binding on the LLP. For the Organization,

(Seal of LLP & Signature of authorized person)

Name of authorized person: _____

Designation: _____

Place:

Dated:

Executed and Signed before me on this.....day _____ of _____ At.....(place).

(Seal and signature of Notary Public)

Note:-

1. Stipulations in the above specimen Resolution are for guidance only. LLP firm can incorporate other stipulation /stipulations relevant with the tender and formation of JV, if required.
2. The above Annexure should be executed on the Letter Head of LLP firm. Required even if tender documents are submitted by the authorized/ power of attorney holder himself as per resolution passed by Partners of LLP firm

Annexure –XXII**Clause No. 16.2.5(c) of General Instructions & Clause No. 14(e)(iii) and 15 of Annex. I Part-I of GCC-2022, with up-to-date correction slip****SPECIAL POWER-OF-ATTORNEY (For Registered Society & Registered Trust)**

KNOWALL MEN BY THESE PRESENTS: WHERE AS M/S.....(Name of **Registered Society / Registered Trust**) is a **Registered Society / Registered Trust** registered under the Act(Name of the act vide which registered), and having its registered office at(hereinafter called the '**Registered Society / Registered Trust**').

AND WHEREAS by its resolution No..... passed in the meeting held on.....of the Executive Member of the **Registered Society / Registered Trust** the Registered Society /Registered Trust (Registered Society/**Registered Trust** name) have decided to participate in the tender No. _____ invite d by DFCCIL-Ajmer for the work namely “_____”

I _____ (name and designation) the authorized representative of M/S (name of **Registered Society / Registered Trust**) duly authorized in this behalf by aforesaid resolution do hereby irrevocably constitute, nominate, appoint and authorize Mr./Ms. (designation) _____ (address) & Mr. /Ms./Mr./Ms. (designation) _____ (address)

_____ who is/are presently holding the above-mentioned position in the **Registered Society / Registered Trust** as our true and lawful attorney (hereinafter referred to as “Attorney”) of the **Registered Society / Registered Trust** to jointly or severally exercise all or any of the following powers for and on behalf of M/S..... (name of **Registered Society / Registered Trust**) in respect of the aforesaid tender Invited by the DFCCIL-Ajmer:

1. To appear before office of DFCCIL-Ajmer related to the process of tendering for the above said tender.
2. To download the tender documents for the above said tender.
3. To digitally sign the above said tender document and for uploading the offer on www.ireps.gov.in for the said Tender.
4. To attend meetings and submit clarifications including negotiations, if any, called by DFCCIL-Ajmer.
5. To sign the agreement and all other required documents & receive payment.
6. To co-ordinate measurement through contractor authorized engineer, witness measurement, sign measurement books on behalf of Registered Trust/Society.
7. To compromise, settle, relinquish any claim(s) preferred by the firm, sign no claim certificate and refer all or any disputes to arbitration.

The **Registered Society / Registered Trust** agrees and undertakes that in the event of any change in the constitution of the **Registered Society / Registered Trust**, the rights and obligations of the **Registered Society / Registered Trust** shall continue to be in full force without any effect thereof.

The **Registered Society / Registered Trust** undertakes that it shall not cancel or amend this power of Attorney without obtaining previous written consent of DFCCIL-Ajmer AND the **Registered Society / Registered Trust** hereby agrees that all acts, deeds or things lawfully done by the said Attorneys or either of them under the authority of this power shall be construed as acts, deeds and things done by the **Registered Society / Registered Trust** and the **Registered Society / Registered Trust** hereby

undertakes to confirm and ratify all and whatsoever the said Attorneys or either of them shall lawfully do or cause to be done by virtue of the powers hereby given.

IN WITNESS WHERE OF this deed has been signed and sealed
Shri.....(name and designation), on this.....day of 20....
,in presence of:

WITNESSES:

Signature Name: Signatures of authorized representative
Address: & Seal of **Registered Society / Registered Trust**

Name of authorized Rep (Executants):
Designation:

Signature Name: Address:

Specimen Signatures of Attorney Holder(s) in token of acceptance:

- (1)Name Signature.....
- (2) Name.....Signature.....

Executed and Signed before me on this.....day of.....At (place).

(Seal and signature of Notary Public)

Note: The stamp duty shall be governed by the provision of the Law relating to stamp in force in that State at the time when such Power of Attorney is being executed. The Power of Attorney shall duly registered with registrar or notarized. (Required even if tender documents are submitted by the authorized/ power of attorney holder himself)

Annexure-XXIII**Information and particulars in terms of Para 11(a) and 11(b) & 16.1 (o) of General Instructions and Clause No. 16 of Annexure-I Part-I of GCC-2022, with up to date correction slip.**

- (i) Information and particulars regarding employed retired DFCCIL/Railway Engineer (s)/ Officer(s) of the Gazetted rank.

Sr. No.	Name of retired gazette Officer/Engineer with Designation	Date of Retirement	Details of permission obtained (wherever applicable)
1.			
2.			
3.			
4.			

- (ii) Information and particulars regarding retired DFCCIL/Railway Engineer (s)/ Officer(s) of the Gazetted rank being one of the partner in the partnership Firm/ Joint venture/registered Society/ registered firm/ LLP etc.

Sr. No.	Name of retired gazette Officer/Engineer with Designation	Date of Retirement	Details of permission obtained (wherever applicable)
1.			
2.			
3.			
4.			

- (iii) Information and particulars regarding retired Railway Engineer (s)/ Officer(s) of the Gazetted rank being director in the company

Sr. No.	Name of retired gazette Officer/Engineer with Designation	Date of Retirement	Details of permission (wherever Obtained applicable)
1.			
2.			
3.			
4.			

Note:

- Details as per the above format shall be furnished by the tenderer. The format should not be left blank. In case of there being no such retired DFCCIL Engineer/Gazetted Railway Officer/Engineer, Nil to be furnished in the format.
- In case details are not submitted in terms of Para 11(a) by the tenderer, their offer shall be summarily rejected.
- Also submit the document of permission from the President of India or any officer, duly authorized by him in this behalf, in case (i) where such Engineer or officer had not retired from government service at least 1 year prior to the date of submission of the tender (ii) where such Engineer or officer is a partner or director as the case, in partnership firm or an incorporated company.

- (iv) Information and particulars in terms of Para 11(b) of General instructions regarding Relative(s) employed in DFCCIL/Gazetted capacity in IR.

Sr. No.	Name of the relative who is employed in gazette capacity on North Western Railway with Designation	Relation

1.		
2.		
3.		
4.		

Note :-

1. Details as per the above format shall be furnished by the tenderer. The format should not be left blank. In case of there being no such relative, Nil to be furnished in the format.
2. In case details are not submitted in terms of Para 11(b) of General Instructions by the tenderer, their offer shall be summarily rejected.

Signature of the tenderer.....

Name.....

Clause No. 16.2.7.5(c) of General Instructions Partner’s Resolution of LLP Firm for entering into Joint Venture (To be printed on LLP Firm’s letter head)

EXTRACT OF THE RESOLUTION PASSED AT THE MEETING OF THE PARTNERS OF _____ (LLP Name) having LLPIN _____ of 20) (hereinafter referred to as LLP) HELD ON (Date) _____ AT (Address) _____

Whereas the Partners have been described about NIT No. _____ issued by DFCCIL-Ajmer for the work namely “_____”. Partners discussed the matter and after discussion following resolution was passed:

RESOLVED THAT the LLP (LLP name) shall participate in the above tender in Joint Venture and for the purpose the LLP shall enter into and execute joint venture agreement, with M/S _____ & M/S _____ (name of other constituent(s) of joint venture).

Resolved further that the LLP/Partners authorize(s), Mr./Ms. _____ & Mr./Ms. _____ (name and designation) of the LLP, to jointly or severally, sign joint venture agreement, and to sign such other documents and to do any other act and complete requisite formalities on behalf of the LLP in connection with completion of aforesaid tender work and to enter into liability against the LLP.

Resolved further that LLP/Partners authorize(s) Mr./Ms. _____ (name and designation) of the LLP to execute Power of Attorney in terms of this resolution in favour of Mr./Ms. _____ Mr./Ms. _____ the person(s) abovenamed.

The acts done and documents executed by such above named authorized person(s) shall be binding on the LLP. For the Organization, _____ Designation.

(Seal of LLP & Signature of authorized person)

Name of authorized person _____

Designation _____

Place _____

Date _____

Executed and Signed before me on this.....day _____ of.....At _____ (place).

(Seal and signature of Notary Public)

Clause No. 16.2.5 (d) of General Instructions**POWER-OF-ATTORNEY BY A LLP Firm (incorporated under LLP Act) for entering into JOINT VENTURE AGREEMENT.**

(to be executed non judicial stamp paper of appropriate value as per law of state concerned Non Judicial stamp paper should be purchased in the name of the LLP)

KNOW ALL MEN BY THESE PRESENTS: WHEREAS M/S _____ (name of LLP & LLPIN number) is a LLP registered under the LLP Act, 2008, and having its registered office at (Hereinafter called the 'LLP'). AND WHEREAS by its resolution No..... passed in the meeting held on.....of the Partners of the LLP, the LLP..... (LLP name) has decided to participate in the tender No._____issued by North-Western Railway for the work namely“ _____” in Joint Venture and for the purpose the LLP shall enter into and execute joint venture agreement with M/S___&M/S_____(name of other constituent(s) of joint venture) ANDTHATM/S_____(name of the lead member of joint venture) shall act as the lead member of above mentioned joint venture.

I _____ (name and designation) the authorized representative of M/S _____ (name of LLP) duly authorized in this behalf by aforesaid resolution do hereby irrevocably constitute, nominate, appoint and authorize Mr./Ms. _____ (designation)_____(address)_____& Mr./ Ms.._____(designation) _____(address) _____ who is/are presently holding the above-mentioned position in the LLP as our true and lawful attorney (hereinafter referred to as “Attorney”) of the LLP to jointly or severally exercise all or any of the following powers for and on behalf of M/S..... (Name of LLP & LLPIN number) in connection with aforesaid bid:

1. To enter into and execute and sign JOINT VENTURE agreement, draft of which has been approved by the LLP, on behalf of the LLP with above named constituents for participating in the aforesaid bid of the DFCCIL-Ajmer on behalf of the LLP.
2. To sign and submit all the necessary papers, letters, forms, quotes, bids etc.
3. To do any other act and complete requisite formalities on behalf of the LLP in connection with completion of aforesaid tender work and to enter into liability against the LLP.
4. And generally, to do all such acts, deeds or things as may be necessary or proper for the purposes mentioned above.

The LLP agrees and undertakes that in the event of any change in the constitution of the LLP, the rights and obligations of the LLP shall continue to be in full force without any effect thereof.

The LLP undertakes that it shall not cancel or amend this power of Attorney without obtaining previous written consent of North-Western Railway.

AND the LLP hereby agrees that all acts, deeds or things lawfully done by the said Attorneys or either of them under the authority of this power shall be construed as acts, deeds and things done by the LLP and the LLP hereby undertakes to confirm and ratify all and whatsoever the said Attorneys or either of them shall lawfully do or cause to be done by virtue of the powers hereby given.

IN WITNESS WHERE OF this deed has been signed and sealed by Shri.....(name and designation), on this.....day of 20... , in presence of: WITNESSES:

Signature Name: Address:
LLP

Signatures of authorized representative &Seal of

Name of authorized representative: Designation:

Signature Name: Address:

Specimen Signatures of Attorney Holder in token of acceptance:

(1)NameSignature.....

(2) NameSignature.....

Executed and Signed before me on this..... day
of.....At.....(place).

(Seal and signature of Notary Public)

Note:-The stamp duty shall be governed by the provision of the Law relating to stamp in force in that State at the time when such Power of Attorney is being executed. The Power of Attorney shall duly registered with registrar or notarized. Required even if tender documents are submitted by the authorized/ power of attorney holder of the LLP firm himself.

(Para 16.2.7.6(c) of General Instructions)

SPECIMEN RESOLUTION OF EXECUTIVE COMMITTEE OF REGISTERED

SOCIETY/TRUST

(To be printed on registered society/ trust's letter head)

FOR ENTERING INTO JV WITH OTHER ENTITIES

Extract from the minutes of meeting of Executive Committee of Registered Society/Trust held on..... (Date) at the office of the Registered Society/Trust situated at.....(Address of the Registered Society/Trust).

RESOLVED THAT (Name of the Registered Society/Trust) have decided to participate for the said tender for the work of..... (Name of the work) in joint venture with M/s..... (Name of the other Firm/Firms or company/companies/ Registered Society/Trust with addresses) in name and style of the JV firm _____ (Name of the Joint Venture firm).

FURTHER RESOLVED THAT Shri (Name and designation of authorized person of the Registered Society/Trust) is hereby authorized to execute & sign all necessary documents for submission of tender documents, JV Agreement and any documents in connection with present tender on behalf of Registered Society/Trust etc. For the above-mentioned work on behalf of the Registered Society/Trust.

Name and Signed by authorized Executants/s of Registered Society/Trust

Note:

1. Stipulations in the above specimen Resolution are for guidance only. Registered Society/Trust can incorporate other stipulation /stipulations relevant with the tender and formation of JV, if required.
2. The above Annexure should be executed on the Letter Head of Registered Society/Trust.

(Para 16.2.7.6 (d) of General Instructions)

SPECIAL POWER OF ATTORNEY

(To be submitted by Registered Society/Trust participating as member of JV)

BE IT KNOWN to all that I (Indicate name of Authorised signature of the Registered Society/Trust)..... at the Registered Society/Trust (Indicate Name of Registered Society/Trust)having its office at do hereby for and on behalf of the said Registered Society/Trust appoint Sh.....S/o Shriage.....(Indicate Name of Nominee with full address) of the Registered Society/Trust as our Attorney, whose specimen signature are appended below to execute the MOU/ JV Agreement & all other required documents with M/s (Indicate Name of other Co. /Prop. firm/Registered Society/Trust) Situated at in connection with the following tender invited by DFCCIL-Ajmer:- “T. No..... Name of work.....

We/ I have read the content of this Special Power of Attorney & accept the same, and we/ I hereby agree to ratify & confirm & do hereby ratify & confirm all acts, deeds & things lawfully done or caused to be done by our said Attorney.

In witness where of I..... (Indicate name of Authorised signatory of the Registered Society/Trust) Of..... (Indicate name of Registered Society/Trust) the above-named Authorised signatory has executed this Power of Attorney.

For(Name of Executants/s of Registered Society/Trust)

(Name, address and Sign. of Power of Attorney holder Shri.....)

(Sign &Seal)

Place...

Date:-.....

Note: The stamp duty shall be governed by the provision of the Law relating to stamp in force in that State at the time when such Power of Attorney is being executed. The Power of Attorney shall duly registered with registrar or notarized. Required even if tender documents are submitted by the authorized/ power of attorney holder of Registered Society/ firm himself

ANNEXURE- XXVIII

DFCCIL-Ajmer CONTRACT AGREEMENT OF WORKS (charged to EBR(IF)

CONTRACT AGREEMENT NO. -----DATED-----

ARTICLES OF AGREEMENT made on this day ___in the year Two Thousand and between the DFCCIL-Ajmer Administration having its office at Ajmer hereinafter called the ‘DFCCIL’ of the first and part and----- Name of Contractor herein after called the ‘Contractor’ of the second part.

First part, second part and third part collectively hereinafter called the ‘Parties’.

WHEREAS the contractor has agreed with the DFCCIL-Ajmer for performance of the works-----
- set forth in the schedule hereto annexed upon the Standard General Condition of Contract corrected up to latest correction slips and the Specifications of the -----DFCCIL-Ajmer corrected up to latest correction slips and the Specifications of the -----DFCCIL-Ajmer, corrected up to latest correction slips and the Special Condition and 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 payments to be made by the Railways, the Contractor will duly perform the said works in the said schedule 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 contracts on or before the-----day of -----20--- and will maintain the said work for a period of _____ calendar _____ months from the certified date of their completion and will observe, fulfill and keep all the conditions there is 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 DFCCIL-Ajmer 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 DFCCIL -Ajmer 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 Schedule hereto annexed.

For and on behalf of the President of India

Witness of the Signature 1. 2.....

Address:.....

Signature of Contractor

Witnesses of the Signature 1.....2.....

Address:.....

Name of Authorized Signatory

Witness of the Signature

- 1.
- 2.

Address:.....

ANNEXURE-XXIX

(Clause 16.2.7.2(a) of General Instructions and clause 14(ii) (b), 17.14.2 of the GCC 2022)

CERTIFICATE

(For HUF (Hindu Undivided Family / for JV having HUF as member)

I..... (Indicate Name of Karta) S/o(Full address of HUF)
Karta of M/s.....(Indicate Name of HUF) situated at..... (Full address of HUF) do hereby solemnly affirm & declare as under:

1. That I, who is submitting the tender on behalf of the **HUF** is in the position of **Karta** of the HUF, working in the name & style of(Indicate Name – HUF) at
2. That, I -----
-----(Indicate Name of Karta) have the authority, power and consent given by other members to act on behalf of
(name of HUF)

Deponent Signature and Seal

VERIFICATION

I, the above named deponent do hereby solemnly affirm & verify that the contents of my above affidavit are true & correct. Nothing has been concealed and no part of it is false.

Deponent

Signature and Seal

Place:- Date:-

Note: - The stamp duty shall be governed by the provision of the Law relating to stamp in Force in that State at the time when such AFFIDAVIT is being executed. Affidavit shall be affirmed before the Notary Public.

(Clause 14 (ii) (b) and clause 15 of the GCC 2020)

**SPECIAL POWER OF ATTORNEY
(For HUF (Hindu Undivided Family))**

BE IT KNOWN to all that we (1)
.....(2).....

.....(3).....(4).....(5).....

all the members of the HUF..... having its registered office at..... do hereby, for and on behalf of the said firm appoint Shri _____ (Name & designation) _____ Special Attorney of the said HUF and authorize the said Shri _____ (name), whose specimen signature are appended below, to do all or any of the following acts deeds and/or thing on behalf of the said firm and to represent the firm in respect for the tender

No..... (Name of work) _____ invited by DFCCIL-Ajmer.

1. To appear before office of North Western Railway related to the process of tendering for the above said tender.
2. To procure/download the tender documents for the above said tender.
3. To digitally sign the above said tender document and for uploading the offer on www.ireps.gov.in for the said Tender. In case the offer is submitted by the person other than those who is appointed as above and there is difference between the name of the person authorized as above and the person who digitally submitted the offer then our offer shall be deemed to be summarily rejected.
4. To attend meetings and submit clarifications including negotiations, if any, called by DFCCIL-Ajmer.
5. To sign the agreement and other relevant documents & receive payment on behalf of firm,
6. To co-ordinate measurement through contractor's authorized engineer, witness measurement, sign measurement books on behalf of firm.
7. To compromise, settle, relinquish any claim(s) preferred by the firm, sign no claim certificate and refer all or any disputes to arbitration.

We/ I have read the content of this Special Power of Attorney & accept the same and We/I hereby agree to ratify & confirm & do hereby ratify & confirm all acts, deeds & things lawfully done or caused to be done by our said Attorney.

Members of the HUF

(Signature of Sri.....)

(Name & signature)

DATE.....

Place.....

- 1.....
- 2.....
- 3.....
- 4.....

Seal of Firm

Seal of Firm

Note:-The stamp duty shall be governed by the provision of the Law relating to stamp in force in that State at the time when such Power of Attorney is being executed. The Power of Attorney shall duly registered with registrar or notarized. (Not required if tender documents are uploaded by Karta himself).

Annexure-XXXI

(Para 16.2.3(c) & 16.2.2.5(d) of General Instructions and Explanation for clause 10 – eligibility criteria, of the GCC 2022)

**DECLARATION BY NEWLY FORMED PARTNERSHIP FIRM/ LLP Firm
(Mandatory if tenderer is Newly Formed Partnership Firm/ LLP Firm)**

I.....S/o Shri _____ the authorized signatory of partnership firm/ LLP Firm M/s do hereby solemnly affirm and declare as under:

- That, we are the newly formed partnership firm/ LLP Firm in the name and style of M/s Registered with registrar of firm vide Registration No..... dated.....
- In this newly formed Partnership Firm/ LLP Firm, we are No. of partners. The details of the previous proprietary firm or previous dissolved partnership firm/ LLP Firm or previous splitted partnership firm (s) / LLP Firm wherein any of the partners of the present firm was a proprietor / Partner and proposed to use credentials obtained in such previous propriety firm (s)/Partnership firm(s) / LLP Firm is as under :-

S.N.	Name of person in the newly formed partnership firm	Details of Previous proprietary/ Partnership Firm/ LLP Firm	Share in newly formed partnership firm	Share in previous partnership firm/LLP Firm	Remarks
1.					
2.					

- That, following relevant documents are Annexed with bid–
 - Details of previous Propriety firm / Partnership Firm/ LLP firm as per annexure-I
 - A copy of previous partnership Firm (Notarized or duly registered with the Registrar) (3) Affidavit as per proforma given of Annexure –IX for previous Propriety firm (duly executed on stamp paper and notarized).
 - Copy of previous LLP agreement and certificate of incorporation.
 - Dissolution deed/ splitting deed of the previous partnership deed or LLP agreement (in case of dissolution of previous partnership firm/ LLP firm)
 - Proof of surrender of previous PAN no (in case of dissolution of previous partnership firm, LLP firm or propriety firm)
 - Documents for the technical, financial criteria, bid capacity as claimed w.r.t. such partner(s) joining the new/ existing partnership firm, as per para 16.1 (c), (d), (f), (g), (k)above.

Declaration by the Tenderer:

We/ I have read the content of this declaration & respective conditions of the GCC regarding assessment of the eligibility of our partnership firm/ LLP firm and have/ has enclosed all the required mandatory documents accordingly. We/I hereby declare that the information given above are true. If any of the above information is found to be wrong at any time, my tender will liable to be rejected.

Name and Signature of Tenderer along with Seal

Notes:

- 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 0.3×0.2 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.

2. 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.
3. 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.
4. 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.
5. In case a tenderer is LLP, the credentials of tenderer shall be worked out on above lines similar to a partnership firm.

Annexure XXXII

(Para 16.2.3(d) & 16.2.25 (e) of General Instructions and Explanation for clause 10 – eligibility criteria, of the GCC 2022)

DECLARATION BY AN EXISTING PARTNERSHIP FIRM/ LLP FIRM**(Mandatory if tenderer is an Existing Partnership Firm/ LLP Firm)**

(Fill the relevant para (1.1, 1.2 & 1.3) and strike off the para which is not relevant under Partnership Firm)

IS/o Shri _____, the authorized signatory of Partnership Firm/ LLP Firm M/s _____ do hereby solemnly affirm and declare as under:

1.1 That, we are an existing Partnership Firm/ LLP Firm in the name and style of M/s.....since.....(MM/YY), having GST Registration No.....,PAN/TANNo _____ There has been no change in the Partner(s) of our firm during last 07 (seven) years ending last day of the month previous to the one in which tender is invited.

OR

1.2 That, we are an existing Partnership Firm/ LLP Firm in the name and style of M/s....., Since..... (MM/YY), having GST Registration No....., PAN / TAN No. Following of our partner(s) has/have quit the Partnership firm/ LLP Firm during last 07 (seven) years ending last day of the month previous to the one in which tender is invited, with details as under:

S.No.	Name of Partner(s) of quitting Partner(s)	Share of Partner(s) who has/have quitted.	Date of quitting (MM/YY)

AND / OR

1.3 That, we are an existing Partnership Firm/ LLP Firm in the name and style of M/s....., since..... (MM/YY), _____having GST Registration No.....,PAN/TANNo _____ Following partner(s) has/have joined our Partnership Firm/ LLP Firm during last 07 (seven) years ending last day of the month previous to the one in which tender is invited, with details as under :-

SN	Name of Joining Partner(s)	Share of joining Partner(s)	
		In the present firm	In the previous firm from where he/they has/have quit and joined the present firm

In case of Para 1.2 and 1.3, following documents as applicable are required to be submitted along with bid:-

- (1) Details of previous Propriety firm / Partnership Firm/ LLP firm as per annexure-I.
- (2) A copy of previous partnership Firm (Notarized or duly registered with the Registrar)
- (3) Affidavit as per proforma given of Annexure –IX for previous Propriety firm (duly executed on stamp paper and notarized).
- (4) Copy of previous LLP agreement and certificate of incorporation.
- (5) Dissolution deed/ splitting deed of the previous partnership deed or LLP agreement (in case of

dissolution of previous partnership firm/ LLP firm)

- (6) Proof of surrender of previous PAN no (in case of dissolution of previous partnership firm, LLP firm or propriety firm)
- (7) Documents for the technical, financial criteria, bid capacity as claimed w.r.t. such partner(s) joining the new/ existing partnership firm, as per para 16.1 (c), (d), (f),(g), (k) above.

Declaration by the Tenderer:

We/ I have read the content of this declaration & respective conditions of the GCC regarding assessment of the eligibility of our partnership firm/ LLP firm and have/ has enclosed all the required mandatory documents accordingly. We/I hereby declare that the information given above are true. If any of the above information is found to be wrong at any time, my tender will liable to be rejected.

Name and Signature of Tenderer along with seal

1. 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.
2. In case of existing partnership firm if any other partner(s) joins 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.
3. 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.
4. 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.
5. 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.
6. 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.
7. In case a tenderer is LLP, the credentials of tenderer shall be worked out on above lines similar to a partnership firm.

Annexure XXXIII

(Para 16.2.4 (e) of General Instruction & Explanation for clause 10 – eligibility criteria, of the GCC 2022)

DECLARATION REGARDING CONSTITUTION OF EXISTING/ NEW COMPANY

(Mandatory if tenderer is an Existing / New Company)

(Fill the relevant para (1.1, 1.2) and strike off the para which is not relevant)

I S/o Shri, the authorized signatory of the Company M/s _____ do hereby solemnly affirm and declare as under:

1.1 That, we are an existing Company working in the name and style of Registration No....., PAN/TANNo There has been no change in the constitution of our Company during last 07 (seven) years ending last day of the month previous to the one in which tender is invited.

OR

1.2 That, we are an existing Company working in the name and style of Registration No....., PAN / TAN No. Following Company(ies) merged in the Company during last 07 (seven) years ending last day of the month previous to the one in which tender is invited, with details as under:

SN	Name of quitting Partner(s)	Share of Partner(s)who has/have quitted.	Date of quitting (MM/YY)

In case of Para 1.2, following documents as applicable are required to be submitted along with bid:-

- (1) Details of company getting merged as per annexure-I
- (2) Copy of Memorandum of Association/ Articles of Association of the Company getting merged
- (3) Copy of certificate of incorporation of previous company getting Merged.
- (4) Resolution by the Board of Directors for the Merger of the company(s) with the tenderer
- (5) Proof of surrender of previous PAN no
- (6) Documents for the technical, financial criteria, bid capacity as claimed w.r.t. such Company(s) joining the new/ existing Company, as per para 16.1 (c), (d), (f), (g), (k)above.

Declaration by the Tenderer:

We/ I have read the content of this declaration & respective conditions of the GCC regarding assessment of the eligibility of our partnership firm/ LLP firm and have/ has enclosed all the required mandatory documents accordingly. We/I hereby declare that the information given above are true. If any of the above information is found to be wrong at any time, my tender will liable to be rejected.

Name and Signature of Tenderer along with seal.

Notes- In case company A is merged with company B, then company B would get the credentials of company A also.

Annexure XXXIV

Para 16.1(e) (iii) of General Instructions and clause 10.1 (b) (iii) of part I and clause 7 of part II of the GCC 2022)

DFCCIL-Ajmer**CONTRACT AGREEMENT OF SACONDRARY COMPONENT OF THE WORKS CONTRACT AGREEMENT NO. -----DATED-----**

ARTICLE OF AGREEMENT made on this day _____ in the year.....between the(the tenderer), having its office at -----submitting offer for the tender no.....for the work..... hereinafter called the ‘Main Contractor’ of the first and part and-----Name of Sub Contractor hereinafter called the ‘Sub Contractor’ of the second part having its office at _____ with GSTIN _____

First part, second part collectively hereinafter called the ‘Parties’.

WHEREAS the contractor has agreed with the DFCCIL-Ajmer for performance of the works----- - set forth in for the component detailed in schedule.....for the total cost of Rs.....of the tender schedule of the tender no.....The Standard General Condition of Contract corrected up to latest correction slips and the Specifications of the -----Railway corrected up to latest correction slips and the Specifications of the Railway, corrected up to latest correction slips and the Special Condition and 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 payments to be made by the Railways, the Contractor will duly perform the said works in the said schedule 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 contracts on or before the ----- day of -----20--- and will maintain the said work for a period of _____ calendar months from the certified date of their completion and will observe, fulfill and keep all the conditions there is 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 DFCCIL-Ajmer 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 Schedule hereto annexed.

All the communication in relation to the Contract Agreement would only be between Party hereto of first part and second part. No claim of Contractor, whatsoever on this account shall be entertained by the DFCCIL-Ajmer and this shall be deemed as ‘excepted matter’ (matter not arbitrable). The permitted subcontracting of work by the Contractor shall not establish any contractual relationship between the sub-contractor and the DFCCIL-Ajmer and shall not relieve the Contractor of any responsibility under the Contract. The Contractor shall indemnify Railway against any claim of subcontractor. The Contractor shall endeavor to resolve all matters and payments amicably and speedily with the subcontractor

On receipt of approval from CGM/Ajmer, Contractor shall enter into a formal agreement legally enforceable in Court of Law with subcontractor and submit a copy of the same to the GM/S&T/Engineer.

In addition to issuance of work experience certificate to Contractor, GM/S&T/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 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 Further, in case GM/S&T/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 GM/S&T/Engineer. 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 DFCCIL-Ajmer, with prior intimation to CGM-Ajmer.

For and on behalf of the Contractor Name of Authorized Signatory

Witness of the Signature

1. _____ 2. _____ Address:.....

Signature of Sub Contractor

Name of Authorized Signatory

Witnesses of the Signature 1. _____ 2. _____ Address:.....

(Seal and signature of Notary Public)

Note: The stamp duty shall be governed by the provision of the Law relating to stamp in force in that State at the time when such Agreement is being executed. The Power of Attorney shall duly registered with registrar or notarized.

Para 3.7 of General Instruction

FORM FOR BID SECURITY DECLARATION

(Note: Bid Security Declaration Tender No. DFCC/AD/S&T/CONCOR PFT dated:.....)

(Note: Bid Security Declaration on Bidder’s letter head with duly notarized should be submitted along with offer.)

Name of Work:- “Design, manufacture, supply, installation, testing and commissioning of Microprocessor based Electronic Interlocking (EI) system at CONCOR MMLP/PFT Siding as per RDSO Specification No. RDSO/SPN/192/2019 Version 2 with latest amendment for execution of indoor and outdoor Signalling work which includes excavation of trench, laying of cables, casting of foundations of MACLS Signals & apparatus cases, erection /installation of MACLS signals, fixing & wiring of track circuits & point machines, centralized operation of points & signals etc as per RE standard along with Indoor & outdoor system design for telecom installations including supply (part), testing & commissioning of OFC & 6-Quad cable– for Interlocking of Swarupganj CONCOR MMLP/PFT siding and commissioning of requisite interface between MMLP/PFT Siding and Existing Signal Interlocking (EI System) at DFC New Swarupganj Station & Civil construction work of additional rooms at DFCC New Swarupganj Station.”

”

I/We, M/s. (Name of bidder)..... am/are aware that, I/We have been exempted from submission of Bid Security / Earnest Money Deposit in lieu of this Bid Security Declaration.

I/We..... understand and accept that if I/We withdraw my/our bid within bid validity period or if awarded the tender and on being called upon to submit the Performance Guarantee / Performance Security fail to submit the same within the stipulated time period mentioned in tender documents or on being called upon to sign the contract agreement fail to sign the same within stipulated period mentioned in tender document.

I/We i.e.,the bidder shall be banned from submission of bids in any works / Service Tender issued by for a period of 12 months from the date of such banning done on e-platform IREPS.

Signature with seal of Bidder

Sign of Tenderer(s)

For CGM/Ajmer

ANTI PROFITEERING DECLARATION
TO WHOMSOEVER IT MAY CONCERN

I, age, years, Son/Daughter of, resident of do solemnly affirm and state asunder:

1. That I am the _____ <Designation of the authorized signatory> of.....and I am duly authorized to furnish this undertaking/declaration on behalf of..... (Name of the company).
2. That (Name of the company) has been awarded the work (Name of Work) vide Letter of Award number.....dated
by M/s Dedicated Freight Corridor Corporation of India Limited.
3. That the Company is fully aware of the anti-profiteering provision under the Goods & Services Tax ("GST") Law(s),
4. That the Company has passed the benefit of input tax credit available on the (good/services) having HSN
supplied to M/s Dedicated Freight Corridor Corporation of India Limited which it is getting on account of reduced tax liability and input tax credit because of enactment of GST Laws after introduction of Goods and Service Tax w.e.f. 1st July, 2017. The details and amounts being passed on to DFCCIL are provided in Annexure
of this document and are as per applicable GST Laws. These are true and correct to the best of my knowledge, information and belief
5. Further, it is to confirm also that in case
(name of the organization) will receive any further benefit in future after 1st July, 2017 by way of availing of input tax credits which were not allowed to be availed before 1st July,2017or reduction in tax rates or in any other manner which results in reduction of cost of the goods/services supplied to M/s Dedicated Freight Corridor Corporation of India Limited, then Company will pass that benefit to M/s Dedicated Freight Corridor Corporation of India Limited also.
6. That I declare that the foregoing is true and correct and the same is a legal obligation and failure to fulfil it could result in penalties under the law.
7. I confirm that I am aware of the implication of the above undertaking and our liability on account of incorrect/misleading declaration under the GST Laws.

Signature of the Authorized signatory/ person

Name and Designation of the Auth. Sign/person of the person

Name of the Organization and Seal

Executed on a non-judicial stamp paper of Rs. 100/- duly notarised by notary public

Annexure-XXXVII**PRE CONTRACT INTEGRITY PACT**
(Applicable for Contracts of more than 1 Crore value)**General**

This pre-bid precontract Agreement (hereinafter called the Integrity Pact) is made on _____ day of the month of _____ 2024, between, on one hand, the DFCCIL acting through Shri.....Designation of the officer, (hereinafter called the CLIENT, which expression shall mean and include, unless the context other wise requires, his successors in office and assigns)of the First Part and M/s.....represented by Shri.....Chief Executive Officer (hereinafter called the "BIDDER/SELLER" which expression shall mean and include, unless the context otherwise requires, his successors and permitted assigns) of the Second part.

WHEREAS the CLIENT proposes to procure (Name of the Stores/Equipment/Item, Name of the Consultancy Service, Name of Works Contract, Name of Services) and the [A] is willing to offer/has offered for stores or works.

WHEREAS the [A] is a private company/public Company/Government undertaking /partnership/registered export agency, constituted in accordance with the relevant law in the matter and the CLIENT is a PSU performing its functions on behalf of the President of India. NOW, THEREFORE, To avoid all forms of corruption by following a system that is fair, transparent and free from any influence/prejudiced dealings prior to, during and subsequent to the currency of the contract to be entered into with a view to: -

Enabling the CLIENT to obtain the desired said(Name of the Stores/Equipment/ Item, Name of the Consultancy Service, Name of Works Contract, Name of Services) at a competitive Price in conformity with the defined specifications by avoiding the high cost and the distortionary impact of corruption on public procurement, and

Enabling BIDDERS to abstain from bribing or indulging in any corrupt practice in order to secure [B] by providing assurance to them that their competitors will also abstain from bribing and other corrupt practices and the CLIENT will commit to prevent corruption, in any form, by its officials by following transparent procedures.

The parties hereto hereby agree to enter into this integrity pact and agree as follows:

Commitments of the CLIENT

- 1.1 The CLIENT undertakes that no official of the CLIENT, connected directly or indirectly with the [B], will demand, take a promise for a accept, directly or through intermediaries, any bribe, consideration, gift, reward, favour or any material or immaterial benefit or any other advantage from the[A] either for themselves or for any person, organization or third party related to the [B], in exchange for an advantage in the bidding process, bid evaluation, contracting or implementation process related to the [B].
- 1.2 The CLIENT will, during the pre-contract stage, treat all BIDDERS alike, and will provide to all BIDDERS the same information and will not provide any such information to any particular BIDDER which could afford an advantage to that particular [A] in comparison to other BIDDERS.
- 1.3 All the officials of the CLIENT will report to the appropriate Government office any attempted or completed breaches of the above commitments as well as any substantial suspicion of such a breach.
- 2 In case any such preceding misconduct on the part of such official (s) in reported by the [A] to the CLIENT with full and verifiable facts and the same is prima facie found to be correct by the CLIENT, necessary disciplinary proceedings, or any other action as deemed fit, including criminal proceedings may be initiated by the CLIENT and such a person shall be debarred from further dealings related to the [B] process. In such a case while an enquiry is being conducted by the CLIENT the proceedings under the[B] would not be stalled.

Commitments of BIDDERS

- 3 The [A] commits itself to take all measures necessary to prevent corrupt practices, un fair mean sand illegal activities during any stage of its bid or during any pre-contract or post-contract stage in order

to secure the [B] contract or in furtherance to secure it and in particular committee itself to the following:-

- 3.1 The [A] will not offer, directly or through intermediaries, any bribe, gift, consideration, reward, favour, any material or immaterial benefit or other advantage, commission, fees, brokerage or inducement to any official of the CLIENT, connected directly or indirectly with the bidding process, or to any person, organization or third party related to the [B] in exchange for any advantage in the bidding, evaluation, contracting and implementation of the [B].
- 3.2 The [A] further undertakes that it has not given, offered or promised to give, directly or indirectly any bribe, gift, consideration, reward, favour, any material or immaterial benefit or other advantage, commission, fees, brokerage or inducement to any official of the CLIENT or otherwise in procuring the Contract or forbearing to do or having done any act in relation to the obtaining or execution of the [B] or any other [B] with the Government for showing or forbearing to show favour or disfavour to any person in relation to the [B] or any other [B] with the Government.
- 3.3 [A] shall disclose the name and address of agents and representatives and Indian [A] shall disclose their foreign principals or associates.
- 3.4 [A] shall disclose the payments to be made by them to agents/brokers or any other intermediary, in connection with this bid/contract.
- 3.5 The [A] further confirms and declares to the CLIENT that the [A] is to original manufacturer/integrator/ authorized Government sponsored export entity of the defense stores and has not engaged any individual or firm or company whether Indian or foreign to intercede, facilitate or in any way to recommend to the CLIENT or any of its functionaries, whether officially or unofficially to the award of the [B] to the [A] nor has any amount been paid, promised or intended to be paid to any such individual, firm or company in respect of any such intercession, facilitation or recommendation.
- 3.6 The [A] either while presenting the bid or during pre-contract negotiations or before signing the [B] shall disclose any payment she has made, is committed to or intends to make to or officials of the CLIENT or their family members, agents, brokers or any other intermediaries in connection with the [B] and the details of services agreed upon for such payments.
- 3.7 The [A] will not collude with other parties interested in the [B] to impair the transparency, fairness and progress of the bidding process, bid evaluation, contracting and implementation of the [B].
- 3.8 The [A] will not accept any advantage in exchange for any corrupt practice, unfair means and illegal activities.
- 3.9 The [A] shall not use improperly, for purposes of competition or personal gain, or pass on to others, any information provided by the CLIENT as part of the business relationship, regarding plans, technical proposals and business details, including information contained in any electronic data carrier. The [A] also undertakes to exercise due and adequate care lest any such information is divulged.
- 3.10 The [A] commits to refrain from giving any complaint directly or through any other manner without supporting it with full and verifiable facts.
- 3.11 The [A] shall not instigate or cause to instigate any third person to commit any of the actions mentioned above.
- 3.12 If the [A] or any employee of the [A] or any person acting on behalf of the [A], either directly or indirectly, is a relative of any of the officers of the CLIENT, or alternatively, if any relative of an officer of the CLIENT has financial interest/stake in the BIDDER's firm, the same shall be disclosed by the [A] at the time of filing of tender.
- 3.13 The term 'relative' for this purpose would be as defined in Section 6 of the Companies Act 1956.
The [A] shall not lend to or borrow any money from or enter into any monetary dealings or transactions, directly or indirectly, with any employee of the CLIENT.

4. Previous Transaction

- 4.1 The [A] declares that no previous transgression occurred in the last three years immediately before signing of this integrity pact, with any other company in any country in respect of any corrupt practices envisaged hereunder or with any Public Sector Enterprise in India or any Government Department in India that could justify BIDDER's exclusion from the tender process.
- 4.2 The [A] agrees that if it makes incorrect statement on this subject, [A] can be disqualified from the

tender process or the contract, if already awarded, can be terminated for such reason.

5 Earnest Money (Security Deposit)

5.1 EMD amount & form of EMD will be as per terms & conditions of contract document.

5.2 Validity of EMD & Security Deposit will be as per terms and conditions of contract.

5.3 In case of the successful [A] a clause would also be incorporated in the Article pertaining to Performance Guarantee in the [B] that the provisions of Sanctions for Violation shall be applicable for forfeiture of Performance Bond in case of a decision by the CLIENT to forfeit the same without assigning any reason for imposing sanction for violation of this pact.

5.4 No interest shall be payable by the CLIENT to the [A] on Earnest Money/Security Deposit for the period of its currency.

6 Sanctions for violations

6.1 Any breach of the aforesaid provision by the [A] or any one employer by it or acting on behalf (whether with or without the knowledge of the[A]) shall entitle the CLIENT to take all or any one the following action, wherever required:-

(i) To immediately call off the pre-contract negotiations without assigning any reason or giving any compensation to the[A]. However, the proceeding with the other BIDDER(s) would continue.

(ii) The Earnest Money Deposit (in pre-contract stage) and /or security Deposit/performance Bond (after the [B] is signed) shall stand forfeited fully and the CLIENT shall not be required to assign any reason therefore.

(iii)To immediately cancel the[B], if already signed, without giving any compensation to the [A].

(iv)To recover all sums already paid by the CLIENT, and case of an Indian [A] with interest thereon at 2% higher than the prevailing Prime Lending Rate of State Bank of India, while in case of a [A] from the country other than India with interest thereon at 2% higher than the LIBOR. If any outstanding payment is due to the [A] from the CLIENT connection with any other [B], such outstanding payment could also be utilized the aforesaid sum and interest.

(v) To encash the advance bank guarantee and performance bond/warranty bond, if furnished by the [A] in order to recover the payments, already made by the CLIENT, along with interest.

(vi)To cancel all or any other Contracts with the [A]. The [A] shall be liable to pay compensation for any loss or damage to the CLIENT resulting from such cancellation/rescission and the CLIENT shall be entitled to deduct the amount so payable from the money (s) due to the[A].

(vii) To debar the [A] from participating in future bidding processes of the Government of India for a minimum period of five years, which may be further extended at the discretion of the CLIENT.

(viii)To recover all sums paid in violation of this pact by [A] to any middleman or agent or broker with a view to securing [B] the contract.

(ix)In case where irrevocable Letters of Credit have been received in respect of any [B] signed by the CLIENT with the [A] the same shall not be opened.

(x)Forfeiture of performance Bond in case of a decision by the CLIENT to forfeit the same without assigning any reason for imposing sanction for violation of this pact.

6.2 The CLIENT will entitled to take all or any of the actions mentioned at Para6.1(1) to (x) of this pact also on the commission by the [A] or any one employed by it or acting on the its behalf (whether with or without the knowledge of the [A] of an offence as defined in chapter IX of the Indian penal code,1860 or prevention of Corruption Act., 1988 or any other statute enacted for prevention of corruption.

6.3 The decision of the CLIENT to the effect that a breach of the provisions of this pact has been committed by the [A] shall be final conclusive on the [A]. However, the [A] can approach the independent Monitor(s) appointed for the purposes of this pact.

7 Fall clause

7.1 The [A] undertakes that it has not supplied/ is not supplying similar product/systems or subsystems at a price lower than that offered in the present bid in respect of any other Ministry/Department of the Government of India or PSU and if it is found at any stage that similar product/systems or subsystems was supplied by the [A]to any other Ministry/Department of the Government of India or a PSU at a lower price, then that very price, with due allowance for elapsed time, will be applicable to the present case and the difference in the cost would be refunded by the [A] to the CLIENT, if the [B] has already been concluded.

8 Independence Monitors

- 8.1 The CLIENT has appointed Independent Monitors (hereinafter referred to as Monitors) for this pact in consultant with the Central Vigilance Commission (Names and Addresses of the Monitors to be given).
- 8.2 The task of the Monitors shall be to review independently and objectively, whether and to what extent the parties comply with the obligations under this pact.
- 8.3 The Monitors shall not be subject to instructions by the representatives of the parties and perform their functions neutrally and independently.
- 8.4 Both the parties accept that the Monitors have the right to access all the documents relating to the project/procurement, including minutes of meetings.
- 8.5 As soon as the Monitor notices, or has reason to believe, a violation of this pact, he will so inform the Authority designated by the CLIENT.
- 8.6 The BIDDER(s) accepts that the Monitor has the right to access without restriction to all Project documentation of the CLIENT including that provided by the BIDDER. The [A] will also grant the Monitor, upon his request and demonstration of a valid interest, unrestricted and unconditional access to his project documentation. The same is applicable to Subcontractors. The Monitor shall be under contractual obligation to treat the information and documents of the [A] with confidentiality.
- 8.7 The CLIENT will provide to the Monitor sufficient information about all meetings among the parties related to the Project provided such meetings could have an impact on the contractual relations between the parties. The parties will offer to the Monitor the option to participate in such meetings.
- 8.8 The monitor will submit a written report to the MD/DFCCIL within 8 to 10 weeks from the date of reference or intimation to him by the CLIENT/ BIDDER and, should the occasion arise, submit proposals for correcting problematic situations.

9 Facilitation of Investigation

In case of any allegation of violation of any provisions of this pact or payment of commission, the CLIENT or its agencies shall be entitled to examine all the documents including the books of Accounts of the [A] and the [A] shall provide necessary information and documents in English and shall extend all possible help for the purpose of such examination.

10 Law and Place of Jurisdiction

This pact is subject to Indian Law. The place of performance and jurisdiction is the seat of the CLIENT

11. Other Legal Actions

The actions stipulated in this Integrity pact are without prejudice to any other legal action that may follow in accordance with the provisions of the extant law in force relating to any civil or criminal proceedings.

12 Validity

12.1 The validity of this Integrity pact shall be from date of its signing and extend upto 5 years or the complete execution of the [B] to the satisfaction of both the CLIENT & the[A], including warranty period, whichever is later. In case [A] is unsuccessful; this Integrity Pact shall expire after six months from the date of the signing of the[B].

12.2 Should one or several provisions of this pact turn out to be invalid; the remainder of this pact shall remain valid. In this case, the parties will strive to come to an agreement to their original intentions.

12.3 The parties hereby sign this integrity Pact at _____ on _____.

CLIENT
Name of the Officer
Designation
Deptt./Ministry/PSU

BIDDER
CHIEF EXECUCITIVE EOFFICER

Witness

Witness

1. _____

1. _____

2. _____

2. _____

Note:

[A] - To be replaced by BIDDER/Seller/Consultant/Consultancy firm/Service provider as the case was maybe.

[B] - To be replaced by Contract/Supply Contract/Consultancy Contract/Works Contract as the case may be.

CERTIFICATE OF NO RELATIVE BEING AN EMPLOYEE OF DFCCIL

I/WE THE UNDER SIGNED HEREBY SOLEMNLY DECLARE AND CERTIFY THAT I /WE DO NOT HAVE ANY OF OUR RELATIVE/RELATIVES EMPLOYED IN THE DFCCIL EXCEPT THE NAMES MENTIONED HEREIN UNDER:

1.....

2.....

3.....

AND SO ON

NOTE:- NAMES DESIGNATION, NAME OF OFFICE, HEADQUARTER OF THE TENDERER(S)'S RELATIVE IN DFCCIL TO BE MENTIONED BY THE TENDERER(S)/TENDERER(S) S IN 1, 2,3 AND SO ON ABOVE.

SIGNATURE OF TENDERER(S)/TENDERER(S)

Section:5**SPECIAL CONDITIONS OF THE WORK (TECHNICAL) FOR SIGNALLING****1.0 SCOPE OF WORK:**

Design, manufacture, supply, installation, testing and commissioning of Microprocessor based Electronic Interlocking (EI) system at CONCOR MMLP/PFT Siding as per RDSO Specification No. RDSO/SPN/192/2019 Version 2 with latest amendment for execution of indoor and outdoor Signalling work which includes excavation of trench, laying of cables, casting of foundations of MACLS Signals & apparatus cases, erection /installation of MACLS signals, fixing & wiring of track circuits & point machines, centralized operation of points & signals etc as per RE standard along with Indoor & outdoor system design for telecom installations including supply (part), testing & commissioning of OFC & 6-Quad cable– for Interlocking of Swarupganj CONCOR MMLP/PFT siding and commissioning of requisite interface between MMLP/PFT Siding and Existing Signal Interlocking (EI System) at DFC New Swarupganj Station.”.

- 1.1 In addition to it, the outdoor signalling work for points & signals will be carried out. Once predatory works of yard is ready and circuits have been thoroughly tested with the help of simulation panel, functions will be transferred in Relay Room.

In this work contractor has to supply material and execute the work as detailed in schedule as per technical requirement detailed in this tender documents.

Technical Specifications of this tender includes many circuit features which are to be fulfilled by the circuits. Since circuit design in this case is being done by contractor, contractors liability will be to ensure that the circuit design fulfil all these requirements. Scope of work is detailed in Schedule and the entire work is to be carried out in strict compliance to the tender conditions and specifications.

The work is required to be done using Q-series (metal to carbon) relays as shown in Schedule of work.

- 1.2 The scope for indoor and outdoor supply and installation of material shall mainly comprise of the following (please refer to Schedule)
- a) Supply of EI equipments complete with all sub system like CPU, all the requisite cards, power supply equipments, data logger with its spares and tool kit.etc
 - b) Supply of dual VDU control terminal with counter box (as required).
 - c) Supply of relay racks / cable termination rack alongwith scaffolding material, indoor cable and wires and all required accessories to make a complete EI system functional.
 - d) Supply of all types of interfacing equipments required for connecting all outdoor signalling gears to EI equipments and control cum indication panel or dual VDU control terminal for smooth and safe working of EI.
 - e) Supply of Data logger complete along with supply of all equipments required for networking and central monitoring at test room (with both digital & analog inputs) with VDU keyboard printer.
 - f) Supply of one set of tools required for maintenance of EI.
 - g) Supply of LED Signal units complete with Signal post ladder etc.
 - h) Supply of MSDAC complete sets with its spares and tool kit.
 - i) Supply of Magneto phones & Master Slave phone.
 - j) Supply of all types of inter connecting cables, jumper wires etc.
 - k) Supply of all types of measuring instruments required for installation, testing & commissioning the EI system with 'Hot Standby Architecture'.
 - l) Supply of other required accessories and any other material/equipment for installation & commissioning of the complete EI system for its smooth functioning.

Note: *Tenderer should note that interface equipment/device to the field signalling gears and dual*

VDU control terminal to be supplied and should be compatible with each other to achieve the end objective of EI.

1.3 The scope for the execution mainly include the following (please refer to Schedule)

- (i) Design and wiring of circuit diagrams required for making the EI functional.
- (ii). Installation, testing & commissioning of EI equipments along with power supply equipments, data logger and its networking for central monitoring at divisional test room, installation of EI equipments including software loading and required data input etc.
- (iii). Installation, testing & commissioning of control cum indication panel or dual VDU control terminal.

Note: The complete interlocking system to work signalling gears from VDU in accordance with table of control in a failsafe manner.

- (iv). Erection of complete indoor relay equipment i.e. erection of relay racks/cable termination racks alongwith scaffolding and all required accessories to make a complete system. This also includes axle counter racks and its wiring if required.
- (v) Laying & termination of indoor & outdoor cables, wiring as per standard practice, soldering, connection to indication-cum-operation panel and making the panel through.
- (vi). Complete testing of circuits including continuity test, wire count, functional testing, selection table testing, square sheet testing to the satisfaction of engineer. The testing may be required to be carried out round the clock at the discretion of engineer-in-charge, to meet the target date.
- (vii). Erection of main signals, position light shunt signals, calling on signals, apparatus cases (single & half) and complete wiring and testing of these signalling equipments.
- (viii). Casting of cement concrete foundations for main signals, position light shunt signals, apparatus cases (single & half), main signals etc.
- (ix). Digging of trenches in various types of soils and track crossing and laying of cables, making cable protection by RCC duct, brick laying, providing cable markers as per standard practice.
- (x). Termination of various signalling cables on terminals in apparatus cases, on cable termination rack and fixing of hylum strips, PBT make M-6 terminals & fuse blocks etc.
- (xi). Installation and wiring of complete MSDAC circuits. This includes fixing of MSDAC TLJBs, termination of cables inside TLJBs.c.
- (xii). Fixing of point machines and termination of tail cables in location boxes as per standard practice and as per instructions of site in charge. Wiring, adjusting & fixing of point machines including supply of suitable ground connections and all smithy works. Installation, wiring, testing and commissioning of MSDAC equipment.
- (xiii). Fixing of G.I. pipes or GI trough or GI channels at culverts, bridge and other locations as per instructions of site engineer-in-charge of work.
- (xiv). Complete writing, painting and varnishing work. It includes painting of existing and new signalling gears, apparatus cases, signals etc. as per instructions of site incharge.
- (xv). Indoor work shall be compatible with the outdoor signalling work.

Note: Testing and commissioning of EI system will be done by the contractor through OEM jointly with DFCCIL Engineer at site. The Tenderer shall depute competent Engineer/qualified staff for the same. The tenderer shall submit a detailed commissioning test schedule for DFCCIL's approval and full record of test conducted shall be maintained by the tenderer and handed over to the DFCCIL along with commissioning.

1.4 LOCATION OF SITE:

The work is to be carried out at Swarupganj CONCOR PFT/MMLP Siding.

1.5 TIME SCHEDULE

Time is the essence of the contract. With a view to complete the work within **09months**, the contractor is requested to observe the following time schedule in their own interest, so as to complete the work within the completion period stated above:

1	Submission of CRP, CCC, after site survey & studying field requirement all stations. Submission of ST, C& IPD for DFCCIL approval	Within 01 month after issue of LOA.
2	Putting all major indoor & outdoor materials to be supplied by contractor for RDSO inspection.	Within 02 months after issue of LOA.
3	Submission of design & Indoor wiring/converted circuit for approval of DFCCIL.	Within 03 months after issue of LOA
4	Commencement of cable laying and other outdoor work	Within 03 months after issue of LOA.
5	Commencement of Relay Room work & supply and installation of DG sets and power equipments for relay wiring & testing	As soon as design is ready with the contractor but not later than 04 months after issue of LOA.
6	Completion of wiring & testing by contractor	Within 08 months after issue of LOA
7	Completion of all outdoor works which is possible before TWO	Within 09 months after issue of LOA.

1.6 Contractor along with his offer will submit a tentative time schedule in the form of bar diagram to show his planning to complete the work. After award of the contract the time schedule will be jointly signed along with engineer-in-charge after carrying out necessary modification as suggested by engineer-in-charge.

2.0 PAYMENT TERMS

Payment terms mentioned against each & every items in Schedule portion.

- Note**
- (i) For items pertaining to consignee inspection necessary purchase voucher of the items is to be submitted while taking payment of these items.
 - (ii) The final bill for the balance payment shall be submitted by the contractor along with “No Claim Certificate”.
 - (iii) Partial payment of NS1 to NS12 can be made to the contractor as per quantity supplied.

3.0 IMPLICATION OF MODVAT RULES:

The liability of the purchaser to reimburse excise duty is limited to such sum as may be found legally due and payable in respect of contract goods after availing the full credit on all the inputs used in the manufacture of the finished products irrespective of whether the contractor has in fact availed of the said credit or not.

In case of vitiation due to variation in quantities the amount by which vitiation occurs will not be payable to the contractor.

4.0 STORES

4.1 CONSIGNEE

The consignee for this work will be **Concerned Exec/Sr.Exec/S&T** as the case may be.

4.2 LOADING /UNLOADING OF MATERIAL

The material shall be delivered by the Contractor at the depot of Consignee/site of work. Material supplied by DFCCIL for execution of the work shall be transported from the DFCCIL Store by the contractor.

4.3 INSPECTING AUTHORITY

The Inspecting authority for the work shall be RDSO/RITES/DFCCIL's representative.

4.4 INSPECTION OF MATERIAL

1. All materials to be used for installation shall be subject to inspection by RDSO/RITES/DFCCIL's representative at the manufacturer's premises. For this purpose the Contractor shall give sufficient notice of time to RDSO/RITES/Railway's representative when the material is ready for testing/inspection. All facilities as may be necessary shall be provided for carrying out the tests.
2. Whether a product has or has not been accepted at the point of manufacture, if, upon arrival at destination, it does not meet the requirements of the specification, it may be rejected and the Contractor shall undertake disposal of the rejected products and shall bear all charges.
3. The contractor shall make such tests as may be necessary to demonstrate to the satisfaction of the DFCCIL that the apparatus and the systems are installed in accordance with their requirements. The Contractor shall provide such instruments and apparatus as may be necessary for making the tests.
4. All equipment's materials, fittings and components will be subject to inspection by the DFCCIL or his representative at the manufacturer's factory before dispatch and no materials shall be dispatched from the manufacturer's factory until these are inspected and/or approved. The materials may also be inspected by the DFCCIL or his representative again at the contractor's depot. The DFCCIL or his representative shall have the right to be present during all stages of manufacturer and shall be afforded, free of charge all reasonable facilities for inspection and testing so as to satisfy himself that the materials are in accordance with specification, approved drawing and designs. Any unreasonable delay in inspection will be reasonable ground for extension of time for completion of the work.
5. Materials to IRS/RDSO design or specification and ITD/TEC specification shall be inspected by RDSO before they are finally used in works. Materials other than this should be inspected by DFCCIL Engineer or his representative at site.
6. Materials put up for inspection shall be exactly of the type and quantity laid down in the schedule of materials. Any variation shall require the prior approval of the DFCCIL before the material is manufactured or tendered for inspection.
7. All materials that are not covered under the specification, designs and drawings of RDSO/TEC etc. shall be procured from the manufacturers of repute/their authorized dealers. Such materials are to be approved by DFCCIL Engineer. The Contractor may be required to produce test certificate from the manufacturer wherever called for by the GM/S&T/Engineer.
8. The cost of services of DFCCIL Engineers or other personnel for inspection of material will be to the DFCCIL's account subject to other provisions herein contained. The contractor shall give at least 4 weeks notice to the DFCCIL or his nominee to enable him to arrange necessary inspection.
9. During the execution of the contract, samples may be taken from all the materials employed for the purpose of test and/or analysis under the conditions laid down in specification; such samples to be prepared for testing and forwarded to the testing entity shall be free of all costs to the DFCCIL.
10. The decision of the purchaser or his successor shall be final in respect of acceptability or otherwise of any material, equipment etc. required for the work. The cost of equipment and materials, all tests and/or analysis performed for inspection shall be borne by the contractor.
11. All expenses of the DFCCIL's representative shall be borne by the DFCCIL whether the inspected material is utilized in the work or not.

4.5 INSPECTION CHARGES

The inspection charges for the inspection service rendered to the S&T contractors executing

Signalling works **shall be borne by the DFCCIL.**

4.6 **MATERIALS AND WORKMANSHIP**

1. All the items which are to be procured as per IRS/RDSO specifications shall be procured from RDSO approved firms. (RDSO approved firms shall be from the Part I only. In case there is no firm in PartI, materials from firms in Part II may be accepted only with specific approval of competent authority). Any relaxation with respect to procurement/inspection shall be with the prior approval of the competent authority. The DFCCIL's decision shall be final and binding on the contractor.
2. Signalling items other than those mentioned above will be inspected by RDSO/RITES provided the order value is more than Rs. Five Lakh. Inspection in respect of order below Rs.5 lakh may be got done by Consignee, subject to supplies being from sources approved by RDSO.
3. Certificate of inspection to be submitted along with the supply. For items which donot have RDSO specification or which RDSO has not approved any supplies, inspection shall be carried out by RITES/authorized DFCCIL representatives.
4. Critical item will continue to be inspected by RDSO as per instruction contained in Board's letter No.74/RS(G)/379/2Pt. dated;4/3/91 and 18/6/91
5. The DFCCIL shall have full powers to reject any material that the DFCCIL may consider to be defective or inferior in quality of material, workmanship, design or otherwise, not in accordance with the specifications and drawings specified by the DFCCIL.
6. The Contractor shall remove forth with all rejected materials and replace such material at Contractor's expenses.
- 7 All material should be in properly packed condition and the consignee reserves the right to reject the material even though it was passed by RDSO.

4.7 **Consignee's RIGHTOF REJECTION**

Notwithstanding any approval which the Inspecting Officer may have given in respect of the stores or any materials or the work or workmanship involved in the Performance Of the contract(whether with or without any test carried out by the Contractor or the Inspecting Officer) and not withstanding delivery of the stores where so provided to the interim consignee, it shall be lawful for the consignee, on behalf of the purchaser, to reject the stores or any part, portion of consignment thereof within a reasonable time after actual delivery thereof to him at the place or destination specified in the contract if such stores or part, portion of consignment thereof is not in all respects in conformity with the terms and conditions of the contract whether on account of any loss, deterioration or damage before dispatch or delivery or during transit or otherwise howsoever.

4.8 **CONSEQUENCES OF REJECTION (Rejected Stores)**

1. When any stores delivery at the consignee's depots is rejected, this shall be removed by the contractor within 30 days from the date of rejection. Such rejected stores shall lie at the contractor's risk from the date of rejection. If the stores are not removed by the Contractor within this period, the purchaser or his nominee shall have the right to dispose of such stores, as thought fit, at the contractor's risk and account.
2. The purchaser shall also be entitled to recover from the contractor, handling and ground rent/demurrage and any other charges for the period during the rejected stores are not removed after the period aforementioned.

5.0 **WORKS**

5.1 **SPECIFICATIONS, DRAWINGS**

1. Supply of following diagrams /documents shall form part of the contract (as applicable):-
Documents for Indoor work:

- i) Signalling interlocking plan
- ii) Operating & Indication panel diagrams/VDU layout
- iii) Selection & Locking tables.
- iv) Wiring diagrams
- v) Fuse analysis
- vi) Contact analysis
- vii) Rack erection diagram
- viii) Panel Tag Block analysis
- ix) Tag blocks analysis of tag blocks installed on cable termination rack.
- x) Operating/maintenance & instruction manual should be given.
- xi) Power supply arrangement with appropriate ratings of each module.

Item (i) will be initially prepared by DFCCIL. But completion drawing shall be made by Contractor. Items (ii) to (vi) of the drawings shall be submitted to DFCCIL for approval by the Contractor.

Copies of drawings from items (vii) to (xi) shall be submitted to GM/S&T/Engineer-in-charge for his approval. However, final tracings of these drawings shall be submitted to DFCCIL for approval before commissioning.

2. Outdoor documents

- i) Location terminal details
- ii) Cable Core chart
- iii) Cable route plan
- iv) Track Circuit Plan

Note: All above documents initially shall be prepared by contractor and shall be submitted to Engineer in-charge /GM/S&T for approval.

Once circuit design is submitted by the Contractor to DFCCIL, it will be examined and DFCCIL will indicate the kind of deficiencies, which are existing in the design. If required by DFCCIL, the design team of Contractor will attend DFCCIL GM/S&T's office to hold discussions in this regard. While indicating the deficiencies in design DFCCIL will point out-

- (i) Functional requirement, which are not being met by the circuits.
- (ii) Other violation of standard practices or codal provisions.

DFCCIL is not bound to carryout the exact corrections in the circuit or suggest the exact corrections to the contractor. It will be the duty of the contractor to modify the circuit, so as to ensure that all specifications, codal provisions and functional requirements are fulfilled by their circuit. After corrections are carried out by the contractor an advance approval to the circuit will be given. Deficiencies pointed out by DFCCIL may not be exhaustive.

Advance approval of the circuit from DFCCIL will mean that Contractor can go ahead with the wiring. However, if any deficiencies are found at the stage of testing, it will be solely the responsibility of contractor to ensure that their design team is available at the spot to suggest and carry out alterations without waste of time. Approval by DFCCIL to go ahead with wiring and testing will noway mean that the circuits have been finally approved and accepted.

Approval of circuits will be given only when the circuit has withstood complete series of tests carried out from the operating panel with the help of simulation panel. Commissioning will be done only after circuits are approved.

4. The contractor shall be solely responsible for ensuring that the requirement of safety are incorporated in all designs and drawings and the drawings furnished by him, although these may have been approved by the DFCCIL.
5. Specifications, drawings, requisites and requirements referred to in the body of this specification form an essential part thereof.

The sources from which the drawings & specifications referred to in this Tender can be obtained

from Engineer-in-charge/GM/S&T

6. The installation must comply with the Indian Railway Standard Specification for Electronic interlocking systems and 'Technical requirements' as laid down in this tender. The arrangements of interlocking and design of equipments etc. shall be in conformity with the practices followed on DFCCIL/Railways and the System as a whole shall be so designed that the operation is reliable, safe and satisfactory under the local climatic conditions existing at the station. Information to be given by the Purchaser (DFCCIL) as per IRS:S-36-89.
7. Installation shall comply with the requirements to the following manuals/books:-
 - Signal Engineering Manual
 - Engineering Code
 - P-way manual
 - DFCCIL General & Subsidiary Rules with latest correction slip.
 - Schedule of dimensions.
 These books are available with GM/S&T/Engineer-in-charge for this work which can be given on loan, if required, for reference.
8. After the contract is awarded, the DFCCIL shall furnish to the Contractor, free of charge, a reasonable number of prints of the approved Signalling plan, control tower/cabin drawings and such other drawings as the DFCCIL may consider necessary for proper execution of this work.

5.2 INSPECTION OF WORKS

1. The completed installation at all stages shall be subjected to checks and test as decided by DFCCIL and the contractor shall be liable to remedy such defects as discovered during these checks and test and make good all deficiencies brought out. However, complete installation will be taken over finally on completion of the full system. It will be the responsibility of the contractor to rectify any discrepancy noticed within a period of one month from the date the complete system is taken over. For the purpose of taking over, joint inspection will be carried out by DFCCIL S&T Officials.

The contractor should make himself or his representative available at the time of joint inspection. The decision of the Engineer shall be final in the matter.

2. The contractor will be called upon to pay all the expenses incurred by the DFCCIL in respect of any work found to be defective or of inferior quality, adulterated or otherwise unacceptable.
3. During the execution of the contract, samples may be taken for the purpose of test and/or analysis under the conditions laid down in specification, such samples to be prepared for testing and forwarded free of all cost to the DFCCIL.
4. A log book will be kept at the work site by the contractor. The inspecting officer of the DFCCIL may in addition to oral instruction to the representative of the contractor at the work site, enter such instruction as deems fit in this log book. The contractor will be responsible to note necessary action and remedy the defects and ensure that the instructions either oral or written are complied with. **His non-noting the log book entries shall not be considered sufficient grounds for non-compliance of the instructions.**
5. An Inspection register called Site Order Book shall be maintained at the site of work by the DFCCIL wherein instructions regarding the working etc. shall be recorded by the GM/S&T/Engineer or his executive subordinate. It is expected of the contractor or his representative at the site to note such instructions whenever asked upon to do so and taken action accordingly.

5.3 APPROVAL & MEASUREMENT OF WORK

1. The contractor will obtain written approval of the supervision after completion of the various sub-items of each work mentioned in the Schedule (wherever applicable).
2. The contractor shall sign the measurement as a token of acceptance of the measurement entered by the supervisor in-charge of the work (wherever applicable).

3. The contractor should ensure that measurement has been made for such work, which is not possible to measure subsequently and shall remain hidden. For example:
 - After trenching is done
 - After RCC trunk is placed in trench and properly aligned.
 - After cables are laid properly.
 - After the earth is filled.
 - After brick/slab/capping is laid.
4. Back filling of the trench shall be done only after the inspection and **written** confirmation from the DFCCIL representative.
5. The contractor shall maintain record of cable laid as per Performa provided by DFCCIL/Railway.
6. S&T Inventory/Assets register should be maintained as per performa specified by DFCCIL/Railway.

5.4 **MODIFICATIONS**

1. The contractor shall be responsible for supply of any additional equipment without extra cost for any alterations of the works due to any discrepancies, errors or omissions in the drawings or other particulars supplied by him, whether such drawings or particulars have been approved by the DFCCIL or not due to inaccurate information or particulars furnished to the Contractor on behalf of the DFCCIL.

If any dimensions /figures upon the drawings or plans differ from those obtained by scaling the drawings or plans shall be taken as correct.

2. Any minor modifications required during the course of work shall be done without extra charges and the DFCCIL's decision as to whether the modifications are minor or not shall be final. Where modifications are not minor and the DFCCIL is satisfied that the modifications are essential, they shall be carried out at extra charges to be approved by the DFCCIL.

6.0 **TRAINING**

1. The contractor shall provide adequate training at the manufacturer's premises to DFCCIL personnel in planning, design, installation, operation and maintenance of the EI equipments and system supplied under the contract (if required).
2. The tenderer shall undertake to train DFCCIL nominated by DFCCIL indifferent aspects of equipment which include:
 - 1) System design and architecture
 - 2) Field installation, testing, commissioning.
 - 3) Operation, maintenance and repair, covering both hardware and software with cost analysis
 - 4) Fault diagnosis and analysis
 - 5) Failure rectification methods
 - 6) Data base programming
 - 7) All the issues arises out of day to day maintenance of the system.

The training should be comprehensive so as to impart full knowledge to DFCCIL, operation maintenance, repair and minor alteration of all equipment. The training course should, apart from formal class room training, include hands on practical experience and visits to working installation. The contractor shall make all necessary arrangement for the same. The place of training shall normally be at the manufacturer's premises or as decided mutually between the DFCCIL and the Contractor. OEM should provide competency certificate to the DFCCIL Personnel for the training imparted. Hard copies and soft copies of course module shall be supplied by the contractor to each trainee.

3. The contractor shall at every stage of installation, testing and commissioning provide all facilities for adequate training of DFCCIL personnel who may be deputed to work on the project.
4. The contractor will provide informal training to DFCCIL staff in installation, maintenance and operation of equipments/system. Warranty & Post Warranty Maintenance, Supply of all documentation, supply of spares & Optional items and commitment for long-term support for the system.

7.0 TECHNICAL REQUIREMENTS FOR EXECUTION OF WORKS

7.1. Control Cum Indication Panel.

Deleted, not required for this work, as dual VDU control terminal with counter box will be installed.

7.2 Interlocking and circuit requirement

All requirements given in IRS S-36-87 shall be complied. In addition, the following requirements shall also be met.

7.3 General Circuit requirements

- a) **The internal circuits shall be suitably protected and electrically isolated from external circuits.**
- b) **Signal circuits shall be so designed as to prevent display of signal aspect less restrictive than intended and also prevent setting up of unsafe conditions when signalling supply voltage or frequency fluctuates or the supply is restored following a failure of normal supply.**
- c) **With reference to IRS S-36-87, sectional route release facility shall be provided as per the special sketch and note attached for this purpose for junction and major yard.**
- d) **With reference to IRS:S-36-87, Emergency full route / sub-route cancellation in case of track section failures with sealing facility and emergency operation for throwing signal to danger, shall be provided along with non-re-settable counters for recording the operation.**
It shall be ensured that the counter shall record the operation, just before the operation is effected. Emergency sub-route cancellation facility as referred in IRS:S-36-87 shall be provided. Also facility for Emergency operation of points shall be provided which shall be counted.
- e) **The circuit shall be so made that the vital operation of throwing back the cleared signal to the least restrictive aspect shall be possible and the circuits shall be so prepared to effect the operation, even if its original supply fuse is blown off.**
- f) **The lamp lighting circuit for all lamps including shunt signals shall be on double cutting principle & at least two pick up contacts of different relays are to be proved in circuit.**
- g) **Care should be taken during design of circuits and installation, so as to contain repercussion of any failure to the minimum possible gears and equipments. The contractor shall be bound to amend his design, if the Railways suggest another design for achieving the above.**
- h) **Initiation and cancellation circuits should be drawn as per geographical layout of the yard.**
- i) **Separate fuses should be provided for each aspect of signals.**
- j) **Circuit should not built up by picking up of single relay.**

7.4 Route setting and interlocking circuit

- a) **Setting of conflicting routes shall not be permitted.**
- b) **Necessary back locking of the intended route shall become effective, when all concerned points have taken up their final position and route is set and approach track has been occupied and the signal is cleared or the 'Calling on' is lit.**

- c) Approach and locking shall be provided for all controlled signals. Approach and time locking shall be continuously effective from the pre-determined point in rear of the signal concerned. Dead approach locking should be provided where no suitable track Sections are available.
- d) Time release for approach locking/dead approach locking shall be provided so that 2 minutes shall elapse after the signal has been put to 'ON' position, before the route can be released.
- e) The overlaps shall set only when the last sub-route leading towards the overlap is set.

7.5 **Route Release circuits**

- a) Route release circuit shall be designed on the principle of automatic route release by the passage of the train as provided in IRS:S-36-87.
- b) Circuits which release routes for interlocking shall be controlled by slow operating relays, so that any inadvertent operation of track Section due to a surge or other factors will not result in the release of the routes or the interlocking.
- c) All circuits shall be designed in such a way, that the relays picked up for clearing any signal are proved to have de-energized or normalized before the route or route section restored to normal. Also it shall not be possible to re-clear the route, if the entire route or part of the route set is not released.
- d) It shall be possible to release a route in emergency after suitable time delay, with the approach track occupied, provided the train has not passed the signal during the time interval. The operation of the time relay shall commence upon the operator restoring the signal or calling on signal to 'ON'. The emergency releases must be provided with electric counter.
- e) It should be possible to release an entire route, including overlap portion, in emergency when all controlling track Sections (except berthing track circuit) are clear. This emergency operation should be counted in an electric counter.
- f) It should be possible to release a complete route or individual sub-routes with controlling track Sections energized/de-energized with a separate emergency button which should be kept sealed. Such emergency operations will be counted on a separate electric counter.
- g) The delay time shall be as per IRS Specification no. S-36-87 shall be between 60 to 120 secs. Facility shall be provided to set the delay time in between 60 to 120 seconds.
- h) It shall not be possible to cancel any set route or cancel any portions of the route by any button other than the signal button used to clear the route initially and by the emergency full route cancellation button.
- i) Overlap points shall be released only after the lapse of two minutes of occupation and clearance of the last point track section on the route. On cancellation, the overlap points may be released simultaneously along with the main route.

7.6 **Point Interlocking, Control circuits and Interlocking of Emergency Point Crank Handle.**

- a) Individual operation of points shall be possible only when the interlocking is free and relevant point track circuit /circuits is / are clear.
Individual operation of points shall also be possible when the interlocking is free and relevant point track circuit /circuits is /are de-energized. Such emergency operation of a point will be counted in an electric counter. This emergency point operation button will be provided with sealing facility.
- b) Crossovers will be operated by separate point machines, one at each end. The detection of setting and locking of the points at the two ends shall be connected in series, after the operation circuit is cut-off. The initiation of points should be staggered to avoid excessive drain on the power equipment.
- c) Point circuitry will ensure that once a point movement is initiated, it must be completed even if the controlling track circuit / circuits fail in the mean time.

- d) While changing a point control relay or unit, if the points in the field and the control relay or unit in the relay room are not in correspondence, no operation of point should occur. To bring the point to the corresponding position, the operator shall have to operate the respective push button as in the case of individual operation of points.
- e) The NX key for the point / points should be released from the control panel or VDU control terminal. The key lock relay to be used for this purpose shall located in the cabin ASM's office / in the field.

7.7 Interlocking of crank handles.

The grouping of crank handles for point operation is as detailed in the Signalling plan. There shall be two common controlling buttons for each group for releasing control / taking back control.

Circuit for emergency release of crank handle should be provided to facilitate the ASM to alter the route in case route did not release due to passage of train and ASM is not able to release the route with ERRB. Circuit should be so designed that all crank handle can be released and no signal movement is possible after releasing the emergency crank handle. Separate counter should also be provided for counting this operation.

7.8 Cross protection

For all external circuits, cross protection with double cutting shall be provided to prevent unsafe operation due to a cross, break or both.

7.9 Relays

In addition to the requirements of IRS S-36, the following requirements shall also be meet.

- a) D.C. relays used in signal cabin, when controlled from an outside source, shall be wired on double cutting principle coupled with cross protection. Similarly D.C. relays located in the field shall be wired on double cutting principle coupled with cross protection.
- b) Relay shall be furnished with contact arrangements as approved by the DFCCIL.
- c) Time element relays shall be of a design approved by the DFCCIL.
- d) In case of A.C. Electrified areas, the Relays shall be in conformity with R.E. Manual referred to in para 4. 1.15.

7.10 Point Machines

- a) Means shall be provided in the circuitry adopted by the contractor to cut off the motor feed in case of obstruction to the movement of the point after a time lag of approximately 10 seconds.
- b) The point operating/control circuits shall provide for track circuit control, overload protection, cross-protection and surge absorption as required. These circuits shall have the approval of the Railway.
- c) The circuit design shall enable reversal of the movement of the points during mid-stroke.
- d) Indication shall be provided to prove that the points have been correctly set and locked in the required position. The indication relay will pick up proving the correspondence of the operating function and the position of relays.

7.11 Cables: The conductors in the cables outside building shall be 1.5 sq.mm (copper) conforming to IRS:S-63.

7.13 Wiring and Relay Racks

- a) The handling, laying and pulling in of wires and cables shall be in accordance with instructions and under supervision of the contractor. Dressing & threading of wires to be done column wise and finally all wires should be combined with thread at appropriate interval.
- b) Wiring in relay housings shall be uniform for like apparatus throughout the installation.

- c) Bends in cables shall have a radius of not less than twenty times the diameter of the cable.
- d) Eyelet terminals shall be used on flexible wires, if necessary.
- e) Not more than two wires shall be connected to one terminal / tag.
- f) Ten percent spare wires shall be installed between terminals on control panel (if required), illuminated diagram and relay rack.
- g) It shall be possible to identify wires at all terminals by means of a non-metallic tag or label on which is stamped the designation corresponding to what is known on the circuit and wiring plan. Contractor may adopt any other means subject to approval of the Railway. Tags shall be applied in such a manner that if a wire is removed from the terminal, the tag will remain on the wire.
- h) Where practicable the tags or labels shall be securely fastened adjacent to the terminal or suitably painted so that the number can be easily read.
- i) All wiring in the cabin and location shall be terminated on suitable terminal blocks / tag blocks having minimum insulation resistance of 500 meg. ohms at 500 V D.C.

The colour of the wires for wiring should be as per standard colour scheme used on the Railway, which is as follows:

- Blue 24V
D.C +ve
- Grey 24V
D.C -ve
- Black 110V
Bx &Nx, 24V Nx
- Green 24V
steady
- Red 24V
flashing

The above colour scheme shall be followed as required.

7.14 Relay Racks

- a) Relay racks should be of metal which can be assembled with plug-in base plates and factory pre-wired base plates for ready installation. Inter-rack wiring should be arranged through Tag Blocks. Tag blocks shall be used at all places where distribution/lead out to outside functions is involved viz. Cable termination racks, repetitions of panel tag block units in the relay room etc. This is required for effecting alterations to the circuits at a future date with minimum changes to the existing wiring. The rack will include all the necessary rack fittings, supports, insulators etc. for the mounting of rack in the relay room of the cabin.

The outside colour should be Light Yellow colour. Relay racks, scaffolding, any other metal accessories used for erection of relay racks shall be powder coated / oven baked for long life. It should be corrosive resistant.

- b) Last row of each rack shall be left free for additional relays to be installed for future expansion.
- c) 20% spare contacts for each function relays shall be made available for further expansion.
- d) Relay racks shall be provided with anti-vibration protection.
- e) At the bottom of each relay rack testing points one each for +24V, -24V will be provided on a hylum sheet screwed to the relay rack.

7.15 Fuses, Terminals & terminal links:

7.15.1 Fuses

- a) It shall not be possible to insert a cartridge of a higher rating into a holder of lower rating. It shall be line-wise.
- b) Fuses shall be of non-deteriorating type conforming to RDSO specification.

- c) Fuse clips shall be mounted on an insulating base of fireproof material.
- d) Fuses or circuit breakers shall be installed according to Railway's standard practice, with prior approval of the Railway.
- e) Cartridge fuse links shall conform to BS Specification no.714 or equivalent.

7.15.2 **Terminals**

- a) Terminals shall be as per IRS specification S-78/92 and Terminal blocks shall be IRS specification S;75/2006(Rev2). The material shall be PBT/Polycarbonate/FRP. It should be fire retardant. The material should be got inspected by RDSO.
- b) Terminals shall be mounted so that they cannot be turned in base of frame to which applied. They shall be properly insulated from each other and other metallic parts.
- c) Terminals supporting the fixed parts of front and back contacts of relays shall be fastened in their supports, so as to preclude adjustments of any kind without first breaking the seal of the relay.
- d) Terminals shall be installed in an accessible position and neatly arranged on terminal boards in housings.
- e) The terminal blocks provided at the locations and other places shall be provided with suitable links to facilitate isolation of the two sides of the circuits which are connected through the terminal links.

8.0 **SOLDERING**

Soldering shall be carried out with the resin cored solder or any standard solder. Before soldering, the approval of the Engineer-in-charge shall be obtained. Care should be taken to ensure that the insulation of the wire is not burned while soldering.

9.0 **ELECTRO-MAGNETIC INTERFERENCE [EMI] SHIELDING**

1. Electromagnetic Interference [EMI] shielding shall be done with the bare standard copper conductor of suitable size as per latest guidelines issued by RDSO.
2. The Earth Bus Bar shall be installed at a height of 0.5 Mtrs from the floor level or as decided by site engineer.
3. The Earth Bus Bar shall be insulated from the building structure with low voltage insulator spacers of height 60mm. The whole assembly shall be fixed on a hylum sheet of 6mm thickness mounted on wall.
4. The conductors for EMI shielding shall be fixed on the walls by providing suitable mounting arrangements and insulated spacers of height of 60 mm or as per guidelines issued by OEM/RDSO.
5. All the bare conductors shall be connected to Earth Bus Bar at a common point.
6. The work includes supply of all materials by the contractor at his cost.
7. **The contractor shall submit the drawing for the above arrangement for approval, before commencement of the work.**

10.0 **Earthing & Bonding System For Signaling Equipment's:**

The work related to earthing & bonding system should be carried out as per RDSO specification no. RDSO/SPN/197 Version 1.0 or latest.

10.1 **Maintenance Free Earth & Bonding Plan:**

Practice to be adopted for the installation of Earthing and Bonding system for signaling equipment's shall be as per RDSO letter no. STS/E/SPD dtd. 19.09.2008 or latest.

11.0 **FUSE AUTO CHANGE OVER SYSTEM**

Fuse auto change over system shall be supplied & installed as per guidelines issued by RDSO as

per specification no. RDSO/SPN/209/2012 Version 2.0 of latest.

12.0 **DESIGN & DRAWING**

INDOOR & OUTDOOR DRAWINGS: Will be supplied as per details given in [Technical Specification given in tender document](#).

- 13.0 **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.

14.0 **RELIABLE POWER SUPPLY**

1. Provision of IPS

- a) All the station upto 06 lines, shall be provided with IPS with number of modules and their rating/capacity as per RDSO specification no. RDSO/SPN/165/2012 Version 3.0 (or latest amendment) with the load calculation to be carried out as per para 1.3 of Railway Signalling Installations and Quality Handbook, catering the signaling load of the station.
- b) The surge & lightning protection devices of Class B & C are internal part of RDSO specification of IPS and it shall be ensured that these SPDs are installed along with installation of IPS.
- c) Length of all cable connection from SPDs to earth equi-potential busbar shall be kept less than 0.5 mtr. For this, a sub-earth equi-potential copper busbar of size 25x6 mm shall be installed at approximately 20cm from the SPD box.
- d) The earthing connection of FRBC, ACDP, DCDP panels with sub earth equi-potential copper busbar should be done by 10 sq. mm copper cable.

2. Discrete power supplies for Major Junction Yard.

- a) For major yards, discrete power supplies shall be provided and the power diagram indicating the adequate capacities of battery banks and their corresponding battery charges of sufficient capacity to cater for signaling load as well as maximum battery charging current with standby arrangement and same shall require approval of PCSTE/NWR, /DFCCIL Ajmer office before execution.
- b) It shall be ensured that surge & lightning protection devices of Class B & C shall be installed along with installation of discrete power equipment's.

Note: Provision of Lightning & Surge protection devices: -

Lightning & Surge protection devices shall be provided as per RDSO specification no. RDSO/SPN/144/2006 (Revision 02 or latest) to have stipulated safety & reliability requirement for signaling equipment's.

15.0 **EARTH LEAKAGE DETECTORS**

The ELD's shall be as per RDSO specification RDSO/SPN/256/2002 or with latest amendment.

- a) All MACLS shall have provision of Earth Leakage Detector of adequate channel capacity to monitor the status and health of various power supplies along with their respective cables carrying these power supplies.
- b) ELD should be linked with Data Logger.
- c) Pre-commissioning check list shall be complied & filled jointly before commissioning.

16.0 DATALOGGER

- (i). All MACLS installations shall have provision of data loggers of adequate capacity (including spare logging capacity) to catering of logging of status of all the relays installed including status of block instrument, UFSBI, HASSDAC, Axle Counters, status of IPS through potential free contacts. Track feed battery charger, earth leakage detector (ELD), DG set start/stop, relay room door and analog signal monitoring etc.
- (ii) Data logger should be provided with computer & printer (80-column DOT matrix printer {Only branded}) so that various reports can be generated at site.
- (iii) The validation of data loggers and logic for analytical software for generation of exceptional report shall be checked completely.
- (iv) Networking of data logger shall be integral part of all contracts with satisfactory performance up to Divisional Control office./ DFCCIL OCC
- (v) Data Logger will be installed, wired, tested and commissioned by OEM's engineer as per guidelines issued by RDSO. The Pre-commissioning checklist shall be complied & filled jointly before commissioning. Before commissioning of Data Logger, OEM will submit Site Installation Certificate to Railway by mentioning that Data Logger has been installed, wired, tested and commissioned by approved vendor of RDSO (i.e. by OEM).

17.0 Electronic Interlocking:

- a) Type of interlocking (Ref.: RB's letter no. 2003/SIG/G/5 dtd. 28.04.2016)
- i) Type of interlocking provided at stations shall be:

1	Stations up to 50 routes	Electronic interlocking
2	Stations with 50 to 500 routes	Electronic interlocking with distributed architecture and / or object controllers
3	Stations with more than 500 routes	Route relay interlocking with metal-to-metal type relays Or Electronic interlocking with distributed architecture and object controllers.

- b) Type of operation of EI:
As per PCSTE/NWR letter no. SG/184/1 Vol. V (Loose) dtd. 06.07.16 and SG/184/1 Vol. IV dtd. 21.02.17.
Dual VDU each industrial grade unit of size 42 inches or more to be provided (as required).
- c) Electronic Interlocking system shall be provided with Ring Earth and Bonding as per RDSO's Technical Advisory Note no. STS/E/3006 Version 1.0 dtd. 02.11.2012 & RDSO drawing issued under RB's letter no. 2010/Sig./SGF/EI (Ansaldo) dtd. 22.06.2011 & RDSO TAN enforce. This incorporates provision of equi-potential ring earth with perimeter bonding in the EI room.
- d) Class 'A' protection (Franklin rods of 3 mtrs height made of copper) shall be pri provided on top of the building and should be properly earthed.
- e) The pre-commissioning check list shall be complied & filled jointly before commissioning.
- f) **Technical Requirements of Non-Schedule Items:**

It includes:-

- (1) Design, manufacture, supply (with software), installation, testing and commissioning of Electronic Interlocking system. The EI equipment's shall conform to RDSO specification RDSO/SPN/192/2019 Ver. 2 or with latest amendment and shall be from RDSO approved source only. EI with only hot standby architecture shall be supplied in terms of RDSO TAN no – STS/E/TAN/3004 version 1 dated 13.06.13 or latest.
- (2) EI system will be installed, wired, tested and commissioned by OEM's engineer as per directives issued by RDSO from time to time. OEMs engineer will submit a site installation certificate to Railway mentioning that EI system has been installed, wired, tested and commissioned by

approved vendor of RDSO (i.e. by OEM) after following all the guidelines/instructions issued by RDSO from time to time.

- (3) The contractor shall supply screws, clamps, connectors, terminals, fuses of all ratings with holders, ferrules, indoor wires & wiring cables, twisted wires, indoor communication & data cables, media converters, optical fibre patch chords and all other miscellaneous materials as required and recommended by RDSO to make EI fully operational.
- (4) Power supply system and arrangement for EI, interface relays, control VDU, maintenance terminal etc. shall be as per extant RDSO guidelines. Details of proposed power supply arrangement shall be submitted to Railways. DC-DC converters use for EI shall be provided in N+1 configuration and shall be so segregated that in case of failure of DC-DC converter only one system is affected.
- (5) Various interconnecting cables should be numbered as well as provided name stickers for easy identification. Connectivity diagram should be suitably displayed.
- (6) The panel processor required, shall be supplied along with EI and shall be installed and connected as part of EI's installation. The connection from EI to panel processor and EI to VDU Control Terminal shall be on OFC. OFC cable for this purpose shall be supplied by the Railways.
- (7) There should be synchronization between data logger and EI for which requisite hard ware / software shall be supplied by contractor.
- (8) Instructions for power ON/OFF sequences of the EI, Dos' and Don'ts routine maintenance etc should be prepared and pasted at suitable location near the EI. Proper charts and block diagrams shall also be prepared and submitted.
- (9) Complete ladder support for interconnecting cables/wires up to outdoor Cable Termination rack is to be provided by tenderer as per direction of Railway engineer incharge at site.
- (10) Approved type of Fuse base with cartridge are to be used for wiring of EI Equipment. The type and rating of fuses to be supplied shall be as per manufacturer's instructions and DFCCIL/Railways guidelines.
- (11) Vendors specific guidelines/instructions issued by RDSO for EI system from time to time shall be implemented by OEM.
- (12) *Tentative/Indicative Signaling or Yard Plan of station/stations is/are enclosed with the tender schedule. The tenderer should furnish complete details of cards/modules/ sub-modules connectors etc. for each station in the proforma enclosed. Please give full details of quantities (station wise) & unit rates item wise.*
- (13) *All essential spares shall be tested and kept secured for use during failures.*
- (14) The work is to be carried out in accordance with Signaling/Interlocking Plans for the stations, issued by the DFCCIL. These Signaling/Interlocking Plans are tentative and some minor variation/ alteration may take place. The tenderer should carry out corrections/alterations/additions in design of circuits and other associated works arising out of these changes without any additional cost. The Railway's decision in this regard will be final and binding.

g) **Technical Requirements of Non-Schedule Items**

It includes:-

1. The contractor will supply and install all the diagnostic and maintenance software tools as recommended by RDSO/OEM for smooth EI maintenance.
2. Softcopy in the form of CD containing station specific finally approved application software (which has been loaded in the commissioned EI) duly labeled shall be submitted by the tenderer/contractor. One CD shall contains application software of one station only for backup & record.
3. Station specific software required for functioning of VDU control terminal (including Driver required if any) shall be provided by the tenderer for backup & record.
4. Place of maintenance terminal will be decided by DFCCIL site Engineer incharge of the work.

18.0 LED Signal Lamps:

All signals including subsidiary & shunt signals should be provided with LED signal lamps as per RDSO specification no. RDSO/SPN/153/2011Rev. 4.1 and RDSO/SPN/199/2010 Rev. 1.0 or latest.

19.0 MSDAC based Track Detection System

- a) Digital Axle Counters shall be provided with adequate spares and toolkit for maintenance.

20.0 Automatic Fire Detection & Alarm System:

Automatic Fire Detection & Alarm System for signaling installations shall be provided as per RDSO Specification no. RDSO/SPN/217/2018 Version 2.0 or latest.

21.0 Cable Laying Practice: (Ref. RB's letter no. 2011/SIG/SF/1 dtd. 23.09.2011)

- a) Cable planning & core allocation should be done on line wise and function wise as per SEM para 15.3.3 for ease of maintenance Auxiliary signals shall be taken in different cables.
- b) Adequate spare conductors to a minimum of 20% of the Total conductors used shall be provided in each main cable upto farthest point zone, and minimum 10% thereafter as per Para 15.3.2 of SEM.
- c) Guidelines mentioned in Para 4.4 (Cable Laying) of the Railway Signaling installations and quality handbook should be followed in true spirit for adequately protecting cables. Para 4.4.1 (f) is extracted below for your guidance and implementing the same while cable laying:

"Cable shall be laid at depth of 1 meter parallel to the track, for cable laid between Home Signal and at 1 meter below rail flange while track crossing and 1.2 meter depth for cables laid beyond Home Signals and Automatic Signal area, IBH & Level Crossing gates."

23.0 Procedure of Material Accountal

- 23.1 For every work, a Tally book shall be opened by store Incharge. Receipt/dispatch/transfer/Balance entries are shown in Tally Book. Separate page is nominated for each item in Tally Book as per work schedule.
- 23.2 CONSIGNEE: The consignee for this work will be Exec/S&T or other nominated Jr.Exec/S&T nominated by concerned Dy.PM/S&T.
- 23.9. LOADING/UNLOADING OF MATERIAL: All the material shall be transported by the contractor from its Store to the site of the work and vice versa with his own cost.

23.13. Security of Material

- 23.13.1. The Contractor will be wholsole responsible to secure all the materials required at site during the work execution till the handing over to DFCCIL after successful installation testing and commissioning.

Section: 5A**SPECIAL CONDITIONS OF CONTRACT (TECHNICAL) FOR CIVIL BUILDING WORKS**

For the purpose of this tender in DFCCIL, stipulations and conditions as specified in CPWD standard specification as amended/corrected up to latest correction will be applicable, copies of which can be seen in the office of GM/Co. DFCCIL, Ajmer.

1.0 This Tender shall be governed by Preamble and General instructions to tenderers, General condition of Contract, Special conditions of contract, Technical Specifications, Additional Technical specifications (if any), Drawings, Forms, Annexures, etc.

2.0 If there are varying or conflicting provisions in the documents forming part of the contract, Engineer shall be deciding authority with regard to the intentions of the provision and decision of Engineer will be final and binding on the contractor.

3.0 The Materials, workmanship, technical specification refer Standard General Conditions of Contract-2022 of Indian Railways and Standard Specifications (Works and Materials) of CPWD-2019 as amended/corrected up to latest correction slips are to be followed. CPWD Delhi Schedule of Rates (Vol-I & Vol-II) of 2021, Delhi Schedule of Rates (E&M)-2022 as amended / corrected up to latest correction slips are to be followed. Non schedule items and their specification shall be followed. Apart from the basic data, specifications etc. all items of works shall be governed by the Codes & Specifications as detailed and as revised / corrected / amended up to 28 days before the due date of submission of the Bid Proposal.

Further, if any specification(s) mentioned above not available, good's industrial practices and/or Manufacturer's catalogue are to be referred in consultation with DFCCIL and decision of DFCCIL shall be final & binding to contractor.

4.0 **Inspection and Rectification:** - During execution of said work, the contractor shall provide all facilities to inspect the site to the Engineer- in-charge or his representative.

5.0 **Erection & Equipment:** Before starting the work, the Contractor shall advise the Engineer fully as to the method he/she proposes to follow and the amount and character of equipment he/she proposes to use, which

shall be subjected to the approval of the Engineer. The approval of the Engineer shall not be considered as relieving the Contractor of the responsibility for the safety of his/her method or equipment or from carrying the work in full accordance with the drawings and specifications. All temporary work shall be properly designed and substantially constructed for the loads, which it will be called upon to support. Adequate allowance and provision of a lateral forces and wind loads shall be made according to local conditions and ensure that support shall not settle during erection.

6.0 Further Drawing and Instructions:

- (i) Chief General Manager/Dy.CPM DFCCIL shall have full power to make and issue further drawings or instructions or direction from time to time as may appear necessary and proper to the contractor for efficient construction, completion and maintenance of the works. The contractor shall be bound by the same as fully as be if they had been mentioned or referred to in the contract, and the contractor shall not be entitled to any extra payment in respect of any work or materials shown or directed to be done supplied by such further drawings or instructions required for completion of unless the Chief General Manager/Dy. CPM DFCCIL have given an extra order for the same in writing. The contractor shall be responsible for close scrutiny of the drawings.
- (ii) If the works are required to be done in Railway/DFCCIL Yards and Tracks are to be crossed, the tenderer shall inspect the site and make himself thoroughly acquainted with site condition and quote rate considering these aspects.

- (iii) The work shall have to be done in such a manner that the normal working of the Railway/DFCCIL within the railway/DFC yard does not get disturbed. No material/temporary structures should be kept adjacent to the running track which may infringe rail traffic. The contractor shall take necessary precaution to prevent/cause damage to the Railway/DFCCIL property & staff during the execution of the work.
- (iv) All the work to be executed as per approved drawings, design and instruction of site Engineer/consultant of work no any extra payment shall be made for protection etc.
- (v) The contractor shall execute the work as per the detailed design and drawing of the work.

7.0 **Commencement of the Erection Work at site:** The contractor shall commence the erection work when and as soon as, but not until, he receives instructions from Engineer to do so.

8.0 **Contractor to Study Drawing & Specification etc. and His Liability:**

The contractor shall be responsible for close scrutiny of the approved drawings supplied by the DFCCIL, for any discrepancies, error or omission in the drawings or other particulars indicated therein, the contractor shall approach the DFCCIL immediately for rectification of indicated therein, the contractor shall approach the DFCCIL immediately for rectification of such discrepancies, errors and omission. If any dimension/figure/features etc. on approved drawings or plans differ from those drawings or plans issued to the contractors at the time of calling the tender, the dimensions as figured upon the approved drawings or plans shall be taken as correct.

9.0 **Contractor to Submit his Time Table:** The contractor shall submit a monthly progress of work done during the month by the 4th day of the following month. He will also give the programme of coming month by 25th of each month. The programme will be subject to alteration at the discretion of the DFCCIL officials.

10.0 **Contractor's Liability:** Any fitting, accessory or apparatus which may not have been mentioned in this specification or the drawings, but which are usual or necessary in the execution of such work, are to be provided by the Contractor without extra payment. The whole work must be completed in all details, whether mentioned in this specification or not, with the exception of such work as has been specified in the schedule of items to be separately provided for in the Contract.

11.0 Notwithstanding the specifications and conditions stated in the contract, the contractor shall keep the Engineer/ Employer authority fully indemnified and free from all liabilities and risks consequential to any lapse on his part in respect of material quality, standard of workmanship, accuracy of fabrication and the like. He shall provide all labour and material required for execution of the work as per all standards and specifications.

Note: - In case of any item of CPWD-DSR-2021 is required to be executed by engineer as additional item, rates accepted in this tender will be applicable.

12.0 Before taking up any excavation or digging work at any location of section Guidelines issued from Director/Telicom (Railway board letter no. 2003/Tele/RCIL/1 Pt,IX dated 24.06.2013) must be followed. Penalty to be imposed as per JPO Telecommunication circular no.17/2013 or latest for any damages.

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)

No.2003/Tele/RCTE/1 Pt IX

New Delhi dated 24.06.2013

General Managers,
All Indian Railways.

Telecom Circular No. 17/ 2013

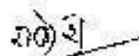
Sub: Procedure for undertaking digging work in the vicinity of Signaling, Electrical and Telecommunication Cable.

JPO No. 1/Sig/2004 dated 16.12.2004 issued by Board on the subject matter was reviewed in consultation with Signal, Electrical, Civil Engineering and Works Directorates of Board.

2. The same has now been finalized and a copy of the Revised Joint Procedure Order duly signed by ED/TD, EDCE/P, ED/SD, ED/W and EDEE/M is attached for compliance.

3. Please acknowledge receipt.

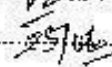
DA: 1 in 5 pages.


(Rakesh Ranjan)
Director(Telecom.)

Copy to:-


- i) ED/TD, EDCE/P, ED/SD, ED/W and EDEE/M
- ii) CS/Es, All Indian Railways
- iii) CSTBs/Construction, All Indian Railways
- iv) ED/Tele, RDSO, Lucknow
- v) MD/RCTE, 143, Institutional Area, Sector 44, Gurgaon - 122003.Haryana.

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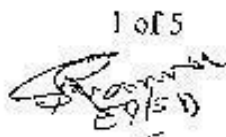
For Signature Date of Issue	 25/06
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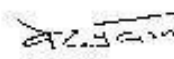
Annexure to Telecommunication Circular No. 17/2013**JOINT PROCEDURE ORDER FOR UNDERTAKING DIGGING WORK
IN THE VICINITY OF UNDERGROUND SIGNALING, ELECTRICAL &
TELECOMMUNICATION CABLES.**

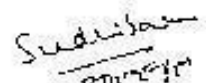
- A. A number of Engineering works in connection with gauge conversion/doubling/third line are in progress on various Railways, which require extensive digging work near the running track, in close vicinity of the working S&T cables carrying vital safety circuits as well as electrical cables feeding the power supply to cabins, ASM room, RRI Cabin, Intermediate Block Huts (IBH) etc. Similarly, S&T organisation under open line or construction units under CAO/C, are executing various Signaling and Telecom works requiring digging of earth for laying of cables or casting of foundations for the erection of signal posts etc. RailTel is 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 organisations.
- 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 departments. Such cable faults results in the failure of vital signaling and telecommunication circuits & electrical installations.
- C. Henceforth, the following joint procedure shall be followed by Engineering, Electrical and S&T (and RailTel organisation, wherever such works are being done by them) officers of the respective divisions and by the construction organisation, while carrying out any digging work near to existing signaling & telecommunication and electrical cables, so that the instances of cable cut due to execution of works, can be controlled and minimized.
1. S&T department (and RailTel, where they have laid the cables) and Electrical department shall provide a detailed cable route plan showing exact location of cable at an interval of 200 m or wherever there is change in alignment so that the same is located easily by the Engineering official/contractor. In addition, S&T department and Electrical department shall also provide cable markers along the alignment of the cable. These cable route plans shall be made available to the Sr.DEN/DEN or Dy.CE/C, as the case may be, by Sr. DSTE/DSTE or Sr.DEE/DPE of the divisions or Dy. CSTE/C or Dy. CEE/C within 15 days in


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ED/CE

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ED/ITD


ED/W


Sr. DSTE/DSTE

duplicate. Sr. DEN/DEN or Dy.CE/C will send copies to their field unit i.e. AEN/SE/P. Way & Works.

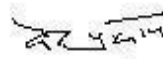
2. Before taking up any digging activity on a particular work by any agency, Sr. DSTE/DSTE or Sr.DEE/DEE of the section shall be approached in writing by the concerned Engg. or S&T or Electrical officer for permitting to undertake the work. Sr.DSTE/DSTE or Sr.DEE/DEE, after ensuring that the concerned executing agencies including the contractor have fully understood the S&T and Electrical cable route plan, shall permit the work in writing within 7 days of the request by concerned department.
3. After getting the permission from S&T or Electrical department 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/Electrical(TRD or G) 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. Creation of posts is not mandatory.
4. The SE/P.Way or SE/Works shall pass on the information to the concerned SE/Sig. or SE/Tele or SE/Electrical(TRD or G) 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, who in turn shall pass on the information to the test room/network operation center of RailTel/TPC/Electrical control.
5. On receiving the above information, SE/Sig or SE/Tele or SE/Electrical(TRD or G) 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 Engineering officials issue the letter authorizing commencement of work to the contractor. Test room shall be given copies. Test room shall collect any further details from the Engineering control and shall pass it on to S&T/RailTel & Electrical officials regularly. In case the supervisors of concerned departments do not turn up on the day as advised in terms of para 4 and 5 above, the works of contractor should not be stopped on this account.

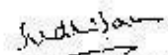

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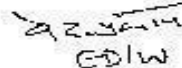
7. In case of works being taken up by the State Government, National Highway Authority etc., the details of the permission given i.e. the nature of work, kilometer etc. be given to the Engineering control including the contact person's number so that the work can be done in a planned manner. The permission letter shall indicate the contact numbers of Test room/Network Operating Centre of RailTel/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/RailTel/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/RailTel supervisors/Electrical supervisors.
9. The concerned SE/P.Way/SE/Works/SE/Sig/SE/Tele/ SE/Electrical(TRD or G) or RailTel 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(TRD or G). The cable shall be reburied soon after completion of excavation with proper care including placement of the brick over the cable under the supervision of S&T or Electrical supervisors. However, the work will be charged to the concerned engineering works. The responsibility for ensuring availability of SE (Signal), SE (Electrical) as per para 4 and 5 above lies with the respective department. The contractor will go ahead with the shifting of cables as per the program decided and he will not be held responsible for any cable cut.
11. In all the sections where major project are to be taken up/going on RailTel/S&T department shall deploy their official to take preventive/corrective action at site of work. As regards Electrical Department, the official may be deputed on need basis.
12. No new OFC or quad cable shall be laid close to the existing track. It shall be laid close to the Railway boundary on one side of the Railway track to the extent possible to avoid any interference with the 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. Wherever multiple cables are laid in a trench, RFID markers may be provided for easy identification of the cable. Henceforth, wherever cable laying is planned, before undertaking the cable laying work, the cable route plan of the same shall be prepared by the Dy.CSTE/C or Dy.CEE/C

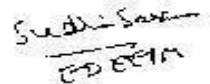

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and shall be got approved from the concerned Sr. DSTE/DSTE or Sr. DEE/DDE and also from the concerned Dy. CE/C for new lines and from the concerned Sr.DEN for all other projects including doubling GC etc., to avoid possible damage in future. Such approval shall be granted within 15 days of the submission of the request.

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. In case damage is caused to OFC/Quad cable during execution of the work, the contractor is liable to pay a penalty for damaging the cable. Penalty shall not be levied in case of the following:-

- (i) Detailed cable route plan as per clause C-1 not provided by concerned department or cable is not protected as per laid down procedures.
- (ii) The alignment of the cable does not tally with the information provided to the contractor.
- (iii) The cable depth is found to be less than 800 mm from normal ground level.
- (iv) No representative of S&T department/RailTel was available at site guarding the cables on the fixed pre determined date and time.

15. Penalty to be imposed for damages to cable shall be as under:-

Cable damaged	Penalty per location
Only Quad cable or Signaling cable	₹ 1.0 Lakh
Only OFC	₹ 1.25 Lakh
Both OFC & Quad	₹ 1.5 Lakh
Electrical Cable	₹ 1.0 Lakh


Necessary debit in this regard shall be raised on the department undertaking the work who shall in turn levy the penalty on the defaulting contractor. S&T department shall raise the debits in case of damage to OFC or Quad or Signaling cable and Electrical department shall raise the debits in case of damage to Electrical cable.

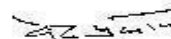
16. Railways will not lodge FIR with RPF in cases of works being executed by authorized contractors of Railways who have been duly permitted to execute the works in accordance with this JPO. Joint note by the supervisors of the concerned department shall be prepared and the responsibility of the cable cut should be decided without involving RPF. The joint note deciding the fact whether the contractor should be penalized shall be completed in a day's time from the occurrence of cable cut.

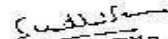
In all other cases, when the cable is cut by an agency that was not permitted to execute any work, FIR should be lodged with RPF.


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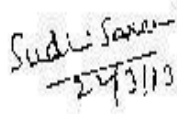

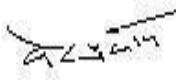


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ED/SD

17. While giving permission for taking up the works, concerned departments may note that earthwork by engineering contractors will normally be done by machines except in a few isolated locations where the quantity of earth work is very less.
 18. Railways shall make necessary correction in their future contract so that this JPO can also be enforced contractually.
 19. In case of damage to OFC, RailTel should be paid 5/6th of the penalty recovered. RailTel shall raise demands on the S&T department in this regard.
 20. All types of signaling & OHE bonds i.e. 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.
-
21. Above joint circular shall be applicable for construction as well as open line organisation of Engineering, S&T & Electrical.
 22. S&T cable and electrical cable route plan should be prepared by the concerned S&T and Electrical officers respectively and got approved as stipulated in para C-12 before undertaking the work. The completion cable route plan should be finalized block section by block section as soon as the work is completed.
 23. All cable laying works shall be executed as per laid down technical specifications, such as protection measures/protective cover, compaction of refilled material etc.

 (Rajeev Sharma) Exec. Dir. Signal Devel.	 (S K Saxena) Exec. Dir. Elect. Enery (M)	 (Shobhan Chaudhuri) Exec. Dir. Telecom (Dev)	 (V P Dudeja) Exec. Dir. Works	 (Surinder Pal) Exec. Dir. Civil Engg.(P)
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Section:6

SPECIAL CONDITION OF CONTRACT (TECHNICAL) FOR TELCOMMUNICATION

1.0 SCOPE OF WORK:

“Design, manufacture, supply, installation, testing and commissioning of Microprocessor based Electronic Interlocking (EI) system at CONCOR MMLP/PFT Siding as per RDSO Specification No. RDSO/SPN/192/2019 Version 2 with latest amendment for execution of indoor and outdoor Signalling work which includes excavation of trench, laying of cables, casting of foundations of MACLS Signals & apparatus cases, erection /installation of MACLS signals, fixing & wiring of track circuits & point machines, centralized operation of points & signals etc as per RE standard along with Indoor & outdoor system design for telecom installations including supply (part), testing & commissioning of OFC & 6-Quad cable– for Interlocking of Swarupganj CONCOR MMLP/PFT siding and commissioning of requisite interface between MMLP/PFT Siding and Existing Signal Interlocking (EI System) at DFCC New Swarupganj Station & Civil construction work of additional rooms at DFCC New Swarupganj Station.”

1.1 The tenderer is required to undertake: -

Detailed route survey, complete system design, preparation of tapping charts & test procedures, supply of all material (as per schedule) and equipments, returning of empty cable drums, commissioning of equalizer amplifier repeaters including their power supply, supply and commissioning of way station equipments including their power supply & termination boxes in ASM's office, supply & commissioning of emergency communication posts, gate telephones, provision of all protective measures, so as to protect the equipments from lightning, surges & induction which may be available on cable (if required).

Execution of works shall only be done commence at site after the preparation of cable route plan and its approval from DFCCIL .

No new OFC/QUAD cable shall be laid close to existing track. It shall be laid close to DFCCIL boundary as per extant instructions i.e. 1.00 mtr. from the DFCCIL boundary to the extant possible (if required).

The tenderer should install, test & commission the S&T Section, Emergency and Deputy control at CONCOR PFT at Swarupganj (if required).

The existing system & type of control to be commissioned is also described in the document.

The tenderer will also supply any other equipment's or services as per approved system design for proper functioning of repeater system.

The contractor will provide informal training to DFCCIL staff in installation, maintenance and operation of equipment's/system. Warranty & Post Warranty Maintenance, Supply of all documentation, supply of spares & Optional items and commitment for long-term support for the system.

DFCCIL shall provide following: -

- Supply the material as per list given in tender document.
- Space in station building for housing equipment's.

Works & materials not specifically listed:

Any materials which are not listed explicitly as 'DFCCIL supply material" as per list given in tender document and is also not covered in Schedule will be provided by the contractor without any extra charges.

Similarly, if some items of works/service are deemed as essential by the contractor for successful

working of system but are not covered in Schedule of work, then contractor will either do such works free of cost or will quote the price for such works separately as an optional item. Contractor will also clearly mention repercussions of not operating such optional items.

1.2 PROGRAMME OF WORK/TIME SCHEDULE:

Already mentioned in signaling portion hence deleted.

1.3 LOCATION OF SITE:

Already mentioned in signaling portion hence deleted.

1.4 Deleted

1.5 COMPLETION PERIOD

Already mentioned in signaling portion hence deleted.

1.6 TIME SCHEDULE

Already mentioned in signaling portion hence deleted.

1.7 SITE ORDER BOOK

Already mentioned in signaling portion hence deleted.

1.8 MILESTONES TO BE ACHIEVED

As the work is of emergent nature and it is very essential to transfer the block working on underground cable, contractor will ensure that the cable is laid in entire section and jointing, testing and termination is done, so that the block working can be shifted to underground cable in the entire section within maximum 06 months of the award of the contract.

1.9 INSURANCE

1) INSURANCE OF PERSONNEL

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 accident to persons who shall be employed by the contractor in or about the site 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 be approval of the purchaser and if he so requires in his name.

2) INSURANCE OF MATERIALS & INSTALLATIONS

The contractor shall take out and keep in force a Policy or policies of Insurance for all materials including DFCCIL supply, materials/ equipment's irrespective of whether used up in the portion or work already done or kept for the use in the balance portion of the work until such works are provisionally handed over to DFCCIL. For this purpose, the works are deemed to have been provisionally handed over for the sub-section after the competence test to be conducted on the works.

The contractor shall not be liable for losses/damages to the materials either used up in the portion of work done or his material kept for use at site in consequence of mutiny, or other similar causes 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 Railway, be made good by the contractor at the cost of the Railway.

The contractor should however insure the stores brought to site, against risk in consequence of war and invasion as required under the Emergency risk (Goods, Insurance Act in force from time to time).

The contractor shall take out all insurance covers in connection with this contract with General Insurance Corporation of India only.

1.10 RECOVERY OF MATERIAL

Already mentioned in signaling portion hence deleted.

2.0 PAYMENT TERMS

Already mentioned in signaling portion hence deleted.

Note 1: For items pertaining to consignee inspection necessary purchase voucher of the items is to be submitted.

Note 2: On the basis of final acceptance certificate from the Railway's engineer for all the works in all the sections covered in this contract and reconciliation of materials issued the final bill for the balance payment for each item of work shall be submitted by the contractor along with a clear "No claim certificate".

Note 3: FINAL SETTLEMENT

On expiry of the warranty period and issue of certificate of final acceptance of the entire installations the security deposit will be refunded to the contractor after adjustment of any dues payable by the contractor.

3.0 IMPLICATION OF MODVAT RULES:

Already mentioned in signaling portion hence deleted.

4.0 Deleted

5.0 Deleted

6.0 STORES

Already mentioned in signaling portion hence deleted.

6.2 LOADING /UNLOADING OF MATERIAL

Already mentioned in signaling portion hence deleted.

6.3 STORES RECEIPT & ACCOUNTAL

Already mentioned in signaling portion hence deleted.

6.4 SECURITY OF MATERIAL

Already mentioned in signaling portion hence deleted.

6.5 RETURN OF SURPLUS STORES

Already mentioned in signaling portion hence deleted.

6.6 RETURN OF RELEASED STORES

Already mentioned in signaling portion hence deleted.

6.7 INSPECTING AUTHORITY

Already mentioned in signaling portion hence deleted.

6.8 INSPECTION OF MATERIAL

Already mentioned in signaling portion hence deleted.

6.9 INSPECTION CHARGES

Already mentioned in signaling portion hence deleted.

6.10 MATERIALS AND WORKMANSHIP

Already mentioned in signalling portion hence deleted.

6.11 TEST AND MEASURING INSTRUMENTS, SPECIAL TOOLS AND INSTALLATION MATERIAL

All tests and measuring instruments and other arrangements required for all the acceptance test shall

be provided by the contractor free of cost.

To achieve the target of commissioning, contractor will have to make arrangements where on one hand new installations are going on while Railway are carrying out the tests on part of the installation already done.

This will require different set of measuring instruments to be available with contractor so that DFCCIL can carryout all the tests necessary for releasing the payment as laid down in Terms of payment. Special tools required for installation and maintenance of all the equipment's shall be arranged by the tenderer in adequate quantities. All installation material for complete commissioning of the system shall be provided by the tenderer.

6.12 STORE TO BE SUPPLIED BY CONTRACTOR

All materials required for execution of the contract other than those specially shown as being supplied by the Railways in this document shall be arranged and supplied by the contractor as detailed in the scope so as to realize the end objective. The materials supplied and used by the contractor shall be of the best quality available. All those items for which RDSO specifications exist have to be supplied from RDSO approved sources with RDSO inspection.

6.13 SUPPLY OF TECHNICAL LITERATURES, DOCUMENTATION, DRAWINGS & COMPLETION PLANS ETC

The supply of equipment's and material shall also include the supply of necessary documents, drawings and completion plans etc. All documents and drawings shall be supplied on very good quality white paper with spiral winding in hard plastic folder. Except where printed documents are supplied with each equipment by original equipment manufacturer, all other documentation and information shall be prepared using CAD & computer.

All the documentation and drawing etc. shall also be supplied in two sets of CDs. The documents to be supplied broadly fall in following categories: -

6.14 FIELD LEVEL OPERATION & MAINTENANCE DOCUMENTS

- i) Fault locations and trouble-shooting procedures, including fault dictionary, to identify fault to card level and to replace the faulty cards.
- ii) Adjustment procedure for all field adjustable units.
- iii) Emergency action procedures.

These documents will be available at each station. These documents will also be made available on CDs in standard packages.

6.15 INSTALLATION SPECIFIC DRAWINGS

- i) Cabling and wiring diagram specific to each installation.
- ii) Equipment layout drawing at each installation.
- iii) Acceptance test results for each installation
- iv) Termination details.

The documents, which are specific to installation, will be supplied in 6 copies for each installation. These documents should be prepared on CAD and will be made available on CDs also so that they can be modified as and when individual installation change.

6.16 OVER ALL SYSTEM DETAILS

This will constitute -

- i) Overall system specification, clear mention of facilities and functions.
- ii) Schematic drawing of all circuits in different equipment's with PCB layout and circuit explanation.

- iii) Catalogue of parts with standard numbering of each component for ordering information.
- iv) Test procedure for individual cards to ascertain failure at sub-card/component level.
- v) System integration test results.

These documents will be made available in 6 copies each. Except for those documents which are available in print from original manufacturer other documents will be made available on CDs.

6.17 AVAILABILITY OF SPARES & ADDITIONAL PARTS

The system is likely to be evolved & expanded over many years, hence additional parts or other components will be required for this purpose.

Tenderer shall guarantee that additional parts will be available in market, as and when order for the same is placed by Railways. Contractor shall also warranty that this material will be supplied at the same rate, which is shown in the break up of the costs in schedule of Material.

6.18 QUALITY ASSURANCE

The tenderer shall submit along with the tender the quality control plan including full details of in-house quality assurance organization, procedures and documentation.

The contractor has to give guarantee that the joints made on the quad cable will withstand two-monsoon seasons. Free replacement of the defective joint during this period will have to be done by the contractor.

6.19 PROTOTYPE TESTING

The contractor shall offer 2 Nos. of prototype units of each equipment fully meeting the technical specifications and providing all facilities for type approval by DFCCIL within the time schedule specified in the tender. The type approval will be given by the DFCCIL after joint tests by the contractor and Railways.

At least one qualified Engineer of the contractor who is fully conversant with the equipment shall be associated throughout the prototype testing and he will be coordinating the prototype testing and shall be responsible for preparing test reports. These tests will include factory testing including environmental testing and at least two months of field evaluation trials.

All cost of the type approval test shall be borne by the contractor. Railways shall provide facilities of building and power supply free of cost for field trial only.

In case adequate test facilities and test instruments required for prototype testing cannot be made available within the country, such tests shall be carried out at the manufacturing plant of the collaborators or any other test centre abroad agreed mutually.

Railways shall nominate two engineers for supervising the tests, which will be in addition to the engineers nominated by the contractor for this purpose. All costs for such test abroad shall be borne by the contractor except for travel boarding and lodging of DFCCIL Engineer, which will be borne by DFCCIL.

Tenderer shall submit a complete plan for prototype testing and approval giving the detail test procedure, the type and specification of measuring instruments used. The test procedure may be modified by the Railways in consultation with contractor to ensure that the prototypes are tested as per technical specifications. All measuring instruments and other accessories required for the prototype testing and approval shall be provided by the contractor free of cost.

The Plan for field-testing of prototype equipment shall be so prepared that all major sub system could be tested in an integrated link to confirm that the equipment of various design and manufacturer shall interface properly and perform as per required specifications.

6.20 TEST PROCEDURES

The contractor shall submit detailed test procedure for each equipment, sub-system and system as

a whole to the DFCCIL. The DFCCIL shall discuss with the contractor and modify the test procedure as may be required to ensure that the requirement of tender specifications are complied. This finalized test procedure shall act only as a broad guideline and Railway shall be free to carry out any other tests that may be considered essential. The test procedure shall give details of all equipment, test and measuring instruments required to perform the tests, which shall be provided by the contractor free of cost for the purpose of testing.

6.21 INSPECTING OFFICER - POWER OF REJECTION

- i. Before any stores or part thereof are submitted for inspection, to certify that they are not in accordance with the contract owing to the adoption or any unsatisfactory method of manufacture.
- ii. To reject any stores submitted as not being in accordance with the particulars.
- iii. To reject the whole of the installment tendered for inspection if after inspection of such portion thereof, as he may in his discretion think fit, he is satisfied that the same is unsatisfactory.
- iv. To mark the rejected stores with a rejection mark, so that they may be easily identified if resubmitted.
- v. The inspecting Officer's decision as regards the rejection shall be final and binding on the contractor.

6.22 Consignee's RIGHT OF REJECTION

Already mentioned in signaling portion hence deleted.

6.23 CONSEQUENCES OF REJECTION (Rejected stores)

Already mentioned in signaling portion hence deleted.

6.24 RIGHT TO RAILWAY TO KEEP BACK FROM THE CONTRACT ANY PORTION OF WORK

The successful tenderer will however, have no claim or right in the execution of work which in the opinion of the GM/S&T/Engineer should be carried out departmentally or otherwise and the DFCCIL reserves the right any time after the acceptance of the tender to keep back from the contract and carry out the work or any portion of work through any other agent if may think without assigning any reason. No claim for compensation/loss or whatsoever on this account will be entertained by the DFCCIL.

6.25 EXECUTION OF WORK

All the work shall be executed in strict conformity to the provisions of the contract document and with such explanatory detailed drawings, specifications and instructions as may be approved from time to time by IR based on detailed design and engineering carried out by contractor in line with requirements as per contract document. The contractor shall be responsible for ensuring that the work throughout are executed in the most substantial proper and workmanlike manner with the quality of material and workmanship in strict accordance with the specifications and as per sound industrial practice and to the entire satisfaction of the IR.

6.26 PROVISIONAL ACCEPTANCE TEST

As soon as the contractor informs the Railways and the DFCCIL's Engineer determines that the works are completed from end to end, Railway shall carry out all tests as per the acceptance test schedule.

Any component, modules, sub-assemblies or equipment failing during the commissioning test shall be replaced/repared free of cost by the tenderer. When all the tests are successfully completed end to end, the provisional test report will be jointly prepared.

6.27 OBSERVATION PERIOD

After the completion of provisional acceptance test, system shall be put under observation for a period of 15 days. During this period DFCCIL may at their discretion connect the user equipment's

and observe the performance from the end user point of view.

If any defects or failures are noticed during this period the contractor will replace or rectify such modules and additional tests or repetition of some of the tests will be carried out to make sure that all parameters are within specified values.

6.28) PROVISIONAL ACCEPTANCE CERTIFICATE

After completion of provisional acceptance tests and if no problems are noticed during observation period), Railway's engineer shall issue a provisional acceptance certificate for successful commissioning of whole system covering all materials and services included in the schedule of work, after the acceptance test as per the approved test procedure have been completed and the performance has been found to meet the specifications. DFCCIL's decision in this respect shall be final.

7.0 WORKS

7.1 SPECIFICATIONS, DRAWINGS

i) Supply of diagrams / documents shall form part of the contract (as applicable):-

Copies of drawings shall be submitted to GM/S&T/DFCCIL/Engineer-in-charge for his approval. However, final tracings of these drawings shall be submitted Engineer-in-charge before commissioning.

ii) Outdoor documents

- CT box termination details
- Cable Allocation chart
- Cable route plan and other document.

Note: All above documents initially shall be prepared by contractor and shall be submitted to site in charge for approval.

iii) Specifications, drawings, requisites and requirements referred to in the body of this specification form an essential part thereof. The sources from which the drawings & specifications referred to in this Tender can be obtained from Engineer-in-charge.

iv) The installation must comply with the Indian Railway Standard Specification and "Technical requirements" as laid down in this tender. The arrangements of design of equipment's etc. shall be in conformity with the practices followed on Indian Railway and the System as a whole shall be so designed that the operation is reliable, safe and satisfactory under the local climatic conditions existing at the station. Information to be given by the Purchaser (DFCCIL).

v) Installation shall comply with the requirements to the following manuals/books:

Signal Engineering Manual

Telecom Manual

Engineering Code

P-way manual

General & subsidiary Rules with latest correction slip.

Schedule of dimensions.

These books are available with Engineer-in-charge for this work which can be given on loan, if required, for reference.

vi) After the contract is awarded, the Railway shall furnish to the Contractor, free of charge, a reasonable number of prints of the approved signaling plan, control tower/cabin drawings and such other drawings as the Railway may consider necessary for proper execution of this work.

7.2 INSPECTION OF WORKS

Already mentioned in signaling portion hence deleted.

7.3 APPROVAL & MEASUREMENT OF WORK

Already mentioned in signaling portion hence deleted.

7.4. SAFETY OF WORK & TRAINS

Already mentioned in general condition of tender document hence deleted.

7.5 MATERIAL TO BE PROVIDED BY DFCCIL:

Already mentioned in signaling portion hence deleted.

7.6 MODIFICATIONS

Already mentioned in signaling portion hence deleted.

8.0 PLACING IN SERVICE & MAINTENANCE

After the equipment has been commissioned & placed in service and provisional acceptance certificate is issued by the purchaser's engineer, the contractor shall be responsible for proper maintenance of the equipment's for a period of 01 (One) Year from the date of commissioning. For this he shall prepare a maintenance plan and make available the services qualified maintenance engineers.

Service engineer for maintenance shall normally be out of those engineers associated with the execution of the work. Changes, if any on special case shall be with the specific approval of DFCCIL.

Details of the service personal/engineer (Bio-data & experience) proposed to be associated with maintenance shall be furnished by the contractor to the Railways, well in advance of the commencement of the maintenance period, so that list can be approved by the DFCCIL.

The team will comprise of at least two maintenance engineers & other supporting staff as may be considered necessary. Maintenance engineers will be stationed at location approved by purchaser's engineer and will make sure that they are easily contactable at any time (day or night).

During this period team of maintenance engineers shall be available for at least sixteen (16) hours every day at the nominated place in the section for attending failures, for carrying maintenance & also making DFCCIL staff trained in hardware & software aspects of system. The duration of sixteen (16) hours shall be spread over the day in consultation with DFCCIL. In case of failures occurring outside the mutually agreed sixteen hours the contractor personal shall be available for the required time at no extra cost.

DFCCIL maintenance staff shall fully associate with the maintenance work under the guidance/supervision of service engineers.

If any lacuna is noticed in functioning as a result of any defect in design or manufacture, the same will be rectified by the contractor free of cost. During such rectification if any faulty equipment/modules need replacement or repair, they shall be provided by the contractor from the set of equipment of modules that the contractor should bring to the site of installation in addition to all materials to be supplied against this contract. Use of spares modules covered under the schedule of material of this tender shall not be permitted to be used during installation, commissioning & during the period of maintenance/supervision for One Year.

During the maintenance period contractor will be liable to pay penalty for outages as mentioned in the document.

Penalty will be recovered at the end of maintenance period from the maintenance charges payable to the contractor. If penalties for a quarter are more than the maintenance charges payable, the contractor will have to deposit necessary amount with Railways, failing which DFCCIL will be

free to encash Bank Guarantee to recover such charges.

If he fails to rectify the failure within six hours from the time of information communicated to him by means of fax, telegram, telephone or any other method at the address as specified by the contractor within geographical jurisdiction of DFCCIL-Ajmer, a penalty will be imposed @Rs.100/- per hour per system and part thereof, which will be recovered from the payments and if required from the security deposit.

Working hours for the system will be twenty-four hours a day. Further if any failure is not rectified within 12hrs. from the time of information communicated to him as above, DFCCIL may proceed to rectify it at contractor's risk and cost or departmentally and a penalty of Rs.2000/- plus cost of such rectification will be deducted from the payments or security deposit payable to the contractor.

Installation will be maintained by the Contractor for a period of 180 days from the date of commissioning. He will post the staffs who are well conversant with the indoor circuitry. Any minor alterations, which may become essential due to problems noticed after traffic working will be carried out by Contractor within this period.

9.0 TRAINING

Already mentioned in signaling portion hence deleted.

10.0 EMERGENCY WORKS

In the event of any accident or failure occurring in or about the work or arising out of or in connection with the construction, completion or maintenance of the works which in the opinion of the Engineer requires immediate attention, the DFCCIL may bring its own work men or other agency to execute or partly execute the necessary work or carry out repairs if the Engineer considers that the contractor/s is/are not in a position to do so in time and charge the cost thereof, as to be determined by the GM/S&T/DFCCIL/AII to the contractor.

11.0 WARRANTY:

Already mentioned in general condition of tender document hence deleted.

12.0 FINAL ACCEPTANCE

- i. The contract shall not be considered as completed until the issue of Final Acceptance Certificate by the DFCCIL.
- ii. The DFCCIL 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.
- iii. Notwithstanding the issue of Final Acceptance Certificate, the contractor and the DFCCIL (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.

13.0 PART COMMISSIONING

As soon as complete cable laying & jointing is done and DFCCIL will start making use of such cable. This will constitute part commissioning of the work. After such part commissioning contractor will have to maintain the cable till the final commissioning. Maintenance of partly commissioned cable will form part of the cost of laying & jointing and no separate payment will be made for this maintenance.

During the period when system is partially commissioned the cable will be owned by DFCCIL and any damages or cuts will be on account of DFCCIL. Contractor will be paid on the schedule rates for any jointing which may be required except when it is a failure of joint.

13.0 DRAWINGS:

Drawings mentioned in the tender document can be taken from the office of CGM DFCCIL Ajmer office on any working day.

CHAPTER I

ROUTE SURVEY FOR OPTICAL FIBRE CABLE AND 6 QUAD CABLE

1.0 The Tenderer/ Contractor has to done a detailed study about the existing system and to make arrangements for dropping Optic fibre cable in every station in these sections. 6 quad cable is to be laid from the Cable hut/OFC room/Porta Cabin in the station area to the Signaling locations in the mid section. In Station area 06 quad/PIJF cables is required to be laid to extent the communication connectivity to the required points as per Railway requirement.

1.1 PRELIMINARY CABLE ROUTE SURVEY:

Preliminary survey shall be carried out for finalizing the drawing for the route of optical fibre& 06 quad cable as a part of project planning and execution.

Following main items of work shall constitute the survey.

- 1.1.1 Selecting the route in general.
- 1.1.2 Deciding the number of drop and insert locations.
- 1.1.3 Deciding the size and assessing the length of cable required.
- 1.1.4 Working out the requirement of circuits which are to be provided in the cable.
- 1.1.5 Working out the requirements of heavy tools and plants depending upon the nature of the territory, availability of roads along the tracks, etc.
- 1.1.6 Assessing the special problems of the section such as type of soil, long cuttings, new embankments, water logged areas, types of major bridges, major yards.
- 1.1.7 Collecting details of the existing telecommunication facilities and the additional requirements due to electrification and preparing tentative tapping diagrams.
- 1.1.8 Assessing the number of track crossings and other protective works required to be done.
- 1.1.9 Avoiding as far as possible laying of cable too close to a newly laid track.
- 1.1.10 Avoiding the toe of the embankment adjacent to the cultivated Fields.
- 1.1.11 Avoiding burrow pits and areas prone to water logging.
- 1.1.12 Avoiding heavily fertilized soils containing acids, electrolytes and decomposable organic materials promoting bacterial activity.
- 1.1.13 Avoiding large rock cuttings, thick jungles, routes of existing cables and areas difficult to approach.
- 1.1.14 Avoiding side of the alignment which is likely to be affected due to addition/alteration of earth work/ supply structures (such as construction of double lane, shifting of alignment of the existing track etc.)

1.2 Preparation of cable route plan and tapping diagrams.

The cable route plan should indicate the route with respect to the main line, that is, whether the route along the DN main line or UP main line in case of double line sections and whether it is on both side or right side of the main line when facing a particular direction in case of single line section. A tentative tapping diagram should be prepared for the section indicating the tappings of various circuits.

1.3 PROPOSED CABLE ROUTE PLAN.

Based on above survey, the cable route plan should be prepared:

- 1.3.1 Main Fibre Optic cable and PIJF/Power, Telecom. Cable route plan (5 Km. charts) with horizontal scale as 1 Km=10 cm. The approved OHE locations, ASM`s office, cabin etc. are to be marked on the chart.

- 1.3.2 Drawings of the laying of the cable in the special terrain viz. station yards, approaches of cable huts, long bridges, culverts etc. are to be made as 1 Km chart. (Scale 1 Km = 50 cm) to show the details.
- 1.3.3 The name of the location should be put in the 'LOC' column and the chainage in the 'CH' column. At every 10 cm. the Km. post number should be written and its exact equivalent chainage as per OHE Survey plan entered in the 'CH' column. The equivalent chainage is required for working out the length of the main cable required. The name of station should be shown against the location of the Station Master 's Office.
- 1.3.4 Based on the OHE Survey, the serial number and the length of culverts, bridges and level crossings should be marked on the 'Track Line' of the cable route plan. The survey party should be supplied with prints of "5 Km. charts" with the above details entered for enabling them to mark the route, and other details after surveying.
- 1.3.5 The actual measurement of the separation distance from the central line of the track (the adjacent main line) is initially to be shown keeping the minimum clearances from OHE masts mentioned above. This is to be compiled on the 5 Km. charts.
- 1.3.6 Based on the requirement of various types of circuits proposed channeling plan on OFC & 4/6 Quad cable is prepared.
- 1.3.7 The requirement of tapping of different control circuits are assessed based on the existing communication arrangement in consultation with open line Rly. users and a tentative tapping chart prepared.
- 1.3.8 All the plans and drawings shall be neatly prepared using Computer Aided Design System & plotter etc. The drawings shall be in A3 or A4 size & suitably filed for ease of handling. Further, a soft copy of Autocad drawings shall be submitted.

1.4 INFORMATION IN CABLE ROUTE PLAN:

The cable route plan shall contain following information:-

- 1.4.1 Whether the cable route is on the up or down side of the Railway Tracks.
- 1.4.2 Approximate locations and lengths where the cable shall be laid in steel pipes and G.I. Troughs, and under the bed on culverts.
- 1.4.3 Locations of sections where the cable shall be covered by burnt bricks positioned breadthwise @ eight bricks/meter (average).
- 1.4.4 Location of track crossing and the number of tracks to be crossed.
- 1.4.5 Location of road crossing and the no. of DWC pipes to be provided.
- 1.4.6 Locations and length for protection of cable in rocky area and platform cutting etc.
- 1.4.7 Approximate locations of derivation Joints L.C. Gates or signaling locations will be provided on 6 Quad cable.
- 1.4.8 The size, length and route of derivation/PIJF cables from OFC cable hut to various terminal locations.

1.5 DETAILED CABLE ROUTE SURVEY:

The purpose of the detailed survey is to undertake the closer study of the various existing telecommunication facilities, to workout the exact requirement of the Optical Fibre, 6 Quad and Derivation/PIJF cables and materials required for different items of work, finalize all the drawings and site plans required for the execution of work as also to examine the details collected during preliminary survey and to effect necessary changes/ modification, if any.

1.6 FINALISATION OF CABLE ROUTE PLAN:

The following are the guidelines for finalizing the route and preparation of the cable route plan:

- 1.6.1 Prepare the "5 Km. charts" as explained above and collect the latest copy of approved OHE survey plan/Engg Index plan to enter the relevant chainages and details in the "5 Km. charts".
- 1.6.2 Actual measurement by 30M steel tape or chain along the route is necessary only in case of important locations, to be termed as "special terrains", for example, approach to repeater station/cable hut, long bridges, big yards, sharp diversions in the cable route from its parallel course along the main railway tracks due to obstruction, cuttings etc.
- 1.6.3 Inspect and decide the portions of route falling in category of "special terrains" stated in para (ii) above, i.e. where actual longitudinal measurement is necessary.
- 1.6.4 The remaining portions of the route, i.e. other than the portion decided as "special terrain" as per para (ii) above are to be termed as "straight runs". Actual chaining along the route is not necessary for such "straight runs" and these can be marked on the "5 Km. charts" by taking chain ages from the OHE plan/index plan.
- 1.6.5 For the "straight runs" on the cable route as per para (iv) above, an allowance of 3.5% of the drum length should be made for the contours, jointing etc. and each drum length should be considered to cover a route length of $0.965 \times$ cable drum length. The cable route should be started from a repeater cable hut station. Actual measurement along the route should be done by means of a 30 M steel tape for a few drum lengths up to a convenient point along the main line where from the distances along the route may be reckoned from the OHE Plan. A termination allowance of 5 M cable length inside the repeater station/cable hut building should be made, in addition to a length of about 10 M being kept in a pit just outside the building.
- 1.6.6 It should be ensured that both "special terrains" and "straight runs" should consist of full drum lengths, so that the position of joints (other than T-Joint) is fixed without difficulty in both cases.
- 1.6.7 Actual measurements of the separation distance from the centre line of the reference track (a reference track 'Special terrain'. On 'straight runs' this measurement should be made where necessary. In case of 'Special terrains' the separation distance at some points on the route may also have to be reckoned from some other permanent structures depending upon the site conditions.
- 1.6.8 The separation distance of the cable route from the nearest track on the "straight runs" should be 10 M. The deviation from this standard separation of 10 M should be kept to the minimum and as soon as any obstruction has been negotiated, the route should again follow this standard separation distance. It is desirable from the point of view of calculating the induced voltage that the uniformity of separation is maintained for the maximum possible length of the main cable route.
- 1.6.9 Separation distance should be marked on the "straight runs" portion of the cable route plan (5 Km charts) at intervals of not more than 250 m. In addition, the separation distances at points of change in the cable route such as diversions, track crossings approach to bridges, culverts etc. should invariably be marked on the cable route plan in such a way as the intended cable route is clearly defined for "special terrains" the separation distance should be marked at as close intervals as is considered necessary depending on the site conditions.
- 1.6.10 The route should be decided by walking along the track. On long stretches of "straight runs" a push trolley moving slowly may be used. The trolley should be on the track closes to the proposed route.
- 1.6.11 Actual measurement should be made for the protective works required for the cable passing over the culverts, under tracks, over long girder bridges, arch bridges, level crossings, rocky areas, under the bed of culverts and near OHE switching posts etc.
- 1.6.12 Once the cables are laid, the actual length of cable as per the printed marking on the cable is required to be indicated at every km. of cable route, at diversions, crossings, approaches of bridges and joints for Optical and 06 Quad cables.

This is necessary for fault localization subsequently the cable length from cable hut can be corroborated with OHE mast Nos./hectometer posts

1.7 FINALISATION OF CHANNELLING PLAN & TAPPING DIAGRAM:

- 1.7.1 The Survey Party should visit each location such as cabins, SM's offices, Loco Sheds, Pump Houses, Gate Lodge etc. and verify the details collected during the preliminary survey of all the existing telecommunication facilities, and additional telecommunication facilities to be provided due to RE such as tapping on Traction Power Control, Traction Loco Control, Remote Control and Emergency Control circuits.
- 1.7.2 For emergency control circuit, in addition to the general tapping to be provided at interval of every 1 Km. (max.), the details of tapping specifically required by the Electrical Department for their switching posts such as sub sectioning posts, sectioning posts, traction sub stations and isolated locations etc. should be collected well in time. The exact location of the various tapping on the emergency control should then be worked out taking into consideration the tapping to be essentially provided at specific locations for Electrical Engineering Department so as to ensure that the distance between the consecutive emergency socket posts does not exceeds one Km.
- 1.7.3 The position of each tapping should thus be finalized and a final tapping diagram prepared.

CHAPTER - II

TECHNICAL SPECIFICATION AND INSTRUCTIONS FOR TRENCHING, LAYING OF PERMANENTLY SOLID LUBRICATED, HDPE PIPE. OPTICAL FIBRE CABLE, AND 6 QUAD CABLE, SPECIAL PROTECTIVE WORKS, DUCT INTEGRITY AND BLOWING OF OFC

2.1 SCOPE:

This chapter deals with the specifications under which the various work for trenching & laying of optical fibre cable and underground cables coming under the purview of the contract are to be executed by the contractor.

2.2 SUPPLY OF FINAL ROUTE PLAN:

As made Cable Route plan and jointing schedule for jointing of cable will be prepared and supplied by the contractor in consultation with the Engineer in charge on completion of the work free of cost. This shall give a fairly accurate idea of the number & locations and the quantities and type of various equipment fixed, wired and commissioned. These shall be got approved from the GM/S&T/DFCCIL-Ajmer/Engineer in charge.

2.3 INSTRUCTIONS FOR EXCAVATION & BACK FILLING OF TRENCHES

2.3.1 The cable route shall be marked by in white chalk or lime as per the route plan and the instructions of engineer incharge.

2.3.2 Trenches for Telecom cable shall be dug to a depth of 1.65 meter. The width of the trench shall be 0.3 m to accommodate cables and their protection **as per DFCCIL approved OFC laying method statement**. In places where underground pipes, electric main etc. come in the way, trenches deeper than one meter shall be dug as necessary and DWC. pipes shall be placed to protect the optical fibre cables and 6 Quad cables. In station limits wherever 1.00 m depth is not possible, after the approval of railway engineer, trenches can be dug to a depth of 0.5 meter. The same may be protected with Half split DWC duct 120 mm out dia and 103.5 inner dia to be given as per the advice of Railway Engineer.

2.3.3 Metaled, macadamized, concrete and stone paved roads shall also be cut to a depth of 1.0 meter. The cable shall be laid through DWC pipe as per **DFCCIL approved OFC laying method statement**.The road surface shall be restored to original.

2.3.4 Permanently Solid lubricated HDPE Telecom Pipe of 33 mm inner diameter, 40mm outer as per RDSO specn No. RDSO/SPN/TC/45/2013 Rev. 2.0 Amdt. No. 02 or latest with accessories to be laid in the entire section through which OFC cable to be blown/drawn (where ever necessary). HDPE has to be continuous in length and has to be provided through D.W.C pipes, GI pipes etc, Quad cables need not be taken through HDPE Pipe. In station limits (between first DN Home signal to UP home signal) brick protection is required to be provided as per the approved 'Tapping route plan' or as per the instructions by the Engineer. The contractor shall arrange supply and distribution of second class bricks of standard size at site along the excavated trenches and after uniformly covering the cable laid in the trenches by stonefree sieved soil upto 50 mm height above the cable, he shall arrange to place the bricks flat and position them breadth wise so that on an average 8/9 (eight/nine) bricks shall be laid in a meter length.

NOTE: In order to be certain that the full requirement of bricks has been arranged by the contractor for placing on the top of the cable to be laid on any day, he shall spread the bricks side by side on the top of the trenches before the depth of the trenches are inspected by the DFCCIL representative.

2.3.5 If the excavation is to be done between the tracks, below culverts or between OHE foundation and track, it shall be done to the full depth just before laying the cables and in the presence of the Engineer's representative so as to ensure the safety of train operations.

2.3.6 The excavation shall include excavation of trial holes clearing bushes and roots of trees along the

trenches, and adopting shoring in case of loose soil or banks made of cinders and ashes. Wherever the Engineer's representative considers it necessary to adopt shoring, the Contractor will be required to adopt shoring for which the Contractor shall have sufficient quantities of shoring material on hand as per **RDSO Drawing No. TC 35003**.

2.4 TRACK CROSSING

All cable crossings across DFCCIL/Railway tracks shall be done in DWC pipes, threading the cable through these pipes. The contractor shall do the trenching to the required depth wherever necessary such as approaches to track crossing and the length in between the adjacent tracks. Two G.I. wires of 10 SWG size shall be threaded through DWC pipes, one to pull the cable and one for future use.

2.5 ROAD CROSSING

- 2.5.1 When crossing roadways, it is necessary to lay the cables in such a manner as to avoid the necessity of handling the cable sharply and minimize excavation of road surface as far as possible. Where cable is laid in surfaced trunking, the trunking alignment should be curved down to the pipes and proper brick or concrete joint should be made between trunking and pipe.
- 2.5.2 The crossing of main roads often involves difficulties especially if traffic is heavy, precautions to avoid accidents to workmen, pedestrians and vehicles should be taken. On minor roads which can be temporarily closed to traffic it is possible to cross the entire width of the road and open up. Pipes should be installed quickly in the cutting, which is then filled in there by reducing to a minimum time for which the road is closed.
- 2.5.3 Some roadways, which are broad, may be opened for half their width, allowing the other half for use of traffic. Pipes are laid trench filled in the first half and the other half opened up after the first half is opened for the traffic. Pipes laid in the second half is linked with those laid in the first half. DWC pipes shall be used for road crossings. In all cases pipes should be laid at a depth of 1 metre, below the formation level or lower as may be required.
- 2.5.4 Whenever a cable is laid across an important road particularly one with a special surface it is good investment to provide for future expansion. The following methods may be adopted.
- (a) One cable per pipe should be laid. Two length of G.I. wire 10 SWG shall be used as lead wire. Two such lengths of G.I. wire shall be laid through the pipe. One wire shall be used for leading in the cable & the other wire shall be kept with suitable overlay to enable cable pulled out at later stage, if required.
- 2.5.5. **Dr. No. OFC/2002/4** shows the arrangement of DWC pipe trunking under metal roads. At road crossings DWC pipe of 103 mm inner dia shall be used.

2.6 CABLE OVER STEEL GIRDER BRIDGES

- 2.6.1 The Fibre optic cable is required to be blown through permanently solid HDPE pipe through GI pipes.
- The GI pipes with its PLHDPE pipe containing fibre optic cable should be covered by bitumen compound and properly clamped without infringing the permanent way structures.
- 2.6.2 The GI pipe should have drilled holes of suitable sizes as an anti-theft measure before covering by bitumen compound.
- 2.6.3 Arrangement for laying the cable over girder bridges shall be similar to one shown in **DFCCIL Drawings**. The filling of the troughs with bitumen compound is necessary as an anti-theft measure and also to prevent over heating of the cable due to sun's rays.
- 2.6.4 For filling of bitumen, following main precautions should be exercised to prevent the melting of HDPE pipe: -

- a) job has to be undertaken in the presence of an engineer of the contractor

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- b) In order that the temperature inside HDPE pipe does not increase beyond 55 degree centigrade, bitumen compound should be poured in the early hours /late hours of day When Ambient temperature is around 18 degree centigrade or less.
- c) Before pouring bitumen compound its temperature should be accurately measured to ensure that the pouring temperature is not more than 140 degree centigrade.
- d) While pouring bitumen compound, condition of HDPE pipe should be observed minutely against any possible damage. It may also be necessary to keep HDPE pipe in touch with the bottom of the steel trough by suitable implements as it may bulge due to heat.
- e) The bitumen compound may be filled up to a height ensuring that HDPE pipe is fully covered by the compound.

2.6.5 When laying cable on long bridges, the question of longitudinal expansion caused by temperature differences should be taken into consideration and suitable cable loops should be provided at the pillars of the bridge. The cable should also be laid sinuously inside the trough.

2.6.6 The laying of the cable on the bridges is to be done with much care and planning. It is necessary that the cable drum to be laid on the bridge is inspected and tested thoroughly so that damaged cable is not installed.

2.7 CULVERTS AND ARCH BRIDGES

2.7.1 Wherever possible the cable shall be laid under the bed of the culvert through RCC/DWC pipes as per DFCCIL approved drawing. Similar arrangement shall be provided for taking the cable in water logged areas and drains.

2.7.1 In case of wet culverts or unfriendly terrains where it is not possible to lay cable under the bed of culverts, the cables may be laid over the culvert in G.I.pipes as per **DFCCIL approved drawings**.

2.7.2 The protection of cable on Arch Bridges and approach to culverts & bridges should be as per **DFCCIL OFC laying method statement**.

2.8 LAYING CABLE /HDPE PIPE IN SOLID ROCK AND HARD ROCKY SOIL

If the terrain is rocky, it may not be possible to ensure normal dimensions of the trench. In such cases a chase is cut as shown **in DFCCIL OFC laying method statement**. Sharp edges on the sides must be smoothed out and bottom of the chase should be leveled and the cable laid in sand or soft earth should be filled and pressed down up to the step.

2.9 CABLES IN CONGESTED RESIDENTIAL AREAS AND MARSHY AREAS:

2.9.1 When laying the cable in residential sections, the cable should be specially protected on both sides up to a distance of about 300 meters beyond the building line. In such cases the cable should be protected by means of split asbestos cement or RCC ducts which are placed directly over the cable. It is also advisable to protect the cable with split asbestos cement or RCC ducts in rocky areas since only this type of protection prevents the cable from being damaged by stones pressing into the cable after the trench is again filled in.

2.9.2 In marshy area where it is not possible to divert the cable route the cable shall be suitably laid and protected as per decision of Engineer depending on site condition, like laying cable in G.I. pipe 100 mm dia or DWC pipe 103 mm inner dia supported on Masonry Pillars/Iron channels etc.

2.10 Deleted

2.11 LAYING OF CABLE IN SPECIAL CASES:

2.11.1 Near Power Cable

When the contractor comes across any other cable already laid, he shall first report the fact to the Engineer. Should the cable be identified by the Engineer as a power cable (LT or HT), the trench shall be dug as far away from the route of the power cable as practicable.

2.11.2 Crossing of Optical Fibre Cable with another cable

Crossing of the Optical Fibre cable with another cable shall be avoided wherever possible. Where, however, this is not possible, the Optical Fibre cable shall be laid in DWC pipes. The length of the pipe to be provided on either side of the crossing shall be atleast one metre.

2.11.3 Laying of other than optical fibre cables in the same Trench

No cable other than quad/PIJF shall be laid in the trench for the Optical Fibre cable. Even in such cases, both the cables are to be laid as per approved drawing. Where, however, exceptional circumstances exist, the optical fibre cable may be laid along with another cable in the same trench provided a specific permission of each such case is obtained in writing from Engineer. When optical fibre cable and L.T. power cable have to be laid in the same trench they shall be separated by placing a layer of brick between them vertically (approx. 16 bricks/meter) or laid in DWC pipe.

2.11.4 Laying of cable through pipes

- i) The cable shall be laid through DWC pipes at the locations marked on the route plan and as advised by the Engineer or his representative.
- ii) For laying the cable through pipes galvanized steel wires of a cross section not less than 10 SWG shall be used as a lead wire. Two such lengths of wires shall be laid through the pipes, so that after the cable is threaded through the pipe, one lead wire is permanently left in the pipe with a suitable overlay at two ends, to enable the cable to be pulled out at a later stage if required to do so.
- iii) On arch bridges and culvert bridges the cables will be threaded through G.I./DWC pipes etc. While threading the cable through these pipes the Contractor shall do the trenching to the required depth wherever necessary for which no extra charge will be paid.

2.11.5 Laying cable near feeding post:

In the vicinity of feeding posts, as far as possible the cable shall be laid on the side of the track opposite to the feeding post. Further the Optical fibre cable shall be at least one metre away from any metallic part of the O.H.E. and other equipment at the sub station which is fixed on the ground and at least one metre away from the sub - station earthing. In addition, the cable shall be laid in DWC pipes 103 mm dia (for a length of 300 metres on either side of the feeding point.

2.11.6 Running of cables at foundations others than OHE Masts and from pipe outlets.

Damages to cable is likely to occur if care is not taken in laying cable where the bed changes from solid support such as a foundation pipe or bridge to soft support such as soft soil. The cable must not press against the edge of the solid support. The soft soil near the edge must be tamped and the cable raised slightly.

2.12 HANDLING OF CABLE DRUMS & PAVING OF CABLES:

- 2.12.1 The drums shall be unloaded by the side of the Railway Track from either a crane or any other suitable means very carefully so as not to cause any damage to the cable. The drums at site shall be protected until they are laid.
- 2.12.2 On each drum there are two ends, A&B. The 'B' end of one cable length shall meet 'A' end of the next cable at a joint. The 'A' end shall be normally on the top unless indicated otherwise on a drum.
- 2.12.3 The drums shall always be kept upright, i.e. axle in parallel position to the base. The drums shall not be set by jerks but shall be handled slowly and with care. The walls of the drums should not be damaged while moving the drums if required for unrolling.
- 2.12.4 The drums shall normally be unrolled at the same place and the cable carried by workmen near the trench. The drums shall not be dragged in any case. But where drums of cable have to be moved, would always be rolled in the direction of the arrow, otherwise the coils tend to unwind and the cable may get battered. In case no direction arrow is marked on the drum, remove several battens and determine the direction in which the cable is coiled. The arrow should then be painted on the drum pointing in the opposite direction in which the upper cable end is coiled so that future

handling of the cable drum is facilitated and then replace the battens carefully.

- 2.12.5 The drum should be properly mounted on jacks (or on a cable wheel) making sure that the spindle is large enough to carry the weight without bending and that it is laying horizontally in the bearings so as to prevent the drum creeping to one side or the other while it is rotating. Before attempting to pull off the cable, remove the end protection box attached to the flange of the drum and cut the security ropes so as to leave the cable free to move..
- 2.12.6 If a portion of the cable only is taken out from the cable drum, the battens should be immediately replaced to prevent damage to the balance of the cable. This is important.
- 2.12.7 The use of steel bars between the bolt heads to 'jump' or turn the drum around is dangerous to staff and likely to damage the drums. A better method is to use two steel plates with grease between them. By standing the drum on these greased plates, it can be easily elevated round to the desired position.
- 2.12.8 All care should be taken in handling cable drums with a view to ensure safety not only of the cables but also of the working party handling them. The man should not be allowed to break the cable drum by standing in front but only from side.
- 2.12.9 **Rewinding and Redrumming of cables.**
- i. If for any reason it is found necessary to rewind a cable on a drum, cable drum with a proper barrel diameter not less than of the original drum should be chosen.
 - ii. The drums should be mounted on cable jacks during rewinding operations using proper size of spindles passed through the flange holes, which will not buckle under the lead. The cable should not be bent opposite to the set it is having already.
 - iii. In the re-drumming operations, drums should be so turned that the cable passes from the bottom of the original set with as little gap as possible.
 - iv. Replace all the lagging on the cable drum.

2.13 LAYING OF DERIVATION/PIJF CABLES.

The derivation/PIJF cables are required to be laid from cable hut to the subscriber premises (ASM, Cabin, Depots, Residences, Electrical Locations etc.) for extending control and other tapings. The plan & requirement of PIJF/derivation cables shall be suitably worked out and got approved from the Engineer well in advance. As far as possible derivation/PIJF cables shall be laid in the trenches/protective works already done for OFC/6 Quad cable. From the diversion point, cables shall have to be laid on independent trenches. For branching out different tapping on route, the cable may be tapped at different locations. However, it must be ensured that every tapping is taken on independent conductors right from cable hut to the subscriber for ease of isolation in case of malfunctioning. All the required protective works shall be implemented for protecting these cables. Instead of HDPE pipes, second class bricks of standard size shall be used for protection. The bricks shall be placed breadth wise so that on an average there will be 8 to 9 bricks per meter.

2.14 ERECTION OF EMERGENCY SOCKET POST

Emergency socket boxes shall be provided on rail as per sketch no **OFC/2002/14 Alt-2** and these shall be erected along side the railway track at a regular interval not exceeding 1 km, as per the location given by the engineer. The EMC post bottom to be fitted with a base plate of 8mm thickness, 30 cm x 30 cm size. The derivation/PIJF cable shall be directly terminated at the 6-pin emergency socket box. Emergency rail post should be duly painted with two coats of paints. The location of EMC Post shall be indicated on every km. post already available at an interval of 100m along the track with reflective arrow mark and telephone symbol as directed by engineer in charge.

2.15 BLOWING OF OFC

- 2.15.1 The cable shall be pulled using Cable jet blowing method or any method approved by the engineer – in –charge.

- 2.15.2 Contractor may have to blow the cable in the Ducts as instructed by engineer – in –charge also along with ducts laid by itself in such conditions all duct cleaning, cable blowing arrangement has to be made by contractor at no extra cost. Before Blowing of the cables, the allotted duct should be identified.
- 2.15.3 Cable manufacturers specification will be provided to the contractor prior to blowing.
- 2.15.4 Unless otherwise specified, the contractor must leave minimum 25 meters of slack on both sides of fiber Optic splices at each splice chamber (every 3 Kms). Each pull through chamber (in between two splice chambers), manhole (ADM or regenerator locations) shall consist a minimum OFC slack of 25 mtr.
- 2.15.5 The proposed cable is an armored type and delivered in reels of up to 3 Kms. Splice points are located and planned at approximate intervals of 2.85 Kms.
- 2.15.6 OFC is normally installed bi-directional that is cable reel is placed midway and installation is taken up on each side one after the other. The first installation is when the cable directly uncoiled from the reel and next is after uncoiling all the cable from the reel are placed on the ground in a figure of 8 to facilitate installation.
- 2.15.7 Sometimes there is considerable lapse of time between the pipe laying and cable laying. This intervening period could have heavy rains too. Therefore, there is possibility of entering dissolved muddy water into the HDPE pipes. This dissolved muddy water may transform into a thick paste or solid mud. Cleaning of the pipes before the cable Blowing is absolutely necessary to remove any such obstructions. Replacing mandrill with nylon brush and rugs for PVC ducts then does similar operation
- 2.15.8 OTDR test has to be conducted for all 24 fibers of the OFC in 1310 nm as well as 1550nm windows and readings to be recorded in soft as well as hard copy and drums with any defects for even one single fiber shall not be blown/Pulled. Such defects shall be immediately brought to the notice of the engineer – in – charge and a joint statement has to be signed for record. The drum test results shall be recorded and signed jointly.

CHAPTER – III

JOINTING AND TERMINATION OF FIBRE OPTIC CABLE.

Para No.	Subject.
3.1	Techniques for Jointing of Fibre Optic Cable.
3.2	Straight Joint for Fibre Optic Cable.
3.3	Preparation of Cable for jointing.
3.4	Stripping/Cutting of the cable.
3.5	Preparation of Cable joint closure for splicing.
3.6	Stripping and cleaving of Fibre.
3.7	Splicing of the Fibres.
3.8	Fusion splicing of Fibre.
3.9	Mechanical splicing of the Fibre.
3.10	Organizing Fibre& Finishing Joints.
3.11	Placing of completed joint in Pit.
3.12	Reopening of the joint.
3.13	Termination joint for Fibre Optic Cable.
3.14	Marking the Cable.
3.15	Cutting/Stripping the cable.
3.16	Gripping the cable.
3.17	Fixing of Tension member.
3.18	Fibre Splicing.
3.19	Enclosing Fibres.
3.20	Mounting of Termination Box.
3.21	Fixing the Cable.
3.22	Isolation of Armour of the Cable.
3.23	Acceptance test for Fibre Optic cable.
3.24	Performa.
3.25	Tools and Equipment, required for jointing and Termination.

3.1 Techniques for Jointing of fibre optic cable

3.1.1 Following types of techniques are used for splicing of fibres:-

- a) **Mechanical Splices:** This align the axis of the two fibres to be joined and physically hold them together.
 - b) **Fusion Splicing:** This is accomplished by applying localized heating (i.e. by electric arc or flame) at the interface between two butted, pre-aligned fibre ends, causing them to soften and fuse together.
- 3.1.2 Mechanical splicing can be used for temporary splicing of fibres or where fusion splicing is impractical or undesirable.
- 3.1.3 At all other location and during initial installation of fibre optic cable, fusion splicing should be adopted.

3.2 STRAIGHT JOINT FOR FIBRE OPTIC CABLE

3.2.1 There are various types of joint enclosures available in the market. The procedure for assembly of joint closure is described in the installation manual supplied with straight joint closure. This includes the following:

- a) Material inside joint closure kit
- b) Installation tools required
- c) Detailed procedure for cable jointing
- d) Procedure for re-opening the closure.

3.2.2 The Optic Fibre straight through joint closure shall be as per RDSO/TECspecn. The joint shall be protected in brick chamber as per standard practice.

3.2.3 However, generally, the following steps are involved for jointing of the cable:

- Preparation of cable for jointing
- Stripping/cutting the cable
- Preparation of Cable and joint closure for splicing
- Stripping and Cleaving of Fibres
- Fibre splicing
- Organizing fibres and Finishing joints
- Sealing of joint closure and
- Placing joint in pit

3.3 PREPARATION OF CABLE FOR JOINTING

- a) During the installation, a minimum of 10 meter of cable of each end is coiled in the jointing pit to provide for jointing to be carried out at convenient location as well as spare length to be available for future use in case of failures.
- b) The pit size must be chosen carefully to ensure the length of the wall on which joint is mounted is greater than closure length plus twice the minimum bending radius of the cable. A pit length of 1 meter is sufficient for most of the cable and joint closures. Bracket to support the cable coil are also fixed on the wall of the pit.
- c) The cable is then coiled on to the pit wall in the same position as required after the joint is complete. The marking is done on all the loops so that it will be easier to install it later.
- d) The distance from the last centre to the end of the cable must be atleast 1.8 meter. This is being the minimum to be stripped for preparation of joint.
- e) Sufficient cable at each end upto the jointing vehicle/enclosure is then uncoiled from the pit for jointing.

3.4 STRIPPING/CUTTING OF THE CABLE

- a) The cables are stripped of their outer and inner sheath with each sheath staggered approximately 10mm from the one above it.
- b) Proper care must be taken when removing the inner sheath to ensure the fibres are not scratched or cut with the stripping knife or tool. To prevent this, it is best to only score the inner sheath twice on opposite sides of the cable, rather than cut completely through it.

The two scores marking on either side of the cable are then stripped of the inner sheath by hand quite easily.

- c) The fibres are then removed from cable one by one and each fibre is cleaned individually using Kerosene to remove the jelly.

3.5 PREPARATION OF CABLE JOINT CLOSURE FOR SPLICING

The type of preparation work performed on the cable prior to splicing differs on the type of joint closure and fibreorganizer used. However, the following steps are usually common:

- a) The strength member of each cable are joined to each other and/or the central frame of the joint closure.
- b) The joint closure is assembled around the cable.
- c) The sealing compound or heat shrink sleeve is applied to the cables and closure, or prepared for application after splicing is complete.
- d) The fibres are protected (usually with plastic tubing) in their run from the cable core to the fibre organizer trays(particularly if cable construction is slotted core type).
- e) Tags which identify the fibres no. are attached at suitable location on the fibres.
- f) Splice protectors are slipped over each fibre in readiness for placing over the bare fibre after splicing.

3.6 STRIPPING AND CLEAVING OF FIBRE

- a) Prior to splicing each fibre must have approximately 50mm of its primary protective U.V. cured coating removed, using fibre stripper which are manufactured to fine tolerances and only score the coating without contacting the glass fibre.
- b) The bare fibre is then wiped with a lint free tissue doused with ethyl alcohol.
- c) Cleaving of the fibre is then performed to obtain as close as possible to a perfect 90 face on the fibre.

3.7 SPLICING OF THE FIBRES

As discussed above there are two types of methods, which can be used for fibre splicing. Some of the basic steps for both the type are as under:

3.8 FUSION SPLICING OF FIBRE

Some of the general steps with full automatic micro processor control splicing machine are as under :

- a) Wash hands thoroughly prior to commencing this procedure.
- b) Dip the clean bare fibre in the beaker of ethyl alcohol of the ultrasonic cleaver. Switch on ultrasonic cleaver for 5-10 seconds (Some of the manufacturers does not prescribe the above cleaning).
- c) Place the bare fibre inside 'V' groove of the splicing machine by opening clamp handle such that the end of fibre is app. 1 mm. over the end of the "V" groove towards the electrodes.
- d) Repeat the same procedure for other fibre, however, first insert heat shrink splice protector.
- e) Press the start button on the splice controller.
- f) The machine will pre fuse, set align both in 'X' and 'Y' direction and than finally fuse the fibre.
- g) Inspect the splice on monitor if provided on the fusion splicing machine and assure no nicking, bulging is there and cores appear to be adequately aligned. If the splice does not visually look good repeat the above procedure.
- h) Slide the heat shrink protector over the splice and place in tube heater. Heat is complete when soft inner layer is seen to be 'oozing' out of the ends of the outer layer of the protector.
- i) Repeat for other fibres.

3.9 MECHANICAL SPLICING OF THE FIBRE

In this there are two types of splicing system, one with precision alignment of fibre in "V" groove and their ends are sealed with some index matching fluid and adhesive. The other uses ultrasonic light source for curing optical adhesive in addition to alignment etc.

The general steps involved for the above are as under:

- a) Stripping and cleaving of fibres is to be done.
- b) Remove protective end cap from mechanical splice and pull-out vent tube.

- c) Inject adhesive as specified by supplier into splice.
- d) Insert fibre until it butts against fibre end already bonded in place.
- e) Cure adhesive with UV light following exposure times as indicated by supplier, if required.
- f) Repeat the same procedure for all the fibres.

3.10 ORGANISING FIBRE AND FINISHING JOINTS

- a) After each fibre is spliced, the heat shrink protection sleeve must be slipped over the bare fibre before any handling of fibre takes place, as uncoated fibres are very brittle and cannot withstand small radius bends without breaking.
- b) The fibre is then organized into its tray by coiling the fibres on each side of the protection sleeve using the full tray side to ensure the maximum radius possible for fibre coils.
- c) The tray are placed in the position.
- d) OTDR reading taken for all splices in this organized state and recorded on the test sheet to confirm that all fibres attenuation are within specification. This OTDR test confirms fibres were not subjected to excessive stress during the organizing process.
- e) After this the joint can be closed with necessary sealing etc. and ready for placement in the pit.

3.11 Placing of completed joint in Pit

- a) Joint is taken out from the vehicle and placed on the tarpaulin provided near the pit.
- b) The cable is laid on the ground, loop the cable such that pen mark previously place on the cable line up. Tape these loops together at the top of the coil.
- c) The joint can now be permanently closed and sealed by heating heat shrinkable sleeve etc. However, before closing, silica gel to be kept inside for moisture protection.
- d) Now the joint closure is placed in the joint closure and pit is closed.

3.12 Re-opening of the joint

If required for attending to faults etc., manufacturers supply special kits for opening of the joint and the steps to be followed. However, the general steps are as under:

- a) Using suitable knife cut heat shrink sleeve longitudinally along its entire length.
- b) Do not damage the smaller heat shrunk sleeve on the ends of the joint.
- c) Apply heat to the cut sleeve until it begins to separate.
- d) Gently remove the cut sleeve from the joint. Now the joint can be opened.
- e) Protective sleeve/cover can be removed for attending to faults etc.

3.13 TERMINATION JOINT FOR FIBRE OPTIC CABLE.

3.13.1 This joint is provided in the cable hut for terminating the outdoor fibre optic cable of both the sides, splicing through fibres, connecting fibres to pigtails for connection to optical line terminal equipment etc.

3.13.2 The OFC Cables shall be dressed up on wooden plank/Aluminium ladder inside cable hut. [The armour of the OFC Cable shall be cut before taking the cable in the equipment rack]. The cables shall be terminated on OFC termination joint closures.

The Optic Fibre termination joint closure as per specification No. IRS.TC-81-2000(Part B) (latest) shall be provided in each cable hut to terminate both optical fibre cables and deriving required pigtails. This shall be mounted suitably inside the equipment rack. Two pairs of fibres shall be derived from either side cable at every OFC cable hut through pigtails with FC/PC connectors.

3.13.2 The procedure for installation of termination joint box depend upon the type of joint enclosure. The installation manual supplied give the step by step procedure for installation. However, the general steps are as under:-

- Marking the cable

- Stripping/cutting the cable
- Gripping cable in sheath/clamp
- Treatment of tension member
- Fibre splicing
- Enclosing fibre
- Fixing strength member
- Closing the cover
- Fixing termination box
- Fixing the cable.

3.14 MARKING THE CABLE

- a) Determine the cable length upto the proposed location of termination box. It is also to be ensured that atleast 10 meters of cable is coiled in the cable pit.
- b) Determine the cutting point and mark the cable
- c) Determine the sheath peeling point and mark the cable

3.15 CUTTING/STRIPPING THE CABLE

- a) Cut the cable as per the marking
- b) Remove the sheath from cable ends. During sheath stripping care should be taken not to damage the fibres.
- c) The length and the steps for various sheath cutting shall be as per the instruction given in the manual.

3.16 GRIPPING THE CABLE

- a) Wind PVC tape around the cable core just beside edge of the sheath.
- b) Insert the bushing inside sheath by cutting the cable sheath for about 25 mm.
- c) Place the sheath grip(lower half and upper half) and tighten it with the help of torque wrench.

3.17 FIXING OF TENSION MEMBER

- a) Mark the tension member for the specified length and cut it.
- b) Clean the tension member thoroughly by Alcohol and cotton cloth.
- c) Fix tension member holder with the help of instant adhesive at the end of tension member.

3.18 FIBRE SPLICING

The procedure for splicing is same as described for straight joint closure in Clause 3.13 above.

3.19 ENCLOSING FIBRES

- a) Set the fibre cassette on the base
- b) Arrange excess length of fibre to make double figure of eight.
- c) Enclose the spliced fibre and its excess length carefully.
- d) Repeat the procedure for other fibres.
- e) After this, the box can be closed. However, a packet of silica gel may be placed inside for protection from entry of moisture.

3.20 MOUNTING OF TERMINATION BOX.

Termination box/FMS can be fixed either on wall or on equipment rack. At wayside stations it shall be mounted inside the equipment rack in order to prevent pigtailed from rodent attacks.

- a) Mark the fixing holes on the walls/bracket/frame
- b) Place the termination box and tightened the nuts inside the base box.
- c) Put the covers.

3.21 FIXING THE CABLE

Secure the cable on wall/frame at two places within one meter from termination box keeping in view straight entry of cable in termination box.

3.22 ISOLATION OF ARMOUR OF OFC CABLE

The maximum continuous length of armour of OFC Cable should not exceed 1.6 Kms. In order to keep the induced voltage within permissible limits. Where the continuous length of cable exceeds 1.6 Kms., a 50 mm cut shall be made in the armour after every 1.6 Kms.

Since jointing pits are available at every one km. The isolation can be carried out at an interval of 1 km at the jointing pit location. The Exposed cable at the cut shall be covered by shrinking suitable heat shrink sleeve as per TEC specifications.

3.23 ACCEPTANCE TEST FOR FIBRE OPTIC CABLE

The Procedure for Testing of Fibre Optic Cable shall be jointly finalized by Contractor with Engineer of the Railways. The parameters specified by manufacturer shall be taken as reference. The Test shall be conducted from cable hut to cable hut, after the Splicing & termination Joints are completed. The length of cable (as per marking in cable & as measured by OTDR) loss in cable, average loss per Km., No. of Splices, Splice loss, etc. shall be recorded and jointly signed as per pro-forma given in para 5.24 below.

3.23.1 Testing of fibers

Testing consists of **OTDR** reading and **power meter** reading of all fibers. Station to station testing is required for fibers terminated at block stations. Run through fibers may be tested form end-to-end terminations only. OTDR readings are to be taken in 1310 nM as well as 1550nM windows and one set of readings to be recorded in soft as well as hard copy and submitted to the DGM duly counter signed by contractor’s authorized representative and RailTel’s engineer – in - charge.

Reports: The reports consists of (a) tabulation of all events reported by OTDR of more than 0.2 db over the section for all fibers tested, (b) Tabulation of power loss from A-B & B-A direction, average and loss per km in both 1310 / 1550 nMfor all the fibers tested.

3.24 TEST PROTOCOL FOR OPTICAL FIBRE CABLE

SYSTEM TEST PROTOCOL	OPTICAL FIBRE	CABLE FIELD TEST
-----		-----
-----		-----
-----		-----

Route: ----- Date: -----
 Station: ----- No. of midsection splices: -----
 Section: ----- Measured by: -----
 Length Length as per meter
 (by OTDR): ----- marking on cable sheath-----

1) Optical measurements (On Line):

Measurement	Fibre - number	Accepted Value
1.1 Total attenuation at a)1300nm with OTDR b)1550nm with OTDR		
1.2 Total attenuation per Km:		0.5 dB/Km(1310nm) 0.25 db/km(1550 nm)
1.3 Splice Loss in dB with OTDR Location		Average splice loss
OHE Mast No./Hectometre post A. B. C. D. E.		

Average splice Loss	0.15 dB
---------------------	---------

NOTE: ALSO ATTACH OTDR RESULTS |----|

2) Visual Inspection (On Line):

2.1 No. of Cable drum used in the section: -----

2.2 S.No. of cable and length of each drum:

S.No.	LENGTH
1. -----	-----M
2. -----	-----M
3. -----	-----M
4. -----	-----M
5. -----	-----M

2.5 Location of Isolation Sleeves: 1. 2. 3.

Contractor's Representative

Railway Representative

3.25 TOOLS AND EQUIPMENTS REQUIRED FOR JOINTING AND TERMINATION OF FIBRE OPTIC CABLE.

SN	TOOL's Name	SN	TOOL's Name
1	Branch Joint Closure	14	Fibre stripper
2	Termination Box	15	Knife for HDPE cutting
3	Rubber end Block	16	Hexa for strength membrane
4	Sheath Clamp	17	Isopropyl alcohol or methanol of high specific gravity
5	Bushing	18	Johnson Buds
6	Strength Member holder	19	Tweezers
7	Heat Shrinkage tube	20	Gun heater Blower type
8	Arc fusion splicer machine.	21	Sleeve for splice protection
9	Power cord AC/DC	22	O.T.D.R.
10	Walkie-Talkie 12V DC source	23	Stickers for numbering of splicers.
11	Tube heater	24	Portable k. oil generator
12	Precision cleaver	25	Umbrella's 2 Nos.
13	Cable sheath stripper	26	Dust protection for splicing machine

CHAPTER IV

TECHNICAL REQUIREMENTS FOR OFC

4.1 OBJECTIVE

The end objective of this system is such that it shall be capable of providing:

- a) Omnibus voice circuits with selective calling on OFC.
- b) Circuits suitable for emergency control on OFC.
- c) Through communication on OFC.
- d) Point-to-Point circuits with associated signaling on Quad cable.
- e) Omnibus voice circuit with selective calling for S&T and Deputy control on Quad cable
- f) Station to station Block working on Quad cable

4.2. EQUIPMENT RACK & MOUNTING ARRANGEMENTS

- The SDH equipment and primary Drop/Insert MUXs shall be mounted on standard racks of suitable size as per tenderer's design and compatible with relevant ETSI/DIN standards specification. 25% of space shall be available for future requirements. The rack shall be provided with metallic covers with suitable ventilation arrangements from all sides. The front panel shall be provided partially with toughened glass or high quality perplex sheet for viewing alarm indications etc. Covered rack shall be so designed so as to ensure that rodents and vermin do not enter inside. The painting and planting of the equipment and the racks shall be of highest quality.
- The equipment shall be of modular construction. Chassis, front panels and mounting may be either aluminum or steel of equivalent section. If steel is used, all parts must be given corrosion-resistance treatment after all matching operations have been completed. If aluminum is used for the panels, the front surface must be etched prior to finishing 'Adequate rigidity shall be provided to prevent undue distortion. Suitable vibration mounting shall be provided. Overall mechanical dimensions are to be furnished by the tenderer. The equipment and cable shall withstand all the vibrations imparted to the building and adjacent sites during the train operations.
- All the switches, control circuit components & sub assemblies of modules shall be mounted as to permit their replacement without appreciable disturbance to other components.
- Provision shall be made by means of mechanical and electrical interlocks and safety covers etc., so that operating and maintenance personnel are not exposed to harmful radiation and cannot come into accidental contact with dangerous voltages. Safety covers shall be fitted over terminals to which dangerous voltages are applied. The words, e.g. 'Danger', 'High Voltage' etc. shall be suitably printed or engraved on the cover.
- Cables complete with connections that may be required to inter link the various stages shall be substantial enough to withstand frequent handling and be suitably protected against corrosion. All wiring shall be cabled where practicable and clamped to the chassis.

Where insulated leads pass through holes in the chassis, the holes shall be equipped with smoothly finished grommets. Colour code shall be employed in wiring.

- All the indoor cables/power supply wires/OFC cables etc. shall be taken through overhead M.S./Aluminum ladder from equipment rack to the cable termination board. The wiring on wall may be taken on suitable casing of PVC channel/conduit pipe.
- The equipment shall be protected from damage due to a faulty condition or the operation of controls in the wrong sequence, by the provisions of fuses/circuit breakers, interlock circuits are similar safety devices. Fuses shall be mounted in an accessible position clearly labeled regarding their capacity and circuit position and shall be easily replaceable. An over-voltage tripping device shall be provided for the battery supply. Protection and isolation against transient voltages through power supply or any other higher voltage and current shall be provided.

- Each component shall be clearly identified with its circuit designation by an appropriate marking method so that complete description and circuit position of the components can be located in the Instruction Hand Book. Each sub-assembly shall be clearly showing their circuit designation and function.
- Symbols used for the identification of components, sub-assemblies, etc. shall be those shown in the circuit diagram of the equipment, ‘; Danger’ or ‘Warning’ marking shall be prominently displayed.
- Arrangements shall be made for power distribution panel mounted on the rack itself. Arrangements for termination of all 30 channels from MUX. and provision of surge, lightning protection etc. may also be provided on the rack itself.
- The equipment shall have self cooling arrangement. No forced cooling using fans etc. are envisaged. However, if forced cooling arrangements are essential, the cooling fans should work with 48V DC supply. Suitable heat deflectors shall be provided after each equipment sub rack/shelf.
- The equipment rack shall be provided with 3 Nos. of U-link panels. The derived control circuits shall be terminated on U-link panels for the purpose of testing & isolation.
- Detailed layout of equipment rack shall be submitted by the tenderer and got approved from purchaser’s Engineer well in advance.

4.3. SYSTEM DESIGN REQUIREMENTS

4.3.1(a) The Optical Fibre System in the section under consideration envisages an SDH ring comprising of SDH system with STM-1 L-1.1 Add Drop Multiplexers (ADMs) in ring topology and STM-1 L-1.2 add/drop multiplexer in bus topology. The SDH STM-1 L1.1 ring will be connected to the 2 pairs of fibers in such a way that one set of alternate stations in the section will be connected in one direction and the other set of alternate stations will be connected in the other direction. Presently, the SDH STM1 L-1.1 system shall be equipped with 21 Nos. of 2MB streams and other cards as per the schedule of works. This should be expandable to ultimate capacity of STM-4. This expansion should be achieved merely by addition of tributary cards and reconfiguration of software. Any common control card or impedance matching interfaces or other hardware (except tributary cards) necessary for achieving the objectives of expansion shall be supplied with the equipment as part of ADMs. The SDH equipment should also be able to support other interfaces such as 34 MBPS, STM-1 (Optical and Electrical), Video and LAN so as to utilize in future the balance bandwidth available in the SDH chains.

4.3.1(b) The STM-1 L-1.1. ADMs in this section are being envisaged to be used in ring topology. In future the network may be converted to a protected ring. It should be ensured that for migration to protected ring topology, no extra hardware other than additional optical interface cards is required. Software reconfiguration for such migration will not involve any extra expenditure.

4.3.1(c) The network elements envisaged in the present scheme are to Add Drop MUX configuration. However, it shall be possible to reconfigure these ADMs into Regenerator or Terminal MUX without any need of hardware or software. It shall also be possible to reconfigure the ADM as synchronous digital cross connect having 3 STM-1 optical ports and local tributary dropping capability of STM-1 as well as 2 MB. Additional hardware for this should be quoted as an optional item.

4.3.1(d) At each location, one E1 tributary from both directions shall be connected to primary Drop Insert MUX to extract different channels. Out of 30 channels of the E1 stream, 18 channels shall be programmed for omnibus operation and the balance 12 should be programmed for point to point operation, Emergency communication, remote control, data applications, subscriber loop application and patching arrangement. it should, however, be possible as required under the specifications of digital drop insert multiplexer to configure the working of the channels through NMS as omnibus/point to point as per requirement of Railways.

- 4.3.1(e) If, for some reason, one E1 tributary is not adequate additional E1 tributaries are required to be used along with suitable back up protection.
- 4.3.1(f) At MW Repeater Stations/Required Location, the SDH STM-1 L-1.2 shall also be equipped with suitable interface cards to take up the traffic of 34MB Digital MW system in case of failure of MW system as well as interface card to patch the system optically on STM-1 L-1.2 system in case of failure of STM-1 L-1.1 system.
- 4.3.1(g) Telephone Exchange will also be connected to the OFC system by providing an optical interface card in STM-1 L-1.1 at these locations as per instruction of Engineer and an STM-1 sub-link in each exchange.
- 4.3.1(h) MW Repeater Stations (located at maximum inter repeater distance of 40 KMs) will also be provided with SDH STM-1 L-1.2 ADMs as per instructions of GM/S&T/DFCCIL/Engineer as required.

These will be provided on one pair of fibers which will be terminated only at repeater stations but will be spliced through in the termination box itself at intermediate cable huts. The STM-1 L-1.2 system will be connected in bus topology.

Presently the SDH STM-1 L-1.2 system will be equipped with 21 Nos. of 2MB streams and other cards as defined in the schedule of work. It should be however, possible to use the specified full capacity of the equipment's only by adding/inserting tributary cards. STM-1 L-1.2 should however also be expandable up to its ultimate capacity of STM-4 by adding additional cards/hardware at a later stage.

- 4.3.1(i) It is proposed to patch STM-1 L-1.1 system on STM-1 L-1.2 system in case of failure of STM-1 L-1.1 system. The STM-1 L-1.2 system will be equipped with necessary cards/interfaces for this arrangement.
- 4.3.1(j) Radio patches/protection paths
- (i) In case of failure of equipment/fiber, the ring topology in STM-1 L-1.1 stream should take care of failure and there should not be any interruption in traffic. This should be achievable automatically.
 - (ii) In case of failure of STM-1 L-1.1 stream at more than one places, it will be patched on STM-1 L-1.2 streams optically at MW Repeater Stations. This should be achieved either automatically or through NMS remotely.
 - (iii) In case of failure of STM-1 L-1.1 stream at more than one place, 4 important voice channels namely Section Control, TPC, Remote Control and emergency control will be patched voice level at Repeater Stations on voice channels derived from MW system for uninterrupted communication on these channels.
 - (iv) In case of failure of MW system, the complete 34 MB will be patched on STM-1 system at respective MW Repeater Station for which relevant cards and interfaces will be provided in STM-1 system. The +2MB tributary of MW will also be patched on one of the 2 MB tributaries out of 21 available in STM-1 streams to enable uninterrupted traffic flow connected to MW system.

4.3.2 General Operational Requirements

- (a) The equipment shall be able to work under all Indian Atmospheric conditions as per specification QM-333 category-B1.
- (b) The general requirements for the SDH equipment and system shall be as per DOT generic specifications referred to in the tender documents unless specified otherwise in this tender.

4.3.3 Channel Allocation

- (a) At a way-station, it shall be possible to connect at least four-way station control equipment to the same omnibus channel in parallel without calling for any additional multiplexing equipment.

Additional hardware interfaces necessary to meet this requirement, if any, should be indicated

along with their cost. The offer of the tenderer shall be loaded accordingly. Any limitation on this account or any alternative solution may be explicitly brought out in the offer.

- (b) The system shall allow any two-way stations establishing the communication through the same four wire omnibus channels after the Control Office calls the attention of one-way station through the selective calling at the oral request of the other way station.
- (c) Any in band/ out band/ any other type of signaling used for this purpose shall not in any way interfere with or be interfered by the telephone conversation.
- (d) The channeling plan shall be finalized in consultation with Railways, the exact number of circuits/channels required at every station shall be worked out and appropriate interface card provided accordingly.

4.3.4 Cable cutting out and communication

Without considering the protective patching arrangements of STM-1 L-1.1, STM-1 L-1.2, and digital MW system detailed in the system design requirement stated above, if the fiber optic cable gets cut, the communication between the various points on the control office side shall remain undisturbed; point to point communication in the portion beyond the cut shall get affected for the channels for which Radio patching are not provided.

4.3.5 Failure of way-station PCM equipment

Any failure of PCM equipment at way side station shall not affect communication at any other station especially in the case of omnibus circuits.

4.3.6 Optical Loss budget and Power Source

- i) The optical loss budget shall be worked out for each sub section between adjoining stations on the ring.

The optical attenuation of F.O. cable, splice loss, connector loss, Equipment margin, cable operation margin, system operational margin shall be specified and subsequently measured. Based on this and receiver sensitivity, the minimum optical power of the transmitter/power sources is decided.

- ii) The armoured optical fiber cable shall be as per latest IRS specification in slotted core or loose tube configuration.

4.3.7 Signal-to-noise ratio and Noise budget

- a) The signal-to-noise ratio for the worst channel at any time of the year from any point to Control Office on omnibus channels shall be better than 40 db; considering a length of 300 kilometer for such omnibus channels and irrespective of the number of tappings.
- b) The signal-to-noise ratio of all other channels shall be better than 45 db at any time of the year.
- c) For the purpose of designing and noise criteria, a maximum of four telephone shall be taken as “in circuit” at any given time simultaneously over each omnibus channel.
- d) The tenderer shall submit details of the noise budget & loss budget keeping a safety margin and safety margin shall be spelt out clearly.

4.3.8 Location of Optical Repeaters

All the opto electronic equipment shall be located in the prefabricated building or OFC Cable Huts or Microwave Repeaters as the case may be as per technical specifications according to typical layout.

4.4 OPTICAL & DIGITAL EQUIPMENT

- (a) The Add Drop Multiplexers will be as per DOT’s generic specification as given below:
 - (i) No.G/SDH/04/02 March 2002 with latest amendments.

- (b) The ADD Drop Multiplexers include the optical interface at the bit rate of STM-1 L1.1 & STM-1 L-1.2. The Optical Line Interface shall be suitable to work on mono mode fiber to specification No. IRS: TC55-98 or latest in the section under consideration connecting all the stations along the route. The Optical Interface shall comply with relevant ITU-T recommendations. The beginning of life values for the receiver sensitivity shall, however be at least 4 dB better than the values given in relevant ITU-T recommendations. Each of the optical aggregate ports should be independent of each other and failure of one should not affect the others.
- (c) The equipment shall be capable of working with any of the following synchronization sources: (a) External Clock (b) Any STM-N line, (c) Any 2 Mbps tributary signal and (d) internal clock as per G.813. The management system should include facility for a user programmable synchronization priority list of available timing references in the network.
- (d) At all the SDH nodes, Synchronization station messaging (SSM) for synchronization quality must be available. SSM should be transferred in the SI byte of STM-N section overhead and it must be ensured that the best available timing source will be used for synchronizing the network. The retiming or resync. functionality should be available to allow transfer of high-quality signal from SDH to PDH system. Outgoing 2 Mb/s must be synchronized to SDH network synchronization to filter out effects of pointer adjustments. Vendor has to clearly mention availability of this feature and how it is implemented in the tributary cards.

4.4.1(i) The equivalent number of cards to equal the total requirement of minimum circuits per card must be offered by the tenderer and this shall be taken into consideration for evaluating and comparing the equipment.

(ii) The number of maintenance portable test & diagnostic terminals shall be as per Clause 6,7,8 of specification (IRS TC 68/97) over and above the equipment provided at master station for Network Monitoring and Control. The terminals shall be either of Hand-held type or portable PC (personal computer). It is preferable that these portable terminals be able to connect to any network element, either SDH or PDH, for comprehensive management of the local node as well as any element on the entire network.

4.4.2 MTBF

ADMs including Optical Interfaces and the Primary Muxes shall have high MTBF figure. The MTBF figures from the manufacturers shall be supplied. Different functional cards module should have typical value not less than 25 years under field conditions. MTBF calculations shall be as per the guide lines issued by the Q/A wing of DOT operational manual 115. System availability calculation shall be furnished in the form of flow chart.

4.4.3 Reliability

The reliability of the offered system shall be very high. The overall reliability of the optical Fibre Communication system shall not be less than 99.9 percent considering the MTTR of three hours and a limit of thirty stations.

4.4.4 Redundancy

Wherever the tenderer requires redundant equipment like hot stand-by to achieve the system reliability with his equipment, he shall do so. If redundancy is shown, it will be treated as obligatory for his system. Phrases like “preferable”, “recommended”, etc. should be avoided. If such phrases are used, they will be taken to mean that redundancy is obligatory and the evaluation will be done on the basis of hot stand-by offer.

4.5 Power Supply

4.5.1 The equipment shall be capable of working on normal 48V DC supplied through maintenance free lead-acid secondary batteries as per IRS 93/96, with voltage varying from 40V DC to 60V DC. The equipment shall be capable of withstanding voltage spikes of 3 volts over the maximum voltage.

- 4.5.2 The suitability of the battery chargers shall be confirmed by the tenderer and additional features/protection if any, required for the equipment shall be provided along with the equipment separately. The capacity of battery charger and batteries required shall also be worked out and advised considering 12 hrs. back up under field conditions and high ambient temperatures.
- 4.5.3 AC and DC supply to different equipment bays/shelves shall be segregated by providing a power distribution panel with MCBs of required capacity in the equipment rack.
- 4.6 Protection against transients, surges and lightning:
- 4.6.1 The protection against surge, transients and lightning should be graded and provided at 230V AC input to the battery charger as per RDSO specifications no. RDSO/SPN/172/2001 or latest.
- 4.6.2 The earthing arrangement is proposed to be provided for earthing of optical & digital equipment. The recommended value of earth resistance is not more than one ohm. The adequacy of the arrangement shall be confirmed by the tenderer and alternative if any to meet the requirement shall be indicated along with cost.
- 4.7 **Radio Patching Arrangements**
- The optical fiber channels shall be interfaced with Railways Microwave/ UHF channels which support E&M signaling for important circuits. In the event of failure in the optical fiber transmission system the continuity of communication shall be maintained by automatic radio patching. Necessary interface and other equipment including the signaling arrangements shall be provided. This facility is envisaged for important omnibus conference circuits. The radio channels shall be provided by Railways. The technical details of proposed interface shall be submitted by the tenderer.
- 4.8 **Emergency Communication**
- The emergency circuit derived from 6 quad cable will be connected to Optical Fibre system for extension to control office at all optical fiber cable huts through suitable isolation transformers.
- 4.9 **NETWORK MANAGEMENT SUPERVISORY SYSTEM:**
- NMS system should be installed in test room at Ajmer (if required).

4.9.1 TECHNICAL SPECIFICATION OF PC WORK STATION FOR NMS:

Processor	Intel[R]Pentium[R]i5 12 th gen or higher / i7 10 th Gen or higher (NOTEBOOK make DELL/HP/ACER)
Operating system	Microsoft windows 10 or higher
System memory	8GB, 667MHz Dual Channel DDR4, SD RAM Cache 3MB Level-2Cache.
Hard drive	500GB or higher SSD
Optical drive	Dual Layer DVD+_RW/+_R
Graphics.	Intel[R]Graphics Media Accelerator 900 [upto512MB or higher Shared Memory].
Modem	High speed 64K Modem
Network	Integrated10/100/1000 LAN Ethernet, Intel[R]Pro/Wireless 2200 802.11g integrated wireless LAN, integrated Bluetooth.
Antivirus software	Symantec/Norton Anti Virus Total Security ver. latest.
Battery	43Whr 6-cell Lithium-Ion battery.
Display	17" Widescreen WXGA(1280x800) TFT Display with True Life Widescreen.
Pointing device.	Touch pad pointing device with4-way scroll and on/off switch button.
I/O interfaces	[1] 6-in-1 Digital Media Reader slot, [1]IEEE1394port,[1] S-video port, [1] VGA port, [1]Port Replicator connector, [1] Headphone,[1] External Microphone,[1] AC power connector, [1]RJ-11, [1] RJ-45, [4] USB3.0 port.
Compatibility/compliance	Plug-and-play, Ethernet network compatibility, Advanced Configuration and Power Interface [ACPI], Hibernation/ Sleep modes.
PC card slots	Type-I/IIPC Card Slot with support for 16-bit PCMC IA and 32-bit Cardbus.
Status disp	System Power, NUM Lock, CAPS Lock, SCROLL Lock, Battery Charging, HDD/ Optical activity, Touch pad on/off, Media Slot, Mute, Wireless Keyboard, Full-sized keyboard with touchpad
Printer	Basic Digital Copier (Size A-3) - Minimum copying speed (cpm) 30, paper size (original/image), A3/A3, RAM (MB) 64 Bye Pass: 50 sheet, Zoom: 50 to 200%, Category-SIMPLEX. (with one set of spare cartridge)
Pendrive	16GB (Make-Sony)
Warranty	1YearLimitedWarranty[1YearParts/1YearLabour]
Carrycase	Leather.
Inspection.	Officer Incharge

4.9.2 TECHNICAL SPECIFICATION FOR REMOTE SERVICE / LOCAL CRAFT TERMINALS

(Note book type):

Processor	Intel[R]Pentium[R]i5 12 th Gen or higher / i7 10 th Gen or higher (NOTEBOOK make DELL/HP/ACER)
Operating system	Microsoft windows 10 or higher
System memory	3GB,667MHzDualChannelDDR2SDRAMCache 3MBLevel-2Cache.
Hard drive	500GB SSD or higher.
Optical drive	Dual Layer DVD+_RW/+_R
Graphics.	Intel[R]Graphics Media Accelerator 900[upto512MB or higher Shared Memory].
Modem	Highspeed 64K Modem
Network	Integrated10/100 LAN Ethernet, Intel [R}Pro/Wireless2200 802.11 g integrated wireless LAN, integrated Bluetooth.
Antivirus software	Symantec/Norton AntiVirus TotalSecurity ver. latest.
Battery	43Whr 6-cell Lithium-Ion battery.
Display	17”WidescreenWXGA(1280x800)TFTDisplaywithTrueLifeWidescreen.
Pointing device.	Touchpadpointingdevicewith4-wayscrollandon/offswitchbutton.
I/O interfaces	[1] 6-in-1Digital Media Reader slot, [1] IEEE1394 port,[1] S-video port,[1] VGAport, [1] Port Replicator connector, [1] Headphone,[1]External Microphone, [1] AC power connector,[1]RJ-11,[1]RJ-45,[4]USB2.0port.
Compatibility/compliance	Plug-and play, Ethernetnet work compatibility, Advanced Configuration and Power Interface [ACPI], Hibernation/Sleepmodes.
PCcardslots	Type-I/IIPCCardSlotwithsupportfor16-bitPCMCIAand 32-bitCardbus.
Status display	System Power, NUM Lock, CAPS Lock, SCROLL Lock, Battery Charging, HDD/Optical activity, Touchpad on/off, Media Slot, Mute, Wireless.
Keyboard	Full-sized keyboard with touchpad
Printer	Digital Copier & Multifunctional Office Machine (HP/Canon make)– Printer type Laser,Mono/Colour:Mono, Minimum printing speed (ppm) 22, Category Simplex, ADF/DADF, ADF, Networking: Yes, Fax: Yes (with one set of spare cartridge)
Pendrive	16GB (Make-Sony)
Warranty	1YearLimitedWarranty[1YearParts/1YearLabour]
Carrycase	Leather.
Inspection.	Officer Incharge

4.9.3 ST/LCT shall be common for management of PDH & SDH network elements. It shall be possible to connect these terminals to any network element of SDH or PDH for comprehensive management of the local node as well as any element on the entire network.

4.9.4 Standard Computer furniture i.e. PC table, Printer table, 2 revolving chairs & one side rack etc. of Godrej make or superior shall be provided.

The back up for software shall also be provided in two sets of CD's.

4.10 TECHNICAL LITERATURE & INSTRUCTION BOOKS

- The purpose and scope of the Instruction Books shall be for the guidance of the personnel who shall install, commission, operate and maintain the equipment. The books shall be in English Language or Hindi Language.
- The information contained in the Instructions shall be such as to convey a thorough understanding of the operation of the equipment so that improper functioning may be readily detected and corrected.
- The Instruction Books shall give all the 'DOs' and 'Don't boldly so that the personnel without much of knowledge of theory and design of opto-electronic equipment can prevent failures and also locate the faulty stages. The wordings shall be clear, concise and free from ambiguities and duplications.
- The Instruction Books shall enlist all the safety precautions to be taken by personnel employed in the installation or maintenance of the equipment especially with respect to transmission with laser.
- Part lists and typical test data shall be included in the Instruction Books.
- In addition to the schematic diagrams of complete equipment and detailed description with circuit diagrams of technical sub-assemblies of various stages a complete detailed circuit diagram of the equipment with appropriate markings for the block containing such circuits in the equipment's shall also be furnished in the Instruction Books. Such detailed circuit diagram shall contain the voltages/wave forms and levels at various points.
- Maintenance procedure, Trouble shooting details giving symptoms and remedies shall be included in the Instruction Books.
- Detailed installation procedures, drawings, spelling out the correct type of equipment connections etc. shall be included.
- Testing & Measurement procedures and the parameters to be measured monitored shall be included.

4.11 EMERGENCY CONTROL CIRCUIT

The Emergency Telephone circuits are provided for enabling the train crews to contact the controller in the event of an emergency/accident and for maintenance of overhead electrical equipment. Controller's equipment is generally provided on the Table of TPC controller. Arrangements are provided with TPC to extend the Emergency Circuit to section controller in case of emergency/accidents. In the OFC scheme, this emergency circuit will work with existing arrangement.

4.12 MEASUREMENT FOR FIBRE OPTICAL COMMUNICATION SYSTEM

The measurement & test protocol for all the equipment and complete system including infrastructure shall be done as per guidelines given in RDSO report No. STT.23. Finally, the measurements listed will be taken after commissioning of the system and will be compared with the theoretical link budget submitted by the firm. Additionally, BER performance and jitter performance will also be measured for confirming the performance of these parameters to be within limit as specified by ITU-T.

CHAPTER V

JOINTING OF 6 Quad TELECOM CABLE AND ACCEPTANCE TEST.

- 5.1** This Chapter deals with the requirements of various types of joints on 6 Quads cable, jointing procedure, V.F. Transformers and the acceptance test etc.
- 5.2** Thermoshrink joint closures for various types of joints in 6 Quads Telecom. cable are used as per RDSO specification No. IRS-TC/77/2006 with Amendment – 1 or latest for the requirement of Railway. The 2T (1 quad) VF transformer as per IRS 76/2000 shall be used for derivation joints (if required).
- 5.3** With Optical Fibre application, the 6 Quads cable is meant for carrying circuits only between two stations. Therefore, it is not proposed to load & balance the cable.

Accordingly, only normal & derivation joints with or without transformers need to be provided. As the joint is always a weak link, efforts shall be made to club two or more joints in one if falling within 100 mtrs.

- 5.3.1** The straight through joints shall be provided for normal jointing of cable.
- 5.3.2** The straight through joints with branching clip shall be provided for deriving the circuit using 10 pairs PIJF cable. No isolation transformer is considered necessary upto the distance of 7.5 Km.
- 5.3.3** Transformer joints shall be used for deriving emergency sockets approx. at one Km. distance. This joint shall generally be combined alongwith normal joint. The tapping shall be derived through V.F transformer 470:1120 using 6 Quad or PIJF cable. As the phantom circuit is not required. the centre tap wires of transformer shall be cut permanently and not derived.
- 5.3.4** Where block instruments are provided in end cabins, the 6 Quad cable will shall be terminated with suitable C.T.Box near the block instruments as directed by the engineer at site. A separate 10/20 pair PIJF cable will be laid from OFC cable hut/repeater and will be terminated with suitable krone on both ends. The EMC circuits derived from the main system will be patched to the quad cable suitably isolating with 2T transformers at both ends.

5.4 Termination of 6 Quad cable at station/Cable Hut.

- 5.4.1** L.C Gate quad shall be derived directly without V.F. Transformer to permit passing of magneto ring.
- 5.4.2** One No. of 2T V.F. transformer for emergency circuit shall be provided in thermoshrink joint.
- 5.4.3** Where block is provided in end cabin one no. of 2T V.F. Transformers for Emergency circuit shall be required in the thermoshrink termination joints at 6 Quad cable termination point.
- 5.4.4** A 20 Pair cable termination box (Krone) as per TEC Specification shall be provided to facilitate termination of main 6 Quad cable and PIJF cables for the derivation purposes.

The lead sheath derivation cables shall be terminated on C.T. Box of suitable size. The Krone box & C.T. Box shall be wall mounted at 1 to 1.5 metre from floor level. The OF Cable, 6 Quad joint, PIJF & Derivation cables shall be dressed up on Kongu wood plank & wall mounted, at 1 to 1.5 metre from floor level (**Drp. No.OFC/2002/22**). The Copper & OFC cables shall be further dressed up on Aluminum slotted angle guide ladder from CT box to OFC equipment rack.

5.5 LONG BLOCK SECTIONS &SIDING: -

- 5.5.1** In case of long block sections and sidings (> 12-15 kms) it may be necessary to carry out loading and balancing of 6 Quad cable to reduce the loss & cross talk.
- 5.5.2** The loading section shall be 2 kms. and loading and condenser joints shall be provided at alternate one kilometer similar to conventional quaded main telecom. paper cable. The loading coil assembly for thermoshrink joints contains loading coils of 88 MH for 2 quads and is similar to 2T(1 quad) Transformer in shape & size. Therefore, thermoshrink jointing kit for transformer joint is suitable for loading coil joint also. In condenser joints only 2 wire condensers are to be used for

balancing purpose.

5.6 Jointing Procedure

- 5.6.1 For jointing of 6 Quad cable /PIJF cable jointing pit of depth, 1.0 mtr length of 1 mtr and to a width of 1 mtr has to be made. One layer of country bricks of size 220mmX100mmX60mm should be placed breadth wise above the joint and the pit should be closed and consolidated. The pit surface is levelled by ramming the earth. In case of loose soil or mud bricks or ballast may be used if necessary. A tent may be placed over the pit to protect against adverse weather/dust.
- 5.6.2 Bend the two cable ends slowly into an "S" shape taking care that the cables are not strained excessively and minimum overlap of 350 mm is available.
- 5.6.3 Prepare the cable ends as per the detailed installation instructions for making heat shrinkable joints for 6 Quad Cable.
- 5.6.4 Preliminary checks may be carried out using multimeter for continuity of conductors & breaks/crosses etc. if any. The insulation is measured between all conductors bunched together and screen/Armour by 500V megger. The equivalent average insulation resistance/ conductor/km is obtained by multiplying the megger reading with the number of conductors and the length of cable in Kms.
- 5.6.5 Slip the quad rings on a PE insulated quad of the cable end. Similarly slip another quad ring on the corresponding PE insulated quad of other cable ends. Select a conductor slip a PE sleeve over it. Take the corresponding conductor of the corresponding PE quad of the other cable end. Peel of the PE insulation from these conductors for a length of 50 mm.
- 5.6.6 Bring the two conductors together perpendicular to the cable. Twist the two conductors by rotating giving approximately 10 turns for length of 25 mm. Cut off the surplus wire. Solder half the length of twisted conductors using solder resin core, solder bit flat & blow lamp. Fold the twisted conductors along the main cable conductors and allow it to cool.

Draw a PE sleeve over twisted joint in such a way that former projects equally on the two sides of the latter and equally covers the polyethylene insulation of the two conductors. It should be ensured that the PVC sleeve fits properly over the twisted joint and is not able to move easily over it.

- 5.6.7 For tapping joint, select the quad from which the circuit is to be tapped. Cut the quad. Slip numbered group ring over both ends as also on the lead wire bunch of required transformers. Select a conductor in one quad and slip a P.E sleeve over it and its other end. Select a conductor, a short lead wire and transformer lead wire and make twisted joint. With the other end of the short lead and other cut end of same conductor, make another twisted joint.
- 5.6.8 The conductors of remaining PE quads should also be joined accordingly.
- 5.6.9 Complete the joint as per the detailed installation instructions for making heat shrinkable joints for 6 Quads Telecom cable.

5.7 Jointing & termination of PIJF & lead sheath derivation cables.

- 5.7.1 Thermo shrink joints of appropriate size for straight through or branch off joints as per DOT specification shall be provided.
- 5.7.2 All the derivation / PIJF / cables shall be terminated on krone or CT box of suitable size duly mounted on the wall in subscriber premises.

Section:7**TECHNICAL SPECIFICATION / DETAILS / VARIOUS PROFORMA****TS-01****TECHNICAL SPEC FOR MAINTENANCE & VDU CONTROL TERMINAL**

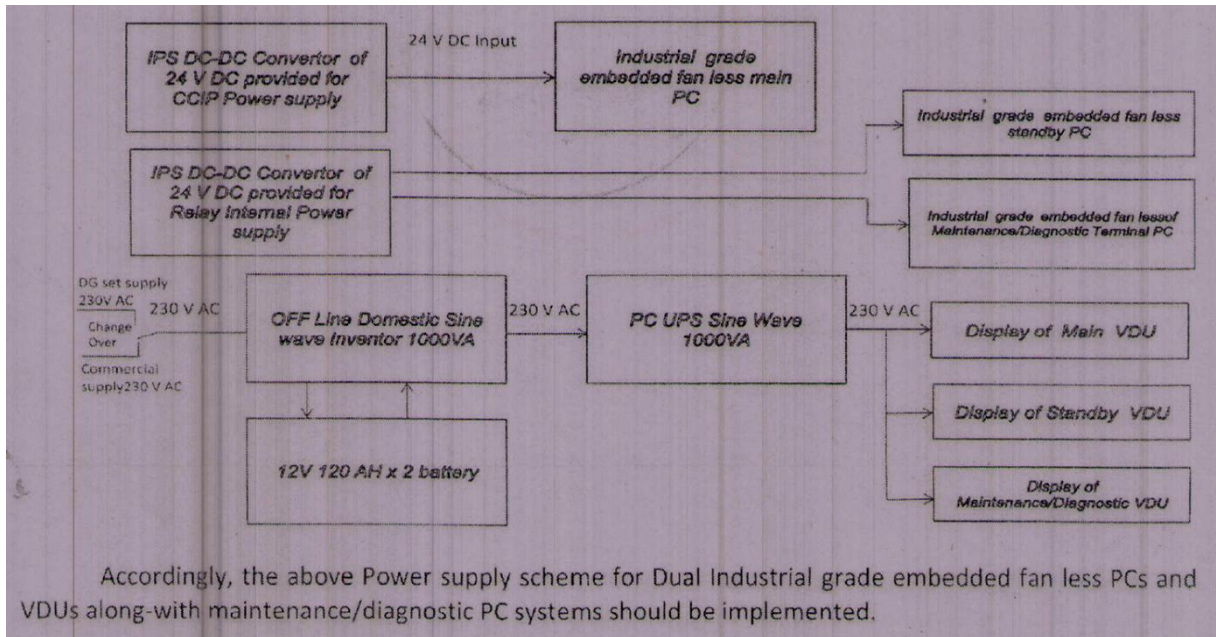
(As per RDSO TAN No. STS/E/TAN/3007 Ver 1.0 of 02.11.12 reproduced below)

Make	Embedded Fanless computer from any one from MOXA V 2406 or KONTRON MPCX 28 R or MEN BC50M Or Similar With Compact Flash Drives in Non –AC and normal environment.	
CPU	AMD T52R 1.5GHz or intel Atom N270 1.6 GHz processor or Intel ®Atom™ Z530 1.6 GHz or above or better	
OS (Pre-installed)	Linux or Windows Embedded Standard 2009 or above/better version OS	
System Memory	1x200 pin DDR2 SODIMM socket support DDR2 533 up to 1GB, built in 1 GB minimum	
Storage		
Built In	40 GB onboard industrial DOM to store OS minimum	
Other Peripherals		
KB/MS	1 PS/2 interface supporting standard PS/2 keyboard and mouse through Y-type cable or USB mouse	
Audio	Line- in, line -out interface	
*Display		
*Ethernet Interface		
LAN	2 auto-sensing 10/100 Mbps ports (M12)	
Serial Interface		
Serial Standards	4 Rs-232/422/485	Ports*
	*software selectable (DB9 male)	
Environmental Limits		
Operating Temperature	Wide temp, models: -10 to 70°C(-40 to 158°F)	
Ambient Relative Humidity	5 to 95% (non-condensing)	
Anti-vibration	EN 50155 standard, (Railway Applications-Electronic Equipment on Rolling stock)	
Anti-stock	EN 50155 standard, (Railway Applications-Electronic Equipment on Rolling stock)	
Power Requirements		
Input Voltage	9-36 or 12 to 48 VDC Note: Complaint with EN 50155 on 24 VDC	
Standards and Certifications		
Rail Traffic	EN 50155, (Railway Applications-Electronic Equipment on Rolling stock:)	
Warranty		
Warranty Period	2 years and supplier to give additional 3 years	
Fan Less	Yes	

TS-02**Technical Requirement for Monitor/LCD Display****(to be supplied with Maintenance Terminal/VDU Control Terminal)**

Data Description	Data sheet for Monitor of VDU control terminal	Data sheet for Monitor of Maintenance terminal
	(Supplied in NS-3/NS Sch. B)	(Supplied in NS-2/NS Sch. B)
LCD Type	LED/LCD Type Grade A Industrial	LED/LCD Type Grade A Industrial
Display Size	48/42 inch	42 inch
Resolutions	Minimum 1366 x 768	Min 1280 x 1024
Display Color	16.7M color	16.7 M
Brightness	450 cd/m ²	Min 250 cd/ m ²
Contrast ratio	5000 : 1 (Typical) or 4000:1	1000 : 1 or 800:1
Viewing angle	178° x 178°	160° x 160°
LCD MTBF	50,000 hrs.	50,000 hrs.
Signal Input	HDMI / DVI-D / VGA / S-Video / RCA	VGA /DVI-D
Power Supply	INPUT: 230V AC	INPUT: 230V AC
Mounting	Wall-mount / Stand mount	Wall-mount / stand mount
Temperature	0 to 50 Degree Celsius (Operation) -5 to 60 Degree Celsius (Storage)	0 to 50 Degree Celsius (Operation) -5 to 60 Degree Celsius (Storage)
Relative Humidity	5~90%, Noncondensing	5 ~90%, Noncondensing
Shock	10G peak acceleration (11ms duration)	10G peak acceleration (11ms duration)
Vibration	5~500Hz, 1G RMS random vibration	5~500Hz 1G RMS random vibration
Certification	FCC, CE	FCC, CE
Warranty	3 Years	3 Years
Power Adapter	External: Screw type	External: Screw type

Note:-Tenderer should submit an Inspection certificate from an authorized institution for items to be supplied. Inspecting agency must certify the configurations of Computer and Monitor as per attached Technical specifications.



TS-03***SPECIFICATION OF FAILURE ANALYSIS SYSTEM***

1. The FAS shall be PC based system with the following configuration:-

Processor:	11th Generation Intel® Core™ i7-1165G7 Processor (12MB Cache, up to 4.7 GHz)
Operating System	Windows 10 Home 64-bit English (License)
Microsoft Office	Microsoft® Office Home & Student 2019 (License)
Security Software	McAfee® Multi Device Security 15-month subscription (License)
Monitor	27-inch FHD (1920 x 1080) Narrow Border Infinity Touch Display with Wide Viewing Angle
Memory²	8GB, 8GBx1, DDR4, 2666MHz
Hard Drive	512GB Solid State Drive (Boot) + 1TB 5400RPM Hard Drive (Storage)
Video Card	NVIDIA® GeForce® MX330 with 2GB GDDR5 graphics memory
Optical Drive	Dell External USB Slim DVD+/-RW Optical Drive – DW316
Wireless	Intel® Wi-Fi 6 2x2 (Gig+) and Bluetooth 5.1
Warranty	Premium Support Plus
Ports	<ol style="list-style-type: none"> 1. Security lock slot 2. DC Power 3. HDMI-out (1.4) 4. HDMI-in 5. USB 3.1 Gen 2 Type C™ 6. RJ-45 Ethernet 10/100/1000 7. USB 2.0 Type A 8. USB 3.1 Gen 1 Type A 9. USB 3.1 Gen 1 Type A 10. USB 3.1 Gen 1 Type A 11. Microphone/Headset Jack 12. SD Card Reader 3.0
Essential accessories	Wired Mouse with Fingerprint Reader - MS819 or superior (additional)
Chassis Color	Silver Cover with Silver Fabric Speaker Mesh
Camera	White FHD IR Camera
Keyboard and Mouse	Dell KM636 Wireless Keyboard & Mouse White
Dimensions	<ol style="list-style-type: none"> 1. Height: 45.32 cm (17.84) 2. Width: 61.19 cm (24.09) 3. Depth: 4.2 cm (1.65)
Audio and Speakers	Sound bar equipped with speakers professionally tuned with Waves MaxxAudio® Pro
Power	90 Watt AC Adapter
Model	Inspiron 27 7000 All-In-One Desktop or superior
Printer	MFP Laser printer, HP make (HP LaserJet M1005 MFP or superior) with one spare toner
Make	DELL or superior

2. An UPS of 1/2 hour capacity should be supplied and installed for FAS.
3. Necessary furniture for installing FAS (computer table and chair Godrej make) shall be provided by the contractor (model of both items will be approved by competent authority).

TS-04

OEM's Site Installation Certificate

(For EI, Data logger, FEP and IPS)

To,

GM/S&T, DFCCIL-Ajmer

This is to certify that verification of system installation (details given below) has been completed by undersigned (OEM representative) and all necessary arrangement like earthing, surge protection, power supply, power & communication cable and equipment wiring meet the requirement standards of engineering for trouble free working of installed system.

1. System being commissioned.
2. Station / section
3. Division
4. Date of commissioning

Name of the RDSO approved Original Equipment Manufacturer

Name of OEM representative with designation

Signature of OEM representative with date

TS-05**COMPLETION DRAWINGS OF EI STATION INDOOR & OUTDOOR DRAWINGS**

(i) Design & submission of three sets of paper copies-

SN	Description	Unit	Qty.
1	Design of SIP & Selection Table, submission of three copies for approval	Set	1
2	Design of SWRD & submission of three copies for approval	Set	1
3	Design of cable route plan (station section) & submission of three copies for approval	Set	1
4	Design of cable distribution plan & submission of three copies for approval	Set	1
5	Design of Circuit Diagrams consisting as mentioned below & submission of three copies for approval	Per Stn	1
	(a) Wiring diagram along with all Logic details & interface circuit.		
	(b) Relay Disposition chart		
	(c) Contact analysis and fuse particulars.		
	(d) Panel Termination Chart		
	(e) CT Rack Particulars		
8	Design of Miscellaneous Diagrams consisting as mentioned below & submission of three copies for approval	Per Stn	1
	(a) Floor plan of Relay room, Battery room, Power Eq. room, Data logger room etc.		
	(b) Power supply Diagram along with power supply calculation.		
	(c) Earthing diagram.		
9	Design of Location Box Drawings (including contact Analysis, Fuse particulars etc.) and submission of three paper copies for approval	Per Stn	1
10	Design of Goomty drawings (including Relay disposition chart, Contact Analysis, Fuse particulars, CT Rack particulars and floor plan etc.) and submission of three paper copies for approval	Per Stn	1

(ii) Supply of original tracings

1	Supply of original tracing of SIP after incorporating all the corrections	Nos	1
2	Supply of original tracing of SWRD after incorporating all the corrections	Nos	1
3	Supply of original tracing of RCC/ST after incorporating all the corrections	Nos	1
4	Supply of original tracing of Panel Diagram/VDU after incorporating all the corrections	Nos	1
5	Supply of original tracing of CRP(station section) after incorporating all the corrections	Nos	1
6	Supply of original tracing cable route plan(Block section) (if any as instructed by Railway Engineer) after incorporating all the corrections	Nos	1
7	Supply of original tracing of cable distribution plan/CCP after incorporating all the corrections	Nos	1
8	Supply of original tracing of Track bonding plan after incorporating all the corrections	Nos	1
9	Supply of original tracing of circuit diagrams consisting of the items as mentioned below after incorporating all the corrections	Per Stn	1
	(a) Wiring diagram along with all Logic details & interface circuit.		
	(b) Relay Disposition chart		
	(c) Contact analysis and fuse particulars.		
	(d) Panel Termination Chart		
	(e) CT Rack Particulars		
	(f) Input & Output bit chart		

10	Supply of original tracing of Miscellaneous diagrams consisting of the items as mentioned below after incorporating all the corrections	Per Stn	1
	(a) Floor plan of relay room, Battery room, Power equipment room, D/L room etc.		
	(b) Power supply diagrams along with power supply calculation		
	(c) Earthing diagram		
11	Supply of original tracing of Location box drawings (including contact analysis, Fuse particulars etc.) after incorporating all the corrections	Per Stn	1
12	Supply of original tracing of Goomty/End cabin/OC Drawings (including relay Disposition chart, Contact Analysis and fuse particulars, CT rack particulars and floor plan etc.) after incorporating all the corrections	Per Stn	1

(iii) Supply of Ammonia print

1	Supply of Ammonia print of approved SIP	Nos.	3
2	Supply of Ammonia print of approved SWRD	Nos.	3
5	Supply of Ammonia print of approved cable route plan (station section)	Nos.	3
6	Supply of Ammonia print of approved cable route plan (Block section) (if any as instructed by Railway Engineer)	Nos.	3
7	Supply of Ammonia print of approved cable Distribution plan/CCP	Nos.	3
8	Supply of Ammonia print of approved Track bonding plan	Nos.	3
9	Supply of Ammonia print of approved circuit diagrams consisting of the items as mentioned below	Nos.	3
	(a) Wiring diagram along with all Logic details & interface circuit.		
	(b) Relay Disposition chart		
	(c) Contact analysis and fuse particulars.		
	(d) Panel Termination Chart		
	(e) CT Rack Particulars		
10	Supply of Ammonia print of approved Miscellaneous diagrams consisting of the items as mentioned below	Nos.	3
	(a) Floor plan of relay room, Battery room, Power equipment room, D/L room etc.		
	(b) Power supply diagrams along with power supply calculation		
	(c) Earthing diagram		
11	Supply of Ammonia print of approved Location box drawings (including contact analysis, Fuse particulars etc.)	Per Stn	3
12	Supply of Ammonia print of approved Goomty/OC/End cabindetails (including relay Disposition chart, Contact Analysis, fuse particulars, CT rack particulars and floor plan etc.)	Per Stn	3

(iv) Supply of completion diagram (8 sets)

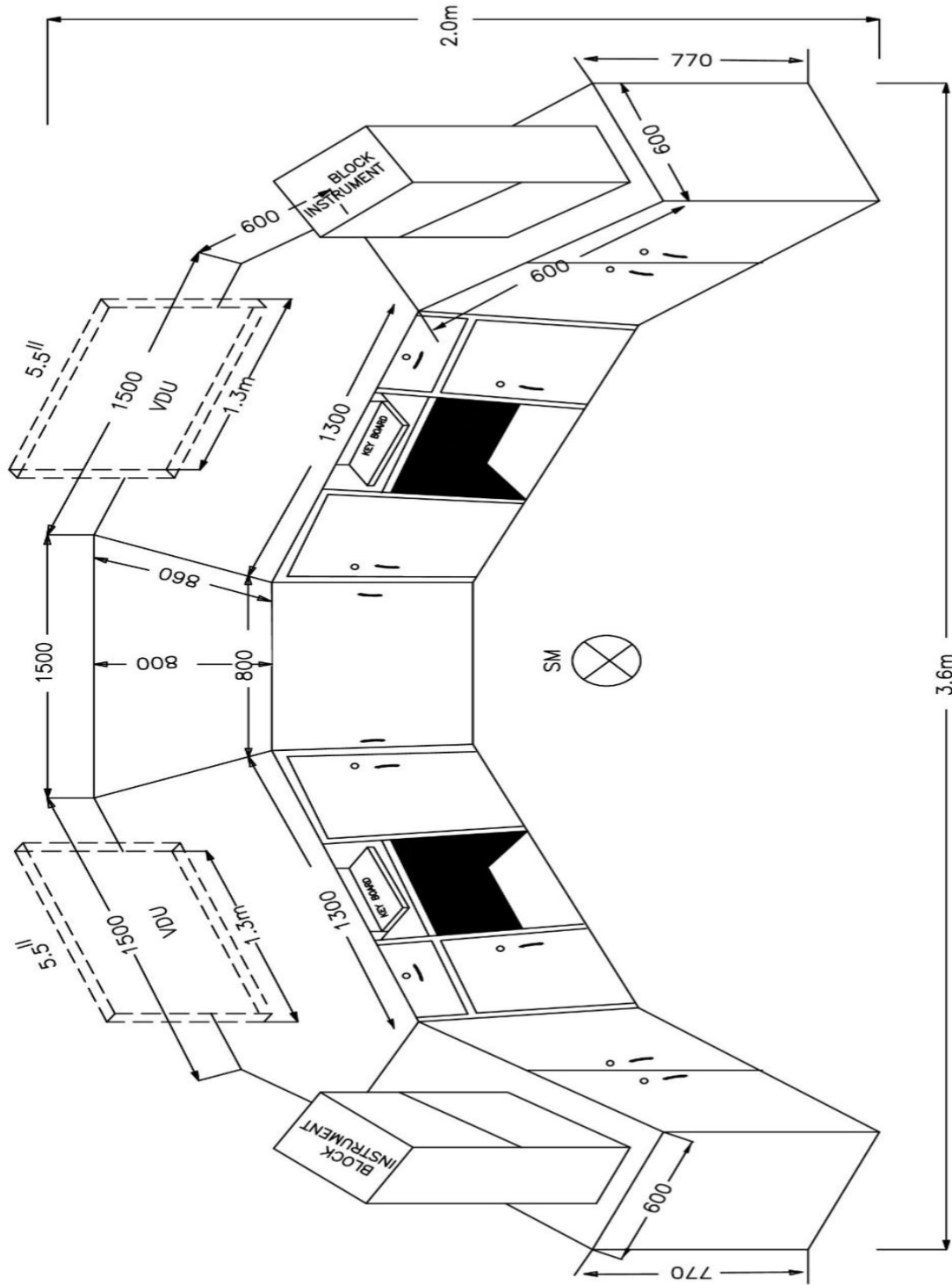
1	Supply of eight sets of Ammonia print of approved completion SIP	Per Stn	1
2	Supply of eight sets of Ammonia print of approved completion SWRD	Per Stn	1
3	Supply of eight sets of Ammonia print of approved completion RCC/ST	Per Stn	1
4	Supply of eight sets of Ammonia print of approved completion FPD/VDU/Panel diagram	Per Stn	1
5	Supply of eight sets of Ammonia print of approved completion CRP (stn section)	Per Stn	1
6	Supply of eight sets of Ammonia print of approved completion cable route plan (Block section) (if any as instructed by Railway Engineer)	Per Stn	1

7	Supply of eight sets of Ammonia print of approved completion cable Distribution plan/CCP	Per Stn	1
8	Supply of eight sets of Ammonia print of approved completion Track bonding plan	Per Stn	1
9	Supply of eight sets of Ammonia print of approved completion circuit diagrams consisting of the items as mentioned below	Per Stn	1
	(a) Wiring diagram along with all Logic details & interface circuit.		
	(b) Relay Disposition chart		
	(c) Contact analysis and fuse particulars.		
	(d) Panel Termination Chart		
	(e) CT Rack Particulars		
	(f) Input & Output bit chart		
10	Supply of eight sets of Ammonia print of approved completion Miscellaneous diagrams consisting of the items as mentioned below	Per Stn	1
	(a) Floor plan of relay room, Battery room, Power equipment room, D/L room etc.		
	(b) Power supply diagrams along with power supply calculation		
	(c) Earthing diagram		
11	Supply of eight sets of Ammonia print of approved completion Location box drawings (including contact analysis, Fuse particulars etc.)	Per Stn	1
12	Supply of eight sets of Ammonia print of approved completion Goomty drawings (including relay Disposition chart, Contact Analysis, fuse particulars, CT rack particulars and floor plan etc.)	Per Stn	1

TS-08

TENTATIVE DRAWING OF VDU Table and Sizes

(This drawing is tentative only. Tenderer should prepare and get approve the drawing before supply of material)



TS-09**LIST OF ESSENTIAL SPARES FOR EI SYSTEM****(Quantity of Various items in a unit lot)****1. For M/s ANSALDO Make EI System:**

S.N.	Description	Unit	Quantity
1	MLK II Card file	Nos	1
2	MLK II CPU PCB	Nos	1
3	MLK II Power Supply PCB	Nos	1
4	MLK II Vital Input PCB 24V DC	Nos	2
5	MLK II Vital Output PCB 24V DC	Nos	2
6	MLK II Non-Vital Input/Output PCB 24V DC	Nos	1
7	VCOR Relay	Nos	1
8	VCOR Relay Base	Nos	1
9	Address Select PCB - 48 Pin	Nos	4
10	Address Select PCB - 96 Pin	Nos	1
11	CPU EEPROM PCB	Nos	1
12	SYNC PCB (MDSC)	Nos	1
13	COMMS PCB	Nos	1
14	230V AC Lightning Arrestor	Nos	1
15	110V DC Lightning Arrestor	Nos	1
16	24V DC Lightning Arrestor	Nos	1
17	DC/DC converter Input 110VDC Output 12VDC, 10A	Nos	1
17	DC/DC converter Input 110VDC Output 24VDC, 10A	Nos.	1

2. For M/s SIEMENS (Invensys) Make EI System:

S.N	Description	Unit	Quantity
1	Processor Module	Nos	1
2	Processor Module Backplane	Nos	1
3	Parallel Input Module (50V)	Nos	2
4	Relay Output Module (50V)	Nos	1
5	I/O back plate connector - Crimp - PIM	Nos	2
6	I/O back plate connector - Crimp - ROM	Nos	1

3. For M/s KYOSAN Make EI System:

S.N	Description	Unit	Quantity
1	CPU card,F486-4I	Nos.	1
2	IF card, FSIO	Nos.	1
3	IF card,FSIO-EX	Nos.	1
4	I/O card,FIO7-[P]	Nos.	1
5	I/O card ,EXTFIO7-(P)	Nos.	1
6	I/O card,DID	Nos.	1
7	Power card ,IPU6C	Nos.	1
8	I/O card,ET-PIO2	Nos.	3
9	Watch Dog Timer / SM480 Relay	Nos.	1
10	DC-DC convertors	Nos.	2

4. For
M/s MEDHA Make EI System:

S.N	Description	Unit	Quantity
A	Central interlocking unit		
1	Vital interlocking computer card	Nos	1
2	Communication processor card	Nos	1
3	Communication interface card	Nos	1
4	CIU voltage & health monitoring card	Nos	1
5	Power supply card Type B	Nos	1
6	Front panel display	Nos	1
7	RS232-OFC converter	Nos	1
8	Single mode RS485-OFC-BI-DIR, converter	Nos	1
9	RS485 distribution card	Nos	1
10	24V EMI filter	Nos	1
B	Object Controller		
1	IOCOM CPU card	Nos	1
2	IOCOM voltage & health monitoring card	Nos	1
3	Input WFM CPU card	Nos	2
4	Output WFM CPU card	Nos	1
5	WFM relay driver card	Nos	1
6	OCM cital cut-off card	Nos	1
7	Power supply card Type-B	Nos	1
8	Power supply card Type-C	Nos	1
9	Single mode RS485-OFC Bi-directional converter	Nos	1
10	24v EMI filter	Nos	3
C	Counter Box		
1	Single mode RS485-OFC-BI directional converter	Nos	1
2	Panel processor CPU card	Nos	1
3	Panel processor output card	Nos	1
4	Power supply card Type-B	Nos	1
5	24V EMI filter	Nos	1
6	CB cardfiles, encl. with mounting arrangement, OFC patch cords, cables, connectors & accessories	Nos	1
D	DC-DC convertor for MEI633 (04 nos.)	Set	1

Spare material by other RDSO's approved vendors of EI, if any, shall be supplied according to the same guidelines used for assessment of existing vendors i.e. 10% of used material of total stations extant to minimum 1.

Supply of this item will be made after successful commissioning of this work in terms of RB's letter no. 2013/Sig./01/(pt.) Dup dtd. 19.11.2020.

TS-11

FORMAT FOR QUANTITY BREAKUP FOR EI SYSTEM TO BE FURNISHED BY TENDERER

S.N.	Description of Item	Unit	Name of Stn	Name of Stn	Name of Stn	Name of Stn	Total Qty.	Base Rate	Total Amount

(Tenderer shall furnish detail quantity breakup for the EI system offered against NS-1 of Schedule-A)

TS-12
INDEMNITY BOND

Indem
nity Bond for safe custody of DFCCIL-Ajmer material to be supplied to M/s ----- under Tender
No. -----

We, M/s. _____ (hereinafter called the Contractor) do hereby undertake that we shall hold in our custody for and on behalf of the President of India acting in the premises through the CGM/DFCCIL-Ajmer or for him all DFCCIL materials which have been handed over to us against the contract for Tender no. ----- dt. ----- for the work of "-----" by the DFCCIL-Ajmer for the purpose of execution of the said contract until such time the materials are duly installed and/or erected or otherwise handed over to the DFCCIL.

We shall be entirely responsible for the safe custody and protection of the said materials against all risk till they are duly delivered as installed and/or erected equipment to the DFCCIL or as directed otherwise and shall indemnify the DFCCIL against any loss, damage or deterioration whatsoever in respect of the said materials. The said materials shall at all time be opened to Inspection by any Officer authorized by the CGM, DFCCIL-Ajmer or his nominee.

Should any loss, damage or deterioration of materials occur or surplus materials disposed off and a refund becomes due, the DFCCIL shall be entitled to recover from us the full cost and compensation determined in terms of the contract 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 thereafter becomes due to us under the said or any other contract.

In the event of any loss or damage as aforesaid the assessment of such loss or damage and the assessment of the compensation therefore would be made by the President of India acting through the Chief General Manager, DFCCIL-Ajmer or his authorized nominee shall be final and bind upon us.

Signed at _____
on this day of _____
Signature of Witness: _____
for & on behalf of _____

M/s. _____
Name of Witness in
BLOCK LETTERS
ADDRESS:

TS-13

Form No.

DFCCIL

_____ station

Cable Insulation Resistance Test (Meggering) Sheet

Main / Tail Cables

1. Location from _____ to _____
2. Cores _____
3. Size _____
4. Grade 250/440/650/1100V
5. Length _____
6. Type Unscreened / Screened / Power
7. Insulation PVC
8. Date of installation / Commissioning _____
9. Name of manufacturer _____

* Strike out whichever is not applicable

Core No. Or Designation	Date of test and Weather @

Temperature:

Remarks:

Signature:

@ Write wet, damp or dry:

TS-14**Performa for furnishing for RDSO / RITES / CONSIGNEE Inspection of Material to be supplied by S&T contractor**

1	Name of work	
2	LOA No. & date	
3	Ordering authority	GM/S&T/AII
4	Name of contractor	
5	Consignee	Exec/Sr.Exec/S&T
6	Inspection charges will be borne by	CGM DFCCIL Ajmer
7	Inspecting authority	
8	Completion period	
9	Material to be inspected	Detail as follows

Sr. No.	Schedule Item	Description of material	Quantity	Rate	Name of RDSO firm on which order is placed
1					

* Contract is awarded at _____% below/ above the NIT.

** The inspection charges shall be borne by the DFCCIL as per tender clause.

GM/S&T/DFCCIL-Ajmer.

C/- M/s _____
information & necessary action.

for

TS-15

OEM's Site Installation Certificate

To,

GM/S&T/DFCCIL-Ajmer.

This is to certify that verification of system installation (details given below) has been completed by undersigned (OEM representative) and all necessary arrangement like earthing, surge protection, power supply, power & communication cable and equipment wiring meet the requirement standards of engineering for trouble free working of installed system.

1. System being commissioned.
2. Station / section
3. Division
4. Date of commissioning

Name of the RDSO approved Original Equipment Manufacturer

Name of OEM representative with designation

Signature of OEM representative with date

TS-16

SYSTEM PERFORMANCE GUARANTEE

PROFORMA FOR THE SYSTEM PERFORMANCE GUARANTEE

To,

The President of India,

I/We ----- hereby guarantee that the design on the basis of which we have submitted our tender No. ----- has been carefully made to confirm to the end objectives in the tender documents and to technical specification therein. We further guarantee that in the event of the performance of the system, when installed, not complying with the end objectives or with the specifications contained in the tender documents, we shall provide further inputs to enable the DFCCIL (PSU under Ministry of Railways) to realize the end objectives contained in these documents without any additional payment for any additional equipment which may be required in this regard. We further guarantee that all the expenses including the expenses incurred in India for providing the additional inputs under the System Guarantee will be borne by us. We further guarantee that these additional inputs will be provided by us to make the system workable within ----- months from the date on which this guarantee is invoked by the Purchaser.

(Signature of Firm's authorized Officer)

Seal

Signature of witness:

1.-----

2.-----

Section :8 –**SCHEDULE OF WORKS AND RATES for S&T items**

SN	Item Code as per IREPS	Description of item	Unit	Qty.	Rate	Amount
1	1	<p>Design, Manufacture & Supply of Electronic Interlocking (EI) System (with centralized arrangement) for 4 (FOUR) Line stations as per Signal Interlocking Plan in 'Hot Standby architecture'. EI system shall be provided to operate with dual VDU Control Terminal as per RDSO Specification No. RDSO/SPN/192/2019 Ver. 2 or latest and from RDSO approved source only. It mainly consist of Microprocessor Equipments, Interface Equipments, EI vendor specific Interfacing Relays, In-built event Logger, In-built Power Supply Equipments, Racks (Only Relay Rack/EI Rack), Indoor cables, Wires, Fuses, Fixtures, Mounting arrangements along with all accessories required to make complete EI system functional. Design of indoor EI system should be compatible as per outdoor interlocking requirement based on Signal Interlocking Plan & Selection Table of station /yard. This item also includes supply of following :- (a) Supply of documents/manuals for EI system as per RDSO Specn.No. RDSO/SPN/192/2019 Ver. 2 or latest. (b) Supply & provision of protective devices like surge and lightning protection devices compatible to RE standards as recommended by OEM / RDSO. Note: It includes supply of all the material which is required to make complete EI system to be functional and as recommended by RDSO in Specn.No. RDSO/SPN/192/2019 Ver. 2 or</p>	Station	1	12060441.7	12060441.7

		<p>latest. Design, manufacture & Supply of EI system will be done by OEM after following all the guidelines/directives issued by RDSO from time to time. The Technical Requirements are attached with the tender document. DFCCIL will supply RDSO approved type of relays with approved contact configuration only. In case of requirement of vendor specific relays/relays with non-RDSO approved contact configuration being supplied, the same shall be supplied by the tenderer and cost of required relays shall be included in the cost of EI (Electronic Interlocking) system and number & type of such relays shall be indicated separately.</p> <p>Inspection: RDSO Inspection charges: Borne by DFCCIL Payment terms:100% after supply</p>				
2	2	<p>Installation, wiring, testing and commissioning of EI System with 'Hot Standby' architecture as supplied upto 6 (six) line station. It includes transportation of material from consignee's depot to the site, erection and grouting of EI Relay Racks, fixing and wiring of all the interfacing relays (Vital & Non-Vital), installation and wiring of Microprocessor equipments, interface equipments, power supply equipments and all other associated accessories to make complete EI system to be functional.</p> <p>Note: (i) Technical Requirements are attached with tender document (ii) Contractor has to arrange simulator/simulation testing panel for testing and commissioning by Selection Table and Square Sheet for each Signalling function.(iii) Installation, wiring, testing and commissioning of EI system will be done by OEM after following all the guidelines/directives issued by RDSO from time to time.</p>	Station	1	624714.48	624714.48

		Inspection: Consignee Inspection charges: None Payment terms: 100% after commissioning				
3	3	Supply of the following essential spares to the extent of 10% of the quantities installed (subject to minimum 1 number) :-(i) Each type of Input/output cards(ii) Each type of vendor specific relays(iii) DC-DC converters of all voltages (iv) Switches, connectors, fuses, couplers. Inspection: RDSO Inspection charges: Borne by DFCCIL Payment terms:100% after Supply	Lot	1	5353953.67	5353953.67
4	4	Supply of work station notebook as per Technical Specifications. It also includes supply of Laser Printer (Only branded). The workstation should be capable of reconfiguring the system in case of any alteration in yard interlocking in future. Technical Specifications should be attached with the tender document by Tendering authority. Inspection: Consignee Inspection charges: None Payment terms: 100% after supply	Station	1	86892.73	86892.73
5	5	After installation of EI System, Maintenance & Supervision for One year as per details given in the special conditions of contract, technical requirement and SEM. Inspection: Consignee Inspection charges: None Payment terms: 100% after execution (per quarter on account payments are permitted)	Per EI Station	1	251322.07	251322.07
6	6	Supply of Instruments and Tool Kits required for Trouble Shooting and repair of hardware and software for EI system should be supplied for stations. (This includes tools required for EI maintenance sorts of crimping, insertion, removal, general purpose tools like screw drivers, spanners, PCB extractor, temp. controlled soldering iron, wire cutter, nose pliers etc. & measuring instruments with	Set	1	125748.67	125748.67

		<p>carrying case/ holders/ cabinet for technicians/ J.E. for testing, Maintenance and repair at site). Each set comprises of the following:-</p> <ul style="list-style-type: none"> * Crimping tool for all types of special cable assembly used in EI system. * Insertion tool for all types of special cable assembly used in EI system. *Removal tool for all types of special cable assembly used in EI system. * Digital multimeter (Fluke 111 or better) * Steel cabinet/ Almira, Size: 1980mm height, 915 mm width and 485 mm depth (Godrej Make/Jalaram) of good quality to store tool, spare cards and documents. * Steel Book rack Size: 1850mm height, 900 mm width and 316 mm depth for keeping documents. (Godrej Make/Jalaram) * Clamp Earth Tester. (as per specs mentioned in tender document.) * Clamp Current Meter (fluke 362 or superior) Inspection: Consignee Inspection charges: None Payment terms: 100% after supply 				
7	7	<p>Training of Technician/ Jr. Engineer for installation, Commissioning, Testing, Repairs & Troubleshooting of EI system. (Hard copies of training material/course modules to be given to each participant). Inspection: Consignee Inspection charges: None Payment terms: 100% after execution.</p>	Man/ Days	14	1106.23	15487.22
8	8	<p>Design, preparation & supply of drawings in computer print copies and original tracing in AUTO CAD FORMAT for Electronic Interlocking at each station. After completion of the work, the completion drawings incorporating completion details are to be supplied as per Technical Specifications given in tender</p>	Station	1	175967.35	175967.35

		document (upto 6 Line). The technical specifications are as per ANNEXURE 1.13 of SOR. Inspection: Consignee Inspection charges: None Payment terms: 100% after execution.				
9	9	Training of Officers for installation, Commissioning, Testing, Repairs & Troubleshooting of EI system. (Hard copies of training material/course modules to be given to each participant). Inspection: Consignee Inspection charges: None Payment terms: 100% after execution.	Man /Day	14	1097.13	15359.82
10	10	Supply of embedded fanless PC based Maintenance terminal as per RDSO spec. No. RDSO/SPN/192/2019 Ver. 2 or latest & RDSO TAN No. - STS/E/TAN/3007 version 1 dated:02.11.12 . The size of VDU shall be minimum 42 inch. Note: (i) Technical requirements shall be mentioned in the tender document by tendering authority. (ii) One table of suitable size along with revolving chair should be supplied with Maintenance terminal. Inspection: RDSO Inspection charges: Borne by DFCCIL Payment terms:100% after supply	Nos	3	385774.44	1157323.32
11	11	Installation, wiring, testing and commissioning of embedded fanless PC based Maintenance terminal as per RDSO spec. No. RDSO/SPN/192/2019 Ver. 2 or latest & RDSO TAN No. - STS/E/TAN/3007 version 1 dated: 02.11.12. Note: (i) Technical requirements shall be mentioned in the tender document. Inspection: Consignee Inspection charges: None Payment terms:100% after commissioning.	Nos	3	96443.61	289330.83

12	12	Supply of offline domestic sine wave type inverter of 1000VA or above with suitable rating tubular batteries and UPS make of Su-KAM, Luminous, Microtek or other reputed brand for the backup of VDUs of EI. Inspection: Consignee Inspection charges: None Payment terms:100% after Supply.	Nos	1	20857.16	20857.16
13	13	Preparation of SWR literature in English along with associated mid-section interlocked gate with all corrections as per approved SWRD & approved SIP. For this all technical corrections, editing, grammatical correction etc. are to be carried out and one rough print to be given to DFCCIL for approval before printing, as required for final processing of CRS sanction. This also includes preparation of maintenance cards in format provided by DFCCIL. Inspection: Consignee Inspection charges: None Payment terms:100% after execution.	Station	1	3598.62	3598.62
14	14	Translation of Station Working Rules from English to Hindi and framing out in DIGLOT form (or similar software) as per extant DFCCIL practice. The required SWR in English will be provided by the contractor and has been covered separately in item no. 1.21 of Chapter 1 of SOR. Inspection: Consignee Inspection charges: None Payment terms:100% after execution.	Station	1	4478.18	4478.18
15	15	Making photocopies & binding of the SWR literature in English/Hindi/ Diglot form as per DFCCIL practice. Inspection: Consignee Inspection charges: None, Payment terms:100% after execution.	Set	1	178.52	178.52

16	16	<p>Supply of maintainer's furniture of Godrej make or superior and each set consist of (i) executive revolving bearing series low back-floating chair with normal arms cushioned chair-01 Nos. (ii) Executive table size 1650x900x728 mm with 3 drawers one side locker- 01 no .(iii) visitor chair seat & back cushion with high density foam with plastic pvc handle capsule type painted back-03 nos. Inspection: Consignee Inspection charges: None Payment terms:100% after execution.</p>	Set	1	22986.88	22986.88
17	17	<p>Designing and Plotting of Signalling Interlocking Plan (SIP) in AUTOCAD. Two copies of prints with soft copy will be submitted to Railway for checking. If alterations are suggested/proposed by DFCCIL then again two copies of prints will be submitted for advance approval after carrying out all the alterations as suggested/proposed by the DFCCIL. Tracings will be submitted for all the diagrams mentioned above for the purpose of approval by Railway prior to commissioning of station. Inspection: Consignee Inspection charges: None Payment terms:100% after execution.</p>	Per SIP	1	28062.00	28062.00
18	18	<p>Design of circuits in connection with preparation of wiring diagrams as per approved Signalling Plan and submission of indoor as well as outdoor completion documents. It includes Route Section Plan (RSP), Selection Table (ST), Locking Table (LT) and Control Panel Diagram (CPD)/VDU Diagram. Two copies of prints with soft copy will be submitted to DFCCIL for checking. If alterations are suggested/proposed by DFCCIL then again two copies of prints will be submitted for</p>	Per Route	37	4153.92	153695.04

	<p>advance approval after carrying out all the alterations as suggested/proposed by the DFCCIL. Tracings will be submitted for all the diagrams mentioned above for the purpose of approval by DFCCIL prior to commissioning of station. All drawings will be prepared in CAD. The wiring diagrams will consist relay rack analysis, relay contact analysis, fuse details. Tag block analysis etc. A separate CD / Pen drive will be submitted to Railway for each station along with original tracings.</p> <p>It also includes preparation and supply of laminated one set of all completion plans including circuit diagrams and indoor as well as outdoor completion documents on standard 75-micron polyester film for station in Auto CAD. 6 (Six) sets xerox copies will be submitted for each of the documents mentioned below: Cable Route Plan, Cable Core Chart, Location details plan for all the locations, Cable termination details, Signalling Plan, SWR Diagram, Wiring Diagrams, Selection Table, Locking Table, Contact Analysis, Fuse and Tag Block Analysis of Relay Rack and CT Rack, Control Cum Indication Panel/VDU diagram, Power Panel Diagram, Track Circuit Plan, Rack Erection Plan and Junction Box details etc.</p> <p>Note: Total cost of design and completion documents for a station/yard will be calculated on basis of total possible movements/routes as per Selection Table (ST). Inspection: Consignee Inspection charges: None Payment terms:100% after execution.</p>				
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19	19	<p>Preparation and supply of laminated one set of all the completion plans including circuit diagrams and indoor as well as outdoor completion documents on standard 75-micron polyester film for station in Auto CAD. 6 (Six) sets xerox copies will also be provided for each of the documents mentioned below: Cable Route Plan, Cable Core Chart, Location details plan for all the locations, Cable termination details, Signalling Plan, SWR Diagram, Wiring Diagrams, Selection table, Locking table, Contact analysis, Fuse and Tag Block analysis of Relay Rack, CT rack, Control cum Indication Panel/VDU Diagram, Power Panel Diagram, Track circuit plan, rack erection plan and Junction Box details etc.</p> <p>Inspection: Consignee Inspection charges: None</p> <p>Payment terms:100% after execution.</p>	Sheet	500	161.07	80535.00
20	20	<p>Supply of Micro Processor based Data Logger System with 1280 digital and 32 analog inputs as per RDSO Spec. No. IRS (S) 99/2006 or latest with laser printer 22 ppm (Only branded HP/Brother/Canon). It includes supply of all the items required for complete indoor relay room wiring from data logger to relay rack tag blocks, drawing/extension of power supply upto Data Logger. It includes relay room door lock checking arrangement, commercial power supply monitoring arrangement & monitoring of DG sets, ELD, IPS, UFSBI, BI, interlinking and networking of Data logger. It also includes supply of leased line MODEM, suitable online UPS (minimum 6 hours backup) and other interfacing cards, if required for networking of Data Logger. This also includes supply of one no. composite computer and printer table (Godrej work station</p>	Nos.	1	485984.88	485984.88

		table or similar) for keeping processor module and one number Godrej operator chair Model PCH7001 or similar. Note: Total numbers of relays and other signalling functions/gears required to be wired as per list circulated vide RDSO Letter No.STS/E/Data logger dtd.12.09.2011 or latest guidelines. Inspection: RDSO Inspection charges: Borne by DFCCIL Payment terms:100% after supply				
21	21	Installation, wiring, testing & commissioning of Micro Processor based Data Logger System with 1280/ 4096 digital and 32 analog inputs as per RDSO Spec. No. IRS (S) 99/2006 or latest It cover complete indoor relay room wiring from data logger to relay rack tag blocks, drawing/extension of power supply upto Data Logger. It includes relay room door lock checking arrangement, commercial power supply monitoring arrangement & DG sets, ELD, IPS, UFSBI, BI interlinking and networking of Data logger. All material required for wiring, networking, power supply monitoring, door-locking arrangement etc will be supplied by contractor. Note: Total numbers of relays and other signalling functions/gears required to be wired as per list circulated vide RDSO Letter No.STS/E/Data logger dtd.12.09.2011 or latest guidelines. Networking of data logger includes extraction of data report from test room. For networking, required communication channel(Quad/OFC cable) will be arranged/provided by DFCCIL in SM/ASM's room or in OFC Porta Cabin and it will be extended by contractor upto location of data logger by using CAT-5/6 telecom cable with proper casing and	No	1	121496.22	121496.22

		capping. The contractor will supply all the material like CAT-5/6 telecom cable, casing & capping, nuts, bolts etc. The final commissioning will be done after filling up of Pre- Commissioning checklist (circulated by RDSO) with the OEM representative. Inspection: Consignee, Inspection charges: None Payment terms:100% after commissioning				
22	22	Supply of centralized monitoring data logger networking system as per RDSO Specification No. IRS: S-99/2006 or latest for centralized acquisition of data from individual remote stations. This includes supply of Multi Front End Processor (FEP) and Dual Leased Line Modem required for data loggers networking as per technical specifications. The item also covers supply of PC based Failure Analysis System (FAS) as per technical specification. It includes supply of 27-inch LED monitor & Network Management Software (NMS), Supply of online UPS (of proper capacity with 1 hr back up,) Central Monitoring Unit (CMU) etc for online system monitoring. Technical Specifications are as per list circulated vide RDSO Letter No. STS/E/Data logger dtd.12.09.2011 or latest guidelines. Inspection: (i) RDSO (for FEP) and (ii) Consignee for Modem, FAS, NMS, CMU, Online UPS Inspection charges: (i) Borne by DFCCIL and (ii) None Payment terms:100% after supply	No	1	363084.82	363084.82
23	23	Installation, testing and commissioning of centralized monitoring data logger networking system as per RDSO Specification No. IRS: S-99/2006 or latest for centralized acquisition of data from individual remote stations. This includes installation of Multi Front End Processor (FEP) and Dual Leased Line Modem required for data loggers	Set	1	90771.00	90771.00

		networking as per technical specifications. The item also covers installation of PC based Failure Analysis System (FAS) as per technical specification. It includes installation of 27-inch LED monitor & Network Management Software (NMS), On Line UPS of proper capacity with 1 hr back up, Central Monitoring Unit etc for on line system monitoring. Technical Specifications are as per list circulated vide RDSO Letter No. STS/E/Data logger dtd.12.09.2011 or latest guidelines. Inspection: Consignee, Inspection charges: None Payment terms:100% after commissioning				
24	24	Supply of Failure Analysis & Fault Diagnostic software for data logger upto 4096 digital inputs at a station. Inspection: Consignee, Inspection charges: None Payment terms:100% after supply.	Set	1	39122.42	39122.42
25	25	Installation and commissioning of Failure Analysis & Fault Diagnostic software for data logger upto 4096 digital inputs. Inspection: Consignee, Inspection charges: None Payment terms:100% after commissioning.	Set	1	9780.60	9780.6
26	26	Q-Series Neutral Line Relay (QN1 Type), 12F/4B, 24V DC complete with plug board (base plate), connectors and retaining clips etc and conforming to BRS- 930 and RDSO Specn.No.IRS:S-34 & S-23 or latest. The interlocking code for this unit shall be "ABCDE". Inspection authority :- RDSO Inspection charges :- Borne by DFCCIL Payment Terms:- 100% after supply.	Nos.	25	3943.56	98589.00
27	27	Q-Series Neutral Line Relay (QN1 Type), 8F/8B, 24V DC complete with plug board(base plate), connectors and retaining clips etc and conforming to BRS- 930 and RDSO Specn.No.IRS:S-34 & S-	Nos.	25	3789.37	94734.25

		23 or latest. The interlocking code for this unit shall be "ABCDF". Inspection authority:- RDSO Inspection charges:- Borne by DFCCIL Payment Terms:- 100% after supply.				
28	28	Q-Series Twin Neutral Line Relay(QNN1 Type), 6F/2B, 24V DC complete with plug board(base plate), connectors and retaining clips etc and conforming to BRS-960 and RDSO Specn.No.IRS:S-34 & S-23 or latest. The interlocking code for this unit shall be "ACDEK". Inspection authority:- RDSO Inspection charges:- Borne by DFCCIL Payment Terms:- 100% after supply.	Nos	25	4985.33	124633.25
29	29	Q-Series Twin Neutral Line Relay(QNN1 Type), 4F/4B, 24V DC complete with plug board(base plate), connectors and retaining clips etc and conforming to BRS-960 and RDSO Specn.No.IRS:S-34 & S-23 or latest. The interlocking code for this unit shall be "ACEHJ". Inspection authority:- RDSO Inspection charges:- Borne by DFCCIL Payment Terms:- 100% after supply.	Nos	25	3938.00	98450.00
30	30	Q-Series Magnetically Latched Neutral Line Relay (QL1 Type), 11F/4B,24V DC complete with plug board(base plate), connectors and retaining clips and conforming to BRS- 935A and RDSO Specn.No.IRS:S-34 & S-23 or latest. The interlocking code for this unit shall be "ABDEG". Inspection authority:- RDSO Inspection charges:- Borne by DFCCIL Payment Terms:- 100% after supply.	Nos.	10	5701.45	57014.5
31	31	Q-Series Magnetically Latched Neutral Line Relay (QL1 Type), 8F/6B, 24V DC complete with plug board (base plate), connectors and retaining clips and conforming to BRS- 935A and RDSO Specn.No.IRS:S-34 & S-23 or	Nos.	10	5426.82	54268.2

		latest. The interlocking code for this unit shall be "ABCEG". Inspection authority:- RDSO Inspection charges:- Borne by DFCCIL Payment Terms:- 100% after supply.				
32	32	Q-Series Neutral Line Relay (Style QN1K), 1000 Ohm, 6F/6B,24V DC complete with plugboard(base plate), connectors and retaining clips etc and conforming to BRS:930 & RDSO letter no STs/E/Relays/UEA/PI dated 30.05.97 Annexure I and RDSO Specn.No.IRS:S-34 & S-23 or latest .The interlocking code for this unit shall be "BDEKX". Inspection authority:- RDSO Inspection charges:- Borne by DFCCIL Payment Terms:- 100% after supply.	Nos.	10	4128.82	41288.2
33	33	Q-Series LED ECR (Universal Type i.e.QECX-61), 4F/4B complete with plug board(base plate), connectors, retaining clips etc and conforming to BRS:941A STS/E/RELAYS/AC LIT LED SIGNAL/09-2002 ,Amdt.-1and RDSO Specn.No.IRS:S-34 & S-23 or latest. The interlocking code for this unit shall be "ABDHK". Inspection authority:- RDSO Inspection charges:- Borne by DFCCIL Payment Terms:- 100% after supply.	Nos.	50	4983.53	249176.5
34	34	Fixing of Q series relay base plate/metal to metal relay mini group and major group base plate, laying, bunching, lacing, dressing & packeting of 60/40 core PVC indoor cable/flexible wire and termination of 60/40 core cable/flexible wire on tag block/base plate & base plates & soldering. This includes fuse wiring, bus bar looping etc. required for keeping installation ready for circuit wiring work & panel throughing work. The work shall be done as per approved plan, extant practice on NWR& the	Nos.	195	390.37	76122.15

		instruction of DFCCIL Engineer at site. Inspection authority:- Consignee Inspection charges:- None Payment Terms:- 100% after commissioning.				
35	35	DC neutral line relay QNA1K, AC immune, DC neutral line 24V, 6F/6B contacts, complete with plug board, retaining clip and connectors. Conforming to BRS: 931A& RDSO letter no STs/E/Relays/UEA/PI dated 30.05.97Annexure II and IRS:S34 & IRS:S23 or latest. The interlocking code for this unit shall be "CDEKY". Inspection authority:- RDSO Inspection charges:- Borne by DFCCIL Payment Terms:- 100% after supply.	Nos	50	4812.82	240641.00
36	36	Key Lock Relays (KLCR), 24 V DC, 2F/2B as per RDSO No. IRS:S-46, S-34 & S-23 or latest. Details of ward plates KLCR of all wards manufactured by firm except I and X preferably in equal number are required. Firm shall supply 2 nos. of ward plates extra with each relay in the metallic enclosure. Inspection authority:- For bare relay -RDSO, for key lock housing- consignee Inspection charges:-Borne by DFCCIL Payment Terms:- 100% after supply.	Nos	10	7965.00	79650.00
37	37	Point Contactor relay AC immune, plug in type, style QBCA1 DC biased contractor, (QBCA1 Type), 24 V DC, 2F(HD)2F-4B contacts , heavy duty metal to carbon front contacts and back contacts metal to carbon, complete with plug board, retaining clip & connectors, conforming to BRS- 943 and IRS:S-34 & S-23 or latest. The interlocking code "DEHJX". Inspection authority:- RDSO Inspection charges:- Borne by DFCCIL Payment Terms:- 100% after supply.	Nos	40	7080.00	283200.00

38	38	<p>Supply of PVC insulated multi strand, single core copper conductor of size 16/0.2 mm (0.5sqmm) as per IS 694:2010 and RDSO Specn.No.IRS:S-76/89 (Amnd-3) or latest. Each coil should be of 100/200/500 meters length. Colour of the wire which is required will be specified by the Engineer incharge.</p> <p>Inspection: (i) RDSO/RITES if value of item in work more than 5 lakhs (ii) Consignee subject to procurement from RDSO approved vendors if value of whole item in work less than 5 lakhs as per extant instructions by Railway Board. Inspection Charges: (i)Borne by DFCCIL (ii) None</p> <p>Payment Terms: 100% on Supply</p>	KM	2	5813.26	11626.52
39	39	<p>Supply of 1 x 6 Sq.mm (Red/Black/Green) multi strand copper power wire as per IS:694:2010 or latest, 84 conductor each dia 0.30 +/- 0.01 with insulation thickness of 0.8mm and nominal conductor resistance of 3.3 ohms/km and test parameters as per RDSO Specn.No.IRS:S-76/89(Amnd.3) or latest. Colour of the wire which is required will be specified by the Engineer incharge.</p> <p>Inspection: (i) RDSO/RITES if value of item in work more than 5 lakhs (ii) Consignee subject to procurement from RDSO approved vendors if value of whole item in work less than 5 lakhs as per extant instructions by Railway Board. Inspection Charges: (i)Borne by DFCCIL(ii) None</p> <p>Payment Terms: 100% on Supply</p>	Meter	500	36.37	18185.00
40	40	<p>Supply of 1 x 10 Sqmm (Red/Black/Green) multi strand copper power wire as per IS:694:2010 or latest, 140 conductor each dia 0.30 +/- 0.01 with insulation thickness of 1.0 mm and nominal conductor</p>	Meter	500	57.53	28765.00

		<p>resistance of 1.91 ohms/km and test parameters as per RDSO Specn.No.IRS:S-76/89(Amnd.3) or latest.Colour of the wire which is required will be specified by the Engineer incharge.</p> <p>Inspection: (i) RDSO/RITES if value of item in work more than 5 lakhs (ii) Consignee subject to procurement from RDSO approved vendors if value of whole item in work less than 5 lakhs as per extant instructions by Railway Board. Inspection Charges: (i)Borne by DFCCIL (ii) None</p> <p>Payment Terms: 100% on Supply</p>				
41	41	<p>Supply of 1 x 16 Sqmm (Red/Black/Green) multi strand copper power wire as per IS:694:2010 or latest, 127 conductor each dia 0.40 +/- 0.01 with insulation thickness of 1.0 mm and nominal conductor resistance of 1.21 ohms/km and test parameters as per RDSO Specn.No.IRS:S-76/89(Amnd.3) or latest. Colour of the wire which is required will be specified by the Engineer incharge.</p> <p>Inspection: (i) RDSO/RITES if value of item in work more than 5 lakhs (ii) Consignee subject to procurement from RDSO approved vendors if value of whole item in work less than 5 lakhs as per extant instructions by Railway Board. Inspection Charges: (i)Borne by DCCIL(ii) None</p> <p>Payment Terms: 100% on Supply.</p>	Meter	500	99.45	49725.00
42	42	<p>Supply of 1 x 25 Sqmm (Red/Black) multi strand copper power wire as per IS:694:2010 or latest, 197 conductor each dia 0.40 +/- 0.01 with insulation thickness of 1.2 mm and nominal conductor resistance of 0.78 ohms/km and test parameters as per RDSO Specn.No.IRS:S-76/89(Amnd.3) or latest. Colour of the wire which</p>	Meter	100	155.29	15529

		is required will be specified by the Engineer incharge. Inspection: (i) RDSO/RITES if value of item in work more than 5 lakhs (ii) Consignee subject to procurement from RDSO approved vendors if value of whole item in work less than 5 lakhs as per extant instructions by Railway Board. Inspection Charges: (i)Borne by DFCCIL (ii) None Payment Terms: 100% on Supply				
43	43	Supply of 1 x 35 Sqmm (Red/Black/Green) multi strand copper power wire as per IS:694:2010 or latest, 277 conductor each dia 0.40 +/- 0.01 with insulation thickness of 1.2 mm and nominal conductor resistance of 0.554 ohms/km and test parameters as per RDSO Specn.No.IRS:S-76/89(Amnd.3) or latest. Colour of the wire which is required will be specified by the Engineer incharge. Inspection: (i) RDSO/RITES if value of item in work more than 5 lakhs (ii) Consignee subject to procurement from RDSO approved vendors if value of whole item in work less than 5 lakhs as per extant instructions by Railway Board. Inspection Charges: (i)Borne by DFCCIL (ii) None Payment Terms: 100% on Supply	Meter	100	176.93	17693
44	44	Supply of wiring material in relay room for potential free relay contacts for digital & analog Inputs (1280 digital inputs and 32 analog inputs). It includes supply of PVC insulated indoor Railway Signalling cable (1/0.6 sqmm dia), 60-Core/40-Core/Single Core as per RDSO Specn.No.IRS:S-76/89(Amnd.3) or latest, PVC insulated jumper wires multi strand, tinned in all colours as per RDSO Specn.No. IRS: S-76/89 (Amnd.3) or latest. The item also includes supply & wiring of	Station	1	38132.15	38132.15

		<p>Modular disconnect terminals /Tag Blocks as per RDSO Specn.No.IRS:S-77/2006 (Rev.1) or latest and RDSO Drg.No.SA-24751 or latest. The wiring for getting potential free contacts of relays for complete PI/RRI/EI installation including points, tracks, signals, panel, power supply, IPS, SSDAC, TLBI, LC Gates, crank handle control etc will be done by contractor. All material will be supplied by contractor including all type/contact configuration relays.</p> <p>Inspection: (i) RDSO/RITES if value of item in work more than 5 lakhs (ii) Consignee subject to procurement from RDSO approved vendors if value of whole item in work less than 5 lakhs as per extant instructions by Railway Board. Inspection Charges: (i) Borne by DFCCIL (ii) None</p> <p>Payment Terms: 100% on Installation & commissioning</p>				
45	45	<p>Supply of Powder Coated Relay Racks as per Drg.No.CSTE/NWR/SOR/01 with scaffolding and suitable grouting arrangements. The relay racks shall be supplied & completed with scaffolding, bus bars, fuse strips, fuses (G/NDT), fuse bases, resistors, capacitors, insulators and 200-Way tag blocks with poly carbonate covers, grouting bolts, tripods etc. It includes supply of Tag Blocks as per RDSO Specn.No.IRS:S-77/2006 (Rev.1) or latest and RDSO Drg.No.SA-24751. The top of relay racks will be supported through an angle iron with one side fixed on supporting wall.</p> <p>Inspection: (i) RITES if value of item in work more than 5 lakhs (ii) Consignee</p> <p>Inspection Charges: (i) Borne by DFCCIL (ii) None Payment Terms: 100% on Supply</p>	Nos.	2	46394.04	92788.08

46	46	<p>Erection of Powder Coated Relay Racks as per Drg.No.CSTE/NWR/SOR/01 with scaffolding and suitable grouting arrangements. The relay racks shall be completed with scaffolding, bus bars, fuse strips, fuses (G/NDT), fuse bases, resistors, capacitors, insulators and 200-Way tag blocks with poly carbonate covers, grouting bolts, tripods etc. It includes fixing of Tag Blocks as per RDSO Specn.No.IRS:S-77/2006 (Rev.1) or latest and RDSO Drg.No.SA-24751. The top of relay racks will be supported through an angle iron with one side fixed on supporting wall. After installation of relay racks, one coat of paint will be done by contractor before fixing the fuses. Scaffolding should include 1 relay rack position as spare at every Station/ Level Crossing Gate for future expansion.</p> <p>Inspection: Consignee Inspection Charges: None Payment Terms: 100% on execution</p>	Nos.	2	11598.51	23197.02
47	47	<p>Supply of Cable Termination (CT) racks as per Drg.No. CSTE/NWR/SOR/02 complete along with fitting arrangements and also with arrangement for fixing four 8-way terminal strips/ Screw less terminals/ ARA terminals on each row having 16 such rows. Supply of 8 way terminal strips, Screw less terminals, ARA terminals also included in this item. Cable termination rack shall be Powder Coated.</p> <p>Inspection: (i) RITES if value of item in work more than 5 lakhs (ii) Consignee if value of whole item in work less than 5 lakhs as per extant instructions by Railway Board. Inspection Charges: (i)Borne by DFCCIL (ii) None Payment Terms: 100% on Supply</p>	Nos	2	22732.41	45464.82

48	48	Installation of Cable Termination Racks Assembly complete including wall supports, scaffolding and suitable grouting arrangements with installation of 8 way/ARA terminals/Screw less connectors, Tag blocks & other necessary accessories etc. The work shall be done as per approved plan, extant practice on NWR & the instruction of DFCCIL engineer at site. Inspection: Consignee Inspection Charges: None Payment Terms: 100% on Commissioning.	Nos	2	8687.12	17374.24
49	49	Supply of ARA Terminal Block (M-6) made of PBT/Poly Carbonate as per RDSO Specn.No.IRS:S-75/2006 (Rev.2) or latest and RDSO Drg.No. SA-23741A (Alt. 4) or latest. Inspection: RDSO. Inspection Charges: Borne by DFCCIL. Payment Terms: 100% on supply.	Nos	4500	87.41	393345.00
50	50	Supply of Cartridge Fuse Block made of PBT and as per RDSO Drg. No. SA-23748 (Alt. 4) or latest and RDSO Specn.No.IRS:S-75/2006 (Rev.2) or latest. Inspection: RDSO. Inspection Charges: Borne by DFCCIL. Payment Terms: 100% on supply.	Nos.	100	152.98	15298.00
51		Supply of indicating type fuse inserts with holder (material will be supplied only from approved vendors of RDSO). Inspection: Consignee Inspection Charges: Borne by DFCCIL. Payment Terms: 100% on supply.				
(i)	5101	0.6A	Nos.	100	61.11	6111
(ii)	5102	1.6A	Nos	100	64.41	6441
52		Supply of indicating type fuse inserts without holder (material will be supplied only from approved vendors of RDSO). Inspection: Consignee				

		Inspection Charges: Borne by DFCCIL. Payment Terms: 100% on supply.				
(i)	5201	0.6A	Nos	50	20.23	1011.5
(ii)	5202	1.6A	Nos.	50	18.22	911
53	53	Supply of Tag block 200 way/160 way with PVC covers as per (IRS: S-77/2006 (Rev.1) or latest & Drg. no. SA-24751 & 52. Requirement of each type shall be specified by Engineer-in-charge. NOTE: In case ABB type relays proposed to be used with 100 way block then Two 100 way Tag Block will be consider as one 200 way Tag Block. Inspection: (i) RDSO/RITES if value of item in work more than 5 lakhs (ii) Consignee subject to procurement from RDSO approved vendors if value of whole item in work less than 5 lakhs as per extant instructions by Railway Board. Inspection Charges: (i)Borne by DFCCIL (ii) None Payment Terms: 100% on Supply	Nos.	10	2221.57	22215.7
54	54	Supply D type fuse block non indicating type low voltage non deteriorating fuse base suitable for fuse link of capacity 2A/6A/10A as per specification IRS:S-80/92 or latest. Quantity break up of each type of fuse block will be specified by Engineer in-charge. Inspection: Consignee Inspection Charges: None Payment Terms: 100% on supply.	Nos	100	29.59	2959.00
55	55	Supply of D type fuse link non indicating type low voltage non detonating, capacity 2A/6A/10A as per specification IRS:S-80/92 or latest. Quantity break up of each type of fuse block will be specified by Engineer in-charge. Inspection: Consignee Inspection Charges: None Payment Terms: 100% on supply.	Nos.	100	30.73	3073.00
56	56	Supply of Fuse auto changeover system for used in Railway Signaling System as per RDSO/SPN/209/2012 rev.1 with	Per Module	20	29277.62	585552.4

		<p>latest amendments. One Automatic changeover Unit comprise 32 nos. of external Non-Deteriorating Type or 'G' type fuses from 0.6 Amp to 4 Amp capacities which are in signaling circuits. System shall have 8 cards with monitoring arrangement of 4 fuses in one card.</p> <p>Inspection:(i) RDSO/RITES: if value of item in work more than 5 lakhs (ii) Consignee: subject to procurement from RDSO approved vendors if value of whole item in work less than 5 lakhs or as per extant policy.</p> <p>Inspection charges:(i)Borne by DFCCIL (ii) None</p> <p>Payment Terms: 100% after supply.</p>				
57	57	<p>Installation wiring testing and commissioning of Fuse change over system (FACS). This includes provision of common Buzzer & indication at ASM Room & ESM Duty Room and painting of fuse details. This also includes fabrication of frame for installation of FACS at Station/LC gate where installation of relay racks not feasible.</p> <p>Inspection: Consignee Inspection charges: None</p> <p>Payment Terms: 100% on commissioning</p>	Per Module	20	885.44	17708.80
58	58	<p>Supply of Auto changeover Power Panel suitable to change over between three incoming Three phase 230V supplies with signaling supply distribution arrangement, voltage sensing relays, MCB's, fuses & contactor Unit as per Drawing supplied by Engineer -in- charge</p> <p>NOTE:- i). Item include supply of 10 spare fuses of each type, 1 contactor relay of each type & 1 MCB of each type used in panel. ii). Program switches & wire to be supplied based on current requirement.</p>	Nos.	1	543448.44	543448.44

		iii).The cabinet of Auto changeover shall be powder coated & in compact in size as possible. Inspection: Consignee Inspection Charges: None Payment Terms: 100% after supply				
59	59	Supply of Auto changeover Power Panel suitable to change over between three incoming single phase 230V supplies with signaling supply distribution arrangement, voltage sensing relays, MCB's, fuses & contactor Unit as per drawing supplied by Engineer -in- charge i). Item include supply of 10 spare fuses of each type, 1 contactor relay of each type & 1 MCB of each type used in panel. ii). Program switches & wire to be supplied based on current requirement. iii).The cabinet of Auto changeover shall be powder coated & in compact in size as possible. Inspection: Consignee Inspection Charges: None Payment Terms: 100% after supply	Nos	1	89744.88	89744.88
60	60	Installation of LT Power Panel/ Power distribution panel/ Auto Changeover Panel, power supply equipments such as Rectifiers Transformers, Battery chargers etc including mounting on wooden planks/Hylem Sheet and complete wiring for automatic change over arrangement, mounting of Program switches on Bakelite sheet of size 300 mm x 300 mm x 8 mm fitted to MS angle (size 25mm x 25mm x 5mm) brackets, wiring as per requirements. Necessary wires, lugs & glands to be supplied by Contractor. Inspection: Consignee Inspection Charges: None Payment Terms: 100% after execution	Lot	1	20558.64	20558.64

61	61	<p>Supply of SMPS based Integrated Power Supply System for PI in RE-Section up to 6 Line with Block Instruments (OR Block panel) and LC gates as per RDSO/SPN/165/2012 version -3 or latest and as per NWR drawing. This includes transportation to consignee depot & Commissioning of Integrated Power Supply System after duly filling pre commissioning check list by RDSO approved vendor & DFCCIL representative jointly. (Item shall be procured through Store) Inspection: RDSO Inspection Charges: Borne by DFCCIL. Payment Terms: As per Stores Purchase Order (PO) conditions.</p>	Nos.	1	1355751.38	1355751.38
62	62	<p>Installation, Wiring and testing of Integrated Power Supply System. This includes power distribution connection to bus bars and relay racks in the room with contractor's own wiring materials and fabrication and fixing of AC/DC power distribution board made on 10mm thick Phenolic hylam sheets or any standard make with connections suitable for 32 A. Wiring to be done considering site requirement, depending upon the load with suitable wires, lugs & glands as per instructions of Engineer-in-charge. The work includes installation of Thermo flasher relay, ELD's, fixing & wiring of change over switch (program switch) for selection of DG set supply (DG1 & DG2) and wiring of change over switch (program switch) for selection of mains or DG supply. This item also includes supply & fixing of ladder along the wall for carrying power supply wires/cables from IPS room to Relay room/power room etc. Any masonry work required will be carried out by contractor's own material. It includes transportation of IPS from consignee depot to work site/station/ LC gate.</p>				

		Inspection: Consignee Inspection Charges: None Payment Terms: 100% after execution				
(i)	62	For Station	Nos.	1	103449.88	103449.88
63	63	Supply of DC to DC Converter, 110V DC/24V DC, 10 Amp as per RDSO Specn.No.S-96/2000 or latest. Inspection: RDSO Inspection Charges: Borne by DFCCIL. Payment Terms: 100% on Supply	Nos	2	16161.14	32322.28
64	64	Supply of DC to DC Converter, 110V DC/24V DC, 5 Amp as per RDSO Specn.No.S-96/2000 or latest. Inspection: RDSO Inspection Charges: Borne by DFCCIL Payment Terms: 100% on Supply	Nos	2	15327.81	30655.62
65	65	Supply of DC to DC Converter, 110V DC/(12 -24)V DC, 5 Amp as per RDSO Specn.No.S-96/2000 or latest. Inspection: RDSO Inspection Charges: Borne by DFCCIL Payment Terms: 100% on Supply	Nos.	2	14563.68	29127.36
66	66	Supply of DC -DC Converter, 110V DC/24V DC, 50 Amp as per RDSO Specn.No.S-96/2000 or latest. Inspection: RDSO Inspection Charges: Borne by DFCCIL Payment Terms: 100% on Supply	Nos.	2	30498.87	60997.74
67	67	Fixing, wiring, testing and commissioning of Electrical Point Machine on the extended sleepers at points as per std. practice and as per RDSO Drg No. SA 9151-52 or 9710 or 9161 or 10800 or 11000 as per section of rails used. Item includes fixing switch extension bracket, providing insulation for switch extension bracket, fixing ground connection, adjusting opening of the switches and adjusting the point machine with crank handle. The item also includes : (i) Complete material for installation like ground-connections, switch extension brackets, point insulation material, I pipes, wiring materials, various	Nos.	14	27586.00	386204.00

		fixing nuts & bolts including castle nuts, spring washers (ii) All smithy & fitting works required at site for complete installation. (iii) Installation of gauge tie plate & providing insulation for gauge tie plate (Insulation in William Stretcher Bar will be Provide by DFCCIL). (iv) Wiring inside the point machine, insertion and termination of tail cable in point machine and junction boxes / location box /cable hut as per extent practice on NWR and the instruction of DFCCIL Engineer at site. (v) Supply and fixing of suitable size GI pipes with flange for taking cable into point machine. Note ; The ground connections shall be suitable to the Point Machines as specified by Engineer-in-charge and shall be suitable to the point lay out i.e. 60 Kg. / 52 Kg / 90R as per yard layout. Electrical Point Machine and M-6 / Screw less terminals will be supplied by DFCCIL / covered in Schedule separately (RDSO Spec.No IRS:S-24/2002 (Amendment-1 Drg.NO RDSO/S 110000) and for Motor IRS:S 37/82(Amendment-3) Inspection: Consignee Inspection Charges: None. Payment Terms: 100% after commissioning.				
68	68	Point insulation Complete set as per RDSO/SPN/168/2005 for 1.Switch bracket 'D' bracket insulation for IRS point machine - One set comprises of (a)Side plate LH to Drg.No.S-3266 - 1 No. (b) Side plate RH to Drg.No.S-3265 - 1 No. (c)Insulating bush to Drg.No.S-3199 - 4 Nos. (d) Insulating washer to Drg.No.S-8640 - 4 Nos., 2. Split-Stretcher bar 2.1 Insulation for Leading stretcher bars(BG) each set comprising of (a) Insulating plate for leading insulated stretcher bars BG as per RDSO Drg.No.T-10384 – 2 Nos.	Set	14	1290.61	18068.54

		<p>(b) Insulating bushing for leading insulated stretcher bars for BG as per RDSO Drg.No.T-10535- 4 Nos.</p> <p>(c) Insulating Washer for insulated stretcher bar BG as per RDSO drg.No.T-10371 – 6 Nos.</p> <p>2.2 Insulation for following stretcher bars BG. Each set comprising of:</p> <p>(a) Insulating side plate for insulated stretcher bars BG as per RDSO Drg.No.T-10367 – 3 No.</p> <p>(b) Insulating bushing for insulated stretcher bars BG as per RDSO Drg.No..T-10368 – 6 Nos.</p> <p>(c)Insulating washer for insulated stretcher bars BG as per RDSO Drg.No.T10371 – 12 Nos&</p> <p>3. Gauge tie plates (52 Kg/60Kg as per site requirement) Insulation for (BG) complete with insulating bush and washer each set comprising of:</p> <p>(a) Insulating plate for insulated tie plate BG as per RDSO Drg.No.T-10372-1 No.</p> <p>(b) Insulating bushing for insulated stretcher bar BG as per RDSO Drg.No.T10368 – 3 Nos.</p> <p>(c) Insulating Washer for insulated stretcher bar BG to IRS 40/84 as perRDSO drg.No.T-10371 – 6 Nos.</p> <p>Inspection: (i) RDSO/RITES if value of item in work more than 5 lakhs</p> <p>(ii) Consignee subject to procurement from RDSO approved vendors if value of whole item in works less than 5 lakhs as per extant instructions by Railway Board. Inspection Charges: (i)Borne by DFCCIL (ii) None</p> <p>Payment Terms: 100% on Supply</p>				
69	69	Gauge Tie plate insulation as per RDSO/SPN/168/2005 as per RDSO drg No: T- 10372Alt2, T-10368, T- 10371Alt2, T-15083/88/Alt2 & T-11690/Alt2 and as per RDSO/SPN/168/2005 with latest amendments as applicable.	Nos.	14	1156.31	16188.34

		<p>Gauge tie plates (52 Kg/60Kg as per site requirement) Insulation for (BG) complete with insulating bush and washer each set comprising of:</p> <p>(a) Insulating plate for insulated tie plate BG as per RDSO Drg.No.T-10372-1 No.</p> <p>(b) Insulating bushing for insulated stretcher bar BG as per RDSO Drg.No.T10368 – 3 Nos.</p> <p>(c) Insulating Washer for insulated stretcher bar BG to IRS 40/84 as per RDSO drg.No.T-10371 – 6 Nos.</p> <p>Inspection: (i) RDSO/RITES if value of item in work more than 5 lakhs (ii) Consignee subject to procurement from RDSO approved vendors if value of whole item in work less than 5 lakhs as per extant instructions by Railway Board. Inspection Charges: (i)Borne by DFCCIL (ii) None Payment Terms: 100% on Supply</p>				
70	70	<p>Ground connections, complete set suitable for IRS type / approved point Machine for ordinary turnout with tongue attachment insulation and other insulation as per RDSO Drg. S/3361/62/63 (for IRS type point machine) or RDSO Drg No.SA-9151/52 (for Siemens point machine) with latest amendments. However the ground connection shall be procured only after confirmation from Railway engineer as per site condition /type of machine/turnout.</p> <p>Inspection: (i) RDSO/RITES if value of item in work more than 5 lakhs (ii) Consignee subject to procurement from RDSO approved vendors if value of whole item in work less than 5 lakhs as per extant instructions by Railway Board. Inspection Charges: (i)Borne by DFCCIL (ii) None Payment Terms: 100% on Supply</p>	Set	17	6829.74	116105.58

71	71	<p>Ground connections, complete set suitable for IRS type/approved point Machine for derail switch with tongue attachment insulation as per RDSO Drg. S/3361/62/63(for IRS type point machine) or RDSO Drg No. SA 9151/52 (for Siemens point machine) with latest amendments. However the ground connection shall be procured only after Confirmation from Railway engineer as per latest site condition /type of machine/turnout.</p> <p>Inspection: (i) RDSO/RITES if value of item in work more than 5 lakhs (ii) Consignee subject to procurement from RDSO approved vendors if value of whole item in work less than 5 lakhs as per extant instructions by Railway Board. Inspection Charges: (i)Borne by DFCCIL (ii) None</p> <p>Payment Terms: 100% on Supply</p>	Set	4	5847.56	23390.24
72	72	<p>Supply of ELECTRIC POINT MACHINE 143 MM STROKE, AC IMMUNITY 400 VOLT AC, COMPLETE WITH LOCK DETECTOR AND SLIDES, NON - TRAILABLE TO OPERATE ON 110 V DC ROTARY LOCKING WITH CRANK HANDLE UNIVERSAL TYPE AS PER RDSO SPECIFICATION NO. IRS : S-24/2002 AMENDMENT - 1 OR LATEST AS PER DRAWING.NO. RDSO/S-10800(ALT5.) WITH JUNCTION BOX TELESCOPIC. THE MOTOR WILL BE AS PER RDSO SPECN. NO. S-37/82 (AMND.3) WITH RDSO DRG NO. S-10910.</p> <p>This includes supply of Set of tools as per para20.1 & 20.2 of RDSO SPECN. NO. IRS:S-24/2002 (AMND 1) or latest 20.1 The following set of tools in a suitable tool box shall be supplied along with every set of eight point machines or less. i).</p>	Nos.	16	72450.00	1159200.00

		<p>Hand operated square drive socket wrenches of 12.5 mm driving square (short type) as per IS: 7381 for M8, M10, M12 & M18 threads. (One 250 mm long 12.5 mm square extension bar as per IS: 7991</p> <p>Along with compatible Tee handle Square drive as per IS: 7975 suitable for above socket wrenches shall also be provided.)</p> <p>ii). Open jaw wrenches (spanners) for M10, M12, M20, M24 & M33 threads as per IS: 2028. iii). Adjustable wrench.</p> <p>iv). Screw driver 300 mm long.</p> <p>20.2 Junction box and two numbers of telescopic pipes of approved type shall be supplied as an integral part of the point machine.</p> <p>Inspection: RDSO Inspection Charges: Borne by DFCCIL Payment Terms: 100% after Supply.</p>				
73	73	<p>Supply of William Stretcher Insulation Set (complete) as per RDSO/SPN/168/2005 with insulating bush and washer to suit point layout and conforming to RDSO Drg.No.T- 10372 or latest, T-10368 or latest and T-10371 or latest.</p> <p>1.1 Insulation for Leading stretcher bars (BG) each set comprising of</p> <p>(a) Insulating plate for leading insulated stretcher bars BG as per RDSO Drg.No.T-10384 – 2 Nos.</p> <p>(b) Insulating bushing for leading insulated stretcher bars for BG as per RDSO Drg.No.T-10535- 4 Nos.</p> <p>(c) Insulating Washer for insulated stretcher bar BG as per RDSO drg.No.T-10371 – 6 Nos.</p> <p>1.2 Insulation for following stretcher bars BG. Each set comprising of:</p> <p>(a) Insulating side plate for insulated stretcher bars BG as per RDSO Drg.No.T-10367 – 3 No.</p>	Set	16	386.13	6178.08

		(b) Insulating bushing for insulated stretcher bars BG as per RDSO Drg.No..T-10368 – 6 Nos. (c) Insulating washer for insulated stretcher bars BG as per RDSO Drg.No.T10371 – 12 Nos Inspection: (i) RITES if value of item in work more than 5 lakhs (ii) Consignee subject to procurement from RDSO approved vendors if value of whole item in work less than 5 lakhs as per extant instructions by Railway Board. Inspection Charges: (i) Borne by DFCCIL (ii) None Payment Terms: 100% on Supply				
74	74	Supply of High frequency Digital Axle Counter Multi section type complete system including central evaluator (s), final track clearance relay for each track section, Reset boxes, LV boxes, detection points, mushroom housing for track side electronic and all other accessories fully wired to the ultimate capacity and fully equipped for 24 Detection Points and 14 Track Sections as per RDSO'S specification No. RDSO /SPN / 176/2013 (ver. 3) or latest and OEM specification. Inspection: RDSO Inspection Charges: Borne by DFCCIL Payment Terms: 100% after Supply.	Set	1	7887750.00	7887750.00
75	75	Installation and commissioning of Central Evaluator of axle Counter, wiring from CT rack to Central Evaluator, installation and wiring of the reset box, LV box (if required) and associated power supply wiring. This includes supply of shielded cable of required conductor size for wiring between CT rack to evaluator rack, all other wires, power supply cable and wiring materials. The power supply cable from power room to Central Evaluator should not be less than 10 sq.mm PVC wire. Earthing as per OEM's guidelines & specification with their own	Nos.	1	15355.25	15355.25

		material. This also includes painting and writing work on evaluator as per site requirement. NOTE: Installation/programming/ configuration/ commissioning of Axle counter equipment to be carried out in accordance with latest guidelines issued by DFCCIL/ RDSO preferably by Authorised representative of OEM. Inspection: Consignee Inspection Charges: None. Payment Terms: 100% after Commissioning.				
76		Supply of Tools Kit for High frequency Digital Axle Counter Multi section				
	7601	Supply of Service test panel including meter for test of track equipment, tools for mounting and adjustment of track equipment and standard jig for drilling holes in rail. It should be as per Principal manufacturers (OEM) recommended list adequate for installation, day to day maintenance, and adjustment of indoor and outdoor gears. This shall also include kit for making and drilling of holes on rail. Detail Specification of tools kit are provided in tender document. Inspection: Consignee Inspection Charges: None Payment Terms: 100% after Supply.	Set	1	104325.07	104325.07
	7602	Supply of Portable operator console for onsite programming of Axle Counters as per technical requirement given in tender document. Inspection: Consignee Inspection Charges: None Payment Terms: 100% after Supply	Set	1	88247.14	88247.14
77		Supply of spares for High frequency Digital Axle Counter Multi section				

7701	Supply of Control card for evaluators of Multi Section DAC along with power supply card or Equivalent. Inspection: (i) RDSO if value of item in work more than 5 lakhs (ii) Consignee subject to procurement from RDSO approved vendors if value of whole item in work less than 5 lakhs as per extant instructions by Railway Board. Inspection Charges: (i) Borne by DFCCIL (ii) None Payment Terms: 100% on Supply	Nos	2	202106.07	404212.14
7702	Supply of Input / Output card for Evaluators for "detection Point" or Equivalent. Inspection: (i) RDSO if value of item in work more than 5 lakhs (ii) Consignee subject to procurement from RDSO approved vendors if value of whole item in work less than 5 lakhs as per extant instructions by Railway Board. Inspection Charges: (i)Borne by DFCCIL (ii) None Payment Terms: 100% on Supply	Nos	2	70814.86	141629.72
7703	Supply of Input / Output card for Evaluators for relay driver and final track clearance relay or Equivalent. Inspection: (i) RDSO if value of item in work more than 5 lakhs (ii) Consignee subject to procurement from RDSO approved vendors if value of whole item in work less than 5 lakhs as per extant instructions by Railway Board. Inspection Charges: (i)Borne by DFCCIL (ii) None Payment Terms: 100% on Supply	Nos	2	70814.86	141629.72
7704	Supply of Double Rail contact assembly with track side EJB for MSDAC. Each set shall consist of track side Electronic unit, Double rail contact with cable and mounting accessories. Inspection: (i) RDSO if value of item in work more than 5 lakhs (ii) Consignee subject to procurement from RDSO approved vendors if value of whole item in work less than 5 lakhs as per extant instructions by	Set	2	261222.40	522444.80

		Railway Board. Inspection Charges: (i)Borne by DFCCIL (ii) None Payment Terms: 100% on Supply				
78		Supply of LED signal lamps for Main colour light Signal, 110V AC retrofittable in existing CLS housing and compatible with AC LED ECR as per RDSO Specn. No.RDSO/SPN/ 199/2010 (Rev1.1) or latest.(items to be procured through Stores) Inspection: RDSO Inspection Charges: Borne by DFCCIL. Payment Terms: 100% after Supply.				
(i)	7801	RED Aspect	Nos	12	8484.20	101810.4
(ii)	7802	YELLOW Aspect	Nos	12	8488.13	101857.56
(iii)	7803	GREEN Aspect	Nos	2	9552.10	19104.2
79		Supply of various LED signals (Subsidiary Signal), 110V AC retrofittable in existing CLS housing and compatible with AC LED ECR as per RDSO Specn.No.RDSO/SPN/153/2011 (Rev.4.1) or latest.(items to be procured through stores) Inspection: RDSO Inspection Charges: Borne by DFCCIL. Payment Terms: 100% after Supply.				
(i)	7901	LED for Route Aspect	Nos	13	5860.67	76188.71
(ii)	7902	LED for Shunt Signal Aspect	Nos	65	5821.33	378386.45
(iii)	7903	LED for Calling ON Signal Aspect	Nos	2	7021.00	14042.00
80	80	Installation of LED signals lamps for auxiliary/ subsidiary signals/ main signals (i.e. route, shunt, calling on, Red , Yellow, Green) as per instructions given by engineer incharge. The contractor will supply all materials required for installation. Inspection: Consignee Inspection Charges: None. Payment Terms: 100% after commissioning.	Nos	96	178.89	17173.44
81	81	Supply of Colour Light Signal Complete. This includes: -(1). Post Tubular 140 mm Dia, as per IRS: S-6/81 or Latest & RDSO Drg. No. SA-24625 (Advance). (2). CI Base (As per IRS S-10 &	Nos	9	10791.46	97123.14

		<p>RDSO Drg. No. 2011/M with latest assembly). (3). Number plate to Drawing No. S 23149 Alt.1 =1 No , Number plate clamps to Drawing No. S 23148 Alt.1 =2 no (4). Ladder Assembly, as per RDSO Drg. No. SA-23156, with Base, Ladder Guard rail (complete) to Drawing No. SA 23138 Alt.1(1No), Platform to Drawing No. SA 23134 Alt.1(1 No), Front Maintenance Platform, MS Supporting bracket to Support Ladder.Ladder stay (small) to Drawing No. S 23159 Alt. 1 (2 Nos.) , Ladder stay (large) to Drawing No. S 23160 Alt. 1 (2 Nos.) , Ladder section to Drawing No. SA 23157 Alt. 1(1 Nos.)Stay clamp to Drawing No. SA 2062/M (2 no), Rail Clamp to Drawing No. S 2066/M (1 No.)</p> <p>(5). Signal Front Staging Complete Assembly for CLS Unit.</p> <p>(6). Signal back staging as per extent NWR Practice.</p> <p>Note: Note: Height of the Post shall be 5.5 Long.</p> <p>Inspection: (i)RDSO/RITES if value of item in work more than 5 lakhs</p> <p>(ii) Consignee subject to procurement from RDSO approved vendors if value of whole item in work less than 5 lakhs as per extant instructions by Railway Board. Inspection Charges: (i)Borne by DFCCIL (ii) None</p> <p>Payment Terms: 100% on Supply</p>				
82	82	<p>Supply of Offset brackets for Main Signal, made of tubular steel, outer diameter 140 mm, thickness of pipe 4.5 mm. horizontal length of pipe 545 mm & vertical length of pipe 324 mm with fixing arrangement on Main Signal post as per Drawing No SW/554/G/R</p> <p>Inspection: (i)RDSO/RITES if value of item in work more than 5 lakhs</p> <p>(ii) Consignee subject to procurement from RDSO approved vendors if value of</p>	Nos	3	4462.49	13387.47

		whole item in work less than 5 lakhs as per extant instructions by Railway Board. Inspection Charges: (i)Borne by DFCCIL (ii) None Payment Terms: 100% on Supply				
83	83	Supply of Offset brackets for Shunt Signal, made of tubular steel, outer diameter 89 mm, thickness of pipe 4.5 mm. horizontal length of pipe 324 mm & vertical length of pipe 324 mm with fixing arrangement on Shunt Signal post as per Drawing No SW/354/I Inspection: (i)RDSO/RITES if value of item in work more than 5 lakhs (ii) Consignee subject to procurement from RDSO approved vendors if value of whole item in work less than 5 lakhs as per extant instructions by Railway Board. Inspection Charges: (i)Borne by DFCCIL (ii) None Payment Terms: 100% on Supply	Nos.	10	4336.16	43361.6
84		Installation of LHS interface module as per RDSO Specification No. RDSO/ SPN/ 217/ 2018 ver 2.0 or latest. Inspection: Consignee, Inspection Charges: None Payment Terms: 100% after execution.				
(i)	8401	2/3/4 aspect signal unit mounted on offset bracket with junction type route indicator 1/2/3/4/5/6 or multilamp route indicators/ Stencil type rout indicator mounted on signal post.	Nos	2	3227.65	6455.3
(ii)	8402	2/3/4 aspect signal unit mounted mounted directly on signal post.	Nos	6	2187.43	13124.58
85	85	Supply of Position Light Shunt Signal Unit Complete with Post(made of GI Pipe of 80 mm Diameter Medium Class IS Spec. No. IS: 1239 Pt. 1/1990, Base, Hood, Cover etc as per Drg. No. SA-23840 suitable for LED	Set	13	4297.47	55867.11

		Signal Lighting Unit.(Supply of LED Unit is not covered in this item) Inspection: (i)RDSO/RITES if value of item in work more than 5 lakhs (ii) Consignee subject to procurement from RDSO approved vendors if value of whole item in work less than 5 lakhs as per extant instructions by Railway Board. Inspection Charges: (i)Borne by DFCCIL (ii) None Payment Terms: 100% on Supply				
86	86	Erection of Position Light Shunt signal with Base, Post, Signal unit and fixing of Number Plates. The work shall be done as per instructions of DFCCIL engineer at site. Inspection: Consignee Inspection Charges: None. Payment Terms: 100% after commissioning.	Nos	13	1779.99	23139.87
87	87	Supply of Position Light Shunt Signal Unit Complete, with offset bracket, hood, Cover etc as per Drg. No. SA-23840 suitable for LED Signal Lighting Unit.(Supply of LED Unit is not covered in this item)Inspection: (i)RDSO/RITES if value of item in work more than 5 lakhs (ii) Consignee subject to procurement from RDSO approved vendors if value of whole item in work less than 5 lakhs as per extant instructions by Railway Board. Inspection Charges: (i)Borne by DFCCIL (ii) None Payment Terms: 100% on Supply	Nos.	9	3358.53	30226.77
88	88	Erection of Position Light shunt signal on Offset bracket on main signal. Inspection: Consignee Inspection Charges: None. Payment Terms: 100% after commissioning.	Nos.	9	1967.77	17709.93

89	89	Supply of Junction route indicator unit 1 way (Without Lenses & Holder) as per Drg. No. RDSO SA 23401 suitable for LED Signal Lighting Unit & as IRS:S-66/84 amndt-1 or latest.(Supply of LED Unit is not covered in this item) Inspection: (i)RDSO/RITES if value of item in work more than 5 lakhs (ii) Consignee subject to procurement from RDSO approved vendors if value of whole item in work less than 5 lakhs as per extant instructions by Railway Board. Inspection Charges: (i)Borne by DFCCIL (ii) None Payment Terms: 100% on Supply.	Nos.	2	19835.94	39671.88
90	90	Fixing of Junction type Route Indication 1-Way/2-Way/3-Way/4-Way/5-Way/6-Way on the top of the signal post. Inspection: Consignee Inspection Charges: None. Payment Terms: 100% after commissioning.	Nos.	2	590.67	1181.34
91	91	Supply and fixing of protective screen of expanded metal 12 SWG of size 1200 x 1500 mm on signals as per std. practice in RE Area. Inspection: Consignee Inspection Charges: None. Payment Terms: 100% after installation.	Nos	4	5087.65	20350.6
92	92	Casting of CC Foundation for Signal Post in the ratio of 1:3:6 as per Drg.No.CSTE/NWR/SOR/21/A using standard size of foundation/galvanized holding down bolts required for erection of colour light signal post. Item includes excavation, ramming of CC using vibrator, curing and plastering with 1:4 cement-sand mixture (aggregate will not exceed 3.8 cm). Aggregate, cement, sand and holding down bolts will be supplied by contractor. Any machines & tools, if required for execution of this item, will be arranged/provided by contractor.	Nos	9	9361.50	84253.50

		<p>Inspection: Consignee Inspection Charges: None. Payment Terms: 100% after installation.</p>				
93	93	<p>Casting of C.C. Foundation for Position Light Shunt Signal/ Indicator/SPI as per Drg.No.CSTE/NWR/SOR/ 22 in ratio 1:3:6 by using standard size of galvanized holding down/foundation bolts. Item includes excavation, ramming of CC using vibrator, curing and plastering with 1:4 cement sand mixture. Aggregate cement, sand and holding down bolts, will be supplied by contractor. Any machines and tools, if required for execution of this item, will be arranged/provided by contractor. Note: As per available site conditions, if sizes of foundations are required to be decreased/increased and same has been approved/agreed by engineer incharge then variation in CC work will be calculated on volumetric basis as per rates of these items. Inspection: Consignee Inspection Charges: None. Payment Terms: 100% after installation</p>	Nos.	13	6310.26	82033.38
94	94	<p>Supply of Air Sampling Type detector shall use LASER type. This type of detector shall use piping or tubing distribution network that shall run from the detector to the area as to be protected. It should be supplied with required module & Power supply unit complete as a system with all accessories like pipes, Sampling points etc as per RDSO Specification No. RDSO/ SPN/ 217/ 2018 ver 2.0 or latest Inspection: RDSO Inspection Charges:Borne by DFCCIL Payment Terms: 100% after Supply.</p>	Set	1	115235.80	115235.80

95	95	Installation, Testing and Commissioning of Air Sampling Type detector (it shall use LASER type) as per RDSO Specification No. RDSO/ SPN/ 217/ 2018 ver 2.0 or latest. Inspection: Consignee Inspection Charges: None Payment Terms: 100% after commissioning	Set	1	28808.95	28808.95
96	96	Supply of intelligent Addressable Loop Powered Sounder cum beacon with base inbuilt fault isolator with protection category of IP42 and duly approved as per RDSO Specification No. RDSO/ SPN/ 217/ 2018 ver 2.0 or latest Inspection: RDSO Inspection Charges:Borne by DFCCIL Payment Terms: 100% after Supply.	Nos.	1	6435.92	6435.92
97	97	Installation, testing and commissioning of intelligent Addressable Loop Powered Sounder cum beacon with base inbuilt fault isolator with protection category of IP42 and duly approved as per RDSO Specification No. RDSO/ SPN/ 217/ 2018 ver 2.0 or latest Inspection: Consignee Inspection Charges:None Payment Terms: 100% after commissioning.	Nos	1	1608.98	1608.98
98	98	Supply of FRLS unarmoured/armoured cable(2Cx1.5 sq.mm) with all accessories for connection of all Fire Alarm devices as per RDSO Specification No. RDSO/ SPN/ 217/ 2018 ver 2.0 or latest Inspection: RDSO Inspection Charges:Borne by DFCCIL Payment Terms: 100% after Supply.	Lot	1	27324.36	27324.36
99	99	Installation ,Testing and Commissioning of FRLS unarmoured/armoured cable(2Cx1.5 sq.mm) with all accessories for connection of all Fire Alarm devices as per RDSO Specification No. RDSO/ SPN/ 217/ 2018 ver 2.0 or latest	Lot	1	6831.09	6831.09

		<p>Inspection: Consignee Inspection Charges: None Payment Terms: 100% after commissioning.</p>				
100	100	<p>Supply of CO2 type fire extinguisher capacity 4.5 Kg capacity ISI Mark IS: 15683 operating temperature (-30) ° to (50) ° for class 13 B type of fire with 1 mtr. Hose pipe fitted with PVC bend horn complete in all respect.</p> <p>Inspection: (i) RITES if value of item in work more than 5 lakhs or as per extant policy (ii) Consignee if value of whole item in work less than 5 lakhs or as per extant policy Inspection Charges:(i) Borne by DFCCIL (ii) None Payment Terms: 100% after Supply.</p>	Nos	6	5301.70	31810.20
101	101	<p>Supply of Apparatus Case Single(Large) NE Rly Type as per Drg. No. CSTE/6088 fitted with two nos of E Type lock (ward No will be specified by Engineer-in Charge) as per RDSO Drg. No. SA 3376 and Key to Drg. No. 3377 as per RDSO drawing No. RDSO/S-11500.</p> <p>Note: This item includes the supply of 2 Nos E Type Lock fitted on both doors, along with two Keys.</p> <p>Inspection: (i) RITES if value of item in work more than 5 lakhs or as per extant policy (ii) Consignee subject to procurement from RECOMMENDED LIST OF FIRMS FOR MECHANICAL SIGNALLING ITEMS if value of whole item in work less than 5 lakhs or as per extant policy Inspection Charges:(i) Borne by DFCCIL (ii) None Payment Terms: 100% after Supply.</p>	Nos.	30	14945.53	448365.9

102	102	<p>Installation of Apparatus Cases Single(Large) with 'E' type lock on CC foundation. This includes filling of location foundations with river bed sand and plastering on top of the sand. Supply of 'E' Type lock has been covered in supply of Apparatus case separately. It covers fixing of lamp holder , switch and lamp etc. in Apparatus Case.</p> <p>Inspection: Consignee Inspection Charges: None Payment Terms: 100% after installation.</p>	Nos	30	1039.09	31172.7
103	103	<p>Supply of Apparatus Case half (Medium) NE Rly Type as per Drg. No. CSTE/6088 fitted with two nos of E Type lock (ward No will be specified by Engineer-in Charge) as per RDSO Drg. No. SA 3376 and Key to Drg. No. 3377 as per RDSO drawing No. RDSO/S-11507.</p> <p>Note: This item includes the supply of 2 Nos E Type Lock fitted on both doors, along with two Keys.</p> <p>Inspection: (i) RITES if value of item in work more than 5 lakhs or as per extant policy (ii) Consignee subject to procurement from RECOMMENDED LIST OF FIRMS FOR MECHANICAL SIGNALLING ITEMS if value of whole item in work less than 5 lakhs or as per extant policy Inspection Charges:(i) Borne by DFCCIL (ii) None Payment Terms: 100% after Supply.</p>	Nos	15	9439.40	141591.00
104	104	<p>Installation of Apparatus Cases Half (Medium) with 'E' type lock on CC foundation. This includes filling of location foundations with river bed sand and plastering on top of the sand. Supply of 'E' Type lock has been covered in supply of Apparatus case separately. It covers fixing of Location lamp holder , switch and lamp etc.</p>	Nos	15	632.78	9491.7

		Inspection: Consignee Inspection Charges: None Payment Terms: 100% after installation.				
105		Excavation and Casting of Apparatus Case foundation in ratio 1:3:6 with contractor's own materials including cement and galvanized anchor bolts of standard size. The required scaffolding Ferma etc for Casting of foundation will have to be brought by the contractor at his own cost. The item also includes additional masonry work as well as earthwork if required on bank where there will be possibilities of foundation sinked, fallen or tilted. Inspection: Consignee Inspection Charges: None Payment Terms: 100% after installation.				
(i)	10501	Single (Large) Case Apparatus case/SS location box as per Drg No. CSTE/5074	Nos	30	6888.92	206667.6
(ii)	10502	Half (Medium) Case Apparatus case/ SS location box as per DrgNo CSTE/5074	Nos	15	5259.16	78887.4
106	106	Supply of Phenolic laminated Sheet, grade P3 in standard size of 1220 X 1220 x 20 mm as per spec. No IS 2036 of 1995 or latest. Test report of manufacture to be supplied. Inspection: (i) RITES if value of item in work more than 5 lakhs or as per extant policy (ii) Consignee Inspection Charges:(i) Borne by DFCCIL (ii) None Payment Terms: 100% after Supply.	Nos	150	9563.45	1434517.5
107	107	Supply of Phenolic laminated Sheet, grade P3 in standard size of 1220 X 1220 x 12 mm as per spec. No IS 2036 of 1995 or latest. Test report of manufacture to be supplied. Inspection: (i) RITES if value of item in work more than 5 lakhs or as per extant policy (ii) Consignee	Nos	60	4855.13	291307.8

		Inspection Charges:(i) Borne by DFCCIL (ii) None Payment Terms: 100% after Supply.				
108		Fabrication and fixing of phenolic laminated sheet of size 10/12/20 mm thick in location box by providing all fixtures as per DFCCIL Drawing including fixing of PVC coated string rods at the back side for cable support with contractor's own materials. The work shall be done as per instructions of DFCCIL engineer at site. Inspection: Consignee Inspection Charges: None Payment Terms: 100% after installation.				
(i)	10801	Single Case (Large Case)	Nos	30	2344.49	70334.7
(ii)	10802	Half Case (Medium Case)	Nos.	15	684.00	10260.00
109	109	Fixing of ARA(M-6) Terminals /Screw less connectors / modular disconnect terminal blocks and fuse blocks on phenolic laminated sheets and fixing by stainless steel/brass nuts & bolts. This includes provision of two additional holes on the board on either side for cable conductor entry.(Supply of all above terminals have been covered separately in Chapter 4 of SOR) Inspection: Consignee Inspection Charges: None Payment Terms: 100% after installation.	Nos	4500	12.52	56340
110	110	Supply of Round head type non deteriorating type low voltage cartridge fuse as per Spec No IRS/S/78/92 with latest amendments 2A/4A/6A capacity. Inspection: RDSO Inspection Charges: Borne by DFCCIL Payment Terms: 100% after supply.	Nos	50	59.18	2959.00
111	111	Supply of HRC fuses block complete with 2A fuse link as per IS 9224/79 Inspection: RDSO Inspection Charges: Borne by DFCCIL	Nos	50	63.73	3186.50

		Payment Terms: 100% after supply.				
112		Supply of Rapid Joint LS3, suitable for cable jointing of Signalling cable of various size, having dielectric strength > 20KV/mm, Non Toxic, low viscosity, Flamability point > 200° C, Re-entrable, Long storage life Make RAYTECH or Similar. Inspection: Consignee Inspection Charges: None. Payment Terms: 100% after Supply.				
(i)	11201	Cable Size 6C x 1.5 Sq. mm.	Nos	30	3506.49	105194.7
(ii)	11202	Cable Size 12C x 1.5 Sq. mm	Nos	20	4879.03	97580.6
(iii)	11203	Cable Size 30C x 1.5 Sq. mm.	Nos	10	12560.07	125600.7
113	113	Tools for installation of Rapid Cable Joint kit.	Nos	10	5201.12	52011.2
114	114	Supply of Medium class GI pipes 100 mm dia(4.5 mm thickness) as per IS 1239 (Part 1) : 2004 with coupling on culverts bridges as per Drg.No.CSTE/NWR/SOR/06 to 12 or at any other locations as decided by Site Engineer. It includes supply of all material required for fixing arrangement. Contractor will also supply flexible/corrugated HDPE pipe at the end of GI pipe to protect the cables from sharp edges and sudden bends. Inspection: Consignee Inspection Charges: None. Payment Terms: 100% after Supply.	Mtr	300	760.66	228198.00
115	115	Fixing of Medium class GI pipes 100 mm dia(4.5 mm thickness) as per IS 1239 (Part 1) : 2004 with coupling on culverts bridges as per Drg.No.CSTE/NWR/SOR/06 to 12 or at any other locations as decided by Site Engineer. It includes installation of all material required for fixing arrangement. Contractor will install flexible/corrugated HDPE pipe at the end of GI pipe along with any masonry work(if required) to protect the	Mtr	300	190.17	57051.00

		cables from sharp edges and sudden bends. Inspection: Consignee Inspection Charges: None. Payment Terms: 100% after installation.				
116	116	Supply of Medium class GI pipes 50 mm dia(3.6 mm thickness) as per IS 1239 (Part 1) : 2004 for use in ASM room and at any other location as decided by Site Engineer. It includes supply of all material required for fixing arrangement. At the ends of GI pipe, flexible/corrugated HDPE pipe will be provided by contractor to protect cables from sharp edges and sudden bends. Inspection: Consignee Inspection Charges: None. Payment Terms: 100% after Supply.	Mtrs	400	390.52	156208.00
117	117	Fixing of Medium class GI pipes 50 mm dia(3.6 mm thickness) as per IS 1239 (Part 1) : 2004 for use in ASM room and at any other location as decided by Site Engineer. It includes installation of all material required for fixing arrangement. At the ends of GI pipe, flexible/corrugated HDPE pipe along with any masonry work(if required) will be provided by contractor to protect cables from sharp edges and sudden bends. Inspection: Consignee Inspection Charges: None. Payment Terms: 100% after Installation.	Mtrs	400	97.63	39052.00
118	118	Supply of Double Wall Corrugated (DWC)-HDPE pipe/duct of size 200 mm outer dia, & 175 mm inner dia. It includes supply of Double Wall Corrugated -HDPE pipe/duct as per RDSO Specn.No. RDSO/SPN/204/2011 (version 1.1) or latest and conforming to ISI Spec. No.IS:14930, Part-II. (The manufacturers, suppliers must produce valid IS license and should be certified under ISO 9000	Mtr	1500	383.47	575205.00

		<p>and shall submit copy of certificate). One of the following coupling arrangements should also be supplied with each pipe as per the site requirement.</p> <p>1) Suitable snap fit coupler with rubber O-Ring 2) Spacers 3) Tees 4) Bend, 5) End-cap</p> <p>DWC pipe shall be marked at every 1 mtr length in such a way that manufacturer's name, vendor name and year of manufacture can be easily identified.</p> <p>Inspection: (i) RDSO/RITES if value of item in work more than 5 lakhs or as per extant policy (ii) Consignee subject to procurement from RDSO approved vendors if value of whole item in work less than 5 lakhs or as per extant policy</p> <p>Inspection Charges: (i) Borne by DFCCIL (ii) None</p> <p>Payment Terms: 100% after Supply</p>				
119	119	<p>Supply of Double Walled Corrugated (DWC) HDPE Pipe/duct with associated collars etc. as per RDSO Specification No. RDSO/SPN/204/2011 or latest anti-rodent & anti-oxidant and non flame propagating type in 6 meters straight length and of size 120 mm outer dia, & 103.5 mm inner dia. (The manufacturers, suppliers must produce valid IS license and should be certified under ISO 9000 and shall submit copy of certificate). One of the following coupling arrangements should also be supplied with each pipe as per the site requirement.</p> <p>1) Suitable snap fit coupler with rubber O-Ring 2) Spacers 3) Tees 4) Bend, 5) End-cap</p> <p>(The total quantity of above items is equal to no. of pipes supplied.)</p> <p>DWC pipe shall be marked at every 1 mtr length in such a way that manufacturer's name, vendor name and year of manufacture can be easily identified.</p>	Nos.	500	1798.20	899100.00

		<p>Inspection: (i) RDSO/RITES if value of item in work more than 5 lakhs or as per extant policy (ii) Consignee subject to procurement from RDSO approved vendors if value of whole item in work less than 5 lakhs or as per extant policy Inspection Charges: (i)Borne by DFCCIL (ii) None Payment Terms: 100% after Supply</p>				
120	120	<p>Placing of DWC HDPE/RCC/GI pipes along with collars in trenches at places near track and road, crossings, platform cuttings etc. Inspection: Consignee Inspection Charges: None. Payment Terms: 100% after Execution</p>	RM	4500	29.59	133155.00
121	121	<p>Jointing of 4 / 6 quad /Signaling cable with Heat Shrinkable straight through Jointing Kit. All the material required for the work are to be arranged by contractor himself at his own cost except Thermo shrinkable Joint Kit/Rapid Joint kit. After jointing the cable through test such as insulation test, continuity cable losses etc. to be carried out jointly with Railway Engineer. If any defect or any damage is observed during jointing, the contractor has to redo the joint free of cost. Inspection: Consignee Inspection Charges: None. Payment Terms: 100% after Execution</p>	Nos.	10	1157.45	11574.5
122	122	<p>Horizontal direction drilling/ boring without damage of surface road / track using Auger Machine (HDD machine). The bore shall be upto 200 mm dia & shall be done at the depth of minimum 1200 mm from the ground level. The ground level shall be considered ignoring the bank height of the bank of the road. The length of the bore shall be minimum 4 Mtrs long. This include insertion of different dia</p>	Mtrs	300	1202.97	360891.00

		<p>DWC-HDPE pipe/ GI pipes coupling etc. as per direction of Engineer In charge.</p> <p>Note:- Pipe Supply is not covered under this item. Contactor shall provide all material required for boring and adequate nos. of labours for proper laying of cables into the bore. Cable shall be laid cautiously so that it should not get damage due to rough handling & pressure on cable.</p> <p>Inspection: Consignee Inspection Charges: None.</p> <p>Payment Terms: 100% after Execution.</p>				
123	123	<p>Supply of RCC cable route marker engraved and painted on both side along the route at every 50 meter and route diversion as per Drg. No 4014/00/CC4 or latest/ Stone marker.</p> <p>Inspection: Consignee Inspection Charges: None.</p> <p>Payment Terms: 100% after Supply</p>	Nos	100	328.68	32868.00
124	124	<p>Excavation of cable trench as per cable route plan, 1.2 Mtr. deep and of 0.3 Mtr. to 0.6 Mtr. wide at bottom as per RDSO sketch No. RSDO/CABLE LAYING/003 or latest alongside the track in normal (all type) soil/strata, conforming to distances as per cable route plan and refilling. This work includes clearing of route from bushes etc, covering of cable laid in trench by loose soil for a layer of 50mm thickness approximately before covering by bricks. The work shall be done as per the extant practice on North Western Railway and instructions of DFCCIL Engineer at site. In case 1.2m depth of trench is not achievable due to site conditions, specific approval of JA grade officer will be required for each site where trench depth of 1.2m is not possible. Without the approval of JA Grade officer, no payment for trenching will be made for trench depth less than 1.2m.</p>	CuMtrs	1800	274.28	493704.00

		<p>Inspection: Consignee Inspection Charges: None.</p> <p>Payment Terms: 100% after Execution</p>				
125	125	<p>Digging of trench 1.2 Mtrs. deep from rail flange/ road level and 0.3 Mtrs to 0.6 Mtrs wide and back filling after placing of DWC/RCC/GI pipe. (Placing of DWC/RCC/GI pipe covered separately).The ballast disturbed be screened and dressed as required by Engineer-in-charge or his representatives and road tarred immediately. For track crossing, Drg. No.CSTE/3644 Pg.7 of 11 and for Road Crossing, Drg. No. CSTE/3644 Pg. 5 of 11 are to be followed.Inspection: Consignee Inspection Charges: None.</p> <p>Payment Terms: 100% after Execution</p>	Cu Mtrs	300	274.28	82284.00
126	126	<p>Digging of cable pit (min 2x2x1m) as per instruction of Site Engineer, supplying and filling of sand before and after coiling the cables, covering top of the cable pit with stones and providing brick masonry on all four sides of the cable pit and plastering thereafter. Inspection: Consignee Inspection Charges: None.</p> <p>Payment Terms: 100% after Execution</p>	Nos	1	12506.58	12506.58
127	127	<p>Laying of S&T Cables of various cores/ pairs/ quads in trenches/ GI pipes/ RCC pipes/ DWC pipes/ Trunking. This also includes laying of cables in track crossings & road crossings. Item includes provision of labels of coloured plastic adhesive tapes or any other identifiable material on each cable to give the cable number at each Gantry Post/hectometer post.(Cables will be meggered before and after its laying by contractor under supervision of Railway Representative and he will submit the meggering report of each testing). Length of the</p>	RM	6000 0	9.10	546000.00

		cable laid includes the length of the cable coiled for termination purposes. Inspection: Consignee Inspection Charges: None. Payment Terms: 100% after Execution				
128	128	Supply of Earth Leakage Detector (ELD) 12 Channels as per RDSO Specn.RDSO/SPN/256/2002 or latest. Inspection: RDSO Inspection Charges:Borne by DFCCIL Payment Terms: 100% after Supply.	No	1	158443.22	158443.22
129	129	Wiring, installation, testing and commissioning of Earth Leakage Detector (ELD) 12 Channels as per RDSO Specn.RDSO/SPN/256/2002 or latest. This includes supply of fuse terminal strip for incoming power supply wires. On job training at site will be given by OEM engineer for installation and maintenance of ELD. Inspection: Consignee Inspection Charges: None Payment Terms: 100% after commissioning.	Nos.	1	39610.81	39610.81
130	130	Provision of Ring Earth for EI system which includes supply of all components of earthing & bonding system like earth electrode, earth enhancement material, earth pit, equi- potential earth busbar, connecting cables and tape/strips and other associated accessories in accordance with RDSO Spec.No.RDSO/SPN /197/2008 or latest consisting minimum 8 Nos. of earth pits connected in a ring to achieve less than 1 Ohms earth resistance for connecting EI equipments, relay racks, panel, power equipments as per Signal Engineering Practice. Diagram of ring earth should be supplied to	Station	1	151992.97	151992.97

		<p>Railway for Approval before execution. All related material as recommended by RDSO in Specn. No.RDSO/SPN /197/2008 or latest, will be supplied by the contractor.</p> <p>basic material for one earth pit is given below:</p> <p>(a) Copper bonded steel electrode of 3.0 m long, 17.2 mm dia with copper bonding thickness of minimum macrons and UL listed and marked = 1 no.</p> <p>(b) Earth enhancement material supplied in sealed bags of minimum 10 kg = 3 nos.</p> <p>© Copper strip of 150x25x6 mm, to terminate earth rod = 1 no.</p> <p>(d) Copper strip of 300x25x6 mm (MEEB) = 1 no.</p> <p>(e) Copper strip of 150x25x6mm (SEEB) = 1 no.</p> <p>(f) Supply of 35 sq. mm multi strand single core PVC insulated copper cable as per IS: 694 for connecting main earth electrode to MEEB in the equipment room in duplicate.(minimum 10 meter)</p> <p>(g) Supply of 16 sq. mm multi strand single core PVC insulated copper cable as per IS: 694 for connecting MEEB to SEEB and SPD to MEEB (minimum 10 meter)</p> <p>(h) Supply of 10 sq. mm multi strand single core PVC insulated copper cable as per IS: 694 for connecting various equipments to SEEB</p> <p>(i) Supply of copper lug sleeve for 3/16 cable</p> <p>Note:Earthing arrangement for EI must be as per RDSO guidelines issued by RDSO vide RDSO TAN no. STS/E//TAN/3006 dated 02.11.2012 or latest. Inspection: Consignee Inspection Charges:None Payment Terms: 100% after Supply.</p>				
131	131	Installation, testing and commissioning of Ring Earth for EI system which includes	Station	1	37998.24	37998.24

	<p>installation of all components of earthing & bonding system like earth electrode, earth enhancement material, earth pit, equi-potential earth busbar, connecting cables and tape/strips and other associated accessories in accordance with RDSO Spec.No.RDSO/SPN /197/2008 or latest consisting minimum 8 Nos. of earth pits connected in a ring to achieve less than 1 Ohms earth resistance for connecting EI equipments, relay racks, panel, power equipments as per Signal Engineering Practice. Diagram of ring earth should be supplied to DFCCIL for Approval before execution.</p> <p>Installation of one earth pit includes</p> <p>(i) Digging the earth to the required depth.</p> <p>(ii) Insertion of electrode.</p> <p>(iii) Filling of earth enhancing compound (Approx.30 Kg)</p> <p>(iv) Provision of exothermic weld connections to copper tape of 25 mm x 6 mm x 150 mm to the earth electrodes. All material tools and features required for weld will be arranged by contractor.</p> <p>(v) This also includes CC cover 1.5 ft x 1.5 ft. 1 ft wall thickness 2 inch with cover 3 inch thickness.</p> <p>Cables 35 Sq mm/ 16 Sq mm/10 sq mm for connecting earth to busbar, busbar to busbar and busbars to various equipments. Earth electrode of 17.20 mm dia and 3.00 meter long high tensile low carbon steel circular rods molecularly bonded with copper and outer surface (minimum copper bonding thickness of 250 microns to made requirement of under writer's laboratories (UL) 467-2007 or latest.</p> <p>Copper strips of 150 mm x 25 mm x 6 mm to be welded with each earth electrode, copper strips of 300 mm x 25 mm x 6 mm for main equip-potential busbar, copper strips of 150 mm x 25 mm x 6 mm</p>				
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		<p>sub equip-potential busbar in relay room, power room and panel room.</p> <p>GI strip 25 mm x 2 mm for ring formation of earth pits Earth enhancement material in bags for each Earth Electrode. Inspection chamber of site 300 mm x 300 mm x 300 mm (Inside dimension) of approximate 50 mm thick with pulling hooks to cover the earth pits.</p> <p>Note:Earthing arrangement for EI must be as per RDSO guidelines issued by RDSO vide RDSO TAN no. STS/E//TAN/3006 dated 02.11.2012 or latest. Inspection: Consignee</p> <p>Inspection Charges:None</p> <p>Payment Terms: 100% after commissioning.</p>				
132		<p>Lettering/Numbering Termination particulars, equipment's names etc., legibly and neatly inside location boxes. This includes supply of paints of Asian Paints/ Nerolac/ Dulux/ Berger make.</p> <p>Inspection: Consignee, Inspection Charges: None</p> <p>Payment Terms: 100% after Execution</p>				
	13201	Full Case.	Nos	30	119.50	3585.00
	13202	Half Case	Nos	15	81.94	1229.1
133	13301	<p>Complete painting and varnishing work at a station (3/4 Line). This includes painting of signal posts and fittings, apparatus cases, point machines, junction boxes, rail post etc. This also includes varnishing, letter writing on relays, terminal Nos., apparatus cases, point machine, Signal Nos. and other details as per Signal Engineering Manual and instructions of Engineer at site. The item includes painting of distances of main cable run from G.P nearest to cable run and painting of distances of signals from nearest line on the signals base. At least two coats of paint is to be applied besides primary coating of red oxide. This includes supply of paints, varnishes and all</p>	Station	1	36944.91	36944.91

		<p>other material required for complete painting work at a station. This includes painting on existing functional units also. The painting shall consist of initial red oxide / base paint followed by at least two coat of the paint as per standard painting scheme. This item also includes painting of interlocked gate attached to the station. Location box no. shall be painted on both sides.</p> <p>Inspection:Consignee Inspection Charges: None Payment Terms: 100% after Execution</p>				
134	134	<p>Supply of UTP CAT-6 cable in a roll of 305 meter and make Siemen/ Systemax / Panduit/ Tyco/ Krone/ AMP. Inspection: Consignee Inspection Charges: None. Payment Terms: 100% after Supply.</p>	Mtr	305	18.74	5715.7
135	135	<p>Supply of 4/2 wire combined Portable Light Weight Emergency control telephones of metal body with 6-pin plug as per IRS-TC-75/99 (Amnd 4) or latest. Inspection: Consignee Inspection Charges: None. Payment Terms: 100% after Supply.</p>	Nos	2	3316.73	6633.46
136	136	<p>Supply of KRONE Punching tool, Krone or any reputed make only. Inspection: Consignee Inspection Charges: None. Payment Terms: 100% after Supply.</p>	Nos	1	1401.40	1401.40
137	137	<p>Supply of patch chord cable (10 meter long) with FC/PC connectors compatible with SDH equipments as per TEC Specn.No.GR/OFJ-02/01 May 2004 with latest Amendment. Inspection: Consignee Inspection Charges: None. Payment Terms: 100% after Supply.</p>	Nos.	100	947.11	94711.00

138	138	<p>Supply, preparation, splicing and installation of straight joint for 24 fibers along with enclosures with heat shrinkable splice protection sleeve as per TEC Specn.G/OJC-02/01 March- 99 or latest. Splice losses in no case should be more than 0.1 dB.</p> <p>Inspection: Consignee Inspection Charges: None.</p> <p>Payment Terms: 100% after Execution.</p>	Nos.	10	12752.2	127522.00
139	139	<p>Supply of managed SDH (STM-1 Add/Drop MUX and upgradeable to STM-4) fully wired for 2 X 63 MB and equipped for 21E1s and a Virtual Container (VC)-12 with STM- 1(L1.1) aggregate interface including power supply, order wire, Ethernet card, sub rack, inbuilt DDF, installation material and all other accessories, manuals etc. as per TEC. Specification GR SDH 04/02, March 02 or with latest amendment. The contractor will supply all other accessories as mentioned in the above said TEC Specifications and system will have provision of different redundancy cards as per the TEC Specifications.</p> <p>Note: It shall be possible to increase capacity from 21E1 to 63 E1s by adding / inserting tributary cards. This includes connecting all pig tails, optical patch cords etc. to the SDH equipment. This also includes connecting the SDH equipment with all cards to the 48V Bus including supply of wires and connectors. Termination of all E1s on DDF taking PVC cable over runway or a wall. At the terminal station, one port may be disabled if required as per instructions given by site engineer incharge.</p> <p>Inspection:(i) RDSO if value of item in work more than 5 lakhs or as per extant policy (ii) Consignee subject to procurement from RDSO approved vendors if value of whole item in work less than 5</p>	Nos.	1	193957.98	193957.98

		lakhs or as per extant policy Inspection Charges: (i)Borne by DFCCIL (ii) NonePayment Terms: 100% after Supply				
140	140	Installation, wiring, testing & commissioning of managed SDH (STM-1 Add/Drop MUX and upgradeable to STM-4) fully wired for 2 X 63 MB and equipped for 21E1s and a Virtual Container (VC)-12 with STM-1(L1.1) aggregate interface including power supply, order wire, Ethernet card, sub rack, inbuilt DDF, installation material and all other accessories, manuals etc. as per TEC. Specification GR SDH 04/02, March 02 or with latest amendment. The contractor will install all other accessories as mentioned in the above said TEC Specifications and system will have provision of different redundancy cards as per the TEC Specifications. Note: It shall be possible to increase capacity from 21E1 to 63 E1s by adding / inserting tributary cards. This includes connecting all pig tails, optical patch cords etc. to the SDH equipment. This also includes connecting the SDH equipment with all cards to the 48V Bus including supply of wires and connectors. Termination of all E1s on DDF taking PVC cable over runway or a wall. At the terminal station, one port may be disabled if required as per instructions given by site engineer incharge. Inspection: Consignee Inspection Charges: None. Payment Terms: 100% after Commissioning.	Nos.	1	48489.50	48489.50
141	141	Supply of 2 Mb Programmable Primary Digital drop insert multiplexer as per RDSO Specs. IRS TC- 68/2004 (Amnd.1) or latest with conference facility and other stipulation to tender documents and fully wired for 30 channel complete with power	Nos.	1	253550.16	253550.16

	<p>supply card, remote control, supervision facility and all other accessories, installation material, manuals etc. It should have facilities to accommodate data interface card in multi drop mode and should be able to support cards needed for video conferencing and ISDN. It shall support NMS installed at Test Room and may operate local/remote location of entire section. It also includes submission of all technical documents, manuals and supply of all miscellaneous items which will be required for final testing and commissioning of system.</p> <p>The above MUX should be equipped with following circuits: -</p> <ul style="list-style-type: none"> i) 2 wire/ 4 wire E&M VF circuits (minimum 16 nosckts) ii) Subscriber loop circuits (minimum 4 nosckts) iii) Exchange loop interface circuits (minimum 8 circuits) iv) This also includes connecting all pigtails, optical patch cords etc to the SDH equipments. This also includes connection of SDH and primary MUX equipment with all interface cards to the 48V Bus including supply of wires and connectors termination of all evens on DDF taking PVC cable over runway or a wall and termination of VF interface circuit to the Krone type. <p>Inspection:(i) RDSO if value of item in work more than 5 lakhs or as per extant policy (ii) Consignee subject to procurement from RDSO approved vendors if value of whole item in work less than 5 lakhs or as per extant policy</p> <p>Inspection Charges: (i)Borne by DFCCIL (ii) None</p> <p>Payment Terms: 100% after Supply</p>				
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142	142	<p>Installation, wiring, testing and commissioning of 2 Mb Programmable Primary Digital drop insert multiplexer as per RDSO Specs. IRS TC- 68/2004 (Amnd.1) or latest with conference facility and other stipulation to tender documents and fully wired for 30 channel complete with power supply card, remote control, supervision facility and all other accessories, installation material, manuals etc. It should have facilities to accommodate data interface card in multi drop mode and should be able to support cards needed for video conferencing and ISDN. It shall support NMS installed at Test Room and may operate local/remote location of entire section. It also includes submission of all technical documents, manuals and supply of all miscellaneous items which will be required for final testing and commissioning of system.</p> <p>The above MUX should be equipped with following circuits: -</p> <p>i) 2 wire/ 4 wire E&M VF circuits (minimum 16 nosckts)</p> <p>ii) Subscriber loop circuits (minimum 4 nosckts)</p> <p>iii) Exchange loop interface circuits (minimum 8 circuits)</p> <p>iv) This also includes connecting all pigtails, optical patch cords etc to the SDH equipments. This also includes connection of SDH and primary MUX equipment with all interface cards to the 48V Bus including supply of wires and connectors termination of all evens on DDF taking PVC cable over runway or a wall and termination of VF interface circuit to the Krone type.</p> <p>Inspection: Consignee Inspection Charges: None.</p> <p>Payment Terms: 100% after Commissioning.</p>	Nos.	1	63387.54	63387.54
143	143	Supply of Pre-lubricated HDPE duct, 40 mm OD, 33 ID as per RDSO specification No. RDSO/SPN/TC/45/2013 Rev. 2.0	KM	4	48313.26	193253.04

		<p>or latest. The item also includes supply of all the accessories of HDPE duct like end caps, collars, bends, couplers etc.</p> <p>Inspection: (i) RDSO/RITES if value of item in work more than 5 lakhs (ii) Consignee subject to procurement from RDSO approved vendors if value of whole item in work less than 5 lakhs as per extant instructions by Railway Board. Inspection Charges: (i) Borne by DFCCIL (ii) None Payment Terms: 100% on Supply</p>				
144	144	<p>Laying of Pre-lubricated HDPE duct, 40 mm OD, 33 ID as per RDSO specification No. RDSO/SPN/TC/45/2013 Rev. 2.0 or latest. The item also includes installation of all the accessories of HDPE duct like end caps, collars, bends, couplers etc.</p> <p>Inspection: Consignee Inspection Charges: None. Payment Terms: 100% after Execution.</p>	KM	4	12078.31	48313.24
145	145	<p>Blowing/drawing of OFC cables in the HDPE duct along with all the protective work as per instructions of engineer incharge at site. Inspection: Consignee Inspection Charges: None. Payment Terms: 100% after Execution.</p>	KM	4	10804.77	43219.08
146	146	<p>Construction of brick chamber of optical fibre cable straight through joint as per Drg. No. CSTE/NWR/SOR/23. It also includes supply and provision of all the material required for this item like bricks, sand, cement etc. The cement and sand should be in ratio 1:6. Inspection: Consignee Inspection Charges: None. Payment Terms: 100% after Execution.</p>	Nos.	12	5263.87	63166.44

147	147	<p>Supply, installation and complete indoor wiring of 19 inch covered Rack of size 2035 mm x 600 mm x 600 mm (Approx.) as per Drg. No. CSTE/NWR/SOR/24. The rack shall be complete with all fittings for housing SDH equipments, Primary MUXES, DDF, MDF using crone modules and other equipments like runway ladders etc completely wired and equipped with integrated protection modules for all channels as per technical specifications and other stipulations of tender document. It should be possible to lock all the equipments with only order wire telephone remaining outside the rack.</p> <p>Inspection: Consignee Inspection Charges: None. Payment Terms: 100% after Execution.</p>	Nos	1	36716.41	36716.41
148	148	<p>Supply & Installation of Professional 19" Equipment Racks 4U for housing of network equipments. Inspection: Consignee Inspection Charges: None. Payment Terms: 100% after execution.</p>	Nos	1	4413.95	4413.95
149	149	<p>Supply, installation, testing & commissioning of Network Management System (NMS) for both STM-I ADMs & Primary Digital Drop/Insert MUX including associated application software, power supply arrangement along with all accessories as mentioned in respective tender document. Application software will be licensed software This also includes necessary interface if required at way side stations for achieving the end objective of patching and switching of equipment from NMS.</p> <p>Note: i).It include supply of work station note book (02 Nos.) with configuration of Intel Pentium (R) i5 or i7, 3GB, 667 Mhz, dual channel DDR2 SDRAM, Cache</p>	Nos	1	738877.32	738877.32

		<p>3MB, Label II Cache or latest model available in the market for data input and as per Technical Specification given in respective tender document. ii). Supply of Laser Printer (02 Nos.) as per technical specifications enclosed in tender documents. iii). NMS shall be capable of monitoring and managing upto 250 nodes simultaneously for both STM-1 ADMs and Primary MUXES iv). User interface shall be Graphic User Interface (GUI) based. v). NMS shall provide point and click facility and trial management capability vi). It also includes supply of furniture (Godrej or any repudiated make) i.e. PC/Printer table, revolving chair and one side rack as approved by site engineer. Inspection: RDSO Inspection Charges: Borne by DFCCIL. Payment Terms: 100% after commissioning.</p>				
150	150	<p>Supply of SMPS based Battery Chargers as per RDSO Spec for Telecom use 48 volts, 25 Amps in 2+1 configuration modules of 25 Amps with ultimate expandable capacity 50 Amps, automatic switching between the modules as per RDSO Spec No. RDSO/SPN/TC/23/1999 version 4 or latest along with two potential free contacts. Inspection: (i) RDSO if value of item in work more than 5 lakhs (ii) Consignee subject to procurement from RDSO approved vendors if value of whole item in work less than 5 lakhs as per extant instructions by Railway Board. Inspection Charges: (i)Borne by DFCCIL (ii) None Payment Terms: 100% on Supply</p>	Nos.	1	127514.14	127514.14

151	151	Installation of Battery chargers, Power distribution Board along with MCBs of suitable ratings and wiring and commissioning of External alarm contacts through EMS. The work includes supply of battery rack, MCBs, battery cable and battery lugs and other accessories required for installation of power plant. Inspection: Consignee, Inspection Charges: None. Payment Terms: 100% after Execution.	Nos.	1	3666.60	3666.6
152	152	Supply of Module for SMPS 25 Amps/48VDC suitable for item no 15.21 of SOR. Inspection: Consignee Inspection Charges: None. Payment Terms: 100% after Supply.	Nos	1	37035.61	37035.61
153	153	Supply of 48Volt / 200AH maintenance free VRLA Batteries duly charged as per IRS Spec. No. S-93/96(A) with amendments-1 or latest Inspection: RDSO Inspection Charges: Borne by Railways. Payment Terms: 100% after Supply.	Nos	1	77027.97	77027.97
154	154	Installation, wiring, testing & commissioning of 48Volt/200AH maintenance free VRLA Batteries duly charged as per IRS Spec. No. S-93/96(A) with amendments-1 or latest. Inspection: Consignee, Inspection Charges: None. Payment Terms: 100% after Execution.	Set	1	19256.99	19256.99
155	155	Supply of 48V/500AH VRLA battery bank consisting of 24x2 volt 500AH VRLA cells, with required container and accessories like connectors, clamp, lugs, interlinks etc as per RDSO Spec. No. IRS-S-93/96A with Amnd.1 or latest. Inspection: RDSO Inspection Charges: Borne by DFCCIL. Payment Terms: 100% after Supply.	Set	1	244224.00	244224.00

156	156	Supply of Portable Service terminal with installation of software, for managing both STM-1 ADMs Primary D/I MUXES with all accessories compatible with NMS to be supplied as per detailed technical specification attached and other stipulation of tender document. It should be possible to plug in, the service terminal at any of the station to programme any network element from any location of the network. Inspection: RDSO Inspection Charges: Borne by DFCCIL. Payment Terms: 100% after Supply.	Nos.	1	176550.53	176550.53
157	157	Supply, installation and complete wiring of Optical fiber cable termination box for 24 fibers complete with base housing, base mountings with fixing arrangement etc & splicing of fibers with low loss of pigtail cables as per detailed specification mentioned in respective tender documents. Two pairs of fibers shall be derived from either side of OFC cable at every OFC cable hut provided at wayside stations through pigtails with FC/PC connectors and remaining fibers on either side will be made through by splicing. At OFC terminal stations/MW repeater stations, all fibers shall be derived from either side and to be terminated in OFC termination box through pig tails and FC/PC connector. The OFC termination box to be supplied as per TEC No. G/FTB 01-02 March- 99 or latest. Splice losses in no case should be more than 0.1 dB. Necessary 0 dB connectors should be provided by contractor in OFC termination box. Inspection: Consignee, Inspection Charges: None. Payment Terms: 100% after Execution.	Nos.	1	24363.18	24363.18
158	158	Supply of 10 Pairs Krone type D.P. box as per Tech spec, make	Nos	10	1232.67	12326.7

		Hensel or superior. Inspection: Consignee Inspection Charges: None. Payment Terms: 100% after Supply.				
159	159	Fixing and wiring of 10 Pairs Krone type D.P. box as per Tech spec, make Hensel or superior. Inspection: Consignee Inspection Charges: None. Payment Terms: 100% after execution.	Nos.	10	308.17	3081.7
160	160	Supply of 20 Pairs Krone type D.P. box as per Tech spec, make Hensel or superior. Inspection: Consignee Inspection Charges: None. Payment Terms: 100% after Supply.	Nos.	10	1963.08	19630.8
161	161	Fixing and wiring of 20 Pairs Krone type D.P. box as per Tech spec, make Hensel or superior. Inspection: Consignee Inspection Charges: None. Payment Terms: 100% after execution.	Nos.	10	490.77	4907.7
162	162	Supply of Network Management System (NMS) for both STM-I ADMs & Primary Digital Drop/Insert MUX including associated application software, power supply arrangement along with all accessories as mentioned in respective tender document. Application software will be licensed software This also includes necessary interface if required at way side stations for achieving the end objective of patching and switching of equipment from NMS. Note: i).It include supply of work station note book (02 Nos.) with configuration of Intel Pentium (R) i5 or i7, 3GB, 667 Mhz, dual channel DDR2 SDRAM, Cache 3MB, Label II Cache or latest model available in the market for data input and as per Technical Specification given in respective tender document. ii). Supply of Laser Printer (02 Nos.) as per technical specifications enclosed	Nos	1	591101.86	591101.86

		in tender documents. iii). NMS shall be capable of monitoring and managing upto 250 nodes simultaneously for both STM-1 ADMs and Primary MUXES iv). User interface shall be Graphic User Interface (GUI) based. v). NMS shall provide point and click facility and trial management capability vi). It also includes supply of furniture (Godrej or any repudiated make) i.e. PC/Printer table, revolving chair and one side rack as approved by site engineer. Inspection: RDSO Inspection Charges: Borne by DFCCIL. Payment Terms: 100% after supply.				
163	163	Supply of managed optical media converter Complied RDSO spec SPN/TC/103/2013 rev 0 consisting of minimum four user ports 10/100 Mbps (2.1.3.2) without POE; two SFP slots for networking; Two electrical Ethernet ports for networking ; dual power supply support AC 230 VAC / DC - 48V DC from single socket ; Two numbers EOLS-1312-10-D 1000 base -LX 10 unit to work in daisy chain or ring topology :Make/Model : Teamlink 2100 , Team Engg. / Team Link or similar. Inspection: (i) RDSO/RITES if value of item in work more than 5 lakhs or as per extant policy (ii) Consignee subject to procurement from RDSO approved vendors if value of whole item in work less than 5 lakhs or as per extant policy Inspection Charges: (i)Borne by DFCCIL (ii) None Payment Terms: 100% after Supply	Nos.	2	39020.98	78041.96
164	164	4 Quad 0.9mm underground Railway Jelly Filled Telecom Quad Cables to Spec. No. IRS:TC 30/2005(Ver.-1) (Amd. 1 to 5)	KM	10	221674.80	2216748.00
165	165	6 Quad 0.9mm underground Railway Jelly Filled Telecom	KM	10	250503.38	2505033.38

		Quad Cables to Spec. No. IRS:TC 30/2005(Ver.-1) (Amd. 1 to 5)				
166	166	PVC Insulated Armoured, Unscreened, U/G Railway Signalling Cable 12 C X1.5 sqmm.to Spec.No. IRS:S-63/2014 (Rev.4.0)	KM	60	165069.02	9904141.20
167	167	19Cx1.5 PVC Insulated Armoured, Unscreened, U/G Railway Signalling Cable. Spec No. IRS: S-63/2014 (rev-4.0)	KM	12	252888.16	3034657.92
168	168	2Cx16 PVC Insulated Armoured, Unscreened, U/G Railway Signalling Cable. Spec No. IRS: S-63/2014 (rev-4.0) and IS:1554(part-1)	KM	8	73891.6	591132.80
169	169	2Cx2.5 PVC Insulated Armoured, Unscreened, U/G Railway Signalling Cable 12 core x 2.5 sqmm to. Spec No. IRS: S-63/2014 (rev-4.0) or latest	KM	20	329432.40	6588648.00
170	170	2Cx2.5 PVC Insulated Armoured, Unscreened, U/G Railway Signalling Cable Spec No. IRS: S-63/2014 (rev-4.0) or latest	KM	8	83426.00	667408.00
171	171	OFC 48C IRS: TC: 55/2006 Rev-1 Amendment No.3.	KM	4	88500.00	354000.00
172	172	OFC 24C IRS:TC:55/2006 Rev-1 Amendment No.3	KM	4	61360.00	245440.00
173	173	OFC 12C (Spur fiber)	KM	2	56640.00	113280.00
174	174	OFC 6C (Spur fiber)	KM	2	54870.00	109740.00
175	175	10Pair PIJF Polythene Insulated Polythene Sheathed Jelly Filled Telephone Cable 10 Pair 0.5 mm with Poly-AL Moisture Barrier to Spec No.: IRS:TC:41/97 Amdt.No. 3	KM	4	77880.00	311520.00
Total (Rupees seven Crores Sixty Four Lakh Fifty Thousand Three Hundred Ninety Eight Only)						76450398

Section :8A –**SCHEDULE OF WORKS AND RATES for Civil Building Works**

Name of Civil Building work: Construction of SM Panel room and Battery room at Swarupganj Yard & Misc works between New Keshavganj - New Palanpur Section of GM Coordination Ajmer unit						
SN	Item No of DSR 2021	Description of Works	Unit	Rate	Quantity	Amount
1	4.1	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level : :				
	4.1.5	1:3:6 (1 Cement: 3 coarse sand (zone-III) derived from natural sources: 6 graded stone aggregate 20 mm nominal size derived from natural sources)	cum	6833.40	19.70	₹ 1,34,635.06
2	5.33	Providing and laying in position ready mixed or site batched design mix cement concrete for reinforced cement concrete work; using coarse aggregate and fine aggregate derived from natural sources, Portland Pozzolana / Ordinary Portland/Portland Slag cement, admixtures in recommended proportions as per IS: 9103 to accelerate/ retard setting of concrete, to improve durability and workability without impairing strength; including pumping of concrete to site of laying, curing, carriage for all leads; but excluding the cost of centering, shuttering, finishing and reinforcement as per direction of the engineer-in-charge; for the following grades of concrete.				
		Note: Extra cement up to 10% of the minimum specified cement content in design mix shall be payable separately. In case the cement content in design mix is more than 110% of the specified minimum cement content, the contractor shall have discretion to either re-design the mix or bear the cost of extra cement.				
	5.33.1	All works upto plinth level				
	5.33.1.1	Concrete of M25 grade with minimum cement content of 330 kg/cum	cum	7997.3	40.87	₹ 3,26,811.30
3	5.33.2	All works above plinth level upto floor V level				
	5.33.2.1	Concrete of M25 grade with minimum cement content of 330 kg/cum	cum	10080.15	42.49	₹ 4,28,284.15

4	5.9	Centering and shuttering including strutting, propping etc. and removal of form for				
	5.9.1	Foundations, footings, bases of columns, etc. for mass concrete	Sqm	307.95	26.25	₹ 8,083.69
5	5.9.5	Lintels, beams, plinth beams, girders, bressumers and cantilevers	Sqm	608.35	292.13	₹ 1,77,720.27
6	5.9.6	Columns, Pillars, Piers, Abutments, Posts and Struts	Sqm	804.5	138.765	₹ 1,11,636.44
7	5.9.3	Suspended floor, roofs, landing, balconies and access platform	Sqm	766.55	145.7	₹ 1,11,686.34
8	6.4	Brick work with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in super structure above plinth level up to floor V level in all shapes and size				
	6.4.1	Cement mortar 1:4(1 cement : 4 coarse sand)	Cum	8512.1	78.91	₹ 6,71,665.93
9	13.4	12 mm cement plaster of mix :				
	13.4.1	1:4 (1 cement: 6 coarse sand)	Sqm	307.25	686.193	₹ 2,10,832.80
	13.61	Painting with synthetic enamel paint of approved brand and manufacture to give an even shade :				
10	13.61.1	Two or more coats on new work	sqm	131.45	686.193	₹ 90,200.07
11	13.80	Providing and applying white cement based putty of average thickness 1 mm, of approved brand and manufacturer, over the plastered wall surface to prepare the surface even and smooth complete.	Sqm	123.85	686.193	₹ 84,985.00
12	11.38	Providing and laying Ceramic glazed floor tiles of size 300x300 mm thickness to be specified by the manufacturer), of 1st quality conforming to TS 15622, of approved make, in all colours, shades, except White, ivory, Grey, Fume Red Brown, laid on 20 mm thick bed of cement mortar 1:4 (1 Cement: 4 Coarse sand), jointing with grey cement slurry @ 3.3 kg/ sq.m including pointing the joints with white cement and matching pigments etc., complete.	Sqm	1107.05	53.264	₹ 58,965.91
13	11.21	Providing and fixing 10 mm thick acid and/or alkali resistant tiles of approved make and colour using acid and/or alkali resisting mortar bedding, and joints filled with acid and/or alkali resisting cement as per IS:4457, complete as per the direction of Engineer-in-Charge.				
	11.21.1	In flooring on a bed of 10 mm thick mortar 1:4 (1 acid proof cement: 4 coarse sand)				

	11.21.1.1	Acid and alkali resistant tile	Sqm	1515.45	48.8	₹ 73,953.96
14	11.21.2	In dado/skirting on 12 mm thick mortar 1:4 (1 acid proof cement: 4 coarse sand)				
	11.21.2.1	Acid and alkali resistant tile	Sqm	1637.7	4.464	₹ 7,310.69
15	8.31	Providing and fixing Ist quality ceramic glazed wall tiles conforming to IS: 15622 (thickness to be specified by the manufacturer), of approved make, in all colours, shades except burgundy, bottle green, black of any size as approved by Engineer-in-Charge, in skirting, risers of steps and dados, over 12 mm thick bed of cement mortar 1:3 (1 cement: 3 coarse sand) and jointing with grey cement slurry @ 3.3kg per sqm, including pointing in white cement mixed with pigment of matching shade complete.	Sqm	1063.45	13.4325	₹ 14,284.79
16	9.1	Providing wood work in frames of doors, windows, clerestory windows and other frames, wrought framed and fixed in position with hold fast lugs or with dash fasteners of required dia & length (hold fast lugs or dash fastener shall be paid for separately).				
	9.1.1	Second class teak wood	Cum	131576.95	1.36425	₹ 1,79,503.85
17	9.20	Providing and fixing ISI marked flush door shutters conforming to IS: 2202 (Part I) decorative type, core of block board construction with frame of 1st class hard wood and well matched teak 3 ply veneering with vertical grains or cross bands and face veneers on both faces of shutters.				
	9.20.1	35 mm thick including ISI marked Stainless Steel butt hinges with necessary screws	SQM	3086.1	9.41	₹ 29,040.20
18	9.48	Providing and fixing M.S. grills of required pattern in frames of windows etc. with M.S. flats, square or round bars etc. including priming coat with approved steel primer all complete.				
	9.48.1	Fixed to steel windows by welding	Kg	181	2000	₹ 3,62,000.00
19	9.147D.1	Two track two panels sliding window made of (small series) frame 52 x 44 mm & sash 32 x 60 mm both having wall thickness of 1.9 ± 0.2 mm and single glazing bead of appropriate dimension. (Area of window upto 1.75 sqm)	Sqm	7634.1	8.35	₹ 63,744.74

20	12.52	<p>Providing and fixing tiled false ceiling of specified materials of size 595x595 mm in true horizontal level, suspended on inter locking metal grid of hot dipped galvanized steel sections (galvanized @ 120 grams/ sqm, both side inclusive) consisting of main "T" runner with suitably spaced joints to get required length and of size 24x38 mm made from 0.30 mm thick (minimum) sheet, spaced at 1200mm center to center and cross "T" of size 24x25 mm made of 0.30 mm thick (minimum) sheet, 1200 mm long spaced between main "T" at 600 mm center to center to form a grid of 1200x600 mm and secondary cross "T" of length 600 mm and size 24x25 mm made of 0.30 mm thick (minimum) sheet to be interlocked at middle of the 1200x600 mm panel to form grids of 600x600 mm and wall angle of size 24x24x0.3 mm and laying false ceiling tiles of approved texture in the grid including, required cutting/making, opening for services like diffusers, grills, light fittings, fixtures, smoke detectors etc. Main "T" runners to be suspended from ceiling using GI slotted cleats of size 27 x 37 x 25 x1.6 mm fixed to ceiling with 12.5 mm dia and 50 mm long dash fasteners, 4 mm GI adjustable rods with galvanised butterfly level clips of size 85 x 30 x 0.8 mm spaced at 1200 mm center to center along main T, bottom exposed width of 24 mm of all T-sections shall be pre-painted with polyester paint, all complete for all heights as per specifications, drawings and as directed by Engineer-in-charge.</p>				
	12.52.3	<p>12.5 mm thick square edge PVC Laminated Gypsum Tile of size 595x595 mm, made of Gypsum plasterboard, manufactured from natural gypsum as per IS 2095 part I and laminated with white 0.16mm thick fire retardant PVC film on the face side and 12micron metalized polyester on the back side with all edges sealed with SUB HEAD : 12.0 ROOFING 266 Code Description Unit RateNo.the face side PVC film which goes around and wrapthe edges and is bonded to the edges and the back side metalized</p>	sqm	1948.95	137.6	₹ 2,68,175.52

	polyester film so as to make the tile a completely sealed unit.				
21	Other DSR item 3%				₹ 1,02,405.62
	Total Amount Schedule A				₹ 35,15,926.35
	As per NWR letter No. NWR-HQ0ENGG(WKS)/73/2021 Base rate of tenders shall be reduced by 38% of CPWD DSR-2021				₹ 21,79,874.33
	Total of schedule A excluding 12% GST				₹ 19,46,316.37
	Total of Schedule A including 18% GST				₹ 22,96,653.32
	Further modified @ 11.37% above as LAR issued by AII unit				₹ 2,61,129.48
	Grand total Schedule A				₹ 25,57,782.80

END OF TENDER DOCUMENT