

GOVERNMENT OF INDIA

NORTH WESTERN RAILWAY

SIGNAL & TELE

COMMUNICATION

GATI SHAKTI UNIT

Bikaner Division

TENDER DOCUMENT

(Two Packets)

For the work of

“Provision of Design, manufacture, supply, installation, testing and commissioning of electronic interlocking along with MSDAC and DC track circuit in c/w expansion of traffic facilities in Lalgah (LGH) yard over Bikaner Division”.

Tender No. SNT-GS-BKN-2025-26-02R

NORTH WESTERN RAILWAY

Dy. CSTE/GSU/JP&BKN

Price: Nil

Signature Not
Verified

Digitally signed by
PRATEEK SHARMA
Date: 2025.03.20
14:59:29 +05'30'
Reason: IREPS-CRIS
Location: New Delhi

Signature of Tenderer

TENDER DOCUMENT

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TENDER DOCUMENT
NORTH WESTERN RAILWAY
(TOP SHEET)

(A) Details to be filled in by Railway:

Mode of Tender	E-Tender (Two Packets)
Tender Notice No.	SNT- GS-BKN-2025-26-02R
Full name of work	“Provision of Design, manufacture, supply, installation, testing and commissioning of electronic interlocking along with MSDAC and DC track circuit in c/w expansion of traffic facilities in Lalgah (LGH) yard over Bikaner Division”.
Approx. cost	Rs. 30,23,32,729.25
Completion period	15 Months
Bid Security amount	Rs. 16,61,700.00
Sale/availability of tender document on Rly. Website	Tender documents will be available on IREPS website i.e. www.ireps.gov.in from 20.09.2025 to 13.10.2025 upto 15:00 hrs.
Last date/Time of upload of tenders	13.09.2025 up to 15:00 hours. Tender documents can be uploaded by the tenderer on IREPS website w.e.f 29/09/2025 to 13.10.2025 upto 15:00 hrs.
Date and time of opening of tender	13.10.2025 at 15:00 hours (immediately after close of uploading of tender). In case of two packet system, Financial bids of the eligible tenderers would be opened subsequently on the date & time to be notified later on.

PART-I
NORTH WESTERN RAILWAY
TENDER FORM (First Sheet)

Tender No. SNT-GS-BKN-2025-26-02

Name of Work:- “Provision of Design, manufacture, supply, installation, testing and commissioning of electronic interlocking along with MSDAC and DC track circuit in c/w expansion of traffic facilities in Lalgah (LGH) yard over Bikaner Division”.

To
The President of India, Acting through the
Dy.CSTE/GSU/JP&BKN
North Western Railway, Bikaner

1. I/We _____ have read the various conditions to tender attached hereto and agree to abide by the said conditions. I/We also agree to keep this tender open for acceptance for a period of _____ 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”. I/We offer to do the work for _____ Railway, at the rates quoted in the attached **bill of quantities** and hereby bind myself/ourselves to complete the work in all respects within _____ Months from the date of issue of letter of acceptance of the tender.
2. I/We also hereby agree to abide by the Indian Railways Standard General Conditions of Contract - 2022, with all correction slips up-to-date and to carry out the work according to the Special Conditions of Contract and Specifications of materials and works as laid down by Railway in the annexed Special Conditions/Specifications, **bill of quantities** with all correction slips up-to-date for the present contract.
3. A sum of ₹ _____ has already been deposited online as Bid Security. Full value of the Bid Security shall stand forfeited without prejudice to any other right or remedies in case my/our Tender is accepted and if:
 - (a) I/We do not submit the Performance Guarantee within the time specified in the Tender document;
 - (b) I/We do not execute the contract documents within **seven days** after receipt of notice issued by the Railway that such documents are ready; and
 - (c) I/We do not commence the work within **fifteen days** after receipt of orders to that effect.
4. (a) I/We am/are a Startup firm registered by Department of Industrial Policy and Promotion (DIPP) and my registration number is valid up to(Copy enclosed) and hence exempted from submission of Bid Security.
5. We are a 100% Govt. owned PSUs and hence exempted from payment of Bid Security.
6. We are a Labour Cooperative Society and our Registration No. is..... withand hence required to deposit only 50% of Bid Security.
7. Until a formal agreement is prepared and executed, acceptance of this tender shall constitute a binding contract between us subject to modifications, as may be mutually agreed to between us and indicated in the letter of acceptance of my/our offer for this work.

Signature, Name & Address of Witnesses:

(1) _____

(2) _____

Signature & Name of Tenderer(s)

Date _____

Part-II

GENERAL CONDITIONS OF THE TENDER

TENDER FORM (Second Sheet)

1.	Instructions to Tenderers and Conditions of Tender: The following documents form part of Tender / Contract: (a) Tender Forms – First Sheet and Second Sheet (b) Special Conditions/Specifications (enclosed) (c) bill of quantities of approximate quantities (enclosed) (d) Standard General Conditions of Contract-April 2022 or latest and Standard Specifications (Works and Materials) of Indian Railways as amended/corrected up to latest correction slips, copies of which can be seen in the office of Dy.CSTE/GSU/JP&BKN or obtained from the office of Dy.CSTE/GSU/JP&BKN of N.W.Railway on payment of prescribed charges. (e) bill of quantities as amended / corrected up to latest correction slips, copies of which can be seen in the office of _____ or obtained from the office of the Principal Chief Signal & Telecom Engineer, North Western Railway on payment of prescribed charges. (f) All general and detailed drawings pertaining to this work which will be issued by the Engineer or his representatives (from time to time) with all changes and modifications.						
2	Drawings for the Work: The Drawing for the work can be seen in the office of the Dy.CSTE/GSU/JP&BKN and/or Principal Chief Signal & Telecom Engineer, North Western Railway at any time during the office hours. The drawings are only for the guidance of Tenderer(s). Detailed working drawings (if required) based generally on the drawing mentioned above, will be given by the Engineer or his representative from time to time. As per Clause No. 2 of tender form 2nd sheet Annex.I Part-I of GCC-2022						
3	The Tenderer(s) shall quote his / their rates as a percentage above or below or at par the total value of tender Schedule of Rates of North Western Railway. The quantities shown in the attached Bill(s) of Quantities are given as a guide and are approximate only and are subject to variation according to the needs of the Railway. The Railway does not guarantee work under each item of the Bill (s) of Quantities. The tenderer(s) shall quote rates / rebates only at specified place in Tender Form supplied by Railway. Any revision of rates / rebates submitted (quoted) through a separate letter whether enclosed with the bid (Tender Form) or submitted separately or mentioned elsewhere in the document other than specified place shall be summarily ignored and will not be considered.						
4	Tenders containing erasures and / or alterations of tender documents are liable to be rejected. Any correction made by tender(s) in his/their entries must be attested by him / them.						
5	The works are required to be completed within a period of ... 15 months from the date of issue of acceptance letter.						
6.	Bid Security: (a) The tenderer shall be required to submit the Bid Security with the tender for the due performance with the stipulation to keep the offer open till such date as specified in the tender, under the conditions of tender. The Bid Security shall be as under: <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Value of the Work</th><th style="text-align: left;">Bid Security</th></tr> </thead> <tbody> <tr> <td>For works estimated to cost up to ₹ 1 crore</td><td>2% of the estimated cost of the work</td></tr> <tr> <td>For works estimated to cost more than ₹ 1 crore</td><td>₹ 2 lakh plus ½% (half percent) of the excess of the estimated cost of work beyond ₹ 1 crore subject to a maximum of ₹ 1 crore</td></tr> </tbody> </table>	Value of the Work	Bid Security	For works estimated to cost up to ₹ 1 crore	2% of the estimated cost of the work	For works estimated to cost more than ₹ 1 crore	₹ 2 lakh plus ½% (half percent) of the excess of the estimated cost of work beyond ₹ 1 crore subject to a maximum of ₹ 1 crore
Value of the Work	Bid Security						
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	Note : (i) The Bid Security shall be rounded off to the nearest ₹100. This Bid Security shall be applicable for all modes of tendering. (ii) Any firm recognized by Department of Industrial Policy and Promotion (DIPP) as 'Startups' shall be exempted from payment of Bid Security detailed above. (iii) Labour Cooperative Societies shall submit only 50% of above Bid Security detailed above. (b) It shall be understood that the tender documents have been issued to the tenderer and the tenderer is permitted to tender in consideration of stipulation on his part, that after submitting his tender he will not resile from his offer or modify the terms and conditions thereof in a manner not acceptable to the Engineer. Should the tenderer fail to observe or comply with the said stipulation, the aforesaid amount shall be liable to be forfeited to the Railway. (c) If his tender is accepted this Bid Security mentioned in sub 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 Bid Security of other Tenderers shall, save as herein before provided, be returned to them, but the Railway shall not be responsible for any loss or depreciation that may happen thereto while in their possession, nor be liable to pay interest thereon. (As per Clause No. 5 – 1 of Part-I of GCC-2022, with up to date correction slip) (d) The Bid Security shall be deposited either in cash through e-payment gateway or submitted as Bank Guarantee bond from a scheduled commercial bank of India or as mentioned in tender documents. The Bank Guarantee bond shall be as per Annexure-XXI 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) (e) 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 (OS/S&T/GSU/BKN as indicated in the tender document before closing date for submission of bids (i.e. excluding the last date of submission of bids). iii. Non submission of scanned copy of Bank Guarantee with the bid on e-tendering portal (IREPS) and/or non submission of original Bank Guarantee within the specified period shall lead to summary rejection of bid. iv. The Tender Security shall remain valid for a period of 90 days beyond the validity period for the Tender. v. The details of the BG, physically submitted should match with the details available in the scanned copy and the data entered during bid submission time, failing which the bid will be rejected. vi. The Bank Guarantee shall be placed in an envelope, which shall be sealed. The envelope shall clearly bear the identification "Bid for the ***** Project" and shall clearly indicate the name and address of the Bidder. In addition, the Bid Due Date should be indicated on the right hand top corner of the envelope. vii. The envelope shall be addressed to the officer and address as mentioned in the tender document. viii. If the envelope is not sealed and marked as instructed above, the Railway assumes no Responsibility for the misplacement or premature opening of the contents of the Bid submitted and consequent losses, if any, suffered by the Bidder. (As per Clause No. 5 – 3 of Part-I of GCC-2022, with up to date correction slip) 6.1 (a) Subject to exemptions provided under para 5(1) (a) of Part-1 (ITT) of GCC-2022, the tender must be accompanied by a Bid Security as mentioned in tender documents, failing which the tender shall be summarily rejected. (b) The Tenderer(s) shall keep the offer open for a minimum period of 60 days (in case of two packet system of tendering 90days) from the date of closing of the Tender. It is understood that the tender documents have been issued to the Tenderer(s) and the Tenderer(s), is / are permitted to tender in consideration of the stipulation on his / their part that after submitting his / their tender subject to the period being extended further, if required by mutual agreement from time to time, he will not resile from his offer or modify the terms and conditions thereof in a manner not acceptable to _____ Railway. Should the tenderer fail to observe or comply with the foregoing stipulation, the amount deposited or Bank guarantee bond submitted as Bid Security for the due performance of the above stipulation, shall be forfeited to the Railway. (c) If his tender is accepted, (i) the Bid Security mentioned in sub para(a) above deposited in cash through e-payment gateway will be retained as part security for the due and faithful fulfillment of the contract in terms of Clause 16 of the
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	Standard General Conditions of Contract; (ii) the Bid Security mentioned in sub para(a) above submitted as Bank guarantee bond, Will be encashed as part security for the due and faithful fulfillment of the contract in terms of Clause 16 of the Standard General Conditions of Contract. The Bid Security of other Tenderers shall, save as herein before provided, be returned to them, but the Railway shall not be responsible for any loss or depreciation to the Bid Security that may happen thereto while in their possession, nor be liable to pay interest thereon. (d) In case Contractor submits the Term Deposit Receipt/Bank Guarantee Bond towards either the Full Security Depositor the Part Security Deposit equal to or more than Bid Security, the Railway shall return the Bid Security so retained as per sub para(c) above, to the Contractor. (As per Clause No. 6 of Tender Form (second sheet) Annex.I of Part-I of GCC-2022, with up to date correction slip)
7.	<u>SYSTEM OF TENDERING</u>
7.1	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.
7.2	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. (As per Clause No. 7A of Part-I of GCC 2022, with up to date correction slip) Addition of 7D and 7E to be done.
7.2.1	Pre-Bid Conference: Intenders having advertised value more than Rs 50 Crore or as mentioned in the tender document, Railway shall conduct Pre Bid Conference(s) with the prospective bidders. (As per Clause No. 7B of Part-I of GCC 2022, with up to date correction slip)
7.2.2	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)
7.2.3	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)
7.2.4	Clarification of Bids: To assist in the examination, evaluation & comparison and pre-qualification of the Tender, the Railway may, at its discretion, ask any Bidder for a clarification of its Bid. Any clarification submitted by a Bidder that is not in response to a request by the Railway shall not be entertained or considered. The Railway request for clarification and the response of the bidder in this regard shall be in writing. However, if a Bidder does not provide clarification of its bid by the date and time communicated in the Railway request for clarification, the bid shall be evaluated as per the documents submitted along with the bid. (As per Clause No. 7E of Part-I of GCC 2022, with up to date correction slip)
7.3	If the tenderer(s) deliberately gives / give wrong information in his / their tender or creates / create circumstances for the acceptance of his / their tender, the Railway reserves the right to reject such tender at any stage.
7.4	If any partner(s) of a partnership firm expires after the submission of its tender or after the acceptance of its tender, the Railway shall deem such tender as cancelled/contract as terminated under clause 61 of the Standard General Conditions of Contract, unless the firm retains its character as per partnership agreement. If a sole proprietor expires after the submission of tender or after the acceptance of tender, the Railway shall deem such tender as cancelled / contract as terminated under clause 61 of the Standard General Conditions of Contract. As per Clause No. 9 of Tender Form (second sheet) Annex. I of Part-I of GCC -2022, with up to date correction slip.

7.5	Tenderer should submit the offer with due diligence after going through the tender documents.
8.0	Execution of Contract Document: The tenderer whose tender is accepted shall be required to appear in person at the office of General Manager, Principal Chief Signal & Telecom Engineer, Chief Signal & Telecom Engineer (Project), Divisional Railway Manager or concerned Engineer, as the case may be, or if tenderer is a firm or corporation, a duly authorized representative shall appear (there would be no need for appear in person if agreement is signed digitally) and execute the contract agreement within seven days of notice from Railways that the Contract Agreement is ready. Failure to do so shall constitute a breach of the agreement affected by the acceptance of the tender. The Contract Agreement shall be entered into by Railway only after submission of valid Performance Guarantee by the Contractor. In such cases the Railway may determine that such tenderer has abandoned the contract and there upon his tender and acceptance thereof shall be treated as cancelled and the Railway shall be entitled to forfeit the full amount of the Bid Security and other dues payable to the Contractor under this contract. The failed Contractor shall be debarred from participating in the re-tender for that work. As per clause No. 8 of Part-I of GCC-2022, with up to date correction slip
8.1	In case, the particular work is charged to EBR (IF), than the Indian Railways Finance Corporation (IRFC) shall also be the party in the contract agreement. After submission of valid performance guarantee, the contract agreement shall be entered into between Indian Railways (IR), Indian Railways Finance Corporation (IRFC) and the tenderer, whose tender is accepted. The Contract Agreement shall be signed as per Annexure XXXI of the STD. The format at Annexure IV of GCC2022 shall not be applicable for Contract Agreement of EBR (IF) funded contracts. As per Railway Board's letters no 2018/AC-II/1/57(pt.) dated 20.03.20 for EBR(IF) funded contracts
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 / Company / Joint Venture (JV) / Registered Society / Registered Trust / Hindu Undivided Family (HUF) / Limited Liability Partnership (LLP) etc. The tenderer(s) shall enclose the attested copies of the constitution of their concern, and copy of PAN Card along with their tender. Tender Documents in such cases are to be signed by such persons as may be legally competent to sign them on behalf of the firm, company, association, trust or society, as the case may be. (ii) 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 documents 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 / LLP etc. shall be neither asked nor considered, if submitted. Further, no suo moto cognizance of any document available in public domain (i.e., on internet etc.) or in Railway's record/office files etc. will be taken for consideration of the tender, if no such mention is available in tender offer submitted. (v) A tender from JV shall be considered only where permissible as per the tender conditions. (vi) The Railway will not be bound by any change of power of attorney or in the composition of the firm made subsequent to the submission of tender. Railway may, however, recognize such power of attorney and changes after obtaining proper legal advice, the cost of which will be chargeable to the Contractor. 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 / joint venture (JV) / registered society / registered trust / HUF / LLP etc if they want to act through agent or individual partner(s), should submit along with the tender, a copy of power of attorney duly stamped and authenticated by a Notary Public or by Magistrate in favour of the specific person whether he/they be partner(s) of the firm or any other person, specifically authorizing him/them to sign the tender, submit the tender and further to deal with the Tender/ Contract up to the stage of signing the agreement except in case where such specific person is authorized for above purposes through a provision made in the partnership deed / Memorandum of Understanding / Article of Association/Board resolution, failing which tender shall be summarily rejected. A separate power of attorney duly stamped and authenticated by a Notary Public or by Magistrate in favour of the specific person whether he/they be partner(s) of the firm or any other person, shall be submitted after award of work, specifically authorizing him/them to deal with all other contractual

	activities subsequent to signing of agreement, if required. Note: A Power of Attorney executed and issued overseas, the document will also have to be legalized by the Indian Embassy and notarized in the jurisdiction where the Power of Attorney is being issued. However, the Power of Attorney provided by Bidders from countries that have signed the Hague Legislation Convention 1961 are not required to be legalized by the Indian Embassy if it carries a conforming Apostille certificate. 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 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 in writing at the time of submitting the tender. b) In case, upon successful award of contract, should a tenderer depute for execution of the works under or to deal matters related with this contract, any retired Engineer of gazette rank or retired gazetted officer working before his retirement in the Engineering or any other department of any of the railways owned and administered by the President of India for the time being, and now in his employment, then the tenderer will ensure that retired Engineer or retired gazetted officer had retired from government service at least 1 year prior to the date of his employment with tenderer and in case he had retired from service within a year then he possesses the requisite permission from the President of India or any officer, duly authorized by him in this behalf, to get associated with the tenderer. c) Should a tenderer or Contractor being an individual, have member(s) of his family or in the case of partnership firm/ company / joint venture (JV) / registered society / registered trust etc. one or more of his partner(s)/shareholder(s) or member(s) of the family of partner(s)/shareholder(s) having share of more than 1% in the tendering entity employed in gazetted capacity in the Engineering or any other department of the railway, then the tenderer at the time of submission of tender, will inform the authority inviting tenders the details of such persons. Note:-If information as required as per 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)	Care in Submission of Tenders: (i) Before submitting a tender, the tenderer will be deemed to have satisfied himself by actual inspection of the site and locality of the works, that all conditions liable to be encountered during the execution of the works are taken into account and that the rates he enters in the tender forms are adequate and all-inclusive to accord with the provisions in Clause-37 of the Standard General Conditions of Contract for the completion of works to the entire satisfaction of the Engineer. (As per Clause No. 6 (a)(i) of G.C.C. 2022Part-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. Tenderers 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. 2022Part-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 railway immediately after the award of contract, without which no payment shall be released to the Contractor. The Contractor shall be responsible for deposition of applicable GST to the concerned authority. (As per Clause No. 6 (a) (iii)of G.C.C. 2022Part-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 railway 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.
13.1(B)	When work is tendered for by a firm or company, the tender shall be signed by the individual legally authorized to enter into commitments on their behalf. 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 Bid Security etc. Tenderers/Prospective bidders are advised to upload their offer well in time. Railway will not be responsible for any delay/non submission of offer due to any reason whatsoever.
13.1(D)	The Railway will not be bound by any power of attorney granted by the tenderer or by changes in the composition of the firm made subsequent to the execution of the contract. It may, however, recognize such power of attorney and changes after obtaining proper legal advice, the cost of which will be chargeable to the Contractor. 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 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 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	<u>RIGHT OF RAILWAY TO DEAL WITH TENDERS</u>
14.1	The Railway reserves the right of not to invite tenders for any of Railway work or works or to invite open or limited tenders and when tenders are called to accept a tender in whole or in part or reject any tender or all tenders without assigning reasons for any such action. In case if tender is accepted in part by Railway administration, Letter of Acceptance shall be issued as counter offer to the Tenderer, which shall be subject to acceptance by the Tenderer.

	As per Clause No. 7, of Tender Form (second sheet) Annex. I of GCC-2022, with up to date correction slip
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	<u>ELIGIBILITY CRITERIA</u>
15.1	Technical Eligibility Criteria (a) The tenderer must have successfully completed or substantially completed any of the following categories of work(s) during last 07 (seven) years, ending last day of month previous to the one in which tender is invited: (i) Three similar works each costing not less than the amount equal to 30% of advertised value of the tender, or (ii) Two similar works each costing not less than the amount equal to 40% of advertised value of the tender, or (iii) One similar work each costing not less than the amount equal to 60% of advertised value of the tender. (b) (1) In case of tenders for composite works (e.g. works involving more than one distinct component, such as Civil Engineering works, S&T works, Electrical works, OHE works etc. and in the case of major bridges – substructure, superstructure etc.), tenderer must have successfully completed or substantially completed any of the following categories of work(s) during last 07 (seven) years, ending last day of month previous to the one in which tender is invited: (i) Three similar works each costing not less than the amount equal to 30% of advertised value of each component of tender, or (ii) Two similar works each costing not less than the amount equal to 40% of advertised value of each component of tender, or (iii) One similar work each costing not less than the amount equal to 60% of advertised value of each component of tender. Note for b(1): Separate completed works of minimum required values shall also be considered for fulfillment of technical eligibility criteria for different components. (b) (2) In such cases, what constitutes a component in a composite work shall be clearly pre-defined with estimated tender cost of it, as part of the tender documents without any ambiguity. (b) (3) To evaluate the technical eligibility of tenderer, only components of work as stipulated in tender documents for evaluation of technical eligibility, shall be considered. The scope of work covered in other remaining components shall be either executed by tenderer himself if he has work experience as mentioned in clause 7 of the Standard General Conditions of Contractor through subcontractor fulfilling the requirements as per clause 7 of the Standard General Conditions of Contract or jointly i.e., partly himself and remaining through subcontractor, with prior approval of Chief Signal & Telecom Engineer in writing. However, if required in tender documents by way of Special Conditions, a formal agreement duly notarised, legally enforceable in the court of law, shall be executed by the main contractor with the subcontractor for the component(s) of work proposed to be executed by the subcontractor(s), and shall be submitted along with the offer for considering subletting of that scope of work towards 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. <i>Note: for subletting of work costing up to Rs 50 lakh, no previous work experience of subcontractor shall be asked for by the Railway.</i> In case after award of contract or during execution of work it becomes necessary for contractor to change subcontractor, the same shall be done with subcontractor(s) fulfilling the requirements as per clause 7 of

	the Standard General Conditions of Contract, with prior approval of Chief Signal & Telecom Engineer in writing. Note for Item 15.1: Work experience certificate from private individual shall not be considered. However, in addition to work experience certificates issued by any Govt. Organization, work experience certificate issued by Public listed company having average annual turnover of Rs 500 crore and above in last 3 financial years excluding the current financial year, listed on National Stock Exchange or Bombay Stock Exchange, incorporated/registered at least 5 years prior to the date of closing of tender, shall also be considered provided the work experience certificate has been issued by a person authorized by the Public listed company to issue such certificates. In case tenderer submits work experience certificate issued by public listed company, the tenderer shall also submit along with work experience certificate, the relevant copy of work order, bill of quantities, bill wise details of payment received duly certified by Chartered Accountant, TDS certificates for all payments received and copy of final/last bill paid by company in support of above work experience certificate. Definition of Similar Work :- Following works will be treated as of similar nature: "Any RRI/PI/EI/MACLS Supply, Installation Testing, Commissioning Signalling work OR Any RRI/PI/EI/MACLS Alterations Signalling work OR Any CTC/TMS Work" As per Clause No. 10.1 of Tender Form (second Sheet) of Annex.I of Part-I of GCC-2022, with up to date correction slip.
15.2	Financial Eligibility Criteria: The tenderer must have minimum average annual contractual turnover of V/N or 'V' whichever is less, where V= Advertised value of the tender in crores of Rupees N= Number of years prescribed for completion of work for which bids have been invited. 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 tenderer shall submit requisite information as per Annexure-VIII given in tender document, 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 GCC-2022, 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. (For tenders costing more than Rs 20 crore) 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.
15.4	No Technical and Financial credentials are required for tenders having advertised value up to Rs 50 lakh. In addition to this, the tenderer needs to submit only Annexure II along with annexures required for validating its legality. i.e. Annexure IX, XIII, XIV, XV, XX, XXII, XXIII, XXVII, XXVIII, XXIX and XXX. (Whichever is applicable). As per Clause No. 10.4 of Tender Form (second Sheet) of Annex. I of Part-I of GCC-2020, with up to date correction slip.
15.5	Credentials if submitted in foreign currency shall be converted into Indian currency i.e., Indian Rupee as under: The conversion rate of US Dollars into Rupees shall be the daily representative exchange rates published by the Reserve Bank of India or entity authorized by RBI to do so for the relevant date or immediately previous date for which rates have been published. Where, relevant date shall be as on the last day of month previous to

	the one in which tender is invited. In case of any other currency, the same shall first be converted to US Dollars as on the last day of month previous to the one in which tender is invited, and the amount so derived in US Dollars shall be converted into Rupees at the aforesaid rate. The conversion rate of such currencies shall be the daily representative exchange rates published by the International Monetary Fund for the relevant date or immediately previous date for which rates have been published. 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. [Explanation for clause 15 including clause 15.1 to 15.5]- Eligibility Criteria: 1. Substantially Completed Work means an ongoing work in which payment equal to or more than 90% of the present contract value (excluding the payment made for adjustment of Price variation (PVC), if any) has been made to the contractor in that ongoing contract and no proceedings of termination of contract on Contractor's default has been initiated. The credential certificate in this regard should have been issued not prior to 60 days of date of invitation of present tender as per Annexure-IV (B). 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) of GCC 2022, the same shall be considered for the purpose of fulfillment of credentials. 6. In case a work is considered similar in nature for fulfillment of technical credentials, the overall cost including the PVC amount(if paid) of that completed work or substantially completed work, shall be considered and no separate evaluation for each component of that work shall be made to decide eligibility. 7. In case of newly formed partnership firm, the credentials of individual partners from previous propriety firm(s) or dissolved previous partnership firm(s) or split previous partnership firm(s), shall be considered only to the extent of their share in previous entity on the date of dissolution / split and their share in newly formed partnership firm. For example, a partner A had 30% share in previous entity and his share in present partnership firm is 20%. In the present tender under consideration, the credentials of partner A will be considered to the extent of $0.3 \times 0.2 \times \text{value of the work done in the previous entity}$. For this purpose, the tenderer shall submit along with his bid all the relevant documents which include copy of previous partnership deed(s), dissolution deed(s) and proof of surrender of PAN No.(s) in case of dissolution of partnership firm(s) etc. 8. In case of existing partnership firm, if any one or more partners quit the partnership firm, the credentials of remaining partnership firm shall be re-worked out i.e., the quitting partner(s) shall take away his credentials to the extent of his share on the date of quitting the partnership firm (e.g. in a partnership firm of partners A, B & C having share 30%, 30% & 40% respectively and credentials of Rs 10 crore; in case partner C quits the firm, the credentials of this partnership firm shall remain as Rs 6 crore). For this purpose, the tenderer shall submit along with his bid all the relevant documents which include copy of previous partnership deed(s), dissolution deed(s) and proof of surrender of PAN No.(s) in case of dissolution of partnership firm(s) etc. 9. In case of existing partnership firm if any other 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
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	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.] <u>Note to Para 15</u> (i) The criteria for completed works shall be as under :- (a) Entire work has to be completed in all respects as per contract agreement. Part completed work shall not be considered. (ii) 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 closing 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 IV(C), 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 an copy of final/last bill paid by company in support of above work experience certificate. (iii) Details of works physically completed/substantially completed is to 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 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.
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	(vi) 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. (vii) Certificate from private individuals for whom such works are executed shall not be considered for eligibility. (viii) Conditional tenders are liable to be rejected straight away. Railway reserves the right to reject such tenders summarily without assigning any reasons whatsoever. As per Clause No. 10 of Tender Form (second Sheet) of Annex. I of Part-I 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, JV and HUF.
(a)	Firm details as per proforma & Notes 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). 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 Performa given in Annexure- III/Annexure IIIA(in case of composite works)- For works (i) For Work awarded by Govt. organization. (ii) Public listed company having average annual turnover of Rs. 500 crore and above in last 3 financial years excluding the current financial year, listed on National Stock Exchange or Bombay Stock Exchange, incorporated/registered at least 5 years prior to the date of closing of tender. As per Clause No.10.1 (a) Tender Form (second Sheet) of Annex.I of Part-I of GCC-2022, with up to date correction slip.
(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 invited and detailed in Annexure III. In case of tender having composite nature of work, having distinct components(bifurcated with defined Primary Components in the bill of quantities) and having separate schedule for each component, as per Performa given in Annexure-IIIA (Mandatory in case of tender for composite nature of work). As per Clause No. 10.1(b) (1) & (2) Tender Form (second Sheet) of Annex.I of Part-I of GCC-2022, 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 GCC-2022, with up to date correction slip.
e	To be taken as 16.e of STD 10.5
	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 closing 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 closing 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 and a copy of final/last bill paid by company in support of above work experience certificate duly self-attested.
(e)	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.
(f)	A statement showing construction works executed and payment received during the current and last three financial years immediately preceding the current financial year upto date of inviting of 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 GCC-2022, with up to date correction slip.
(g)	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 GCC-2022, with up to date correction slip.
(h)	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 GCC-2022, with up to date correction slip.
(i)	Bid security should be in proper form. The Bid Security shall be deposited either 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- XXI and shall be valid for a period of 90days beyond the bid validity period. (Mandatory) similar nature As per Clause No. 5(2) of Part-I of GCC-2022, with up to date correction slip.
(j)	Contractual Turnover as per Annex. VIII (Mandatory.) Note: 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. As per Clause No. 10.2 and 11(ii) Tender Form (second Sheet) of Annex. I of Part-I of GCC-2022, with up to date correction slip.
(k)	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.
(l)	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 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
(i)	The tenderer shall clearly specify whether the tender is submitted on his own (Proprietary Firm) or on behalf of a Partnership Firm / Company / Joint Venture (JV) / Registered Society / Registered Trust / Hindu Undivided Family (HUF) / Limited Liability Partnership (LLP) etc. The tenderer(s) shall enclose the attested copies of the constitution of their concern and copy of PAN Card along with their tender. Tender Documents in such cases are to be signed by such persons as may be legally competent to sign them on behalf of the firm, company, association, trust or society, as the case may be.
(ii)	Following documents shall be submitted by the tenderer:
16.2.1	For Sole Proprietorship firm a) Affidavit as per proforma given of Annexure -IX (duly executed on stamp paper and notarized). b) 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 Part-I of GCC 2022, with up to date correction slip
16.2.2	<u>For Partnership firm</u> (a) A Notary certified copy of the Partnership Deed or a copy of the Partnership deed registered with the Registrar. (b) A notarized or registered copy of Power of attorney in favour of the individual to tender for the work, sign the agreement etc. and create liability against the firm as per proforma given in Annexure-XIII (duly registered with the Registrar or notarized). (c) An undertaking by all partners of the partnership firm that they are not blacklisted or debarred by Railways or any other Ministry / Department of the Govt. of India from participation in tenders / contracts as on the date of submission of bids, either in their individual capacity or in any firm/LLP in which they were / are partners/members. Any Concealment / wrong information in regard to above shall make the bid ineligible the contract shall be determined under Clause 62 of the Standard General Conditions of Contract. (d) In addition to Annexure-II, Annexure II(A) shall also be submitted by the each member of a Partnership Firm. Non submission of 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. 14(ii) (c) and clause 15, 18 and explanation to Clause 10.1 to 10.5 of Annex. I Part-I of GCC-2022, with up to date correction slip)
16.2.3	<u>For Company registered under Companies Act 2013</u> a) The copies of MOA (Memorandum of Association) / AOA (Articles of Association) of the company. A copy of Certificate of Incorporation b) A copy of Authorization/Power of Attorney issued by the Company (backed by the resolution of Board of Directors) in favour of the individual to sign the tender on behalf of the company and create liability against the company. as per proforma given in Annexure-XV(duly registered with the Registrar or notarized). c) 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-XXX. (Mandatory if company is merged). 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
16.2.4	<u>For LLP (Limited Liability Partnership) Firm Registered under LLP Act 2008</u> a) A copy of LLP Agreement. b) A copy of certificate of Incorporation. c) A copy of Power of Attorney/Authorization issued by the LLP in favour of the individual to sign the tender on behalf of the LLP and create liability against the LLP (Standard proforma as per Annexure- XX). d) An undertaking by all partners of the LLP that they are not blacklisted or debarred by Railways or any other Ministry / Department of the Govt. of India from participation in tenders / contracts as on the date of submission of bids, either in their individual capacity or in any firm/LLP or JV in which they were / are partners/members. Concealment / wrong information in regard to above shall make the contract liable for determination under Clause 62 of the Standard General Conditions of Contract. e) In addition to Annexure-II, Annexure II(A) shall also be submitted by the each member of a Limited Liability Partnership (LLP). Non submission of 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. 14(f), 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	<u>For Registered Society & Registered Trust</u> a. A copy of the certificate of registration. b. A Copy of Memorandum of Association of Society/Trust Deed.

	c. A copy of Power of Attorney in favour of the individual to sign the tender documents and create liability against the Society/ Trust as per proforma given in Annexure-XXII(duly registered with the Registrar or notarized). d. A copy of Rules & Regulations of the Society. As per Clause No. 14(g), 15 of Annex. I Part-I of GCC-2022, with up to date correction slip
16.2.6	<u>For JV firm:</u> Following documents are mandatorily to be submitted by constituents of the JV firm depending upon their status. As per clause no. 14(ii) (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). b) Power of Attorney/authorization duly Notarised by all JV constituents, in favour of the individual under whose digital signature key the tender document shall be uploaded on behalf of JV for signing the tender document on behalf of the JV (Standard Performa as per Annexure-X(A)) c) In addition to Annexure-II, Annexure II(A) shall also be submitted by the each member of a Joint Venture (JV). Non submission of 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. 17.6, 17.12 of Annex.I Part-I of GCC-2022, with up to date correction slip.
16.2.6.1	<u>In case one or more members of JV is/are Proprietary Firm or HUF (Hindu Undivided Family) the following documents shall be Uploaded/Submitted</u> (a) A copy of notarized affidavit on Stamp Paper declaring that his Concern is a Proprietary Concern and he is sole proprietor of the Concern OR he who is signing the affidavit on behalf of HUF is in position of "KARTA" of Hindu Undivided Family (HUF) and he has the authority, power and consent given by other members to act on behalf of HUF. (Standard Affidavit as per Annexure-IX or XXVIII as applicable) (b) A copy of Power of Attorney to be submitted by Sole Proprietor or HUF participating as member of JV firm as per proforma given in Annexure-XII(duly registered with the Registrar or notarized). As per Clause No. 15 & 17.14.2 Annex. I of Part-I GCC-2022, with up to date correction slip
16.2.6.2	<u>In case one or more of the members of the JV is/are partnership firm(s), following documents shall be submitted:</u> (a) A notarized copy of the Partnership Deed or a copy of the Partnership deed registered with the Registrar. (b) A copy of consent of all the Partners or individual authorized by partnership firm to enter into the Joint Venture Agreement on a stamp paper as per pro forma given in Annexure-XI. (c) A notarized or registered copy of Power of Attorney in favour of the individual to sign the MOU/JV Agreement on behalf of the partnership firm and create liability against the firm.(Standard Performa as per Annexure-XVIII) (d) An undertaking by all partners of the partnership firm that they are not blacklisted or debarred by Railways or any other Ministry / Department of the Govt. of India from participation in tenders / contracts as on the date of submission of bids, either in their individual capacity or in any firm/LLP in which they were / are partners/members. Any Concealment / wrong information in regard to above shall make the bid ineligible or the contract shall be determined under Clause 62 of the Standard General Conditions of Contract. As per Clause 17.14.1 and clause 15 & 18.2 of Annex.I Part-I,GCC-2022, with up to date correction slip
16.2.6.3	<u>In case one or more members of the JV is/are companies, the following documents shall be submitted</u> a) A copy of resolutions of the Directors of the Company, permitting the company to enter into a JV agreement (Standard Performa as per Annexure-XVII) b) The Copies of MOA(Memorandum of Association)/AOA(Articles of Association) of the Company c) A copy of Certificate of Incorporation. d) A copy of Authorization/copy of Power of Attorney issued by the Company (backed by the resolution of Board of Directors) in favour of the individual, to sign the tender, sign MOU/JV Agreement on behalf of the company and create liability against the company, as per proforma given in Annexure-XII(duly registered with the Registrar or notarized). As per Clause No. 17.14.3, 15 of Annex.I Part-I,GCC-2022, with up to date correction slip
16.2.6.4	<u>In case one or more members of the JV is/are LLP firm/s, the following documents shall be submitted:</u> (i) A copy of LLP Agreement (ii) A copy of Certificate of Incorporation of LLP

	(iii) A copy of resolution passed by partners of LLP firm, permitting the Firm to enter into a JV agreement as per proforma given in Annexure-XXIV. (iv) A copy of Authorization /copy of Power of Attorney issued by the LLP firm (backed by resolution passed by the Partners) in favour of the individual, to sign the tender and/or sign the MOU/ JV agreement on behalf of the LLP and create liability against the LLP as per proforma given in Annexure- XX(duly registered with the Registrar or notarized). (v) An undertaking by all partners of the LLP that they are not blacklisted or debarred by Railways or any other Ministry / Department of the Govt. of India from participation in tenders / contracts as on the date of submission of bids, either in their individual capacity or in any firm/LLP or JV in which they were / are partners/members. Any Concealment / wrong information in regard to above shall make the contract liable for determination under Clause 62 of the Standard General Conditions of Contract.
16.2.6.5	<u>In case one or more members of the JV is/are Society/s or Trust/s, the following documents shall be submitted:</u> (i) A copy of Certificate of Registration (ii) A copy of Memorandum of Association of Society/Trust Deed (iii) A copy of Rules & Regulations of the Society (iv) A copy of Power of Attorney, in favour of the individual to sign the tender documents and create liability against the Society/Trust.
16.2.7	<u>For HUF(Hindu Undivided family)</u> (a) A copy of notarized affidavit on Stamp Paper declaring that he who is submitting the tender on behalf of HUF is in the position of 'Karta' of Hindu Undivided Family (HUF) and he has the authority, power and consent given by other members to act on behalf of HUF. (Standard proforma as per Annexure XXVIII). (b) 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). (c) In addition to Annexure-II, Annexure II(A) shall also be submitted by the each member of a Hindu undivided Family (HUF). Non submission of 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. 14 (ii) (b) & 15 Annex. I Part-I of GCC-2022, with upto date correction slip.
	<u>Note to Para 16</u> 1. The tenderers shall submit a copy of 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. In addition to Annexure-II, in case of other than Company/ Proprietary firm, Annexure-II(A) shall be submitted by each member of a Partnership Firm/ Joint Venture (JV)/ Hindu undivided Family (HUF)/ Limited liability Partnership (LLP) etc. as the case may be. Non submission of a copy of certificate by the bidder shall result in summarily rejection of his/their bid. It shall be mandatorily incumbent upon the tenderer to identify, state and submit the supporting documents duly self-attested/digitally signed by which they/he is qualifying the Qualifying Criteria mentioned in the Tender Document. 2. As per Clause No. 11(iv) Annexure 1 part I of GCC-2022, with up to date correction slip 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. 3. The Railway reserves the right to verify all statements, information and documents submitted by the bidder in his tender offer, and the bidder shall, when so required by the Railway, make available all such information, evidence and documents as may be necessary for such verification. Any such verification or lack of such verification by the railway shall not relieve the bidder of its obligations or liabilities hereunder nor will it affect any rights of the railway thereunder. 3.1 In case of any information submitted by tenderer is found to be false forged or incorrect at any time during process for evaluation of tenders, it shall lead to forfeiture of the tender Bid Security besides banning of business for a period of upto Two 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. Bid Security, Performance Guarantee and Security Deposit available with the railway shall be forfeited. In addition, other dues of the contractor, if any, under this contract shall be forfeited and agency shall be banned for doing business for a period of up to two years. As per Clause No. 11(v), 11(vi)(a) & (b) 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 Railway 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 in single packet system or with technical bid in Two Packet system. If any of these documents is not uploaded along with the tender, the offer shall be summarily rejected
	6. 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 submitted. Further, no suo moto cognizance of any document available in public domain (i.e., on internet etc.) or in Railway's record/office files etc. will be taken for consideration of the tender, if no such mention is available in tender offer submitted.
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.
18.0	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
18.1	JV firms will be permitted participation in tender costing rupees more than Rs. 10 crores.
18.2	Separate identity/name shall be given to the Joint Venture. As per Clause No. 17.1 of Tender form second sheet Annex.I of Part-I of GCC-2020, with up to date correction slip.
19.0	The tenderer shall submit the original copies of the documents as per Annexure II, IX, X, X(A), XI, XII, XIII, XIV, XV, XVII, XVIII, XX, XXI, XXII, XXIII, XXIV, XXV, XXVI and XXVII, XXVIII as applicable for Sole Proprietor/Partnership firm/LLP/Registered Society & Trust /Limited Company/JV Firms/HUF as and when required by the Railway 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	<u>Security Deposit:</u> The Security Deposit shall be 5% of the contract value. The Bid Security submitted by the Contractor with his tender will be retained/encashed by the Railways as part of security for the due and faithful fulfillment of the contract by the Contractor. Provided further that, if Contractor submits the Cash or Term Deposit Receipt issued from a Scheduled commercial bank of India or irrevocable Bank Guarantee Bond from a Scheduled commercial bank of India, either towards the Full Security Depositor the Part Security Deposit equal to or more than Bid Security, the Railway shall return the Bid Security, to the Contractor. Balance of Security Deposit may be deposited by the Contractor in cash or Term Deposit Receipt issued from Scheduled commercial bank of India or irrevocable Bank Guarantee bond issued from Scheduled commercial bank of India, or may be recovered at the rate of 6% of the bill amount till the full Security Deposit is recovered. Provided also that in case of defaulting Contractor, the Railway may retain any amount due for payment to the Contractor on the pending "on account bills" so that the amounts so retained (including amount guaranteed through Performance Guarantee) may not exceed 10% of the total value of the contract. The Irrevocable Bank Guarantee submitted towards Security deposit shall be initially valid up to the stipulated date of Maintenance period plus 60 days and shall be extended from time to time, depending upon extension of contract granted in terms of Clause 17A and 17B of the Standard General Conditions of Contract. Note: Security Deposit deposited in cash by the Contractor or recovered from the running bills of a Contractor or submitted by contractor as Term Deposit Receipt(s) can be refunded/returned to the contractor, in lieu of irrevocable Bank Guarantee bond issued from scheduled commercial bank of India, to be submitted by him, for an amount equal to or more than the already available Security Deposit, provided however that, in a contract of value less than Rs. 50 Crore, such refund/ return of the already available Security Deposit is permitted up to two times and in a contract of value equal to or more than Rs. 50 Crore, such refund / return of the already available Security Deposit is permitted up to three times. As per Clause No. 16.(1) Part-II of GCC-2022, with up to date correction slip.
20.1	(i) Refund of Security Deposit: Security Deposit mentioned in sub clause (1) above shall be returned to the Contractor along with or after, the following: (a) Final Payment of the Contract as per clause 51.(1) and (b) Execution of Final Supplementary Agreement or Certification by Engineer that Railway has No Claim on

	Contractor and (c) Maintenance Certificate issued, on expiry of the maintenance period as per clause 50.(1), in case applicable. As per Clause No. 51.(1) and 16.(2)(i) Part-II of GCC-2022, with up to date correction slip
20.2	Forfeiture of Security Deposit: Whenever the contract is rescinded as a whole under clause 62 (1) of these conditions, the Security Deposit already with railways under the contract shall be forfeited. However, in case the contract is rescinded in part or parts under clause 62 (1) of these conditions, the Security Deposit shall not be forfeited. 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 Bid Security and Security Deposit or amounts payable to the Contractor under the Contract, but Government Securities deposited in terms of Sub-Clause 16.(4)(b) of this clause will be payable with interest accrued thereon. 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 upto 60 days from the date of issue of LOA may be given by the Authority who is competent to sign the contract agreement. However, a penal interest of 12% per annum shall be charged for the delay beyond 21(Twenty one) days, i.e. from 22nd day after the date of issue of LOA. Further, if the 60th day happens to be a declared holiday in the concerned office of the Railway, submission of PG can be accepted on the next working day. In all other cases, if the Contractor fails to submit the requisite PG even after 60 days from the date of issue of LOA, the contract is liable to be terminated. In case contract is terminated railway shall be entitled to forfeit Bid Security and other dues payable to the contractor against that particular contract, subject to maximum of PG amount. In case a tenderer has not submitted Bid Security on the strength of their registration as a Startup recognized by Department of Industrial Policy and Promotion (DIPP) under Ministry of Commerce and Industry, DIPP shall be informed to this effect. The failed Contractor shall be debarred from participating in re-tender for that work. (b) The successful bidder shall submit the Performance Guarantee (PG) in any of the following forms, amounting to 5% of the contract value: - A deposit of Cash; - Irrevocable Bank Guarantee; - Government Securities including State Loan Bonds at 5% below the market value; - Pay Orders and Demand Drafts tendered by any Scheduled Commercial Bank of India; - Guarantee Bonds executed or Deposits Receipts tendered by any Scheduled Commercial Bank of India; - Deposit in the Post Office Saving Bank; - Deposit in the National Savings Certificates; - Twelve years National Defence Certificates; - Ten years Defence Deposits; - National Defence Bonds and - Unit Trust Certificates at 5% below market value or at the face value whichever is less. Also, FDR in favour of Sr.Divl. Finance Manager, N.W.Rly., Bikaner (free from any encumbrance) may be accepted. (c) The Performance Guarantee shall be submitted by the successful bidder after the Letter of Acceptance (LOA) has been issued, but before signing of the contract agreement. This P.G. shall be initially valid upto the stipulated date of completion plus 60 days beyond that. In case, the time for completion of work gets extended, the Contractor shall get the validity of P.G. extended to cover such extended time for completion of work plus 60 days. (d) The 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. (e) Whenever the contract is rescinded, the Performance Guarantee already submitted for the contract shall be encashed. (f) The Engineer shall not make a claim under the Performance Guarantee except for amounts to which the President of India is entitled under the contract (not withstanding and/or without prejudice to any other

	provisions in the contract agreement) in the event of: (i) Failure by the Contractor to extend the validity of the Performance Guarantee as described herein above, in which event the Engineer may claim the full amount of the Performance Guarantee. (ii) Failure by the Contractor to pay President of India any amount due, either as agreed by the Contractor or determined under any of the Clauses/Conditions of the Agreement, within 30 days of the service of notice to this effect by Engineer. (iii) The Contract being determined or rescinded under clause 62 of these conditions. As per Clause No.16.(4), Part-II of GCC-2022, with up to date correction slip
22.1	MEASUREMENTS OF CONTRACTOR WORKS.
22.2	The tenderer whether sole proprietor / a company or a partnership firm / joint venture (JV) / registered society / registered trust / HUF / LLP etc if they want to act through agent or individual partner(s), should submit along with the tender, a copy of power of attorney duly stamped and authenticated by a Notary Public or by Magistrate in favour of the specific person whether he/they be partner(s) of the firm or any other person, specifically authorizing him/them to sign the tender, submit the tender and further to deal with the Tender/ Contract up to the stage of signing the agreement except in case where such specific person is authorized for above purposes through a provision made in the partnership deed / Memorandum of Understanding / Article of Association/Board resolution, failing which tender shall be summarily rejected. A separate power of attorney duly stamped and authenticated by a Notary Public or by Magistrate in favour of the specific person whether he/they be partner(s) of the firm or any other person, shall be submitted after award of work, specifically authorizing him/them to deal with all other contractual activities subsequent to signing of agreement, if required. Note: A Power of Attorney executed and issued overseas, the document will also have to be legalized by the Indian Embassy and notarized in the jurisdiction where the Power of Attorney is being issued. However, the Power of Attorney provided by Bidders from countries that have signed the Hague Legislation Convention 1961 are not required to be legalized by the Indian Embassy if it carries a conforming Apostille certificate. As per Clause No. 15 of Annexure I part 1 of GCC-2022, with up to date correction slip
22.3	Measurement of works by Railway: The Contractor shall be paid for the works at the rates in the accepted Bill(s) of Quantities and for extra works at rates determined under Clause 39 of these Conditions on the measurements taken by the Engineer or the Engineer's representative in accordance with the rules prescribed for the purpose by the Railway. The quantities for items the unit of which in the accepted Bill(s) of Quantities is 100 or 1000 shall be calculated to the nearest whole number, any fraction below half being dropped and half and above being taken as one; for items the unit of which in the accepted Bill(s) of Quantities is single, the quantities shall be calculated to two places of decimals. Such measurements will be taken of the work in progress from time to time and at such intervals as in the opinion of the Engineer shall be proper having regard to the progress of works. The date and time on which 'on account' or 'final' measurements are to be made shall be communicated to the Contractor who shall be present at the site and shall sign the results of the measurements (which shall also be signed by the Engineer or the Engineer's representative) recorded in the official measurements book as an acknowledgement of his acceptance of the accuracy of the measurements. Failing the Contractor's attendance, the work may be measured up in his absence and such measurements shall, notwithstanding such absence, be binding upon the Contractor whether or not he shall have signed the measurement books provided always that any objection made by him to measurement shall be duly investigated and considered in the manner set out below: (a) It shall be open to the Contractor to take specific objection to any recorded measurements or Classification on any ground within seven days of the date of such measurements. Any remeasurement taken by the Engineer or the Engineer's representative in the presence of the Contractor or in his absence after due notice has been given to him in consequence of objection made by the Contractor shall be final and binding on the Contractor and no claim whatsoever shall thereafter be entertained regarding the accuracy and Classification of the measurements. (b) If an objection raised by the Contractor is found by the Engineer to be incorrect the Contractors 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)

22.3.1	Measurement of Works by Contractor's Authorized Representative (In case the contract provides for the same): (a) The Contractor shall be paid for the works at the rates in the accepted Bill(s) of Quantities and for extra works at rates determined under Clause 39 of these Conditions on the measurements taken by the Contractor's authorized Engineer in accordance with the rules prescribed for the purpose by the Railway. The quantities for items the unit of which in the accepted Bill(s) of Quantities is 100 or 1000 shall be calculated to the nearest whole number, any fraction below half being dropped and half and above being taken as one; for items the unit of which in the accepted Bill(s) of Quantities is single, the quantities shall be calculated to two places of decimals. Such measurements will be taken of the work in progress from time to time. The date and time on which 'on account' or 'final' measurements are to be made shall be communicated to the Engineer. The date and time of test checks shall be communicated to the Contractor who shall be present at the site and shall witness the test checks, failing the Contractor's attendance the test checks may be conducted in his absence and such test checks shall 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 Railway's authority in the presence of the Contractor or in his absence after due notice given to him in consequent of objection made by the Contractor shall be final and binding on the Contractor and no claim whatsoever shall thereafter be entertained regarding the accuracy and classification of the measurements. (ii) If an objection raised by the Contractor is found by the Engineer to be incorrect the Contractor shall be liable to pay the actual expenses incurred in measurements. (b) Incorrect measurement, actions to be taken : If in case during test check or otherwise, it is detected by the Engineer that agency has claimed any exaggerated measurement or has claimed any false measurement for the works which have not been executed; amounting to variation of 5% or more of claimed gross bill amount, action shall be taken as following: (i) On first occasion of noticing exaggerated/ false measurement, Engineer shall recover liquidated damages equal to 10% of claimed gross bill value. (ii) On any next occasion of noticing any exaggerated/false measurement, railway shall recover liquidated damages equal to 15% of claimed gross bill value. In addition the facility of recording of measurements by Contractor as well as release of provisional payment shall be withdrawn. Once withdrawn, measurements shall be done by railway as per clause 45(i) above. 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 Engineer. As per Clause No. 1.(1)(q), Part-II of GCC-2022, with up to date correction slip
23.0	PAYMENT OF CONTRACTUAL WORKS
23.1	"On-Account" Payments: The Contractor shall be entitled to be paid from time to time by way of "On-Account" payment only for such works as in the opinion of the Engineer he has executed in terms of the contract. All payments due on the Engineer's/Engineer's Representative's certificates of measurements or Engineer's certified "Contractor's authorized Engineer's measurements" shall be subject to any deductions which may be made under these presents and shall further be subject to, unless otherwise required by Clause 16 of these Conditions, a retention of six percent by way of Security Deposits, until the amount of Security Deposit by way of such retentions shall amount to 5% of the total value of the contract provided always that the Engineer may by any certificate make any correction or modification in any previous certificate which shall have been issued by him and that the Engineer may withhold any certificate, if the works or any part thereof are not being carried out to his satisfaction. As per Clause No. 46.(1) Part-II of GCC-2022, with up to date correction slip
23.2	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) 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
23.3	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 upto ₹1 will be reckoned as ₹ 1. As per Clause No. 46.(2) Part-II of GCC-2022, with up to date correction slip
23.4	Final Payment: On the Engineer's certificate of completion in respect of the works, adjustment shall be made and the balance of account based on the Engineer or the Engineer's representative's certified measurements or Engineer's certified "contractor's authorized engineer's measurements" of the total quantity of work executed by the Contractor upto the date of completion and on the rates accepted in Bill(s) of Quantities and for extra works on rates determined under Clause 39 of these Conditions shall be paid to the Contractor subject always to any deduction which may be made under these presents and further subject to the Contractor having signed delivered to the Engineer enclosing either a full account in detail of all claims he may have on the Railway in respect of the works or having delivered No Claim Certificate and the Engineer having after the receipt of such account given a certificate in writing that such claims are not covered under excepted matter i.e. Clauses 7(j), 8, 18, 22(5), 39.1, 39.2, 40A, 43(2), 45(i)(a), 55, 55-A(5), 57, 57A, 61(1), 61(2) and 62(1), 63(iv) and 63.2.11 of Standard General Conditions of Contract or in any Clause (stated as excepted matter) of the Special Conditions of the Contract, that the whole of the works to be done under the provisions of the Contracts have been completed, that they have been inspected by him since their completion and found to be in good and substantial order, that all properties, works and things, removed, disturbed or injured in consequence of the works have been properly replaced and made good and all expenses and demands incurred by or made upon the Railway for or in the respect of damage or loss by from or in consequence of the works, have been satisfied agreeably and in conformity with the contract. As per Clause No. 51.(1) of Part-II GCC-2022, with up to date correction slip.
24.0	<u>INSTRUCTIONS OF MODE OF PAYMENT IN WORKS TENDERS OR SERVICE TENDER THROUGH LETTER OF CREDIT (LC)</u>
24.1.1	For all the tenders having advertised cost of Rs. 10 lakh or above, the contractor shall have the option to take payment from Railways through a letter of credit (LC) arrangement.
24.1.2	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 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.
24.1.3	The option so exercised, shall be an integral part of the bidder's offer.
24.1.4	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.
24.1.5	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) SBI, New Delhi, Main Branch will be the nodal branch for issue of LCs based on online requests received from Railway Accounts Units for tenders opened in financial year 2019-19. SBI branches where the respective Railway Accounts Office has its Account (local SBI branch) will be the issuance/ reimbursing branch for LC issued under this arrangement. The Bank shall remain same for this tender till completion of contract. The incidental cost @ 0.15% per annum of LC value, towards issue of LC and operation thereof shall be borne by the contractor and shall be recovered from his bills.
	(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 Railway from and against all losses, claims and demands of every nature and description brought or recovered against the Railway by reason of any act or omission of the contractor, his agents or employees, in relation to the Letter of Credit (LC). All sums payable/borne by Railways on this account shall be considered as reasonable compensation and paid by contractor.
	(f) The LC terms and conditions shall inter-alia provide that Railways 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 Railway Accounts Office against each bill passed by Railway.
	(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 Railway Accounts Office to Railway's bank (Local SBI 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 Railway's Bank (Local SBI Branch).
	(l) The contractor's bank (advising bank) shall submit the documents to the Railway's Bank (Local SBI Branch).
	(m) The railway's bank (issuing bank) shall, after verifying the claim so received with reference to the digitally signed Document of Authorization received from Railway Accounts 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 railway with the contractor i.e., not through LC.
24.2	For opening of LC, executive department shall make a request letter to concerned Accounts Department on a format, placed as Annexure-'A' .
26.0	Period of completion:-
	Force Majeure Clause: If at any time, during the continuance of this contract, the performance in whole or in part by either party of any obligation under this contract shall be prevented or delayed by reason of any war, hostility, acts of public enemy, civil commotion, sabotage, serious loss or damage by fire, explosions, epidemics/pandemics, strikes, lockouts or acts of God (hereinafter, referred to events) provided, notice of the happening of any such event is given by either party to the other within 30 days from the date of occurrence thereof, neither party shall by reason of such event, be entitled to terminate this contract nor shall either party have any claim for damages against the other in respect of such non-performance or delay in performance, and works under the contract shall be resumed as soon as practicable after such event has come to an end or ceased to exist, and the decision of the Engineer as to whether the works have been so resumed or not shall be final and conclusive, PROVIDED FURTHER that if the performance in whole or in part of any obligation under this contract is prevented or delayed by reason of any such event for a period exceeding 120 days, either party may at its option terminate the contract by giving notice to the other party.
26(a)	The work, in reference is required to be completed in all respect within the period specified in tender notice as time is the essence of contract. The contractor will be required to maintain steady and regular progress to the

	satisfaction of the Engineer to ensure that the work is completed in all respects within the time stipulated above. Failing which action may be taken by the Railway as per General Conditions of the contract- April 2022 amended from time to time. The contractor should plan the execution of works in close co- ordination with the engineer or his authorized representative.
26(b)	Site Inspection Register at the site of the work be maintained by the Engineer or his representative in which the contractor shall be bound to sign day to day entries made by the Engineer or his representative. The contractor is required to take note of the instructions given to him in site inspection register and should comply within reasonable time. The contractor will receive all the letters etc., issued to him at the site of work or at his registered address with the Railways.
26(c)	Extension of Time in Contracts under clause 17(A) of GCC: Subject to any requirement in the contract as to completion of any portion or portions of the works before completion of the whole, the Contractor shall fully and finally complete the whole of the works comprised in the contract (with such modifications as may be directed under conditions of this contract) by the date entered in the contract or extended date in terms of the following clauses:
26(c)(i)	Extension due to Modification: If any modifications have been ordered which in the opinion of the Engineer have materially increased the magnitude of the work, then such extension of the contracted date of completion may be granted as shall appear to the Engineer to be reasonable in the circumstances, provided moreover that the Contractor shall be responsible for requesting such extension of the date as may be considered necessary as soon as the cause thereof shall arise.
26(c)(ii)	Extension for Delay not due to Railway or Contractor: If in the opinion of the Engineer, the progress of work has any time been delayed by any act or neglect of Railway's employees or by other Contractor employed by the Railway under Sub-Clause (4) of Clause 20 of GCC April 2022 or in executing the work not forming part of the contract but on which Contractor's performance necessarily depends or by reason of proceeding taken or threatened by or dispute with adjoining or to neighboring owners or public authority arising otherwise through the Contractor's own default etc. or by the delay authorized by the Engineer pending arbitration or in consequences of the Contractor not having received in due time necessary instructions from the Railway for which he shall have specially applied in writing to the Engineer or his authorized representative then upon happening of any such event causing delay, the Contractor shall immediately give notice thereof in writing to the Engineer within 15 days of such happening, but shall nevertheless make constantly his best endeavours to bring down or make good the delay and shall do all that may be reasonably required of him to the satisfaction of the Engineer to proceed with the works. The Contractor may also indicate the period for which the work is likely to be delayed and shall be bound to ask for necessary extension of time.
26(c) (iii)	Extension for Delay due to Railways: In the event of any failure or delay by the Railway to hand over the Contractor possession of the lands necessary for the execution of the works or to give the necessary notice to commence the works or to provide the necessary drawings or instructions or any other delay caused by the Railway due to any other cause whatsoever, then such failure or delay shall in no way affect or vitiate the contract or alter the character thereof or entitle the Contractor to damages or compensation therefor, but in any such case, the Railway may grant such extension or extensions of the completion date as may be considered reasonable. The Contractor shall indicate the period for which the work is likely to be delayed and shall seek extension of time as may be considered necessary under clause 17A(i) or/and 17A(ii) or/ and 17A(iii) above, as soon as the cause thereof shall arise and, in any case, not less than 15 days before the expiry of the date fixed for completion of the works. The Engineer shall consider the same and shall grant and communicate such extension of time as in his opinion is reasonable having regard to the nature and period of delay and the type and quantum of work affected thereby. No other compensation shall be payable for works so carried forward to the extended period of time; the same rates, terms and conditions of contract being applicable, as if such extended period of time was originally provided in the original contract itself. The non- submission of request for extension or submission of request within less than 15 days before the expiry of the date fixed for completion of the works, shall make him ineligible for extension under these sub clauses, subject to final decision of Engineer.
26(d)	As per clause 17(B) of GCC Extension of Time with Liquidated Damages (LD) for delay due to Contractor: The time for the execution of the work or part of the works specified in the contract documents shall be deemed to be the essence of the contract and the works must be completed not later than the date(s) as specified in the contract. If the Contractor fails to complete the works within the time as specified in the contract for the reasons other than the reasons specified in Clause 17 and 17-A, the Railway may, if satisfied that the works can be completed by the Contractor within reasonable short time thereafter, allow the Contractor for further extension of time (Proforma at Annexure-VII of GCC) as the Engineer may decide. On such extension the Railway will be entitled without prejudice to any other right and remedy available on that behalf, to recover from the Contractor as agreed damages and not by way of penalty for each week or part of the week, a sum calculated at the rate of Liquidated Damages as decided by Engineer, between 0.05% to 0.30% of contract value of the works for each week or part of the week. 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.
26(e)	Provided further, that if the Railway is not satisfied that the works can be completed by the Contractor and in the event of failure on the part of the contractor to complete the work within further extension of time allowed as aforesaid, the Railway shall be entitled without prejudice to any other right or remedy available in that behalf, to appropriate the contractor's Security Deposit and rescind the contract under Clause 62 of these Conditions, whether or not actual damage is caused by such default.
	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.
26(f)	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.
27	VARIATIONS IN QUANTITIES DURING EXECUTION OF WORKS CONTRACT (As per clause No. 42(2) of G.C.C. 2022 with up to date correction slip (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 - 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; - 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; - 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. - Variation to quantities of Minor Value Item: The limit for varying quantities for minor value items shall be 100% (as against 25% prescribed for other items). A minor value item for this purpose is defined as an item whose original agreement value is less than 1 % of the total original contract value. d.(i) Quantities operated upto and including 100% of the agreement quantity of the concerned minor value item, shall be paid at the rate awarded for that item in that particular tender; d.(ii) Quantities operated in excess of 100% but upto 200% of the agreement quantity of the concerned minor value item, shall be paid at 98% of the rate awarded for that item in that particular tender; d.(iii) Variation in quantities of individual minor value item beyond 200% will be avoided and would be permitted only in exceptional unavoidable circumstances and shall be paid at 96% of the rate awarded for that item in that particular tender.

	(iv) In case of earthwork items, the variation limit of 25% shall apply to the gross quantity of earthwork items and variation in the quantities of individual classifications of soil shall not be subject to this limit. (v) As far as Schedule of Rates (SOR) items are concerned, the variation limit of 25% would apply to the value of SOR schedule(s) as a whole and not on individual SOR items. However, in case of Non Standard Schedule of Rates items (NS items), the limit of 25% would apply on the individual items irrespective of the manner of quoting the rate (single percentage rate or individual item rate).
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Annexure-‘A’

(Clause No. 24.3 of General Instructions to Tenderers)

Request letter from Executive branch to Accounts Office for opening of LC
Office of Railway

No.....

Dated.....

The PFA/Sr.DFM/Dy. FA
HQ/Division/Workshop/Cost

Sub: Opening of LC
Ref: Supply Order / Contract Agreement No.

It is requested to open a sight LC against the above referred order/Agreement in favour of
.....The details of beneficiary are as under:

- i) Name of Contractor/Supplier
- i) Vendor Code
- ii) Address
- iii) Tender No.
- iv) Contract Agreement No.
- v) Description of Goods/Service
- vi) Value of Contract
- vii) Stages of payment
- viii) Expected payment within 6 months (LC Amount)
- ix) Beneficiary bank details;
 - a. Bank name
 - b. Address
 - c. Account No.
 - d. IFSC Code
- x) Validity/period for which LC is to be opened.

It is certified that the supplier/contractor has exercised the option of taking payment due against the tender, through LC arrangement in IREPS portal at the time of bidding itself and the option has been flagged in the IREPS. This has the approval of

(Signature)

Name.....

Designation.....

(Official Seal)

Annexure-‘B’

(Clause No. 24.1.5(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 (FROM MASTER TABLE OF LC OPENED).....Against the first/second* commercial Invoice No. (FROM IPAS) Dated..... FROM IPAS..... for INR (FROM IPAS)..... raised against the above contract from State Bank of India..... (Branch FROM LC MASTER TABLE) On the strength of this Certificate.

The details of payment already made to the beneficiary under this Letter of Credit are as follows:

S. No.	Invoice No.	Invoice date	Invoice Amount (INR)	LCDA No.	LCDA date	Amount p (INR)
Total Paid						

THIS PAYMENT: sass.....

LC balance after this payment:

(Signature of authorized Railway authority)

Name

Designation
Official Seal

	<u>Annexure-‘C’</u> (Clause No. 25.0 of General Instructions to Tenderers) <u>Procedure for Conduct and Reporting of R.A.</u> 0. 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 e-procurement. 1. 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. Starting point for reverse auction shall be the lowest initial Price Bid of the Tenderer eligible for award of contract. 7. After close of the RA, tabulation of last (minimum) bids received from all the tenderers will be generated and made visible to Railways and participating tenderers. 8. Railway 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. (Authority : No. 2017/Trans/01/Policy/Pt-S Dated 28.03.2018)

ANNEXURE – D

(Clause No. 15.3 of General Instruction &
Clause 10.3 & 17.15.3 of Tender Form (Second Sheet) of Annexure I of GCC 2022)

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

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

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

Where,

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

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

B = Existing commitments and balance amount of ongoing works with tenderer as per the prescribed proforma of Railway for statement of all works in progress and also the works which are awarded to tenderer but yet not started upto the date of inviting of tender. ACS No. 1 of 14.07.2022

Note:

(a) The Tenderer(s) shall furnish the details of -

(i) Maximum value of construction works executed and payment received in any one of the previous three financial years or the current financial year (up to date of inviting tender) for calculating A, and

(ii) Existing commitments and balance amount of ongoing works with tenderer as per the prescribed proforma of Railway for statement of all works in progress and also the works which are awarded to tenderer but yet not started upto the date of inviting of tender for calculating B. In case of no works in hand, a 'NIL' statement should be furnished.

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

(b) In case if a bidder is JV, the tenderer(s) must furnish the details of

(i) Maximum value of construction works executed and payment received in any one of the previous three financial years or the current financial year (up to date of inviting tender) by each member of JV for calculating A, and

(ii) Existing commitments and balance amount of ongoing works with each member of JV either in individual capacity or as a member of other JV as per the prescribed proforma of Railway for statement of all works in progress and also the works which are awarded to each member of JV either in individual capacity or as a member of other JV but yet not started upto the date of inviting of tender for calculating B. In case of no works in hand, a 'NIL' statement should be furnished.

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

(c) Value of a completed work/work in progress/work awarded but yet not started for a Member in an earlier JV shall be reckoned only to the extent of the concerned member's share in that JV for the purpose of satisfying his/her compliance to the above mentioned bid capacity in the tender under consideration.

(d) The arithmetic sum of individual "bid capacity" of all the members shall be taken as JV's "bid capacity".

(e) In case, the tenderer/s failed to submit the above statement along with offer, their/his offer shall be considered as incomplete and will be rejected **summarily**.

(f) The available bid capacity of tenderer shall be assessed based on the details submitted by the tenderer. In case, the available bid capacity is lesser than estimated cost of work put to tender, his offer shall not be considered even if he has been found eligible in other eligibility criteria/tender requirement.

ANNEXURE-I

(Para 16.1(a) of General Instructions)

& clause No. 14 (i), (ii), Tender Form (Second Sheet), Part-I of GCC-2022, with up to date correction slip

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

NOTES:

- 1) 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.

Enclosures:

- (i) Copy of PAN CARD.

Date:

Signature of Tenderer/s
With Seal

ANNEXURE-II

(Para 16.1(b) of General Instructions)

clause No. 6.1 Part-I & 11(iv), Tender Form (Second Sheet), Part-I of GCC-2022, with up to date correction slip

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

I.....(Name and designation) ** appointed as the attorney/ authorized signatory of the tenderer (including its constituents),

M/s.....(hereinafter called the tenderer) for the purpose of the Tender documents for the work of..... As per the tender No of North Western Railway, do hereby solemnly affirm and state on the behalf of the tenderer including its constituents as under:

1. I/we the tenderer (s), am/are signing this document after carefully reading the contents.
2. I/We the tenderer(s) also accept all the conditions of the tender and have signed all the pages in confirmation thereof.
3. I/we hereby declare that I/we have downloaded the tender documents from Indian Railway website www.ireps.gov.in. I/we have verified the content of the document from the website and there is no addition, no deletion or no alteration to the content of the tender document. In case of any discrepancy noticed at any stage i.e. evaluation of tenders, execution of work or final payment of the contract, the master copy available with the railway Administration shall be final and binding upon me/us.
4. I/we declare and certify that I/we have not made any misleading or false representation in the forms, statements and attachments in proof of the qualification requirements.
5. **I/we also understand that my/our offer will be evaluated based on the documents/credentials submitted along with the offer and same shall be binding upon me/us.**
6. **I/we declare that the information and documents submitted along with the tender by me/us are correct and I/we are fully responsible for the correctness of the information and documents, submitted by us.**
7. I/we certify that I/we the tenderer(s) is/are not blacklisted or debarred by Railways or any other Ministry / Department of Govt. of India from participation in tender on the date of submission of bids, either in individual capacity or as a HUF/ member of the partnership firm/LLP/JV/Society/Trust.
8. I/we understand that if the contents of the **certificate** submitted by us are found to be forged/false or incorrect at any time during process for evaluation of tenders, it shall lead to forfeiture of the Bid Security 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 or incorrect at any time after the award of the contract, it will lead to termination of the contract, along with forfeiture of Bid Security/Security Deposit and Performance guarantee and may also lead to any other action provided in the contract including banning of business for a period of up to two year.
10. I/We have read the clause regarding restriction on procurement from a bidder of a country which shares a land border with India and certify that I am/We are not from such a country or, if from such a country, have been registered with the competent Authority. I/We hereby certify that I/we fulfil all the requirements in this regard and am/are eligible to be considered (evidence of valid registration by the competent authority is enclosed).

SEAL AND SIGNATURE
OF THE TENDERER

Place:
Dated:

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

New Annexure-II(A), 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
..... (Constitute firm/constituent partner) and member/partner of the
..... (tendering firm) hereby solemnly affirm and state as under;

1. I/We certify that(constituent firm/ constituent partner) is/are not blacklisted or debarred by Railways or any other Ministry/ Department of Govt. of India from participation in tender on the date of submission of bids, either in individual capacity or as a HUF/ member of the partnership firm/LLP/JV/Society/Trust.
2. I/We have read the clause regarding restriction on procurement from a bidder of 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/we eligible to be considered (evidence of valid registration by the competent authority is enclosed),

SEAL AND SIGNATURE
OF THE CONSTITUENT FIRM/CONSTITUENT PARTNER

Place:

Dated:

“ANNEXURE -III”

(Para 16.0(c)(i) of General Instructions) &

Clause No. 10.1(a) and explanation to clause 10-Part I 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

SN	Name of work	Name of organization for whom work physically completed/substantially completed	Type of organization for whom work executed	Contract Agreement No. & Date	Original value of contract agreement	Final value of contract as completed/ substantially completed	Payment received till opening of present tender (On account/final bill)	Time taken for completion of work		Principal feature of the work in brief
								Date of award of contract	Date of actual completion	
1	2	3	4	5	6	7	8	9	10	11
1.										
2.										

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. Part completed work shall not be considered.
- (ii) Certificate from Private individual for whom such works are executed shall not be Considered for eligibility of tenderers.
- (iii) The tenderers should attach self-attested copy of certificate issued by the organizations for whom the work was carried out in the proforma as per Annexure-IV(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/ 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).

Annexure III(A)

As per clause No. 16.1(c) (ii) of General Instruction above, Clause No. 10.1 b (i) & b (ii) and explanation to clause 10 of Part I of GCC-2022, with up to date correction slip

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 bill of quantities) to be submitted by tenderer along with Annexure-III in case of tender having composite nature of work.

S. N	Description of components/component as per bill of quantities, 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 ending last day of month previous to the one in which tender is invited	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	
I	II	III	IV	V	VI	VII	VIII	IX	X
1	All components (A,B,C,D,E, ---) executed in single contract								
2	More than one component executed in single contract								
3	Only one component executed in single contract								

Date:

Signature of Tenderer/s
With Seal**Note:-**

- (i) Component wise details mentioned 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 upto Rs. 50 lakhs.

(iii) Meaning of Substantially Completed Work:

- (iv) 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.**

ANNEXURE-IV(A)

(Para 16.1 (d) and Note to para 15 Note No.(iii) (b) of General Instructions)

Clause No. 11(i) and explanation to clause 10 of part I of GCC 2022, **with up to date correction slip****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.	Final value of contract as completed. (if final bill paid)	
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	
12.	In case of composite work: (See note (vii) below) Payment made for relevant distinct component of work out of total payment made under Sr. No. 11 above.	
13.	Brief description of nature & scope of work	
14.	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)

Date-

Name and Designation of officer

Mobile No. of officer

Seal of officer

Note:-

- (i) Submission of false certificates by tenderer shall lead to, forfeiture of Bid Security 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 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 bill of quantities for each such distinct components in the tender documents.
- (viii) No technical and financial credentials are required for tenders having value upto Rs. 50 lakhs.

ANNEXURE-IV-(B)

(Para 16.1(d) and Note to Para 15 Note No. (iii) (b) of General Instructions) & Clause No. 11 (i), and explanation to clause 10 of Part-I of GCC-2022

SUBSTANTIALLY WORK COMPLETION CERTIFICATE

(Declaration below the table by certificate issuing authority is mandatory)

Name of Organization
Postal address, Phone No., Email ID, Fax No

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. (i)	Original value of contract agreement.	
(ii)	Present value of contract agreement	
7.	(i) Cost of work substantially Completed – (Note – Issuer of this certificate shall certify that the work has been completed 90 % of its intended scope). (Mandatory)	
7.1	Payments done so far - (i)Contractual	
	(ii) PVC	
8.	Date of award of contract-	
9.	Has the work physically been completed 90% or more in all respect as per contract agreement?	(Yes / No)
10. (ii)	Whether extension to DOC given with penalty or without penalty	(Yes/No)
11.	Total payment made in above contract till the date of inviting of present tender along with financial year –wise break-up	
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	Payments for the component have been made- Cost of component in contract in last approved variation statement plus PVC amount paid	
13.	Performance of Contractor (Satisfactory/Unsatisfactory)	

***I hereby certify that above mentioned work has been substantially completed (90% or more than contract including updated cost) in all respect as per contract agreement. Performance of the contractor while executing the work had been satisfactory.**

(Signature)

Date-.....

Name and Designation of officer
Mobile No. of officer Seal of officer

Note:-

- (i) Submission of false certificates by tenderer shall lead to, forfeiture of Bid security (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 for the purpose of eligibility under special technical criteria.
- (iv) Above format is for guidance only. Substantially completed work 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 bill of quantities for each such distinct component in the tender documents.
- (viii) No technical and financial credentials are required for tenders having value upto Rs. 50 lakhs.
- (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.
- (xi) If a part or a component of work is substantially 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 Col. 7 & 12 -The value of updated bill including PVC amount-if paid, shall be considered as the substantial completion cost of work/ component.

ANNEXURE-IV(C)

(Para 16.1 (d) and Note to para 15 Note No.(iii) (c) of General Instructions)
Clause No. 11(i), Tender Form (Second Sheet), part I of GCC 2022, with up to date correction slip
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.	Final value of contract as completed. (if final bill paid)	
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	
12.	In case of composite work: (See note (xii) below) Payment made for relevant distinct component of work out of total payment made under Sr. No. 11 above.	
13.	Brief description of nature & scope of work	
14.	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:-

(i). 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.
 6. 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.
Submission of false certificates by tenderer shall lead to, forfeiture of Bid Security and other action including penal action (Annexure-II).
- (i)
 - (ii) Above format is for guidance only. Any certificate containing required information asked for shall be considered
 - (iii) 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).
 - (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 cost of any component of work in separate sheet (for work with composite components).
 - (v) 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 bill of quantities for each such distinct components in the tender document

BID CAPACITY CERTIFICATE

NAME of BIDDER / MEMBER OF JV:

TENDER NO.:

Date of Invitation:

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

B = 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 date of inviting of tender.

N = No. of years prescribed for completion of work for which bids have been invited.

Bid Capacity = $[A * 2 * N] - 0.33 * N * B$

Hence, for above tender and above definitions it is certified that –

A = (Financial Year)

B = (Statement/List of works certified CA separately is attached)

N =

Bid Capacity =

(Signature of Chartered Accountant)

Name of CA:

Registration No:

(Seal)

Statement of B

S.No.	Agreement No., Name & Place of Work	Date of Award	Date of Completion	Agreement cost (including latest corrigendum) (X)	Payment received till date of invitation of above tender i.e. 20.09.2025 (Y)	Balance work (Z) = (X) - (Y)
1.						
Total						

Above statement is of position as on date of invitation of above i.e. **20.09.2025** and certified by me.

(Signature of Chartered Accountant)

Name of CA:

Registration No:

(Seal)

Note:-

1. In the case of a Joint Venture (JV), the Annexure shall be submitted individually by each member of the JV
2. In case, the tenderer's / Joint Venture (JV) failed to submit bid capacity certificate along with offer (for tenders valuing more than 20 Cr), their/his offer shall be considered as incomplete and will be rejected summarily.

ANNEXURE-VI**(Para 16.1 (g) of General Instructions)****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.**

Sr. No.	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 60/40mm etc.

Signature of Tenderer/s

Dated:-----

Signature of Tenderer

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 ORGANIZATION 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 , 17.15.2 and 11(ii) Annex.I of Part-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)

ANNEXURE-IX

(Para 9.0 (ii)(a) & 16.2.1(a) of General Instructions)

Clause No.14(ii)(a) Annex.I of Part-I of GCC-2020, with up to date correction slip

CERTIFICATE/Affidavit

(For Sole Proprietorship firm/Sole Proprietorship firm participating as member of JV)

(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 proprietor of the firm)

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 am running a business in the name and style of M/S which is a sole proprietorship firm and which has got GST registration No.....
2. That I am the “**Sole Proprietor**” of the firm working in the name & style of M/s.....
(Indicate Name – Proprietary firm) at(Firm Address)

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 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 Civil 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 contract works in connection with Tender No. dated (Name of work).....of North Western Railway, 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/s..... The first party and M/s the 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 (Railways) 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 Railways 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 tender, 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..... (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 (Railways) 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 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.

1. 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,monthand yearfirst 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-X(A)

(Para 16.2.6 (c) of General Instructions)

Clause No. 17.14.1(iii) of Annex.I Part-I of GCC-2022, with up to date correction slip)

POWER-OF-ATTORNEY ON BEHALF OF THE JOINT VENTURE

(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 members of Joint Venture)

KNOW ALL MEN BY THESE PRESENTS THAT WE THE PARTIES whose details are given here under:

1.(name of constituent).....(address) as the first party.
2.(name of constituent).....(address) as the second party.

Have entered into a Joint Venture agreement for the purpose of securing the work advertised by North Western Railway vide NIT No..... details of works are as under:

“.....”

The aforesaid Joint Venture shall be known by the name “.....” (Hereinafter called the Joint Venture which Expression shall unless repugnant to the context or meaning thereof, include its successors, administrators and assigns.

We the above said parties, through this power of Attorney do hereby irrevocably constitute, nominate, appoint and authorize Mr./ Ms. _____ S/o Shri _____ (address) who is presently holding the position of in..... the firm/ company as our true and lawful attorney (hereinafter referred to as “Attorney”) of the Joint Venture to jointly or severally exercise all or any of the following powers for and on behalf of“ (name of JV) in connection with aforesaid bid:

1. To sign and submit Tender and participate in the aforesaid bid of the North Western Railway on behalf of the Joint Venture.
2. To sign and submit all the necessary papers, letters, forms, quotes, bids etc. on behalf of Joint Venture
3. To 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 Joint Venture in connection with completion of aforesaid tender work and to enter into liability against the Joint Venture.
4. To sign, execute the contract with North Western Railway for and on behalf of the Joint Venture.
5. And generally to do all such acts, deeds or things as may be necessary or proper for the purposes mentioned above on behalf of Joint Venture.

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

We all the members of Joint Venture undertake that we shall not cancel or amend this Power of Attorney unilaterally and without prior written consent of North Western Railway.

AND the Joint Venture 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 Joint Venture and the Company 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 the members constituting the Joint Venture as aforesaid have executed these present, on this..... day of..... 20.... , under the common seal(s)/seals of their companies and/or firms(s), in presence of:

WITNESSES:

1. Signature
Name:
Address:

Signature of authorized signatories & their Seals:

1. First Party (signature)
Name:
Seal

2. Signature
Name:
Address:

2. Second Party (signature)
Name:
Seal

Specimen Signatures of Attorney Holder in token of acceptance:

Name.....Signature.....

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

(seal and signature of Notary Public)

Notes: 1. In this format space has been provided for entering details of two constituents of the JV however if the number vary the details may accordingly be entered.

Annexure-XI

(Para 16.2.6.2(b) of General Instructions)

Clause No. 17.14.1 (ii) of Annex.I Part-I GCC 2022with up to date correction slip

“LETTER OF CONSENT”

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

(to be executed on non-judicial stamp paper as per tender conditions-Non Judicial stamp paper should be purchased in the name of partners of the firm)

We the following partners of M/s..... (Indicate name of firm)
(1).....S/o.....R/o.....2.....S/o.....R/o.....3.....
S/o.....R/o.....4.....S/o.....R/o.....5.....S/o.....R/o.....6.....
.....S/o.....R/o.....having its office at hereby give our consent on behalf of
M/s..... (Indicate name of firm), which is registered at Registration Noby
Registrar of Firms....., 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

(Signature of Sh)

Date:

Place:.....

Name & Signature of Partner/s

1.....

2.....

3.....

Seal of the Firm

(seal and signature of Notary Public)

Note:-

1. 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

(Clause No. 17.14.2, 17.14.3, 17.14.4, 17.14.5 and 15 of Annex I Part-I of GCC-2022, with up to date correction slip)

POWER OF ATTORNEY

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

(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 proprietor of the firm)

BE IT KNOWN to all that I (Indicate name of Director/Sole Prop.)..... at the Company/Proprietary firm (Indicate Name of Company & CIN no. / Sole Proprietary firm).....having its office at do hereby for and on behalf of the said Company/Proprietary firm appoint Sh.....S/o Shriage..... (Indicate Name of Nominee with full address) of the Company/Prop. Firm 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).....Situating at in connection with the following tender invited by North Western Railway:-

“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.) Of M/s..... (Indicate name of Co. / Prop. Firm) the above named Director / Proprietor has executed this Power of Attorney.

For M/s.....

(Sign. of Shri.....)

(Sign& Seal.....)

Place...

Date:-.....

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

(Seal and signature of Notary Public)

Note: -

1. Not required if MOU/ JV is signed by Proprietor, Karta of HUF itself
2. 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.
3. The document should be notarized at its place of execution (Place of signing the document)..
4. Each page of the document should be signed by executants.

(Para 16.2.2 (b) of General Instructions)
& clause No. 18.10(ii), 15 Annex I Part-I of GCC-2022, with up to date correction slip

POWER OF ATTORNEY

(For Partnership Firms only)

BE IT KNOWN to all that we (1)S/o.....R/o..... (2).....
S/o.....R/o.....(3).....S/o.....R/o.....(4).....S/o.....R/o.....(5)..... S/o.....R/o.....
..... all the partners of the firm namely M/S hereinafter referred to as 'firm', which is registered
at Registration No.....by Registrar of Firms..... The firm is having its head office at
.....(herein after to be referred
as the 'Firm').

We the above named partners of above named firm do hereby, for and on behalf of the said firm irrevocably constitute, nominate, appoint and authorize 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 North Western Railway.

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 North Western Railway.
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.

(Signature of Sri.....)	Executants Partner (Name & signature)
DATE	1..... 2..... 3..... 4.....
Place	Seal of Firm
Seal of Firm	

Executed and Signed before me on this.....day of At.....(place).
(seal and signature of Notary Public)

Note:-

1. 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.

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

POWER OF ATTORNEY

(For Sole Proprietor Firm only)

BE IT KNOWN to all that I Sole Proprietor of the firm having its registered office at do hereby, for and on behalf of the said firm appoint Shri..... (Name& designation with full address) 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 North Western Railway.

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.
4. To attend meetings and submit clarifications including negotiations, if any, called by North Western Railway.
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 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.

Annexure-XV
(Para 16.2.3 (c) of General Instructions)
& clause No. 14(ii)(e) (iii) and 15 of Part-I of GCC-2022, with up to date correction slip

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 North Western Railway

1. To appear before office of North Western Railway 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 North Western Railway.
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

MODEL FORM OF BANK GUARANTEE BOND FOR PG

To
Sr. DFM
North Western Railway, Bikaner

1. In consideration of the President of India acting through (indicate designation of concerned Dy.CSTE/GSU/BKN) (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.----- (Rupees----- -----only) we, ----- (hereinafter referred to as "the Bank" at the request of ----- (contractor(s) do hereby undertake to pay to the Government an amount not exceeding Rs. ----- -- 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 Bikaner/Jaipur i.e.----- (name, address and branch code of local branch at Bikaner/Jaipur) 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) and our local branch at Bikaner/Jaipur i.e..... (name, address and branch code of local branch at Bikaner/Jaipur) 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 at Bikaner/Jaipur i.e..... (name, address and branch code of local branch at Bikaner/Jaipur) 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 Bikaner/Jaipur
i.e. (Name, address and branch code of local branch at Bikaner/Jaipur)
lastly undertake not to revoke this guarantee during its currency except with the previous consent of the Government in writing.

Dated the----- day of----- 2019

For _____ (indicate the name of bank) and our local branch at Bikaner/Jaipur
i.e. (Name, address and branch code of local branch at Bikaner/Jaipur)

ANNEXURE-XVII

**(Para 16.2.6.3 (b) of General Instructions &
Clause No. 17.14.3 (i) 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).

RESOLVED THAT (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 RESOLVED THAT 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

Dated:

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

(seal and signature of Notary Public)

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. 16.2.6.2(c) of General Instructions &
Clause No. 17.14.1 (iii) and 15 of Annex.I Part-I of GCC-2022, with up to date correction slip
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 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.

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.....

Place

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. 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 tenderer)

To
PCSTE/CSTE,

North Western Railway,
Jaipur.

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 preceding 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 Financial year (Say A)	
2.	A-1	
3.	A-2	
4.	A-3	

Yours sincerely,

Date: ...

(Name & Sign. Of Authorized Signatory)
Seal of firm
Registration No:-
E-Mail:-

along with Seal.

Note :

- In case of JV firm details of construction works executed by each member of JV is required to be submitted
- 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. 16.2.4(d) of General Instructions &
Clause No. 14(ii)(f) (iii) and 15 of Annex.I Part-I of GCC-2022, with up to date correction slip**

**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 (here in after 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. invited by NorthWestern Railway 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 NorthWestern Railway :

1. To appear before office of North Western Railway 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 North Western Railway.
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 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.

That our LLP is not blacklisted or debarred by Railways 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 JV in which the LLP was / is a member. Concealment / wrong information in regard to above shall make the contract liable for determination under Clause 62 of the General Conditions of Contract.

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

1.

Signature

Name:

Address:

Signatures of authorized representative & Seal of LLP:

Name of authorized representative (Executants):

Designation:
2.

Signature

Name:

Address:

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

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

Executed and Signed before me on this.....day of At(place).
(Seal and signature of Notary Public)

- Note:-**
1.

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.

(As per Annexure –VIA, **Clause No. 5 – 2 of Part-I of GCC-2022, with up to date correction slip**)
(Bid Security)

Bank Guarantee Bond from any scheduled commercial bank of India

(On non-judicial stamp paper, which should be in the name of the Executing Bank).

Name of the Bank: -----

President of India,

Acting through,

..... Railway,

Beneficiary Railway

Date:.....

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

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

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

AND

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

1. KNOW ALL MEN that by these present that I/We the undersigned [*Insert name(s) of authorized representatives of the Bank*], being fully authorized to sign and incur obligations for and on behalf of the Bank, confirm that the Bank, hereby, unconditionally and irrevocably guarantee to pay to the Railway full amount in the sum of [*Insert required Value of Bid Security*] as above stated.

2. The Bank undertakes to immediately pay on presentation of demand by the Railway any amount up to and including aforementioned full amount without any demur, reservation or recourse. Any such demand made by the Railway on the Bank shall be final, conclusive and binding, absolute and unequivocal on the Bank notwithstanding any disputes raised/ pending before any Court, Tribunal, Arbitration or any Authority or any threatened litigation by the Bidder or Bank.

3. The Bank shall pay the amount as demanded immediately on presentation of the demand by Railway without any reference to the Bidder and without the Railway being required to show grounds or give reasons for its demand of the amount so demanded.

4. The guarantee hereinbefore shall not be affected by any change in the constitution of the Bank or in the constitution of the Bidder.

5. The Bank agrees that no change, addition, modifications to the terms of the Bid document or to any documents, which have been or may be made between the Railway and the Bidder, will in any way absolve the Bank from the liability under this guarantee; and the Bank, hereby, waives any requirement for notice of any such change, addition or modification made by Railway at any time.

6. This guarantee will remain valid and effective from [*insert date of issue*] till [*insert date, which should be minimum 90 days beyond the expiry of validity of Bid*]. Any demand in respect of this Guarantee should reach the Bank within the validity period of Bid Security.

7. The Bank Guarantee is unconditional and irrevocable.

8. The expressions Bank and Railway herein before used shall include their respective successors and assigns.

9. The Bank hereby undertakes not to revoke the guarantee during its currency, except with the previous consent in writing of the Railway. This guarantee is subject to the Uniform Rules for Demand Guarantees, ICC Publication No.758.

10. The Bank hereby confirms that it is on the SFMS (Structured Financial Messaging System) and shall invariably send the advice of this Bank Guarantee to the following bank details –

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

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

Date

Place.....

.....

Bank's Seal and authorized signature(s)

[Name in Block letters]

[Designation with Code No.].....

[P/Attorney] No.

Witness:

1 Signature, Name & Address & Seal

2 Signature, Name& address & Seal

Bank's Seal

[P/Attorney]No.

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

POWER-OF-ATTORNEY
(For Registered Society & Registered Trust)

KNOW ALL MEN BY THESE PRESENTS: WHEREAS 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. invited by North-Western Railway 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 NorthWestern Railway :

1. To appear before office of North Western Railway 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 North Western Railway.
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 North Western Railway.

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 WHEREOF this deed has been signed and sealed by Shri (name and designation), on this day of 20.... , in presence of:

WITNESSES:

1. Signature
Name:
Address:

Signatures of authorized representative & Seal of
Registered Society / Registered Trust

Name of authorized representative (Executants):
Designation:

2. 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)

Notes:-

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.

Annexure-XXIII**Clause No. 16.1(m) of General Instructions &
Clause No. 16 of Annex.I Part-I of GCC-2022, with up to date correction slip**

Information and particulars regarding employed retired 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.			

(a) 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 obtained (wherever applicable)
1.			
2.			
3.			
4.			

(b) Information and particulars regarding retired 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.			

(c) Information and particulars in terms of Para 11(b) of General instructions regarding Relative(s) employed in gazette capacity on North Western Railway.

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 retired Gazetted Railway Officer/ Engineer/relative ,
Nil to be furnished in the format.

3. In case above details are not submitted in terms of Para 11(a), (b) and (c) by the tenderer, their offer shall be summarily rejected.
4. 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.

Signature of the tenderer.....

Name.....

**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
North-Western Railway 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) above 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)

Notes: 1. In this format space has been provided for entering details of two constituents of the JV and two
authorized persons however if the number vary details may accordingly be entered.

**Clause No. 16.2.6.4(c) of General Instructions &
Clause No. 17.14.4(iv) of Annex.I Part-I of GCC-2022, with up to date correction slip**

**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 NorthWestern 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) AND THAT M/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 authorised 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 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 North-
Western Railway 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 WHEREOF this deed has been signed and sealed by Shri.....(name and designation), on this..... day of.....20... , in presence of:

WITNESSES:

1. Signature
Name:
Address:

Signatures of authorized representative & Seal of LLP:

Name of authorized representative:
Designation:

2. 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:-

1. 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.

(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)

I S/o Shri....., the authorized signatory of Partnership Firm/ LLP Firm M/sdo hereby solemnly affirm and declare as under:

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 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

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 quitting Partner(s)	Share of Partner(s) who has/have quitted.	Date of quitting (MM/YY)

AND / OR

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 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 :-

S. No.	Name of Joining Partner(s)	Share of Joining Partners (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) Certificate as per proforma given of Annexure –IX for previous Propriety firm (duly executed on stamp paper and notarized).
- (3) Copy of previous LLP agreement and certificate of incorporation.
- (4) Dissolution deed/ splitting deed of the previous partnership deed or LLP agreement (in case of dissolution of previous partnership firm/ LLP firm)
- (5) Proof of surrender of previous PAN no (in case of dissolution of previous partnership firm, LLP firm or propriety firm)
- (6) 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

Signature of Tenderer

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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

alongwith 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-XXVII

(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 :-

1.	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.....
2.	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					
3					
4					

3. 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) Certificate 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

Note :

1. 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-XXVIII

(Para 16.2.6.7 (a) of General Instructions)

Clause No. 14(ii)(b) of Annex.I Part-I of GCC-2022, with up to date correction slip

AFFIDAVIT

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

3. That as on today, name of coparceners (including name of Karta) of our above said HUF, their father name and their addresses are as under:-

S.No.	Name of Coparceners	Name of Father	Address
1.			
2.			
3.			
4.			
5.			

DEPONENT

Signature and Seal

Verification:

Verified at.....on thisday of.....that the contents of my above affidavit are true and correct to the best of my knowledge and belief and nothing material has been concealed therefrom.

DEPONENT

Signature and Seal

Notes: 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.

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 things on behalf of the said firm and to represent the firm in
 respect for the tender No..... (Name of work). invited
 by North Western Railway.

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 North Western Railway.
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.

F

Members of the HUF

(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. (Not required if tender documents are uploaded by Karta himself).

(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 & 1.3) and strike off the para which is not relevant)

1.1) I S/o Shri....., the authorized signatory of the Company M/s do hereby solemnly affirm and declare as under : That, we are an existing Company working in the name and style of Registration No....., PAN/TAN No 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:

S.No.	Name of quitting Partner(s)	Share of Partner(s) who has/have quitted.	Date of quitting (MM/YY)

1.3) 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:- 1) In case company A is merged with company B, then company B would get the credentials of company A also.

2) This annexure is mandatory, if the company is merged.

**STANDARD AGREEMENT
(For EBR-IF Funded Contracts Only)**

Articles of agreement made on this day ----- in the year Two Thousand and Twenty between the President of India, acting through the -----<Zonal Railway> Administration having its office at -----hereinafter called the 'Railway' of the first part and <-----Name of Contractor-----> hereinafter called the 'Contractor' of the second part and Indian Railway Finance Corporation Limited hereinafter called the 'IRF' of the third part having its office at -----with GSTIN-----<GSTIN of billing unit (IRFC)>.

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

Whereas the party hereto of the second part executed an agreement with the party hereto of the first part being agreement no. -----dated-----with contract cost of Rs.-----for performance of -----hereinafter called the 'Principal Agreement'.

Now it is hereby agreed by and between the parties that Indian Railway Finance Corporation shall be made an additional party to the Principal agreement executed between Railway and Contractor with effect from date of this agreement.

It is agreed by and between the parties that Railway shall continue to be held responsible for all obligations, risk and liabilities, whatsoever, arising out of or in connection with the Principal Agreement and this Agreement, whether during the progress of the work or after its completion.

It is further agreed and understood by and between the parties that IRFC shall be the owner of assets, if any, arising out of execution of works as defined in the Principal Agreement, except the land whose ownership shall continue with Railway. Accordingly, the invoices shall be issued by capturing GSTIN of contractor (as the supplier) and GSTIN of IRFC (as the bill to party). Also, the contractor shall submit the invoice, issued in the name of IRFC, to Railway for processing payment by Railway to Contractor subject to applicable TDS under the Income Tax, GST or any other applicable laws.

It is further agreed by and between the parties that IRFC shall be responsible to comply with Income Tax and GST laws in relation to filing of returns.

It is further agreed and understood by and between the parties that, except for the amended obligations as mentioned above, the terms of the Principal Agreement for all kind of contractual/performance and legal obligations shall remain in full force and effect.

All the communication in relation to the Principal agreement and said Agreement, would only be between party hereto of first part and Second part.

For and on behalf of the President of India

Witness of the Signature

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

Address: -----

For and on behalf of the Indian Railway Finance Corporation

Witness of the Signature

Signature of Tenderer

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

Address: -----

Signature of contractor

<Name of authorised signatory>

Witness of the Signature

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

Address: -----

(Clause 10.1 (b) (iii) of part I and clause 7 of Part II of the GCC 2022)

NORTH-WESTERN RAILWAY

CONTRACT AGREEMENT OF SECONDARY 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 Railway for performance of the works----- set forth in for the componentdetailed in bill of quantitiesfor the total cost of Rs.....of the tender bill of quantities 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 bill of quantities set forth and shall execute the same with great promptness, care and accuracy in a workman like manner to the satisfaction of the railway and will complete the same in accordance with the said specifications and said drawings and said conditions of 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 Railway both hereby agree that if the Contractor shall duly perform the said works in the manner aforesaid and observe and keep the said terms and conditions, the Railway will pay or cause to be paid to the contractor for the said works on the final completion thereof the amount due in respect thereof at the rates specified in the bill of quantities 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 Railway 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 Railway 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 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.

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

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 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. 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.

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.

Part-III**SPECIAL CONDITIONS OF CONTRACT (GENERAL& TECHNICAL)**

1.0	All the clauses of General condition of contract-2022 or latest shall be applicable for this contract. These special conditions and the work bill of quantities 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 as amended by correction Slips on or before the opening of tender.
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: - Letter of Award/Acceptance(LOA) - Bills(s) of Quantities. - Special Conditions of Contract - Technical Specifications as given in tender documents - Drawings - Indian Railways Standard General Conditions of Contract-2022 updated with correction slips issued up to date of inviting tender or as otherwise specified in the tender documents. - IR Specifications/Guidelines updated with correction slips issued up to date of inviting tender or as otherwise specified in the tender documents. - Relevant B.I.S. Codes updated with correction slips issued up to date of inviting tender or as otherwise specified in the tender documents. 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 Railway.
4.0	<u>FIGURES, DIMENSIONS ETC.</u> 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.
5.0	<u>PLEA OF CUSTOM</u> 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
6.0	<u>TAXES</u> -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, Octroies, 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.
7.0	<u>DEDUCTION OF INCOME TAX AT SOURCE</u> In terms of new section 194 inserted by the Finance Act 1972 in the Income Tax Act 1961, the Railway shall at all the time arranging payment to the contractor sub-contractor (in case of sub-contractor only when the Railway 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.
8.0	<u>NOTICE TO PUBLIC BODIES</u> 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.
9.0	<u>DAMAGE BY ACCIDENTS, FLOODS OR TIDES</u> 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.
10.0	<u>SERVICE ROADS</u> The Contractor/s will be permitted to make use of existing service roads, or service roads constructed by the Railway for its use free of cost. New service roads required by the contractor/s either near the

	work site or elsewhere within or outside railway 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.
11.0	<u>EMERGENCY WORKS</u> 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 Railway 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 Chief Signal & Telecom Engineer/ Principal Chief Signal & Telecom Engineer, North Western Railway, to the contractor.
12.0	<u>MAINTENANCE PERIOD</u> (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 12.0 (a) above. (b) The tenderer(s) shall be required to maintain the work effectively for a period of One Year (12 Months) from the date of commissioning of the work and no part refund of Security Deposit shall be permitted during the maintenance period mentioned above.
13.0	<u>INSTRUCTIONS/DIRECTIVES OF THE ENGINEER'S REPRESENTATIVE</u>
13.1	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 Railway 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.
13.2	The contractor shall always execute the work under this contract in strict compliance with the instructions/directives by the Engineer's representative. Any act of non-compliance with the instruction/directives issued by the Engineer's representative shall be considered as a default of the contractor where after the Railway 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 whether there has been an act of non-compliance with the instruction/directives of the Engineer's representative for the purpose of this clause shall be final and conclusive.
13.3	The instructions/directives by the Engineer'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.
14.0	<u>NON-COMPLIANCE WITH THE INSTRUCTIONS/DIRECTIVES OF THE ENGINEER'S REPRESENTATIVE</u>
14.1	The contractor shall always comply with the instructions/directives issued by the Engineer'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 Railway as specified herein above the Engineer's representative may employ at the works Railway's workmen with necessary equipment as considered appropriate and adequate by him to provide the requisite conditions for the safe and unhampered movement of Railway traffic. The decision of the Engineer's representatives in regard to the need of appropriateness and adequacy of the deployment of the Railway Workmen with necessary equipment shall be final and conclusive.
14.2	When the Railway 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 Railway under this contract. The recovery for the total Railway Workmen Hours employed as per actual irrespective of the type and grade of the Railway Employee actually employed. The aggregate period of the Workman-Hours for the above recoveries shall be reckoned from the time the Railway Workmen are actually deployed at the work site till the work is completed to the satisfaction of the Engineer's Representative whose decision in this regard shall be final and conclusive.
14.3	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.
15.0	<u>WARRANTY</u>

	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 service. 1. The contractor shall warranty that all materials & equipment to be supplied and installed as per this tender shall be free from defects and faults in design, material, workmanship and manufacture and shall be of the highest grade and consistent with the established and generally accepted standard for materials of the type ordered and in full conformity with the contract specifications. 2. This warranty shall start from the date of commissioning and shall expire 1 year (12 months) after thereof. The Contractor shall be responsible for the proper functioning of the system during the period of warranty. 3. During the period of Warranty, the Contractor shall remain responsible to arrange replacement and for setting right at his own cost any equipment supplied by him, which is of defective manufacture or defective design or defective material/component and becomes unworkable due to any cause whatsoever. The decision of railways to attend to any damage or defect in work shall be final and binding on the Contractor. 4. If it becomes necessary for the contractor to replace or renew any defective portions of the system under this clause, the contractor shall make the system functional by providing suitable replacements and restore back the original card / equipment after repairs to the same. The card / equipment so repaired should bear warranty equal to the end of original warranty period or minimum Six months from the date of repair, whichever is later. If any defect is not remedied within reasonable time, the Railway may proceed to do the work at contractor's risk and expense, but without prejudice to any other rights, which the Railway may have against the contractor in respect of such defects. 5. All inspections, replacements or renewals carried out by the Contractor during the warranty period shall be subjected to the same conditions of the contract. 6. All replacement and repairs and design change that the Railway shall call upon the contractor to deliver or perform under this warranty shall be delivered and performed by the contractor within one month, promptly and satisfactorily. 7. The decision of the Railway in regard to contractor's liability and the amount, if any, payable under this warranty shall be final and conclusive. 8. Due to analysis of failures, if any design deficiency is pointed out by the Railway, the contractor shall rectify it at his own cost. 9. In subject of the warranty, the contractor shall make his security deposit as defined in Conditions of Contract & Instruction to tenderes, valid to cover the period of warranty also. 10. The Maintenance period given at Clause 11.0 above and warranty period shall be executed concurrently from the date of commissioning of work.
16.0	<u>SHIFTING OF ELECTRICAL/TELEGRAPH WIRES</u> 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
17.0	<u>HANDING OVER OF SITE FOR WORK</u> The entire land required for this work is available. However, Railway 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.
18.0.	<u>ACCIDENT/NATURAL CALAMITIES</u>
18.1	Vehicle and equipment of the contractor can be drafted by Railway Administration in case of accidents/natural calamities involving human lives.
18.2	For payment purpose, the item may be operated as New Non-SOR (NS Item) as per existing norms and powers delegated.
18.3	Contractor may submit list of vehicles and equipment available with him.
19.0	<u>MOBILIZATION ADVANCE</u> (For Contract Value Rs. 25 Crores and Above) As per Provisions of GCC and Railway policy applicable.
20.0	Contractor shall provide suitable manpower to Engineer in Charge 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.
21.0	<u>DEPLOYMENT OF QUALIFIED ENGINEERS AT WORK SITES BY THE CONTRACTOR</u> (As per Clause No.26A of G.C.C. 2022 Part-II with up to date correction slip)
21.1	The Contractor shall also employ qualified Graduate Engineer(s) or equivalent, or qualified Diploma Engineer(s), as prescribed in the tender documents.
21.2	In case the Contractor fails to employ the Engineer, as aforesaid in Para 21.1, he shall be liable to pay liquidated damages at the rates, as prescribed in the tender documents. (As per Clause No.26A.2 of G.C.C. 2022 Part-II with up to date correction slip)
21.3	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 more than Rs. 25 Lah and less than 2.00 Cr. 1) Diploma Engineer – Minimum 1 Nos. (ii) For tenders costing Rs.2.00 Cr. and above. 1) Graduate Engineer – Minimum 1 Nos.
21.4	In case the contractor fails to employ the Qualified Engineer, as aforesaid in Para 20.1 above, he, in terms of provisions of Clause 21.2 to the Conditions of Contract, shall be liable to pay an amount of Rs. 40,000/- per Graduate Engineer and Rs. 25,000/- per Diploma Engineer for each month or part thereof for the default period for the provisions, as contained in Para 21.3 above respectively. (As per Clause No. 26A.3 of G.C.C. 2022 Part-II with up to date correction slip)
22.0	<u>PRICE VARIATION CLAUSE:</u> Price Variation Clause (PVC) shall be applicable only in tender having Advertised value above Rs. 2 Crores.
23.0	<u>HANDLING VITIATION DURING VARIATION IN CONTRACT QUANTITIES</u> Applicable as per GCC 2022 and Railway Board Policy.
24.0	<u>TECHNICAL CONDITIONS</u>
24.1	<u>SCOPE OF WORK:</u> “Provision of Design, manufacture, supply, installation, testing and commissioning of electronic interlocking along with MSDAC and DC track circuit in c/w expansion of traffic facilities in Lalgah (LGH) yard over Bikaner Division”.
24.2	<u>LOCATION OF SITE:</u> Lalgah (LGH) Station over Bikaner Division on N.W. Railway.
24.3	<u>COMPLETION PERIOD:</u> - The entire work shall be completed within 15 months from the Date of issue of letter of acceptance.
24.4	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.
24.5	<u>Meaning of similar works:</u> Railway to mention similar work as per defined policy of Similar nature work of NWR. “Any RRI/PI/EI/MACLS Supply, Installation Testing, Commissioning Signalling work OR Any RRI/PI/EI/MACLS Alterations Signalling work OR Any CTC/TMS Work”

25.0	<u>PAYMENT TERMS</u> (i) All costs, damages or expenses, which Railways may have paid or incurred, which under the provisions of contract are Contractor's obligations will be deducted by Railways from progress payment Bills/Invoice of contractor, as and when it is understood that such an expenses has been incurred or paid for. (ii) All such claims of Railways shall, however, be duly supported by appropriate and certified vouchers, receipts or explanations as are available to enable the contractor to identify such claims. (iii) The contractor will be entitled to be paid from time to time by means of "ON ACCOUNT" payment only for such works as in the opinion of the Purchaser's Engineer which has been executed by him in terms of contract. Payment shall be made on submission of following documents to railway:- "ON ACCOUNT" payment shall be made separately for each item/sub item of work given in the bill of quantities of work. The bill shall be submitted by the contractor for each items of work which has been executed by him. - Receipt of material at stores/Site as certified by the representative of Purchaser's engineer. - Original Inspection Certificate issued by Inspecting Officer RDSO/RITES/Consignee. - Delivery Challan/Invoice in Duplicate. Subject to any deduction which the Railway will be authorized to make under the terms of contract that may be applicable while accepting the tender, the Contractor shall be entitled for payment as below:-
25.1	<u>For SOR items:-</u> The payment will be done as per Payment condition defined in each SOR Item of bill of quantities.
25.2	<u>For NS Items:- Note: Partial payment of NS Item-36 NON SOR can be made to the contractor as per components supplied in respect to Appendix-AF.</u>
25.2.1	<u>For Supply/ Supply & Installation Items (NS-A)</u> 80% of the accepted cost of the items (duly inspected by the nominated Inspection Authority) will be paid on receipt of the equipment by the Consignee. 10% of the accepted cost (in addition to the 80% released above) shall be paid after installation/erection of that particular equipment. - The balance 10% of the accepted cost will be paid after commissioning of the station. 100% will be paid for spares & for items, which are not required to be erected/ installed by the contractor, on receipt of the equipment and no loss certificate by Consignee. The payment will be done as per Payment condition defined in each Non- SOR Item of bill of quantities.
25.2.2	<u>For Installation Items (NS-B) (If applicable)</u> 80% of the accepted cost of the items (duly inspected by the nominated Inspection Authority) will be paid on receipt of the equipment by the Consignee. 10% of the accepted cost (in addition to the 80% released above) shall be paid after installation/erection of that particular equipment. - The balance 10% of the accepted cost will be paid after commissioning of the station. 100% will be paid for spares & for items, which are not required to be erected/ installed by the contractor, on receipt of the equipment and no loss certificate by Consignee. The payment will be done as per Payment condition defined in each Non- SOR Item of bill of quantities.

	<u>Note for Clause 25.0, 25.1 & 25.2</u> (i) For items pertaining to consignee inspection necessary purchase voucher of the items is to be submitted. (ii) The final bill for the balance payment shall be submitted by the contractor along with “No Claim Certificate”. (iii) Railway to clearly define NS-A & NS-B items in work bill of quantities
26.0	FINAL PAYMENT: On the basis of Final Acceptance Certificate issued by the Engineer for all the works covered in this contract, the final bill for the balance payment shall be submitted by the contractor along with “NO CLAIM CERTIFICATE”. The Final Acceptance Certificate shall be issued by Engineer only when: 1. He has accepted the work wholly. 2. The maintenance period is over. 3. All the released materials are handed over by the contractor correctly and stocked as indicated. 4. Material reconciliation done and all the unused Railway materials returned to Railway Stores in good condition.
27.0	INSPECTING AUTHORITY Inspecting authority: For SOR Items: As specified in the SOR item. For NS Items: shall be RDSO/RITES/Consignee (Rly’s representative). (To be decided by Railway as Applicable)
27.1	INSPECTION OF MATERIAL a. All materials to be used for installation shall be subject to inspection by RDSO/RITES/Railway’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. b. Whether a product has or has not been accepted at the point of manufacture, if, up on 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. c. The contractor shall make such tests as may be necessary to demonstrate to the satisfaction of the Railway that the apparatus and the system as installed are in accordance with the requirements of the specifications and contract. The Contractor shall provide such instruments and apparatus as may be necessary for making the tests.
27.2	INSPECTION CHARGES The inspection charges for the inspection service rendered to the S&T contractors executing Signalling works shall be borne by the Railway. The Re-inspection charges for the re-inspection service rendered to the S&T contractor for any reason shall be borne by Contractor.
28.0	<u>STORES</u>
28.1	CONSIGNEE The consignee for this work will be Senior Section Engineer (Signal)/GSU/BKN
28.2	<u>LOADING /UNLOADING OF MATERIAL</u> <u>The material shall be delivered by the Contractor at the depot of Consignee/site of work.</u> Material supplied by Railways for execution of the work & the materials delivered by the contractor shall be transported from the any Store of NWR to the site of work by the contractor.
28.3	MATERIALS AND WORKMANSHIP i). All the items which are to be procured as per IRS/RDSO specifications shall be procured

	from RDSO approved firms. Electrical / Electro Mechanical items which appear in RDSO approved list and supply value is above <Rs.5,00,000/-> should be got inspected by RDSO. All item irrespective of their value, if it falls in critical list of items (as mentioned by RDSO), will be inspected by RDSO. Any relaxation with respect to procurement/inspection shall be with the prior approval of the competent authority. The Railways' decision shall be final and binding on the contractor. ii) Certificate of inspection to be submitted along with the supply. iv) Before placing order and arranging supply of material, approval regarding inspecting authority will be taken from Dy.CSTE/GSU/BKN office. v) The Railway shall have full powers to reject any material that the Railway 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 Railway. vii) The Contractor shall remove forth with all rejected materials and replace such material at Contractor's expenses. viii) 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. ix) When any stores delivery at the consignee's depots is rejected, this shall be removed by the contractor within 30days 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. x) 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 afore mentioned.
28.4	<u>Indemnity by Contractors (Clause No.15 of GCC):-</u> 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.
28.5	<u>Procedure for Store Receipt & Material Accountal.</u> i. For every work, a Tally book shall be opened by store In-charge. Receipt/dispatch/ transfer/Balance entries are shown in Tally Book. Separate page is nominated for each item in Tally Book as per work bill of quantities. ii. Material is received based on request of contractor. Contractor gives in writing the details of item including serial number and quantity of work bill of quantities to SSE/Incharge. SSE/Incharge will inspect the material and its related documents mandatory as per contract agreement and material is entered to the Tally Book assigned for this particular work if found in order as per contract. iii. Whenever material is required for execution of work at site, contractor will request SSE/Incharge for issuing of material on his letter head/demand signed and stamped by his authorized person. iv. For issuing the material required by contractor as above, SSE/Incharge shall fill E-49 Form (Called HR) mentioning all relevant details and this form shall be signed by both SSE/Incharge and authorised representative of contractor. There after material is taken by contractor for site of work and stored temporarily under his own custody. Material so stored temporarily at site shall be secured and protected by the contractor at his own resources. v. While filling up measurement book, reference of E-49 and Tally Book are to be mentioned wherever required (applicable for both running & final bills). vi. Work site register will be maintained by the contractor for recording daily work progress and measurements which is also signed by Railway's representative deployed by SSE/Incharge. <u>Note:</u> Paras i, ii, iii, iv, v and vi above, are applicable for accountal of material supplied by the contractor of sanctioned works costing less than Rs.2.5 Crores. a) Procedure for accountal of material supplied by the contractor of sanctioned works costing

	more than Rs.2.5 Crores:- In addition to accountal of material supplied by the contractor of sanctioned work costing less than Rs.2.5 Crores as mentioned in Para i, ii, iii, iv, v and vi above, field units should also maintain register and accountal of register at site MAS (Material at Site) in accordance with Para 1436 to 1446 of Engineering Code. The contractor will provide necessary assistance for this purpose. b) CONSIGNEE: The consignee for this work will be Senior Section Engineer (Signal/ Tele)or other nominated JE/SSE by Sr. DSTE/Dy. CSTE. c) LOADING/UNLOADING OF MATERIAL: All the material shall be transported by the contractor from any Store of NWRto the site of the work and vice versa with his own cost. d) Before issuing Railway material to the Contractor, SSE/Incharge will ensure that contractor has already indemnified all the Stores handed over to him and executed the Indemnity Bond for this purpose on standard Performa given along with these documents in Appendix-AG. e) The material which will be supplied by the Railway for execution of work will also be transported by the contractor from any Store of NWR to the site of the work. f) All stores drawn by the tenderer shall be accounted for either as installed as per site measurementsrecorded or as per surplus stores returned to the Site Inspector-in-charge. g) Empty cable drums will be the property of the Railway and shall be returned back to Railway store of SSE/Incharge by the contractor. If cable drums are not fully empty then cable shall be rolled back in same cable drum and handed over to Railway store. If empty cable drums are not returned back then recovery @Rs.560/per empty cable drum will be recovered from the running/final bill of the contractor.
28.6	<u>Security of Material</u> a) Once the material is handed over to the contractor, the contractor shall be responsible for the security of material irrespective of the fact that the material is kept in Railway premises. The contractor shall make adequate arrangements at site as deemed necessary for guarding the same from the thefts by outsiders or his labouror damage of any sort. b) The cost of stores lost shall be realized by the Railway out of any payments due to the contractor in this contract or from any other contract executed by Govt. of India. c) The Contractor will indemnify all the Stores handed over to him and will execute the Indemnity Bond for this purpose on standard Performa given along with these documents. Execution of the Indemnity Bond will precede handing over any material to the Contractor.
28.7	<u>Return of Surplus Store</u> a) The stores found to be surplus shall be returned to Consignee by the Contractor with his own staff with immediate effect and proper (-) minus hand receipt will be issued to contractor on receipt of surplus material by the Railway depot staff. b) The contractor shall account for all material that was issued to him. A register shall be maintained by the contractor, which shall be signed by the Contractor as a token of receipt of material. All the issued material shall either be used in the installation or returned to Consignee.
28.8	<u>Return of Released Store</u> a) Released material shall be handed over to Consignee in systematic manner. Proper care should be taken while releasing &transporting the material at General Stores, of NWR(for the material to be D-S8ed) and other released material at Signal Stores (which will not be D- S8ed). b) Unless or otherwise specified, the rates cover the cost of tools and plants, ladders, scaffoldings and all other equipment's required for dismantling. c) Unless otherwise specified, the rates includes leading of material up to the store of Sr. Sec Engineer/Sig/GSU/BKN , the Store Depot of North Western Railway, stacking dismantled material in the store as required specially item wise. d) Royalty, Octroi and other charges on materials to be supplied by the contractor for construction of work except those to be supplied by the Railway will be borne by the contractor/s.

29.0	<u>WORKS</u>
29.1	SPECIFICATIONS, DRAWINGS A). Supply of following diagrams/documents shall form part of the contract(as applicable):- <i>Documents for Indoor work:</i> i) Signaling interlocking plan ii) Operating & Indication panel diagrams/VDU Diagram iii) Selection & Locking tables. iv) System Configuration of EI v) Wiring diagrams/Interface Circuit/ Equivalent Logic Circuit vi) Fuse analysis vii) Contact analysis viii) Rack erection diagram ix) Panel Tag Block analysis x) Tag blocks analysis of tag blocks installed on Cable termination rack. xi) Operating/maintenance & instruction manual. xii) Power supply arrangement with appropriate ratings of each module. Tentative ESP of stations is provided at Annexure-AA. Items (i) to (vii) of the drawings shall be submitted to Railways for approval by the Contractor. Copies of drawings from items(viii)to(xii) shall be submitted to Engineer-in-charge for his approval. However, final tracings of these drawings shall be submitted to Railways for approval before commissioning. B) <i>Documents for Outdoor documents</i> 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 incharge for approval. Once circuit design is submitted by the Contractor to Railways, it will be examined and Railways will indicate the kind of deficiencies, which are existing in the design. If required by Railways, the design team of Contractor will attend PCSTE's office to hold discussions in this regard. While indicating the deficiencies in design Railways will point out- (a) Functional requirement, which are not being met by the circuits. (b) Other violation of standard practices or codal provisions. Railways are not bound to carry out 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 Railway may not be exhaustive. Advance approval of the circuit from Railways 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 Railways to go ahead with wiring and testing will no way 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/VDU with the help of simulation panel. Commissioning will be done only after circuits are approved. (c) 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 Railway. (d). 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. (e) The installation must comply with the Indian Railway Standard Specification for relay interlocking systems (tentative) serial no. S-36-87 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 NWR 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 Purchase (Railways) as per IRS: S-36-89. (f). Installation shall comply with the requirements to the following manuals/books:- • Signal Engineering 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. (g). After the contract is awarded, the Railway shall furnish to the Contractor, free of charge, as many as a number of prints of the approved Signalling plan, control tower/cabin drawings and such other drawings as the Railway may consider necessary for proper execution of this work. (h) Future development: The contractor shall supply to the railway free of charge all software update, data and specifications that may result from developments effected by him or his collaborator in the period of currency of contract. The Railway reserves the right for such modified or improved versions in lieu of these originally quoted for, based on prices and other conditions mutually agreed upon. "For minor alterations in existing yard; alterations in existing logic will be submitted shown 'Red/Green'. Whether it is a minor alteration or not, it will be decided by the Engineer".
29.2	INSPECTION OF WORKS (i). The completed installation at all stages shall be subjected to checks and test as decided by Railways 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 DSTE/ASTE and SSE/SE/JE (Sig./Tele). The contractor should make himself for his representative available at the time of joint inspection. The decision of the Engineer shall be final in the matter. (ii). The contractor will be called upon to pay all the expenses incurred by the Railway in respect of any work found to be defective or of inferior quality, adulterated or otherwise unacceptable. (iii). 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 Railway. (iv). A log book will be kept at the work site by the contractor. The inspecting officer of the Railway may in addition to oral instruction to the representative of the contractor at the work site, enter such instruction as he 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.
29.3	APPROVAL& MEASUREMENT OF WORK (i) The contractor will obtain written approval of the supervision after completion of the various sub-items of each work mentioned in the bill of quantities (wherever applicable). (ii) 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). (iii) 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 the above is laid properly. • After the earth is filled. • After brick/slab/ capping is laid. (iv). Back filling of the trench shall be done only after the inspection and written confirmation from the Railway representative. (v). The contractor shall maintain record of cable laid as per Performa provided by Railways. (vi). Cable laying shall be done as per policy / guidelines issued by RDSO vide letter no. STS/E/Cable Laying Practices dated 31st October'2011 or latest. (vii). S&T Inventory / Assets register should be maintained as per performa specified in the note issued by CSTE/NWR vide note no. SG/176/1 dated 13.09.2012 or latest. (viii). Measurement of works by Contractor's authorized representative shall be applicable only if it is decided so by the Railway.
29.4	MATERIAL TO BE PROVIDED BY RAILWAYS Materials to be supplied by Railways in this contract are listed in Appendix-AE to these documents. All materials to be supplied by Railways shall have to be collected by contractor through his own labour and transport from the any store of NWR to the site of the work.
29.5	MODIFICATIONS (i). The contractor shall be responsible for and supply 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 Railway or not due to inaccurate information or particulars furnished to the Contractor on behalf of the Railway. If any dimensions/ figures upon the drawings or plans differ from those obtained by scaling the drawings or plans shall be taken as correct. (ii). Any minor modifications required during the course of work shall be done without extra charges and the Railway's decision as to whether the modifications are minor or not shall be final. Where modifications are not minor and the Railway is satisfied that the modifications are essential, they shall be carried out at extra charges to be approved by the Railway.
29.6	POWER SUPPLY 230V/5A Electric power supply will be supplied by the Railways at the prevailing rate of electricity only on request of contractor for executing minor works like drilling of holes, soldering etc. for which contractor has to pay as per metered readings. However, contractor shall make his own arrangements such as portable generator for his use in case of power failure.

30.0	<u>TRAINING</u> 1. The contractor shall provide adequate training at the manufacturer's premises to Railway 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 Railway personnel nominated by Railways indifferent aspects of equipment which include: a) System design and architecture b) Field installation, testing, commissioning. c) Operation, maintenance and repair, covering both hardware and software with cost analysis d) Fault diagnosis and analysis e) Failure rectification methods f) Data base programming g) All the issues arise out of day to day maintenance of the system. 3. The training should be comprehensive so as to impart full knowledge to Railway personnel deputed for the training to independently execute the installation, operation, maintenance, repair and minor alteration of all equipment. The training course should, apart from formal classroom 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 Railway and the Contractor. OEM should provide competency certificate to the Railway Personals for the training imparted. Hard copies and soft copies of course module shall be supplied by the contractor to each trainee. The training courses should, apart from formal class room training, include hand on practical experience and visits to working installation. 4. The contractor shall at every stage of installation, testing and commissioning provide all facilities for adequate training of NW Railway personnel who may be deputed to work on the project. 5. The requirement of training in man-weeks has been indicated in the bill of quantities of works. The tenderer shall quote for the man week rates and Railways shall have the right to vary the training period indicated in the bill of quantities of works. 6. Set of documents related to training in adequate quantity shall be provided.
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Part-IV

TECHNICAL SPECIFICATIONS & INSTALLATION PRACTICES

1. The works shall be carried out according to the drawings approved by the Railway and shall conform to the provisions of the 'Signal Engineering Manual', Schedule of "Dimensions" and "Manual of Instructions for Installation of S&T equipment on 25 KV, 50 Hz A.C. electrified sections as modified from time to time unless deviations, RDSO TANS and Policy, if any, are specifically approved by the Engineer. All material shall be supplied as per RDSO latest specification, where ever applicable. The contractor shall be solely responsible for the proper execution of the work as per the said deviation and specifications.
2. **Interlocking and circuit requirement**
All requirements given in IRS S-36-87 or as approved by Railway shall be complied.
3. **Foundation**
 - 3.1 Conforming to the signalling plan and cable plan the positions of foundations for signal posts, apparatus cases, junction boxes, cable termination boxes, diesel generator, shunting /block section limit board, Sighting boards, power panel as required, will be indicated by the Engineer's representative at site before the commencement of the work at the station.
 - 3.2 The excavation of pits for various types of foundations shall be done as per drawings or the instructions given by Engineer's representative and during the excavation, the earth of the pit shall be thrown on plain ground away from track and left out earth if any, shall be thrown outside the Railway premises.
 - 3.3 Before casting of foundation, the Contractor's representative and the Engineer's representative shall jointly check the quality and depth of pits, quality of bricks, concrete etc. and ensure compliance with the drawings and specifications.
 - 3.4 Signal posts and sighting boards shall be vertical and plumb and the gap between the base and the signal post shall be filled with chattering compound or any other approved substance.
4. **Apparatus case and signal erection**
 - 4.1 The signal unit shall be properly mounted, secured, and focussed.
 - 4.2 Cable for signal units shall be taken inside the signal post. Exposed cable should be protected by suitable means.
 - 4.3 The apparatus cases, junction boxes, and cable termination boxes shall be vertical and plumb.
5. **Cable laying and termination**
 - 5.1 Cable laying shall be done as per policy / guidelines issued by RDSO vide letter no. STS/E/Cable Laying Practices dated 31st October'2011 or latest.
 - 5.2 Cable openings in Apparatus cases, junction boxes and in relay rooms should be covered by sand and top should be plastered by cement for apparatus cases and junction boxes.
 - 5.3 The cables in sufficient spare lengths shall be kept coiled in a circle of suitable diameter at 1-meter depth before being taken into the relay rooms/apparatus cases and field operation for termination. Such coils of cables in pits shall be adequately covered by sand and bricks, plaster to provide protection against damage.
 - 5.4 For each station, the cable route plan will be supplied by Contractor Railways for approval of Railway before the commencement of the cable laying work at the stations. However, under the exigencies of local conditions or for any other consideration, the Engineer In charge may alter the cable route plan. The Engineer's representative in charge of the work will mark the route of the cable with chalk or lime, as per cable route plans/ cable plans as per the Engineers instructions to him. He shall lay the cables only along this route. The contractor shall be represented at the time of marking the route of the cable and he shall furnish to the Engineer's representative, required quantities of lime, rope, labour etc. for carrying out this work at the cost of the contractor.

- 5.5 Cable laying should commence only after the depths and quality of trenches have been checked, quantity of bricks and arrangement for tempted filling etc. are checked jointly by the Engineer's representative and Contractor's representative and approved by the Engineer's representative.
- 5.6 Trenching for track crossing and laying of cable across the track should be done only in the presence of the Engineer's representative.
- 5.7 Cable shall not be normally taken over the track at the time of cable laying by the contractor, as this is likely to cause accident to trains and damage to cable. If, at any time, the cable has to be taken across the track, it shall be done only in the presence of the Engineer's representative and after the safety precautions have been taken.
- 5.8 The handling, laying and pulling of wires and cable shall be in accordance with instructions and under supervision of the contractor. For laying the cables, the drum shall be mounted on axle at one end of the trench and the cable laid out and carried by Contractor's labourers guiding the cable into the trench.
- 5.9 Cable should be properly terminated in the terminal boards / racks.
- 5.10 Bends in cables shall have a radius of not less than 20 times the diameter of the cables
- 5.11 Eyelet terminals shall be used on flexible wires, if necessary.
- 5.12 Not more than two wires shall be connected to one terminals/ tag.
- 5.13 Cables terminated inside apparatus cases, junction boxes and in relay room should be fixed by clamp or any other method as indicated by Engineer's representative.
- 5.14 Terminals shall be mounted so that they cannot be turned in base of frame to be applied. They shall be properly insulated from each other and other metallic parts.
- 5.15 Terminal shall be installed in an accessible position and neatly arranged on terminal boards in housings.
- 5.16 The terminal block 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 to the terminal links.
- 5.17 With the help of mega ohmmeter, insulation resistance test shall be conducted on all cores of each cable jointly by the representative of the Engineer and the contractor before the cable is connected or wired to the signalling equipment. The insulation resistance shall be measured between a core and all other cores connected together to the sheath and earth. The results of the insulations resistance test shall be tabulated in the proforma and the proforma signed by the representative of the contractor and the Engineer.
- 5.18 With the help of wheat stone bridge, loop resistance test shall be conducted on all cores of each cable jointly by the representatives of the Engineer and the contractor before the cable is connected or wired to the signalling equipment. The result of the loop resistance test shall be tabulated in the proforma and the proforma signed by the representatives of the Contractor and the Engineer.

6. Relay Racks

- 6.1 Relay racks should be of metal, which can be assembled with plug –in- base plates and factory pre- wired base plates for ready installations. 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 includes all the necessary rack fittings, supports, insulators in the relay room arrangement for fixing fuses and relay bases, as per approved North Western Railway drawings.
- 6.2 Relay rack shall be provided with anti-vibration protection.
- 6.3 Relay rack shall be mounted in the relay room as per the position indicated by the Railway representative.
- 6.4 MDF Rack will be similar to relay rack and will include all materials required for termination of outdoor/ indoor cables, fixing of terminals, fuses, fuse bases, transformers and other accessories as per instructions of Engineer at site.
- 6.5 Last row of each rack shall be left free for additional relays to be installed for future expansion.
- 6.6 20% spare contacts for each function relays shall be made available for further expansion.

- 6.7 At the bottom of each relay rack testing points one each for +24V, -24V will be provided on a hylem sheet screwed to the relay rack.

7. Relays

- 7.1 In case of A.C. electrified areas, the relays shall be in conformity with RE manual. In addition to the requirements of IRS S-36, the following requirements shall also be met.
- 7.2 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.
- 7.3 Relay shall be furnished with contact arrangements as approved by the Railway.
- 7.4 Time element relays shall be of a design approved by the Railway.
- 7.5 Relays shall be of a design approved by the Railways. Relay shall be provided with means to ensure that it cannot be plugged into a wrong base.

7.6 Mounting

Relay base plate shall be fixed on the relay racks for vertical mounting. Relay base plate shall be phenolic moulded or of other approved insulated materials and shall have adequate mechanical and dielectric strength and insulation qualities. The fastening of relay-to-relay base plate shall be so arranged as to securely hold the relay in place and yet be easily removable. Contact pressure between relay and base plate shall be adequate to keep constant uninterrupted contact.

7.7 Sealing and calibration

The enclosure containing the moving parts of the relay shall be sealed with manufacturer's seal or sealing arrangement should be provided. Each coil shall have attached to it, secured by outside binding, a tag which, shall be clearly marked with the following particulars.

- a) Manufacturer's reference No.
- b) Size of wire and kind of insulation.
- c) Resistance of the coil (for DC relays only)

8. Interconnections / wiring

- 8.1 All wiring in the cabin and location shall be terminated on suitable terminal blocks / tag blocks having minimum insulation resistance of 500 Mega Ohms at 500 V D.C. The terminal blocks/tag blocks shall be covered with plastic cover.
- 8.2 Installation of control panel, cable termination and relay racks at the respective places shall have to be done. Wiring of relay racks and control panel shall be carried out as per circuit diagram approved by the Railways providing interconnection arrangements between the racks and control panels.
- 8.3 Interconnection between terminal racks / boards and relay racks shall be carried out by providing ladder arrangements or by any other arrangements as instructed by Engineer's representative.
- 8.4 Interconnection between control panel and other racks shall be with ladder arrangement. The ladder arrangement of suitable capacity is to be fixed neatly and firmly with proper support.
- 8.5 The equipments are to be wired in relay room, control panel, power supply arrangement, apparatus case, cable termination box, and battery box and in other locations.
- 8.6 Cable termination racks should be erected in the relay room, Suitable cable ducts as required, shall be provided to bring all outside cable to the termination rack. Cable ducts should be backfilled with sand and RCC slabs/Tiles shall be provided and covered. All the cables are to be neatly fixed and terminated in order.
- 8.7 Terminals supporting the fixed part of front and back contacts and relay shall be fastened on their supports so as to preclude adjustments of any kind without first breaking the seal of the relay.
- 8.8 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.

- 8.9 Contact numbering for the relays shall be made by the contractor as per the approved circuit diagram issued by the railway and type of relay proposed to be used on the installation.
- 8.10 No joints are permitted in the connection wires.
- 8.11 Wiring in relays housing shall be uniform for like apparatus throughout the installation.
- 8.12 For all external circuits, cross protection with double cutting shall be provided to prevent unsafe operation due to a cross, break or both.
- 8.13 Wiring inside one rack for shelf type and plug in Contact relays type (Metal to Carbon)
- Relay rack wiring housing plug in type relays conforming to BRS-930 and shelf type relays conforming to BS-1659 shall be done with "PVC insulated unsheathed flame retarding type single core flexible wire 1100V grade having 16/0.2mm. annealed copper conductor and nominal cross sectional area of 0.5 Sq. mm of common colour code to the specification IS: 694". For wiring these relays the above wires shall be terminated on eyelet /lugs of standard design.
- 8.14 Wiring of proved type relays (metal to metal contact):
- For wiring the above relays the use of single strand tinned copper wire of 0.6mm and 1.0mm 1100V grade PVC insulated flame proof shall be used. The use of multi-core cable of 100 core, 60 core, 40 core and 20 core having the above conductor diameter and, grade is permitted. Size of conductor shall be chosen based on current to be carried through these conductors. The wire and cable used shall generally conform to IS: 694.
- 8.15 The wiring between the terminal board of the panel and the unwired tag block on the relay rack is to be carried out using multi-core cables (40 core or 60 core) 0.6mm/1.0mm diameter annealed tinned copper wire to IS:694.
- 8.16 The wiring on the Q' series relay rack is to be carried out by 16/0.2mm dia single core multi-strand flexible A. T. copper wire to I.S.694.
- 8.17 Soldering at the tag block terminals shall be made using good quality solder and flux. Care must be taken to prevent dropping of excessive solder from terminal thereby causing failure/unwanted connection or short by fusing of PVC insulation in the row below it. It is advisable to raise the wires by mechanical means and temporarily interposing a wooden or plastic sheet between the adjacent rows while soldering, to collect the excessive solder that may be dropping out.
- 8.18 After testing, the loose wires on the cable ladder shall be neatly bunched and laced with twine black. The contractor shall adopt suitable colour code for wiring as required by the Engineer in-charge. Spare conductors to an extent of 10% are to be provided on the interconnecting wire runs for future developments, in case multi-core cable is used.
- 8.19 Various supplies associated with signalling viz., 110V AC, 110V DC, 60V DC, 24V DC 12/24V AC and 12/24V AC flashing are to be brought out to the relay/equipment room as per instructions. Necessary measuring instruments are to be mounted on the Hylam sheet 10 mm thick fitted to the power panel with suitable switches and HRC fuses.
- 8.20 After the complete testing by the Engineer in-charge and before commissioning the installation, the contractor shall arrange necessary lead seals & sealing wires for sealing the relays.
- 8.21 The nomenclature of each relay shall be painted both in front and rear side of each relay with contact configuration. The relay index sheet duly painted with details of relay and their position in the relay rack shall be manufactured out of Decolum /Novapan or similar sheet and fixed in the relay room. All the relays to be plugged shall be checked visually and defect if any, noticed shall be replaced, duly reporting the same to the Railways. Relay rack wiring and contact chart of all relays shall be prepared in linen/polyester sheets, duly signed and handed over to Railways for preparation of handing -over documents to maintenance organisation.

- 8.2.2 Suitable arrangements shall be made in the relay rack for fixing condenser and resistance unit, required for slow to release feature. Letter painting shall be made against each unit to identify circuit for which it is used.

9 FUSES, TERMINAL AND TERMINAL LINKS

9.1 FUSES

- 9.1.1 It shall not be possible to insert a cartridge of a higher rating into a holder of lower rating.
- 5.1.2 Fuses shall be of non-deteriorating type conforming to RDSO specification.
- 5.1.3 Fuse clips shall be mounted on an insulating base of fireproof material.
- 5.1.4 Fuses or circuit breakers shall be installed according to standard practice with prior approval of the Railway.
- 5.1.5 Cartridge fuse links shall conform to BS Specification no.714 or equivalent.

5.2 Terminals

- 9.2.1 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.
- 5.2.2 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.
- 9.2.3 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.
- 5.2.4 Terminals shall be installed in an accessible position and neatly arranged on terminal boards in housings.
- 5.2.5 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.

10. INSULATION

Provision of insulation wherever required to follow standard approved Railway practice for the purpose. Material used for insulation shall be such that it will not be injuriously affected by atmospheric conditions.

11. POWER SUPPLY ARRANGEMENTS

1. 230V/50Hz supply will be provided by the railway. IPS supply of 120VDC will be made available. Contractor has to arrange various power supply modules of DC/DC Converters and Isolators to make functional of complete EI system as per guideline issued by RDSO.
2. DG Set will be supplied as per latest specification. Manufacturer's internal test report with specific mention of noise level to be provided with supply of D.G. Set.
3. Although items which are not mentioned in the document but essential for proper functioning of whole PI/RII/EI/IBS system to be supplied, installed and commissioned by the contractor.

12 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.

13 ELECTRO-MAGNETIC INTERFERENCE [EMI] SHIELDING

- i. Electromagnetic Interference [EMI] shielding shall be done with the bare standard copper conductor of suitable size as per latest guidelines issued by RDSO.
- ii. The Earth Bus Bar shall be installed at a height of 0.5 Mtrs from the floor level or as decided by site engineer.
- iii. 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 hyulum sheet of 6mm thickness mounted on wall.
- iv. 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.

- v. All the bare conductors shall be connected to Earth Bus Bar at a common point.
- vi. The work includes supply of all materials by the contractor at his cost.
- vii. The contractor shall submit the drawing for the above arrangement for approval, before commencement of the work.

14. EARTHING

- a. Earth resistance of the Earth Electrode shall not exceed 10 Ohms for “conventional earth” and 1 ohm for “Maintenance free earth”.
- b. Earth Electrode shall be tested as per instruction of Earthing and the result shall be recorded in the proforma. The proforma should be signed by the representative of the Contractor and the Engineer.
- c. Earthing of equipment shall be done as per the instruction on Earthing of signalling and telecom equipment in 25 KV 50 Hz AC electrified section.

15. STATION EQUIPMENT

- a. The control panel shall be erected in the place as shown by the Engineer-in charge of the work on proper foundation bolts and cement concrete. Before erecting the panel, a suitable duct shall be made for bringing the jumper cables into the control panel.
- b. The control panel of Domino type shall be wired with indoor cable 40C/60C.
- c. The contractor shall protect the control panel, while doing the wiring. The terminal particulars, power supply points, tag block particulars shall be neatly painted on the inner side of the panel. Before commencing wiring all knobs, buttons & indicators shall be tested for proper contact and defective ones shall be replaced in the initial stage itself.
- d. The cable termination and internal wiring terminal particulars of control panel shall be made out signed by the contractor and handed over to Railways. The control panel shall be earthed properly.
- e. Any modification to the panel wiring shall be done by the contractor at site, as required by the Railways free of cost before final commissioning.
- f. The inter-connections arrangements includes laying of multi-core hook up wire cables, inter connection between Generator room, battery room, power rack and cable termination rack by using sufficiently thick wires not less than 7/1.4mm PVC copper or 10 sq. mm. multi-strand copper conductor to avoid the voltage drop.
- g. The ladder arrangements provided shall be of suitable size and manufactured by the contractor, fixed neatly and firmly with proper supports. Cable details, functions allotted to each core and terminal numbers shall be prepared and handed over to the Railways.

16. TESTING AND COMMISSIONING

Testing and commissioning consist of final testing of selection circuits, for proper functioning of track circuits and points, gears as per SEM, energising and testing of power cables, stabilisers, secondary cells for all circuits, energising and testing of colour light signals and final commissioning of the entire signalling arrangements for traffic use. All the alterations for improving safety shall be carried out before commissioning as required by the Railways. The contractor shall first test the equipment and then jointly with Railways, testing charges being borne by the contractor. The contractor shall provide test panel for testing at his own cost. The different stages and procedures for testing of indoor and outdoor equipment are given below as guidance –

STAGE. I - TESTING OF THE RELAY INTERLOCKING

STAGE. II- TESTING OF THE OUTDOOR GEARS, i.e. POINTS, SIGNALS, TRACK CIRCUITS, LC GATES, ETC.

STAGE. III- COMMISSIONING OF PANEL BY CONNECTING THE OUTDOOR GEARS TO THE PANEL.

16.1 TESTING OF RELAY INTERLOCKING

Testing of Relay Interlocking consists of Energisation of relays by connecting the simulation panel, & Clearing of signals on the simulation panel and carrying out the following tests (As per table of control) –

- Negative tests

- Dead/Approach locking tests & Route/Back locking tests
- Testing of conflicting signals & routes.
- All other circuits viz., SM's key, CHLR in the respective signalling circuits & LXPR, KLCPR are proved correctly.

Above activities are explained below in detail –

16.2 Energisation of relays:

For major yards, it is preferable to energise relays, circuit wise and sheet wise since it involves number of routes and parallel movements. For way station, it is preferable to energise the circuit, route wise. Before taking up the above energisation, the following works shall be completed –

- Wire to wire bell-test of all sheets before soldering and after soldering.
- Plugging of all relays as per contact configuration.
- Power supply arrangement with batteries.

16.3 Connecting The Simulation Panel:

- It shall be possible to control all TPRs, NWKR/RWKR, CHLRs, KLCRs, LXCPRs etc., from the simulation panel by energising all the relays.
- It is desirable to have the simulation panel adjacent to control panel/VDU so that the panel indication can be observed simultaneously while testing.

16.3.1 Connecting simulation panel : Simulation panel consists of two Boards –

Board No.1: It depicts the yard (painted) with points, track circuits, LC gates and slots. Switches are fixed on the board to simulate the conditions of the points, track circuits, interlocked LC gates, slots etc.

Track circuit switches are fixed on the track. Point control switches are fixed nearer to the points, for small yards. For major yards the switches are grouped as point switches and track circuit switches. Functions requiring ON and OFF switch (with make and break facility i.e. two wires only.) with facility to pick up a relay in one position and drop the same in other position.

Example:

- Switch OFF - Track Down - TPR dropped.
- Switch ON - Track pick up - TPR picked up.

For controlling the following functions the above type switches shall be used –Track circuits, Siding points, Crank handles, Slots, LC gates

Points require ON and OFF switches with facility to pickup conflicting relays (i.e., NWKR and RWKR) in two positions. (These switches require three wires.)

Board No.2: To simulate the signals the following bulbs are used as dummy loads for the ECRs to pick up and also to observe the aspect of the signals during testing.

- ON aspect - 110v 40W
- OFF aspect - 110v 25W
- Route aspect - 110v 75W (Junction type Route indicator)

16.3.2 Wiring simulation panel to the relay room side wiring at MDF:

- Disconnect all the links on cable termination rack. Wires from the switches are connected to the relay room side termination. Similarly the wires from simulation panel board. no. 2 consisting of lamps is connected to the relay room side termination.
- 0.6 mm multi-core cable is used for wiring the simulation boards. To reduce the voltage drop, more conductors are used for supply taken to the test panel and also to the negative since common return is used.

16.4 TESTING OF OUTDOOR GEARS

Testing of outdoor gears consists of –

- Signals
- Motor operated points
- Track circuits

- LC gates (Interlocked)
- Sidings

16.5 COMMISSIONING OF PANEL/VDU

Commissioning of panel/VDU consists of –

- Testing all signals from panel/VDU and correspondence of their aspects. Checking the correspondence between the points and panel for their panel indications.
- Checking the correspondence between the track circuits and their panel indications.
- Testing of sidings, its electrical transmission of EKT, panel indications.
- Testing of LC gates, its electrical transmission of EKT, panel indications.

16.6 TESTING AND COMMISSIONING OF OUTDOOR EQUIPMENT

Cable meggering and pairing up of conductors shall be done.

- 16.6.1 All the power cables shall be made through and power supply shall be extended to all locations.
- 16.6.2 After the power cables are energised, check-up each limb of the power cable whether any earth fault exists using multi-meter. This will indicate whether any cable conductor is faulty (i.e. earthed).
- 16.6.3 Signals shall be initially tested from the location box to attend to minor troubles of bulb holders, wiring etc.,
- 16.6.4 All the aspects shall be checked by giving 110V AC feed from location box and then the test shall be repeated by giving feed from Relay room CT rack. This test shall be done for each aspect, route and pilot lamp of shunt signals.
- 16.6.5 Care shall be taken to ensure that no train is approaching during this test to avoid misleading information to drivers.
- 16.6.6 Ensure that signal number plate is provided and unit back door is fastened and locked properly. Door locking is very important to prevent sunrays falling on to lenses to give phantom indications.
- 16.6.7 Focus the signal aspects, record the aspect voltages and ensure that it is within the permissible limit. (90% of rated voltage of the bulb)
- 16.6.8 Points shall be tested first locally from the location box when the point contactor unit is kept in location. Before commencing this test, ensure 110V DC, 24 VDC are available in location box. If it is cross over point, it is preferable to test one by one and then test both at a time.**

16.6.9 Testing of SIEMENS Point contactor unit:

Connect N 24V to W4, connect B 24V to W1, then remove so that N/R picks up and holds, then touch B24V to W3 to operate points from normal to reverse. All the relays in point contactor unit operate as required and point operated from N to R. Check up whether NWKR supply to relay room is available. For Reverse to Normal operation, keeping N24V in W4, touch B24V on W1 and then on W2; Point operates from Reverse to Normal. Check up that RWKR supply to relay room is available.

16.6.10 Testing of Point Contactor unit with QBCA1 Relays:

- Connect B 24V to W3 and N 24V to W4. WCR picks up. Connect B 24V to W2 and N 24V to W1 to pick up RWCR to operate the point from normal to reverse. After the point operation is completed, drop RWCR, WCR by disconnecting the supply.
- Check up whether outgoing RWKR supply is available in location box.
- For reverse to normal operation, change the polarity on W1 & W2 and check.
- Care shall be taken to check whether correct wiring is done with regard to polarity
- Check up whether the cross protection wiring is done on the electrical detector.
- Check up whether snubbing is effective in case of GRS 5E point machine.

16.6.11 Following tests shall be carried out on Point Machines:

- Obstruction test.
- Detection contact break test
- Out of correspondence test (in case of cross over point)
- Track locking test (to be done when operated from panel/VDU).
- This test is to be done for both N to R and R to N operations.
- Whether point can be hand cranked with interlocked crank handle.

- Check the correspondence between point position at site, both the ends in case of crossover and NWKR/RWKR in relay room (to be done when tested from panel)

16.6.12 Following tests shall be carried out on Track Circuits:

- All the track circuits shall be energized and outgoing TPR voltages checked.
- Check whether cross protection wiring is done for TPR circuit.
- Shunt the track circuit at various places on the track and check whether the track relay drops every time it is shunted. (Especially near fouling marks).
- Check the correspondence between TR and TPR in relay room.
- Track circuit shall be adjusted properly and readings recorded. TSR value shall be recorded.
- Check whether the track circuit is protecting the fouling point.
- Ensure that at least one polarity rail is in series connection.
- Checkup input AC voltage to the track feed charger is sufficient and battery is getting charged.

16.6.13 Check up the interlocking of L.C. Gates, siding points.

16.6.14 Check up for the proper functioning of electrical transmission of key transmitters.

16.6.15 Check up the panel indications.

16.6.16 Connect magneto telephone communication between SM and LC gate/siding.

16.6.17 Ensure that respective signals cannot be taken off if LC/siding controls are not available with SM (i.e. on panel)

16.6.18 Ensure that when the signals are taken off, respective LC gate/siding key cannot be extracted from the EKT

16.7 COMMISSIONING OF PANEL/EI

- a) Check up all signals aspects by directly feeding from cable termination rack (110 V-AC).
- b) Checkup operation of points from CT rack and check whether NWRR/RWKR incoming feed is available (by connecting 24V DC to W1, W2, W3 & W4 as explained earlier).
- c) Check up the incoming feed of TPRs in the C.T.Rack. The above checking will confirm the pairing of cable conductors.
- d) Remove the wiring connection of simulation board on cable termination rack and make through the links of all TPRs, WKR and signal circuits.
- e) First test the points from panel/VDU individually and conduct all tests discussed earlier including track locking test, correspondence between point position and NWKR/RWKR in relay room.
- f) Check whether all TPRs have picked up and check up the panel indication by individually dropping each track circuit to correspond correctly.
- g) Check whether all other required relays viz., CHLR, LXPR, KLCR have picked up.
- h) Test all the signals from panel/VDU.
- i) Check the correspondence between relay room and signal aspects which, is most important.
- j) For checking the aspects of home signals, distant signals, staff (not below the rank of ESM) shall be deputed to site with walkie-talkie or Magneto telephone and check the correspondence.
- k) Remove Disconnect the signal LED at site of every aspect and check whether indication disappears on the panel and ECR drops in the relay room.
- l) EI, Data logger, FEP, IPS, HASSDAC, MSDAC & ELD etc will be installed, wired, tested and commissioned by OEM's engineer as per guidelines issued by RDSO. The Pre-commissioning checklist issued by RDSO for EI, Data logger, FEP, IPS, HASSDAC, MSDAC & ELD etc will be prepared by OEM's engineer and signed jointly with Rly's Site Engineer. Before commissioning of EI, Data logger, FEP, IPS, HASSDAC, MSDAC & ELD etc. OEM will submit Site Installation Certificate as shown in Appendix-AC of Tender Document to Railway by mentioning that equipment (EI, Data logger, FEP, IPS, HASSDAC, MSDAC & ELD) has been installed, wired, tested and commissioned by approved vendor of RDSO (i.e. by OEM).
- m) Open all the registers and make entries of counter numbers before handing over to operating staff.
- n) The following Registers shall be handed over to operating staff.
 - Relay room key register
 - VDU Counter Register
 - Route cancellation register

- Crank handle register
 - Axle counter reset register
- o) The following registers shall be opened for signal maintenance staff
- Track circuit history register
 - Track circuit maintenance register
 - Signal lamp replacement register
 - Battery maintenance register
 - Block / Glued joint maintenance register
 - Axle Counter maintenance register.
- p) Sealing of equipment where required shall be done.
- q) Entries shall be made in the signal history register regarding new S&T assets commissioned.
- 16.8 MISCELLANEOUS:WOOD WORK:
- 16.8.1 Wherever woodwork is involved, the wooden planks are to be supplied by the contractor and he shall ensure the wood of good quality, which shall be varnished/ painted as specified. All teak wood boards shall be varnished and hard wood shelves should be black painted.
- 16.8.2 Wooden cross of approved type should be provided for the newly erected colour light signals, till they are commissioned.
- 16.8.3 Wooden Board and shelves are to be properly polished before fixing the terminals and equipments on it, as advised by the Engineer.
- 16.8.4 All the equipments, relays and terminals are to be marked by lettering on it as advised by the Engineer.

17.0 DESIGN & DRAWING

(A) INDOOR & OUTDOOR DRAWINGS: Will be supplied as per details given in Annexure of SOR

(B) Supply of Registers:

1. Technical literature for all the equipments for EI system:-3 copies
 2. Equipment History card:-2 copies
 3. Relay register:-2 copies
- (C) All the plans should be compliant with requirement of RE/non RE area and as per site requirement.
- i) The designing of Circuit Diagrams shall be done as per extant Railway practice, SEM, General and Subsidiary rules, the guide lines provided by RDSO and as per the latest rules prescribed by the Railway.
- ii) Alteration column should be shown on every sheet and sufficient space should be left for further alteration on each sheet.
- iii) All drawings shall be prepared with suitable CAD system. All original drawings shall be supplied in tracing paper of 90/100 GSM of GATEWAY qualities. All drawings shall be prepared on A3 size unless otherwise stated specifically. Each drawing sheet shall have Border Line, Margin, Name Plate / Approval Column, Alteration Column and drawing space as per latest approved practice of North Western Railway.
- iv) At least 20% of available drawing space shall be kept blank at the bottom of each original sheet, above Name Plate / Approval Column, to accommodate future expansion.
- v) In addition to the above specifications the contractor shall follow any other standards as followed by the S&T Dept. of North Western Railway during preparation of drawings.
- vi) All original drawings and prints shall have relay contact no. / terminal no. / fuse no. already incorporated.
- vii) During preparation of the drawings the following shall be kept in view:
- a. Optimization in using of relays.
 - b. Economization in using relay contacts.
 - c. Optimization in using of cables.
- vii) All Original drawings shall be printed through Ink Jet/Laser Plotter.

- viii) No hand correction shall be allowed on the original tracing. If any correction is required on a sheet the original tracing of that particular sheet shall be replaced with a new one and the same shall be submitted for fresh approval of Railway.
- ix) Railway reserves the right to add/delete/modify the requirement of Drawings at any point of time.
- x) Checking of check prints shall be done only one time by Railway.
- xi) Copy/Prints of drawings whenever submitted shall be accepted by Railway in the form of Computer prints only.
- xii) After the initial checking is over subsequent drawings shall be submitted in original tracing only.
- xiii) In case of repeated mistakes the drawings shall be rejected and fresh drawing shall be submitted by the contractor for which no extra payment shall be made by Railway.
- xiv) In case of any modification in Engineering plan or Interlocking Plan the subsequent modifications in all drawings shall be carried out by the contractor at his own cost.
- xv) All transaction shall be made through Sr. DSTE/ Dy. CSTE.
- xvi) The contractor shall be responsible for collection of all field data from the site of work for preparation of 'As made' drawings.
- xvii) Original Tracings of approved 'As Planned' drawings shall be submitted by the contractor to the Railways if so advised.
- xviii) Inspection & Approval: By Design and Drawing office of PCSTE/CSTE/Sr. DSTE.
- xix) For all Technical discussions with Railways regarding the work, the authorized qualified Design Engineer(s), who is well versed in Railway Signalling system shall attend concerned Railway Offices and represent the tenderer.

18.0 SPECIAL SITE CONDITION:-

18.1 The work shall be carried out under train running conditions in the busy main line & working yards taking care that the existing working cables and other safety gears are not damaged during the trenching and laying of new cables. Further, new work is carried out keeping the existing gears intact commissioning of work and ensuring safety of manpower and running of train safely. Submission/acceptance of disconnection memo and non-interlocking of the yard without effecting the punctuality and overall safety of the traveling public are also to be taken into account. Extra safety precautions shall, therefore, have to be taken during execution of this work.

18.2 All Indoor & Outdoor circuits shall be designed and work shall be executed to suit RE area. All the material to be supplied by the contractor should also conform to suit the RE area. Wherever any RDSO spec./drg. are mentioned it automatically includes "with latest amendment/revision" whether specifically mentioned or not in the **bill of quantities**.

19. GENERAL SPECIFICATION FOR WORK.

- 1. Railway representative before its actual use shall inspect materials supplied by contractor.
- 2. The quality of work shall be carried out in accordance with the standard practice.
- 3. Complete work including all items supplied and executed by contractor shall be under warrantee period of one year from the certified date of completion of the work.
- 4. Contractor shall arrange all testing facilities. All material supplied shall be in accordance with the specifications mentioned in the **bill of quantities**.
- 5. The contractor should submit details of credentials along with tender.
- 6. Consignee shall be **SSE/Sig/Gsu/BKN**. All freight charges for the supply of items to the store of Consignee or transportation to the site of implementation shall be borne by the contractor.
- 7. Regarding the execution of work, the Engineer's representative authorized for the purpose by the Dy.CSTE/GSU/ BKN. will inspect and test the various portion of work at all stage and shall have full power to reject all or any work/ material that they may considered to be defective design that may endanger safety. The contractor shall carry out such tests at his cost as are necessary in the opinion of the Railway.

8. The Engineer shall only issue the completion certificate in accordance with Para 48 of General condition of the contract after installation is satisfactorily commissioned and jointly checked with the Railway.

Note:- In whole Tender Document, where ever designations are mentioned they would be taken as there corresponding designation of S&T Department.

BILL OF QTY					
S.No.	Description of Item	Unit	Rate	Qty.	Total Amount
	CHAPTER-1: Electronic Interlocking, Design of circuits and drawings.				
1.9	Supply of work station note book 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	Per Stn.	86892.73	2	173785.46
1.12	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	Man/ Day	1106.23	30	33186.90
1.13	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 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.	Per station	175967.35	1	175967.35
1.15	Supply of embedded fanless PC based VDU control 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. (ii) One revolving chair should be supplied with control terminal. Inspection: RDSO Inspection charges: Borne by Railways Payment terms:100% after supply	No.	409839.20	3	1229517.60
1.16	Installation, wiring, testing and commissioning of embedded fanless PC based VDU control 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 by tendering authority. Inspection: Consignee Inspection charges: None Payment terms:100% after commissioning.	No.	102459.80	3	307379.40

1.21	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 railways for approval before printing, as required for final processing of CRS sanction. This also includes preparation of maintenance cards in format provided by Rly. Inspection: Consignee Inspection charges: None Payment terms:100% after execution.	Station	3598.62	2	7197.24
1.22	Translation of Station Working Rules from english to hindi and framing out in DIGLOT form (or similar software)as per extant Rly 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	4478.18	2	8956.36
1.23	Making photocopies & binding of the SWR literature in English/hindi/Diglot form as per Railway practice. Inspection: Consignee Inspection charges: None Payment terms:100% after execution.	Set	178.52	12	2142.24
1.24	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.	Set	22986.88	1	22986.88
1.25	Designing and Plotting of Signaling Interlocking Plan(SIP) in AUTOCAD.Two copies of prints with soft copy will be submitted to Railway for checking. If alterations are suggested/proposed byRailways then again two copies of prints will be submitted for advance approval after carrying out all the alterations as suggested/proposed by the Railways. Tracings will be submitted for all the diagrams mentioned above for the purpose of approval by Railway prior to commissioning of station.Inspection: ConsigneeInspection charges: NonePayment terms:100% after execution.	Per SIP	28062.00	1	28062.00

1.27	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 Railway for checking. If alterations are suggested/proposed by Railways then again two copies of prints will be submitted for advance approval after carrying out all the alterations as suggested/proposed by the Railways. Tracings will be submitted for all the diagrams mentioned above for the purpose of approval by Railway 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 CDI Pen drive will be submitted to Railway for each station along with original tracings. 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. 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.	Per Route	4153.92	72	299082.24
1.28	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. Inspection: Consignee Inspection charges: None Payment terms: 100% after execution.	Sheet	161.07	500	80535.00
	Chapter-2: DATA Logger, RTU, FEP, CMU, FAS and Networking accessories		0.00		0.00

2.2	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 (minnum 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 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 Railways Payment terms:100% after supply	No.	485984.88	6	2915909.28
2.3	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 Rly 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 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 commssioning	No.	121496.22	6	728977.32

2.10	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	39122.42	1	39122.42
2.11	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	9780.60	1	9780.60
2.14	Supply of Failure Analysis System (FAS) as per Technical Specifications. The specification of FAS should be got approved from the Engineer in charge before supply. Note: The Specification of FAS shall be as per technical specification given in contract Agreement or higher version as approved by Engineer In-Charge. (Technical specification shall be provided in tender documents.) Inspection: Consignee Inspection charges: Borne by Railways Payment terms: 100% after supply	No.	163959.37	1	163959.37
2.15	Installation, testing and commissioning of Failure Analysis System (FAS) as per Technical Specifications. The specification of FAS should be got approved from the Engineer in charge before supply. Note: The Specification of FAS shall be as per technical specification given in contract Agreement or higher version as approved by Engineer In-Charge. (Technical specification shall be provided in tender documents.) Inspection: Consignee, Inspection charges: None Payment terms: 100% after commissioning	No.	40989.84	1	40989.84
	Chapter -3: Indoor Relays, Timers, Flasher, KLCR				
3.5	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:- Bornee by Railways Payment Terms:- 100% after supply.	No.	3943.56	50	197178.00
3.6	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-23 or latest. The interlocking code for this unit shall be "ABCDF". Inspection authority:- RDSO Inspection charges:- Borne by Railways Payment Terms:- 100% after supply.	No.	3789.37	200	757874.00

3.7	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 Railways Payment Terms:- 100% after supply.	No.	4985.33	30	149559.90
3.8	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 Railways Payment Terms:- 100% after supply.	No.	3938.00	100	393800.00
3.9	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 Railways Payment Terms:- 100% after supply.	No.	5701.45	100	570145.00
3.13	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 Railways Payment Terms:- 100% after supply.	No.	4983.53	200	996706.00
3.14	Sealing wire used for sealing of signaling relays & equipments. Inspection authority:- Consignee Inspection charges:-None Payment Terms:- 100% after supply.	Kg	175.27	2	350.54
3.17	Track Relay QBAT, AC immunized, 2F-2B contacts, 9 ohms. Complete with plug board, retaining clip & connectors as per RDSO/SPN/84 Ver 2.0 or latest. The interlocking code for this unit shall be "ABEJX".Inspection authority:- RDSOInspection charges:- Borne by RailwaysPayment Terms:- 100% after supply.	No.	7080.00	5	35400.00
3.18	Q-Series Line Relay (QNA1 Type), AC immunized, 8F/8B, 24 V DC along with plug board (base plate), connectors, retaining clips etc and conforming to BRS-931A and RDSO Specn.No.IRS:S-34, S-23 and S-60 or latest. The interlocking code for this unit shall be "ABDGH". Inspection authority:- RDSO Inspection charges:- Borne by Railways	No.	3913.67	375	1467626.25

	Payment Terms:- 100% after supply.				
3.19	Q-Series Line Relay (QNA1 Type), AC immunized, 12F/4B, 24 V DC along with plug board (base plate), connectors, retaining clips etc and conforming to BRS-931A and RDSO Specn.No.IRS:S-34, S-23 and S-60 or latest. The interlocking code for this unit shall be "ABDFH". Inspection authority:- RDSO Inspection charges:- Borne by Railways Payment Terms:- 100% after supply.	No.	3805.50	125	475687.50
3.20	Q-Series Track Relay (QTA2 Type), AC immunized, 9 Ohms, 2F/1B along with plug board (base plate), connectors, retaining clips etc and conforming to BRS:939A & 966(Appendix F2) or latest.The interlocking code for this unit shall be "FGHKX". Inspection authority:- RDSO Inspection charges:- Borne by Railways Payment Terms:- 100% after supply.	No.	3734.70	75	280102.50
3.25	Key Lock Checking Relay (KLCR) working on 24V DC, AC Immunized with different ward combinations and contact configuration 4F/4B with 2 extra ward plates and with case, RDSO spec no. RDSO/SPN/219/2016 ver 1.0 or latest, confirming to IRS S-23, S-34 & S-60, IRS S:46. Inspection authority:- For bare relay -RDSO, for key lock housing- consignee Inspection charges:-Bornee by Railways Payment Terms:- 100% after supply.	No.	9440.00	100	944000.00
3.26	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 Railways Payment Terms:- 100% after supply.	No.	7080.00	60	424800.00
	Chapter-4: Relay racks, CT racks, Tag Blocks, Terminal, Fuses, Indoor cables and Jumper wires				

4.1	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. 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 Railways (ii) None Payment Terms: 100% on Supply	Km	5813.26	7	40692.82
4.2	Supply of 1 x 6 Sqmm (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 0.8 mm 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. 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 Railways(ii) None Payment Terms: 100% on Supply	meter	36.37	100	3637.00
4.3	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 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. 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 Railways (ii) None Payment Terms: 100% on Supply	meter	57.53	100	5753.00
4.4	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.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 Railways(ii) NonePayment Terms: 100% on	meter	99.45	100	9945.00

	Supply				
4.5	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 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 Railways (ii) None Payment Terms: 100% on Supply	meter	155.29	100	15529.00
4.6	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 Railways (ii) None Payment Terms: 100% on Supply	meter	176.93	100	17693.00
4.7	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, insulat	Per station	38132.15	6	228792.90
4.8	Supply of indoor PVC jumper wire (1x 0.6 mm) of all colours as per RDSO Specn.No.IRS:S-76/89 (Amnd.3) or latest.. Note: wires colours will be specified/decided by site 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 Railways (ii) None Payment Terms: 100% on Supply	Km	2413.22	1	2413.22

4.9	Supply of indoor PVC jumper wire (1x1 mm) of all colours as per RDSO Specn.No.IRS:S-76/89 (Amnd.3) or latest. Note: wires colours will be specified/decided by site 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 Railways (ii) None Payment Terms: 100% on Supply	Km	5633.33	1	5633.33
4.13	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 not covered under this item. Cable termination rack shall be Powder Coated. 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 Railways (ii) None Payment Terms: 100% on Supply	No.	22732.41	10	227324.10
4.14	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 Rly engineer at site. Inspection: Consignee Inspection Charges: None Payment Terms: 100% on Commissioning.	No.	8687.12	10	86871.20
4.15	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 Railways. Payment Terms: 100% on supply.	No.	87.41	4000	349640.00
4.16	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 Railways.Payment Terms: 100% on supply.	No.	152.98	1500	229470.00
4.19	Supply of round head type non-detorating type low voltage cartridge fuse as per RDSO Specn.No.IRS:S-78/92 or latest and Capacity - 2/4/6/10A/16A/20A Amp. (material will be supplied only from approved vendors of RDSO). Inspection: Consignee Inspection Charges: Borne by Railways. Payment Terms: 100% on supply.	No.	54.64	3000	163920.00

4.24	Supply of PVC insulated Railway Signaling multi-core Indoor Cable 60core (0.6mm dia) conforming to IRS:76/89(Amd3) or latest. 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 Railways (ii) None Payment Terms: 100% on Supply	Km	154443.58	1	154443.58
4.25	Termination of Outdoor Cables (Main Cables /tail cables) at both ends in location boxes, cable termination rack in relay room, station building, generator room etc. The item includes dressing of cables and wires with dressing threads as per standard practice. All material required for this item will be supplied by contractor. The outdoor cable shall be terminated in Relay Room, DG Room, ASM Room etc under supervision and instructions issued by Engr. incharge of the work. Inspection: Consignee Inspection Charges: None Payment Terms: 100% after execution	Per Coductor	8.46	15000	126900.00
4.28	Supply of Disconnect Terminal Block, Screw less type, as per RDSO Spec. No. RDSO/SPN/189/2004 (Modular Terminal Blocks, Fuse Terminal Blocks &Miniature fuse link of international standard for Railway signaling) With latest amendments. 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 Railways (ii) None Payment Terms: 100% on Supply		0.00		0.00
4.28(i)	Supply of Disconnect Terminal Block, Screw less type, 4-wire front entry (Two in-put & Two out-put) The colour will be decided by Engineer - in - Charge. (Preferably In Blue, Red & Grey Colors in the ratio of 1:2:3)	No.	54.63	20000	1092600.00
4.28(ii)	Supply of End plate for item 4.28 (i) of Chapter 4 of revised SOR 2.5mm/0.091 in thick as per site requirement.	No.	10.24	5000	51200.00
4.28(iii)	Supply of End Stopper for item 4.28 (i) of Chapter 4 of revised SOR 10mm/0.0394 in width as per site requirement.	No.	10.24	5000	51200.00
4.28(iv)	Supply of Carrier Rails for above 35mm x 7.5mm, 1mm/0.039 in thickness un-slotted type as per site requirement.	Mtrs.	106.98	5000	534900.00
4.28(v)	Supply of Markers strip for item 4.28 (i) of Chapter 4 of revised SOR	No.	15.93	1000	15930.00

4.34	Supply of Fuse auto changeover system for used in Railway Signaling System as per RDSO/SPN/209/2012 rev.1 with 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. 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. Inspection charges:(i)Borne by Railways (ii) None Payment Terms: 100% after supply.	Per Modul e	29277.62	10	292776.20
4.35	Supply of Fuse auto changeover system for used in Railway Signaling System as per RDSO/SPN/209/2012 rev.1 with latest amendments. One Automatic changeover Unit comprise 24 nos. of external Non Deteriorating Type or 'G' type fuses from 4 Amp to 10 Amp capacities which are in signaling circuits. System shall have 6 cards with monitoring arrangement of 4 fuses in one card. 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. Inspection charges: (i)Borne by Railways (ii) None Payment Terms: 100% after supply.	Per Modul e	48285.03	10	482850.30
4.36	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. Inspection: Consignee Inspection charges: None Payment Terms: 100% on commissioning	Per Modul e	885.44	20	17708.80
	Chapter -5: Power Supply Equipments, Batteries, Surge protection, Program Switches, DG sets				

5.14	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 contactors own material. It includes transportation of IPS from consignee depot to work site/station/ LC gate. Inspection: Consignee Inspection Charges: None Payment Terms: 100% after execution				
5.14(ii)	For LC gate/IBS/ ALH Hut/ Portacabin	Nos.	36592.19	6	219553.14
5.24	Supply of Self Regulating Type Battery Charger, 230V AC/110V DC, 50 Amps as per RDSO Specn.No.IRS:S-86/2000 (Amnd.4) or latest. Inspection: RDSO Inspection Charges: Borne by Railways Payment Terms: 100% on Supply	No	122346.29	6	734077.74
5.26	Supply of uncharged Low Maintenance Lead Acid (LMLA) secondary cell, shelf mounting type conforming to RDSO Specn.No.IRS:S-88/2004 or latest with inter cell connectors, nuts and bolts etc. Inspection: RDSO Inspection Charges: Borne by Railways Payment Terms: 100% after Supply.				
5.26(i)	2V, 80 AH	No.	2067.93	150	310189.50
5.26(ii)	2 V, 200 AH	No.	5665.46	42	237949.32
5.26(iii))	2V, 300AH	No.	7059.56	360	2541441.60
5.27	Charging of Lead Acid Batteries with contractors own battery grade sulphuric acid and distilled water with minimum two charge - discharge cycles, installation of charged batteries in groups & their connection & wiring. The work shall be done as per extant practice of N.W.Rly & instruction of Engineer-in-charge. Detailed measurements of initial charging shall be recorded jointly by contractor & Rly's site-in-charge. Inspection: Consignee Inspection Charges: None Payment Terms: 100% after Execution.		0.00		0.00
5.27(i)	2V 80AH	No.	371.02	150	55653.00
5.27(ii)	2V 200AH	No.	985.59	42	41394.78
5.27(iii))	2V 300AH/ 500 AH	No.	986.73	360	355222.80

5.40	Installation, wiring, testing and commissioning of Diesel Generator Set 20 KVA, Single Phase, 240V, 1500 RPM, 50 Hz, 30 BHP (minimum) mounted with air cooled double cylinder diesel engine with acoustic enclosure complete silent type DG sets confirming to RDSO Specn.No.IRS(S) 69/86 with latest. (CPCB Noise and Emission Complaint) Kirloskar make engine/alternator. This also includes supply of standard AMF control panel, supply of 12V/120 AH battery set along with battery charger of suitable rating for charging the batteries to ensure self starting arrangement of DG sets. It also includes supply of start/stop buttons, Volt/Ampere/Frequency meters and 63 AMP MCB(minimum). Note: DG set will be procured from OEM or authorized dealer of OEM's with the warranty certificate of minimum 1 year. All masonry work required for installation of DG set will be done by contractor under supervision/instructions issued by site engineer incharge. Inspection: Consignee Inspection Charges: None Payment Terms: 100% after Commissioning	No.	97013.46	6	582080.76
5.44	Supply of Rubber Mat for Power Equipment room. (5mm/10mm/12 mm/20 mm thick) Inspection: Consignee Inspection Charges: None Payment Terms: 100% after Supply.	Kg.	106.98	100	10698.00
5.57	Supply of maintenance stand for relay room / battery room as per samples as per samples /drawings approved by the site engineer incharge. Inspection: Consignee Inspection Charges: None Payment Terms: 100% after supply.	No.	2390.64	1	2390.64
5.58	Supply of active lightening arrester of Class A for building protection as per standard NFC-17-102. It shall work on early streamer emission principle & shall be made of stainless steel with a T of 60 microseconds. Non resettble type counter shall also be supplied to count the number of lightening occurances. It also includes supply of electrolytic copper tape of 25mmX2mm or better for connecting class A device to the earth pit. This include installation, testing and commissioning of Class A device on the top of the building. This device shall be installed at suitable height on the roof of the building using a GI mast as per instructions of Railway engineer at Site. The device shall be connected to earth pit using a copper tape of 25mm x 2mm or better. This copper tape shall be run firmly only the site of the mast with the help of spacers. It shall also be ensured that the down conductor shall not touch the building throughout. the down conductor shall be connected to the earth electrode using exothermic welding. A counter shall be installed at appropriate space to count the number of occurrence. All the accessories like spacers, welding material etc. required for installaion shall be arranged by the contractor. Inspection: ConsigneeInspection Charges: NonePayment Terms:	No.	66992.10	12	803905.20

	100% after commissioning.				
	Chapter -06: Points Machine		0.00		
6.1	Supply of ELECTRIC POINT MACHINE 143 MM STROKE AC IMMUNITY 160V AC COMPLETE WITH LOCK DETECTOR AND SLIDES FOR LOCK DETECTOR NON -TRILABLE TO OPERATE ON 110 V DC ROTARY LOCKING WITH CRANK HANDLE UNIVERSAL TPE AS PER RDSO SPECN. NO. IRS:S-24/2002 (AMND 1) RDSO DRG. NO S-10800 (ALT.5) WITH JUNCTION BOX TELESCOPIC. THE MOTOR WILL BE AS PER RDSO SPECN. NO. IRS: S-37/82 (AMND. 3) WITH RDSO DRG. NO. S-10910. This includes supply of Set of tools as per para20.1 & 20.2 of RDSO SPECN. NO. IRS:S-24/2002 (AMND 1) 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). 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 alongwith compatible Tee handle Square drive as per IS: 7975 suitable for above socket wrenches shall also be provided.) ii). Open jaw wrenches (spanners) for M10, M12, M20, M24 & M33 threads as per IS: 2028. iii). Adjustable wrench. iv). Screw driver 300 mm long. 20.2 Junction box and two numbers of telescopic pipes of approved type shall be supplied as an integral part of the point machine. Inspection: RDSO Inspection Charges: Borne by Railways Payment Terms: 100% after Supply.	No.	60412.20	30	1812366.00

6.2	Supply of ELECTRIC POINT MACHINE 143 MM STROKE AC IMMUNITY 400V AC COMPLETE WITH LOCK DETECTOR AND SLIDES FOR LOCK DETECTOR NON -TRILABLE TO OPERATE ON 110 V DC ROTARY LOCKING WITH CRANK HANDLE UNIVERSAL TPE AS PER RDSO SPECN. NO. IRS:S-24/2002 (AMND 1) RDSO DRG. NO S-10800 (ALT.5) WITH JUNCTION BOX TELESCOPIC. THE MOTOR WILL BE AS PER RDSO SPECN. NO. IRS: S-37/82 (AMND. 3) WITH RDSO DRG. NO. S-10910. This includes supply of Set of tools as per para20.1 & 20.2 of RDSO SPECN. NO. IRS:S-24/2002 (AMND 1) 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). 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 alongwith compatible Tee handle Square drive as per IS: 7975 suitable for above socket wrenches shall also be provided.) ii). Open jaw wrenches (spanners) for M10, M12, M20, M24 & M33 threads as per IS: 2028. iii). Adjustable wrench. iv). Screw driver 300 mm long. 20.2 Junction box and two numbers of telescopic pipes of approved type shall be supplied as an integral part of the point machine. Inspection: RDSO Inspection Charges: Borne by Railways Payment Terms: 100% after Supply.	No.	72450.00	5	362250.00
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6.3	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 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 Railways). (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 Railway 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 Railways / covered in Schedule separately Inspection: Consignee Inspection Charges: None. Payment Terms: 100% after commissioning.	No.	27586.01	80	2206880.80
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6.4	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. (b) Insulating bushing for leadingg insulated stretcher bars for BG as per RDSO Drg.No.T-10535- 4 Nos. (c) Insulating Washer for insulated stretcher bar BG as per RDSO drg.No.T-10371 – 6 Nos. 2.2 Insulation for following stretcher bars BG. Each set comprising of: (a) Insulating side plate for insulated stretcher bars BG as per RDSO Drg.No.T-10367 – 3 No. (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& 3. Gauge tie plates (52 Kg/60Kg as per site requirement) Insulation for (BG) complete with insulating bush and washer each set comprising of: (a) Insulating plate for insulated tie plate BG as per RDSO Drg.No.T-10372-1 No. (b) Insulating bushing for insulated stretcher bar BG as per RDSO Drg.No.T10368 – 3 Nos. (c) Insulating Washer for insulated stretcher bar BG to IRS 40/84 as perRDSO drg.No.T-10371 – 6 Nos. 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 Railways (ii) None Payment Terms: 100% on Supply	Set	1290.61	130	167779.30
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6.5	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. Gauge tie plates (52 Kg/60Kg as per site requirement) Insulation for (BG) complete with insulating bush and washer each set comprising of: (a) Insulating plate for insulated tie plate BG as per RDSO Drg.No.T-10372-1 No. (b) Insulating bushing for insulated stretcher bar BG as per RDSO Drg.No.T10368 – 3 Nos. (c) Insulating Washer for insulated stretcher bar BG to IRS 40/84 as per RDSO drg.No.T-10371 – 6 Nos. 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 Railways (ii) None Payment Terms: 100% on Supply	Set	1156.31	50	57815.50
6.8	Supply of ELECTRIC POINT MACHINE ROTARY LOCKING TYPE HIGH THRUST OF 220 MM THROW, AC IMMUNITY 160 VOLT AC, NON - TRAILABLE TO OPERATE ON 110 V DC COMPLETE WITH LOCK AND DETECTOR SLIDES AND CABLE TERMINATION BOX, AS PER RDSO SPECIFICATION NO. IRS : S- 24/2002 AMENDMENT - 1 OR LATEST AS PER DRAWING. NO. RDSO/S- 11000 WITH EXTERNAL CLAMP POINT LOCK AS PER DRG. NO. RDSO/S-3395 AND WITH COMPLETE SET OF GROUND CONNECTIONS WITH NYLON INSULATIONS AS PER DRG. NO. RDSO/S-3454 FOR 60Kg RAILS. THICK WEB SWITCH. LATEST ALTERATIONS IF ANY ARE APPLICABLE TO BOTH DRAWINGS. This includes supply of Set of tools as per para 20.1 & 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). 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 along with compatible Tee handle Square drive as per IS: 7975 suitable for above socket wrenches shall also be provided.) ii). Open jaw wrenches (spanners) for M10, M12, M20, M24 & M33 threads as per IS: 2028. iii). Adjustable wrench. iv). Screw driver 300 mm long. 20.2 Junction box and two numbers of telescopic pipes of approved type shall be supplied as an integral part of the point machine. Inspection: RDSO Inspection Charges: Borne by Railways Payment Terms: 100% after Supply.	No.	113610.00	50	5680500.00

6.9	Refixing of electrical point machine, ground connection during phase working (Non interlocked working) after removing the existing fitting if any, adjustment if necessary, cable termination, wiring , testing and commissioning of electrically operated point, fixing and connecting point indicator on derail switch if necessary. The work shall be done as per extant practice on NWR & the instruction of Railway Engineer at site. Inspection: Consignee Inspection Charges: None. Payment Terms: 100% after Execution.	PER Turno ut	2567.55	5	12837.75
6.14	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. 1.1 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. (b) Insulating bushing for leadingg insulated stretcher bars for BG as per RDSO Drg.No.T-10535- 4 Nos. (c) Insulating Washer for insulated stretcher bar BG as per RDSO drg.No.T-10371 – 6 Nos. 1.2 Insulation for following stretcher bars BG. Each set comprising of: (a) Insulating side plate for insulated stretcher bars BG as per RDSO Drg.No.T-10367 – 3 No. (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 Railways (ii) None Payment Terms: 100% on Supply	Set	386.13	500	193065.00
6.15	Supply of 110V DC motor with 400V AC immunity as per Specification No. IRS:S:37/82 Inspection: RDSO Inspection Charges: Borne by Railways Payment Terms: 100% after Supply.	No.	19180.48	11	210985.28
6.16	Removal of existing point motor and installation of immunised motor. Note: Supply of motor is not included in this item. Inspection:Consignee Inspection Charges: None Payment Terms: 100% after execution.	No.	2928.57	3	8785.71
	Chapter 7: Track Circuit equipments, HASSDAC, MSDAC etc.		0.00		

7.1	Supply of Track feed Battery Charger as per RDSO Specn. No.IRS: S-89/2013 Ver.1.0 or latest. Charging Capacity Rating 10 Amps for Charging 80 AH Battery. Inspection: RDSO Inspection Charges: Borne by Railways Payment Terms: 100% after Supply.	No.	4505.12	100	450512.00
7.2	Supply of Adjustable Track Feed Resistance 30 Ohms (Disc Type) as per RDSO Drg. No.SA-20161-66/M or latest. Inspection: Consignee Inspection Charges: None Payment Terms: 100% after Supply.	No.	1439.17	100	143917.00
7.3	Fixing and wiring of DC track circuit equipments i.e. track feed charger, resistance, track relay, battery, B type choke etc., in the Apparatus Case and battery box as per standard practice. Termination of tail cable on M 6 / Screw less terminals WAGO or FINOLEX or similar approved make terminals/ fuse blocks / HRC fuse. Item includes testing /commissioning of track circuit. Complete wiring material will be supplied by contractor. (Supply of Track feed battery charger, track feed battery, resistances & 'B' type choke & Track relays, ARA terminal/Modular terminals wago/phoenix contact type will be supplied by Railways / covered in Schedule separately). Inspection: Consignee Inspection Charges: None Payment Terms: 100% after execution.	Per Track Cct.	6354.01	80	508320.80
7.4	Installation of DC track circuits covering all types of Track circuits including points zones also. The item includes provision of doubled continuity GI wire bonds on rail joints after drilling bond-hole of 7.0/7.2mm dia, skimming of fish plate, insertion of insulated block joint(if required), fixing of TLJB (separate for positive & negative rails) with angle iron for track feed/jumper/track relay ends of track circuits and also for fixing jumper cables as per approved Track Circuit Plan, making rail connections through suitable insulated sleeves from TLJB at TF, jumper & TR end with GI wire, rail clips for fixing bond wire on the TLJB as per standard practice, termination of tail cables on TLJB terminals etc. TF/TR wiring shall be fixed on the suitable arrangement on PRC sleepers with the help of Hooks. In case Engineer at site desires that jumpering from TLJBs is to be done using signalling cable 2 core X 2.5 sqmm, contractor shall provide the jumpering cable using 2 X 2.5 sqmm signalling cable. The signalling cable will be supplied by Railways. Hooks shall be provided on PRC sleepers with the help of suitable steel bracket. This item also includes fixing & supply of channel pins, Hooks etc. The item does not include supply of TLJB as per RDSO Drg.No.RST-11509 or latest as per technical specs Installation of Track Lead Junction Box(TLJB) as per Drg.No.RST-11509 or latest made from FRP material including brass bolts and hylam board sheet with terminals etc. (a) Installation and commissioning of TLJB complete	Per Track Circuit	7952.90	80	636232.00

	with cover to be in black/red having approximate weight of 4.0 Kg with L-262mm W-212mm and H 90 mm and all the holes required for mounting on FRP stump (vertical two for each FRP angle) HDPE pipe , cable etc. (b) Installation and commissioning of Each TLJB having two bakelite terminal block fitted horizontally : each bakelite terminal block shall have two nickel chrome plate M10 brass terminal, 50mm long. Alongwith each TLJB , nickel chrome plated brass links(two nos. of adequate strength for vertical linking of the terminals to be wired and fixed properly. (c) Installation of HDPE pipe of size 32/35mm , 380 mm long alongwith two nuts for fixing on the TLJB hole . (d) Installation of the FRP stump for mounting the TLJB to be made of one meter long 30mm X30mmX 4mm angle(2 nos.) and 300mm long 30mm X30mmX 4mm angle(1 no.) fixed at 50 mm from the bottom using galvanised nuts and bolts. The TLJB and the angles for stump should be fixed in given holes on them for fixing using galvanised nuts and bolts . Inspection: Consignee Inspection Charges: None Payment Terms: 100% after execution.				
7.5	Supply of Track Lead Junction Box(TLJB) as per Drg.No.RST-11509 or latest made from FRP material including brass bolts and hylam board sheet with terminals etc. The technical specifications are as follows: (a) TLJB complete with cover to be in black/red having approximate weight of 4.0 Kg with L-262mm W-212mm and H 90 mm and all the holes required for mounting on FRP stump (vertical two for each FRP angle) HDPE pipe , cable etc. (b) Each TLJB shall have two bakelite terminal block fitted horizontally : each bakelite terminal block shall have two nickel chrome plate M10 brass terminal, 50mm long. Alongwith each TLJB , nickel chrome plated brass links(two nos. of adequate strength for vertical linking of the terminals to be supplied. (c) HDPE pipe of size 32/35mm , 380 mm long alongwith two nuts for fixing on the TLJB hole . (d) The FRP stump for mounting the TLJB to be made of one meter long 30mm X30mmX 4mm angle(2 nos.) and 300mm long 30mm X30mmX 4mm angle(1 no.) fixed at 50 mm from the bottom using galvanised nuts and bolts. The TLJB and the agles for stump should come alongwith holes on them for fixing using galvanised nuts and bolts of adequate strength to be supplied alongwith TLJB drawing no. 11509. 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.	No.	1778.40	300	533520.00

	Inspection Charges: (i) Borne by Railways (ii) None Payment Terms: 100% on Supply				
7.6	Erection, Fitting and Rail connection of Track Lead Junction Box on two supports (FRP stumps) with contractor's fixing material .This will include drilling of holes for track lead/side connections on rail. The work shall be done as per instructions of Rly engineer at site. Inspection: Consignee Inspection Charges: None Payment Terms: 100% after execution.	No.	1315.64	300	394692.00
7.7	Supply of B Type Choke as per RDSO Specn.No.IRS:S-65/83 (Amnd. 1) or latest. Inspection: RDSO Inspection Charges: Borne by Railways. Payment Terms: 100% after supply.	No.	4098.94	100	409894.00
7.8	Supply of Channel Pins MS (Galvanized) single groove, 7 mm suitable for 4mm dia bonding wire as per spec No IRS S 17 & RDSO Drg No. S-69/M. Inspection: Consignee Inspection Charges: None Payment Terms: 100% after Supply.	No.	5.69	10000	56900.00
7.9	Supply of GI wire 8 SWG (4mm dia) suitable for track circuit rail bonding. Inspection: Consignee Inspection Charges: None Payment Terms: 100% after Supply.	Kg	66.01	1000	66010.00

7.10	Provision/Installation of bonding with GI wire 4mm dia (8 SWG) for track jumper & fish plate joints bonds. This will include drilling of 7.0/7.1/7.2 mm dia holes in rails (4 Nos.) and provision of two jumpers for each bond, clipping of bonds etc. with contractors own tools as per instruction of Rly. Engineer at site. Inspection: Consignee Inspection Charges: None Payment Terms: 100% after Execution.	No.	179.82	1000	179820.00
7.11	Supply of Hydrometer, Exide make or similar for measuring specific gravity of Battery Graded acid with mounting stand in location Boxes. Inspection: Consignee Inspection Charges: None Payment Terms: 100% after Supply.	No.	257.21	125	32151.25
7.26	Installation testing & commissioning of High Availability Single Section digital axle counter (HASSDAC) single section type system complete with track devices and other associated accessories. This include fixing of device, relays, wiring, lacing /dressing, cable termination with lug eyelet, drilling holes in rails, Installation of track devices and make it functional along with existing UFSBI/blockinstrument. Material required other then supply item of HASSDAC in item no. 7.25 of SOR shall be arranged by contactor to make it functional. Inspection: Consignee Inspection Charges: None. Payment Terms: 100% after Commissioning.	set	19999.83	4	79999.32
7.30	Supply of Standard Tool kits, Test and Measuring instruments required for Installation, testing, commissioning & maintenance of HASSDAC. Kit will includes all tools & measuring instruments as per ANNEXURE (Annexure shall be attached with Tender Document) Inspection: Consignee Inspection Charges: None. Payment Terms: 100% after Supply.	Set	126868.56	3	380605.68
7.37	Installation, testing and commissioning of SSBPAC(Digital) for Single Line/Double lineas per RDSO Specification No. RDSO/SPN/175/2005 Ver. 1 or latest alongwith station master block panel alongwith DTMF based Electronic Block Bell & Block Telephone equipment as per specification No RDSO/SPN/191/2005(Ver. 0) or latest , Microprocessor Lighting & Surge protection Devices for power line 24 DC Class-C, Lighting & surge protection devices for DATA Line Class-D,EKT for Shunt Key as per Drg. no. SA-22601/Alt.4 & IRS: S-21/2001 and associated data cable including wired relay rack without relays.(Required relays for this item will be supplied by Railways) Inspection: Consignee Inspection Charges: None. Payment Terms: 100% after commissioning.	No.	171852.45	6	1031114.70

7.38	Supply of Automatic Media changeover Card for SSBPAC(D) which includes One Voice Modem Circuit and One E1 Converter Circuit, for working on redundant channels for data transmission on OFC/Quad. Necessary Lightning & Surge protection devices for data lines need to be provided. Inspection: RDSO Inspection Charges: Borne by Railways. Payment Terms: 100% after Supply.	Pair	107188.70	3	321566.10
7.39	Installation and commissioning of Automatic Media changeover Card for SSBPAC(D) which includes One Voice Modem Circuit and One E1 Converter Circuit, for working on redundant channels for data transmission on OFC/Quad. Necessary Lightning & Surge protection devices for data lines need to be provided. Inspection: Consignee Inspection Charges: None. Payment Terms: 100% after commissioning.	Pair	26797.18	3	80391.54
	Chapter-8: LED Main & Subsidiary signals, CLS units, Route Indicators & foundation etc.		0.00		
8.1	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(Rev.1) or latest.(items to be procured through Stores) Inspection: RDSO Inspection Charges:Borne by Railways. Payment Terms: 100% after Supply.		0.00		0.00
8.2	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 Railways. Payment Terms: 100% after Supply.		0.00		0.00
8.3	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.	No.	178.89	660	118067.40

8.4	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 & 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.) (5). Signal Front Staging Complete Assembly for CLS Unit. (6). Signal back staging as per extent NWR Practice. Note: Note: Height of the Post shall be 5.5 Long. 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 Railways (ii) None Payment Terms: 100% on Supply	No.	10791.46	70	755402.20
8.5	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 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 Railways (ii) None Payment Terms: 100% on Supply	No.	4462.49	10	44624.90
8.6	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 Railways (ii) None Payment Terms: 100% on Supply	No.	4336.16	2	8672.32
8.7(i)	2/3/4 aspect signal unit mounted on offset bracket with junction type route indicator 1/2/3/4/5/6 or multilamp lamp route indicators/Stencil type rout indicator mounted on signal post.	No.	3227.65	15	48414.75

8.7(ii)	2/3/4 aspect signal unit mounted mounted directly on signal post.	No.	2187.43	50	109371.50
8.8	Supply of Non Metallic (FRP) colour light signal housing multi unit type for railway signaling suitable for RE area TWO Aspects. Complete without lenses, lamps and signal transformer as per RDSO DRG. No. SA 23001/A/M Adv. Alt- S and as per SPEC. No. RDSO/SPN/194/2006 (Rev 2.0) or latest and FRP material as per RDSO SPEC. No. RDSO/SPN/151/1997 or latest. 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 Railways (ii) None Payment Terms: 100% on Supply	No.	26768.11	44	1177796.84
8.9	Supply of Non Metallic (FRP) colour light signal housing multi unit type for railway signaling suitable for RE area THREE Aspects. Complete without lenses, lamps and signal transformer as per RDSO DRG. No. SA 23001/A/M Adv. Alt- S and as per SPEC. No. RDSO/SPN/194/2006 (Rev 2.0) or latest and FRP material as per RDSO SPEC. No. RDSO/SPN/151/1997 or latest. 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 Railways (ii) None Payment Terms: 100% on Supply	No.	28042.78	24	673026.72
8.10	Supply of Non Metallic (FRP) colour light signal housing multi unit type for railway signalling suitable for RE area FOUR Aspects. Complete without lenses, lamps and signal transformer as per RDSO DRG. No. SA 23001/A/M Adv. Alt- S and as per SPEC. No. RDSO/SPN/194/2006 (Rev 2.0) or latest and FRP material as per RDSO SPEC. No. RDSO/SPN/151/1997 or latest. 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 Railways (ii) None Payment Terms: 100% on Supply	No.	29954.79	7	209683.53

8.11	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 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 Railways (ii) NonePayment Terms: 100% on Supply	Set	4297.47	40	171898.80
8.12	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 Rly engineer at site. Inspection: Consignee Inspection Charges: None. Payment Terms: 100% after commissioning.	No.	1779.99	40	71199.60
8.13	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 Railways (ii) None Payment Terms: 100% on Supply	No.	3358.53	40	134341.20
8.14	Erection of Position Light shunt signal on Offset bracket on main signal. Inspection: Consignee Inspection Charges: None. Payment Terms: 100% after commissioning.	No.	1967.77	40	78710.80
8.17	Supply of Junction route indicator unit 3 ways (Without Lenses & Holder) as per Drg. No. RDSO SA 23403 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 Railways (ii) None Payment Terms: 100% on Supply	No.	24051.47	18	432926.46

8.21	Supply of multi lamp Route indicator (LED double digit) from 1 to 19 with white LED along with housing as per specification. For 1 to 19 (double digit) MLRI . two digits LED route indicator capable of displaying 1 to 19 routes and route 'G'. visibility of 300 metres in clear day light. Option for white, chromaticity as per BS:1376 standard. Built with robust AlinGap, InGan LEDs junction temperature more than 100% BOC. Lamp proving compatible with normal bulb type multi lamp route indicators . Retrofits the existing conventional multi lamp type route indicators housing . Input operating voltage 110V AC +25%. Uniform intensity over entire operating range. Operating temperature - 10%B0 C to + 60%B0 C. 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 Railways (ii) None Payment Terms: 100% on Supply	No.	66032.52	8	528260.16
8.22	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.	No	590.67	18	10632.06
8.23	Supply of Calling ON Signal Unit with Brackets & Fixing accessories. Calling On Signal Unit shall conform to RDSO Drg no 24351(Adv) Alt1 suitable to LED Signal Lighting Unit. 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 Railways (ii) None Payment Terms: 100% on Supply	No.	2550.48	8	20403.84
8.25	Fixing of Calling-on Signal/A-Sign/AG-Sign unit on signal post. The item includes fixing of Co- On signal /'A' sign/ 'AG' sign unit on signal post with bracket, hood etc. Item includes supply of bracket & fixing materials etc. by the contractor. The item also includes termination of cables & wiring inside Co- On signal /'A' sign/ 'AG' sign unit as per standard practice. Inspection: Consignee Inspection Charges: None. Payment Terms: 100% after commissioning.	NO	2325.14	6	13950.84
8.27	Supply of Different warning Boards / Calling on Board used for Railway Signalling system as per RDSO Drg. No. SA2380 (Adv). This includes Painting and retro reflective arrangement should be as per SEM. Inspection: Consignee Inspection Charges: None. Payment Terms: 100% after supply	No.	4637.76	20	92755.20

8.28	Fixing of Stop Board, Block section limit Board, Shunting Limit Board, goods warning board , Calling on Board with contractors own material. This excludes supply of Stop Board / Block section limit Board / Goods warning board/Calling on board. The work shall be done as per instruction of Rly Engineer at site. Inspection: Consignee Inspection Charges: None. Payment Terms: 100% after installation.	No.	334.60	20	6692.00
8.29	Supply, Fabrication and fixing of Signal Number Plate(CSTE Drg No CSTE/6186) , 'A' Marker (Drg No. CSTE/6180), 'AG' Marker (Drg No. CSTE/6181), 'P' Marker (Drg No. CSTE/6182), Arrow Marker (Drg No. CSTE/6183), 'G' Marker (Drg No. CSTE/6184), 'C' Marker (Drg No. CSTE/6185). marker disk on signals as per standard practice All material required for this work shall be supplied by Contractor. Inspection: Consignee Inspection Charges: None. Payment Terms: 100% after installation.	No.	1223.46	250	305865.00
8.30	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.	No.	5087.65	15	76314.75
8.31	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. Inspection: Consignee Inspection Charges: None. Payment Terms: 100% after installation.	No.	9361.50	70	655305.00
8.32	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.	No.	6310.26	45	283961.70

	Chapter-9: Level Crossing Gates, Interlocking of LC gates, ELBs, Accessories etc.		0.00		
9.1	Supply of Electrically Operated Lifting Barrier complete set suitable for 110VDC/24V DC (option to be specified in tender specifically of either 110 V DC or 24V DC) supply without hand generator back up & motorized boom locking arrangements as per RDSO Spec. SPN/208/2012 with latest amendment. One set consisting 02 Nos of Barriers of length 09.76 Mtrs. along with Spares & tool kit mentioned in RDSO Spec. SPN/208/2012 clause 10.1 & 10.2 as below 10.1 Following spares shall be supplied alongwith each set (02 nos.) of Electric lifting barrier as per requirement of the purchaser i) GI boom - 1 no. complete. ii) Belt - 1 no. iii) Crank handle - 1 no. iv) Motor Contactor - 1 no. v) Motor protection MCB- 1 no. vi) Push button complete- 2 nos. vii) Limit switch - 3 nos. (1 lever type and 2 top roller type) viii) Fuses used - 2 sets 10.2 Tool kit consisting of standard sizes of wrinch/ spanner and Allen keys should also be supplied with each set (02 nos.) of Electric Lifting barrier. Inspection: RDSO Inspection Charges: Borne by Railways. Payment Terms: 100% after Supply.	Set	433500.01	3	1300500.03
9.2	Installation, testing and commissioning of electrically operated lifting barrier, complete with Casting of cement concrete foundation for pedestal and boom rest post, cabling, power supply connection & wiring with complete outdoor work as per approved drawing, wiring etc. Inspection: Consignee Inspection Charges: None. Payment Terms: 100% after Commissioning	Per LC	46739.49	3	140218.47
9.3	Supply of Yellow Retro reflective sheet for LC Boom prismatic grade reflective sheets of size 305 x 290 mm one set consist 18 pieces. Inspection: Consignee Inspection Charges: None. Payment Terms: 100% on Supply	SET	1707.15	30	51214.50
9.4	Supply of Dual Tone Bell /Buzzer with Flasher arrangement and 20 Watt horn working on 24 V DC/ 110 V AC for warning road users at LC gates. Inspection: Consignee Inspection Charges: None. Payment Terms: 100% after Supply	Set.	5188.92	7	36322.44

9.5	Supply of (02) nos. electrical lifting barrier booms of 9.76 meter each as per DRG RDSO/S 11600 . The material will be as per RDSO Specn.No.RDSO/SPN/208/2012/Ver.2.0 and Amendment 1 or latest. Inspection: Consignee subject to procurement from RDSO approved supplier. Inspection Charges: None. Payment Terms: 100% after Supply	Set.	25128.93	15	376933.95
9.6	Supply of Sliding type mechanical Boom barrier assembly 11 to 12 Meter Long, movement drive mechanism, resetting & supporting stand suitable for Mechanical/Electrical level crossing gate as an emergency arrangements as per Drg. mentioned in the tender document. Inspection: Consignee Inspection Charges: None. Payment Terms: 100% after supply	Set	136768.89	3	410306.67
9.7	Installation & commissioning of Sliding booms with E type lock and KLCR. This includes wiring of KLCR, running of cables, necessary painting & transportation of materials from store to site. All material required to commissioning of slide booms on gate will be supplied by the contactor. Inspection: Consignee Inspection Charges: None. Payment Terms: 100% after Commissioning	Per LC Gate	15308.58	3	45925.74
9.8	Casting of CC foundations in the ratio of 1:3:6 for sliding boom as per Drg. Minimum 10 Nos of foundation per set shall be cast using standard size holding down bolts & nuts for erection. Item include excavation, ramming, curing and plastering 1:4 cement and sand mixture. Aggregate, cement, sand and holding down bolts & nuts to be supplied by the contactor. Inspection: Consignee Inspection Charges: None. Payment Terms: 100% after installation	Per LC Gate	29388.02	3	88164.06
	Chapter-10 : Panel room equipments, VDUs(Video Display Units), Fire alarm equipments, Furnitures		0.00		
10.9	Supply of professional LED VDU monitor of display size 75 inch. spec -diagonal size 75",Type 120Hz , slim direct LED blu, resolution 3840-2160,(4K UHD), pixel ; pitch mm) 0.143X0.429mm, brightness type; 300 nit, RGB - DVI-D, display port 1.2, (i) (HDMI 2.0) ,stereo mini jack, DVL- HDMI, USB 2.0X2, RS232C(IN/OUT), RJ45, processor , CORETES A72, 1.7GHz, Quad core CPU, make samsung model no. QB75H, LG,Sony or similar. Inspection: Consignee Inspection Charges:None Payment Terms: 100% after Supply.	No.	305060.00	2	610120.00
10.11	Supply of Office Chair make Godrej CH-7B or similar of reputed brand. Inspection: Consignee Inspection Charges:None Payment Terms: 100% after Supply.	No.	2518.62	10	25186.20

10.12	Supply of Office Revolving Chair Godrej Make Model No.9u02r Bravo Or Similar of reputed brand. Inspection: Consignee Inspection Charges:None Payment Terms: 100% after Supply.	No.	7681.04	3	23043.12
10.13	Supply of Office table with laminated top with three drawers on left hand side and one locker on the right hand side. Olive brown with duplicate keys.Make: Godrej Model T-9 (136.5 cmX68cmX 75cm)or Superior of reputed brand. Inspection: Consignee Inspection Charges:None Payment Terms: 100% after Supply.	No.	15037.72	3	45113.16
10.14	Supply of Steel Plain Almirah with 4 adjustable slavesSize: 1980mm height, 915 mm width and 485 mm depth.Make: Godrej Storewel Plain Large or Similar of reputed brand. Inspection: Consignee Inspection Charges:None Payment Terms: 100% after Supply.	No.	16271.42	3	48814.26
10.17	Supply of Microprocessor based Networkable Analogue Addressable up to 64 nodes 1 Loop Fire Alarm Control panel with LCD display, the panel should be equipped with sufficient nos. of loop as per RDSO Specification No. RDSO/SPN/217/2018 ver 2.0 or latest. Each loop shall have capacity of 127 analogue addressable devices in 1 loop, the panel shall have sufficient nos. of programmable relay control for controlling AHU's, pressurisation fans, ventilation fans at fire pump room, monitoring of fire sprinkler & sealed lead acid batteries sufficient for 24 Hours normal working & then capable of operating the system for 24 Hours during Emergency conditions as required. The panel shall have provision of connectivity of BACNET/ MODBUS/ LONWOK/TCP-IP. The panel shall have dedicated RS232 serial port for direct PC or MODEM connection, optional remote printer as per RDSO Specification No. RDSO/SPN/217/2018 ver 2.0 or latest Inspection: RDSOInspection Charges:Borne by RailwaysPayment Terms: 100% after Supply.	No.	50166.35	6	300998.10
10.18	Installation ,Testing and Commissioning of Microprocessor based Networkable Analogue Addressable up to 64 nodes 1 Loop Fire Alarm Control panel with LCD display, the panel should be equipped with sufficient nos. of loop as per RDSO Specification No. RDSO/SPN/217/2018 ver 2.0 or latest. Inspection: Consignee Inspection Charges: None Payment Terms: 100% after Commissioning.	No.	12541.59	6	75249.54

Tender No. SNT-GS-BKN-2025-26-02R

10.19	Supply of Probe type bimetallic Heat Sensor/Fixed cum ROR 90 degree with required module to be communicated with main fire Alarm Panel as per RDSO Specification No. RDSO/ SPN/ 217/ 2018 ver 2.0 or latest Inspection: RDSO Inspection Charges:Borne by Railways Payment Terms: 100% after Supply.	No.	5367.29	2	10734.58
10.20	Installation ,Testing and Commissioning of Probe type bimetallic Heat Sensor/Fixed cum ROR 90 degree with required module to be communicated with main fire Alarm Panel as per RDSO Specification No. RDSO/ SPN/ 217/ 2018 ver 2.0 or latest Inspection: Consignee Inspection Charges: None Payment Terms: 100% after commissioning	No.	1341.82	2	2683.64
10.21	Supply of intelligent Analogue Addressable Multi-Sensor type smoke detector with inbuilt fault isolator and integral response indicator with 360 degree viewing angle. Detector shall communicate 3 danger levels for differentiated alarm activation and high tolerance to dust, dirt, temperature fluctuations and air current. Detector should have unique address for communication and assigned through panel with mounting base as required with the protection category of IP 40. All items as per RDSO Specification No. RDSO/ SPN/ 217/ 2018 ver 2.0 or latest. Inspection: RDSO Inspection Charges:Borne by Railways Payment Terms: 100% after Supply.	No.	2737.45	80	218996.00
10.22	Installation, testing and commissioning of intelligent Analogue Addressable Multi-Sensor type smoke detector with inbuilt fault isolator and integral response indicator with 360 degree viewing angle as per RDSO Specification No. RDSO/ SPN/ 217/ 2018 ver 2.0 or latest. Inspection: Consignee Inspection Charges:Borne by Railways Payment Terms: 100% after commissioning	No.	684.36	75	51327.00
10.23	Supply of Analogue Addressable Manual Call Point with integral short circuit isolator, Analogue addressable protocol having status LED for alarming & standby mode, Electronically addressed) as per RDSO Specification No. RDSO/ SPN/ 217/ 2018 ver 2.0 or latest Inspection: RDSO Inspection Charges:Borne by Railways Payment Terms: 100% after Supply.	No.	2865.44	7	20058.08
10.24	Installation ,Testing and Commissioning of Analogue Addressable Manual Call Point with integral short circuit isolator, Analogue addressable protocol having status LED for alarming & standby mode, Electronically addressed) as per RDSO Specification No. RDSO/ SPN/ 217/ 2018 ver 2.0 or latest Inspection: Consignee Inspection Charges: None	No.	716.36	6	4298.16

	Payment Terms: 100% after commissioning				
10.25	Supply of UV/IR Type Flame detector with required module to communicate on main fire alarm panel as per RDSO Specification No. RDSO/ SPN/ 217/ 2018 ver 2.0 or latest. Inspection: RDSO Inspection Charges:Borne by Railways Payment Terms: 100% after Supply.	No.	53605.32	2	107210.64
10.26	Installation ,Testing and Commissioning of UV/IR Type Flame detector with required module to communicate on main fire alarm panel as per RDSO Specification No. RDSO/ SPN/ 217/ 2018 ver 2.0 or latest. Inspection: Consignee Inspection Charges: None Payment Terms: 100% after commissioning	No.	13401.33	1	13401.33
10.27	Supply of Linear Heat Sensing (LHS) cable as per RDSO Specification No. RDSO/ SPN/ 217/ 2018 ver 2.0 or latestInspection: RDSOInspection Charges:Borne by RailwaysPayment Terms: 100% after Supply.	meter	599.26	1200	719112.00
10.28	Installation of Linear Heat sensing (LHS) cable as per RDSO Specification No. RDSO/ SPN/ 217/ 2018 ver 2.0 or latest Inspection: Consignee Inspection Charges: None Payment Terms: 100% after execution.	meter	149.82	1200	179784.00
10.29	Supply of LHS interface module as per RDSO Specification No. RDSO/ SPN/ 217/ 2018 ver 2.0 or latest. Inspection: RDSO Inspection Charges:Borne by Railways Payment Terms: 100% after Supply.	No.	25189.84	1	25189.84
10.30	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.	No.	6297.46	1	6297.46

10.31	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 Railways Payment Terms: 100% after Supply.	set	115235.80	1	115235.80
10.32	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	28808.95	1	28808.95
10.33	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 Railways Payment Terms: 100% after Supply.	No.	6435.92	7	45051.44
10.34	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.	No.	1608.98	6	9653.88
10.35	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 Railways Payment Terms: 100% after Supply.	Lot	27324.36	6	163946.16
10.36	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 Inspection: Consignee Inspection Charges: None Payment Terms: 100% after commissioning.	Lot	6831.09	6	40986.54

10.37	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. 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 Railways (ii) None Payment Terms: 100% after Supply.	No.	5301.70	15	79525.50
	Chapter-11: Apparatus case, Outdoor installation, Fuses, ARA Terminal, Hylam Sheet, Phenolic Laminated sheets		0.00		
11.1	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.Note: This item includes the supply of 2 Nos E Type Lock fitted on both doors, along with two Keys.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 policyInspection Charges:(i) Borne by Railways(ii) NonePayment Terms: 100% after Supply.	No.	14945.53	180	2690195.40
11.2	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. Inspection: Consignee Inspection Charges: None Payment Terms: 100% after installation.	No.	1039.09	180	187036.20

11.3	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. Note: This item includes the supply of 2 Nos E Type Lock fitted on both doors, along with two Keys. 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 Railways (ii) None Payment Terms: 100% after Supply.	No.	9439.40	119	1123288.60
11.4	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. Inspection: Consignee Inspection Charges: None Payment Terms: 100% after installation.	No.	632.78	119	75300.82
11.8	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.		0.00		0.00
11.8(i)	Single (Large) Case Apparatus case / SS location box as per Drg No. CSTE/5074	No.	6888.92	180	1240005.60
11.8(ii)	Half (Medium) Case Apparatus case / SS location box as per Drg No CSTE/5074	No.	5259.16	119	625840.04
11.9	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 Railways (ii) None Payment Terms: 100% after Supply.	No.	9563.45	60	573807.00

11.10	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 Inspection Charges:(i) Borne by Railways (ii) None Payment Terms: 100% after Supply.	No.	4855.13	145	703993.85
11.12	Fabrication and fixing of phenolic laminated sheet of size 10/12/20 mm thick in location box by providing all fixtures as per Railway 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 Rly engineer at site.Inspection: ConsigneeInspection Charges: NonePayment Terms: 100% after installation.		0.00		0.00
11.12(i)	Single Case (Large Case)	No.	2344.49	180	422008.20
11.12(i)	Half Case (Medium Case)	No.	684.00	115	78660.00
11.13	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.	No.	12.52	30000	375600.00
11.18	Supply of two pin Lamp holder Bakelite type for Apparatus Cases (ISI mark of reputed make) Inspection: Consignee Inspection Charges: None Payment Terms: 100% after supply	No.	44.39	250	11097.50
11.19	Supply of Miniature 'E' type lock complete with keys as per RDSO Drg. No. SA 3473, 3373 & spec. IRS(S) 30/64. Ward to be specified by Engineer - in - charge. Inspection: Consignee. Inspection Charges: None. Payment Terms: 100% after supply.	No.	2026.96	30	60808.80

11.20	Fixing of KLCR relays in field in half location boxes if Gate lodge is not provided or at any other location as decided by engineer in charge. Item includes supply and fixing of MS sheet and wiring of KLCR relays, push buttons and LEDs for KLCR circuit. The KLCR relays, push buttons, LEDs will be fixed on a MS sheet of min. 3mm in the half location box. The MS sheet will cover full length and breadth of the half location box and divided in two pieces of approx. 48cm x 46cm and 80cm x 46cm. The first piece to be fitted on top and will contain the KLCR relays, LEDs and push buttons. The second piece to be fitted below the first piece. (Supply of KLCR relays covered in separate item of SOR). Inspection: Consignee Inspection Charges: None Payment Terms: 100% after installation.	No.	2193.20	20	43864.00
	Chapter-12: Cable laying material, Cable protection, Cable execution, Jointing Kits items etc.		0.00		
12.2	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.	760.66	450	342297.00
12.3	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 cables from sharp edges and sudden bends. Inspection: Consignee Inspection Charges: None. Payment Terms: 100% after installation.	Mtr.	190.17	450	85576.50
12.4	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.	Mtr.	390.52	150	58578.00

12.5	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 installtion 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: ConsigneeInspection Charges: None.Payment Terms: 100% after Installation.	Mtr.	97.63	150	14644.50
12.6	Supplying and placing of one layer of standard size of 'B' grade quality bricks of the local make spreading on cables laid.(minimum size of brick 200mm X 100mm X 70mm) Inspection: Consignee Inspection Charges: None. Payment Terms: 100% after Installation.		0.00		
12.6(i)	Lengthwise (up to 2 cables).	RM	14.80	2500	37000.00
12.6(ii)	widthwise (more than 2 cables)	RM	31.87	15000	478050.00
12.7	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. 1) Suitable snap fit coupler with rubber O-Ring 2) Spacers 3) Tees 4) Bend, 5) End-cap (The total quantity of above items is equal to no. of pipes supplied.) 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. 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 Railways (ii) None Payment Terms: 100% after Supply	No	1798.20	1450	2607390.00

12.8	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 50 mm outer dia, & 38 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. 1) Suitable snap fit coupler with rubber 'O-Ring 2) Spacers 3) Tees 4) Bend, 5) End-cap (The total quantity of above items is equal to no. of pipes supplied.) DWC pipe shall be marked at every 1 mtr length in such a way that manufacturer's name, vender name and year of manufacture can be easily identified. 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 Railways (ii) None Payment Terms: 100% after Supply	No	360.78	450	162351.00
12.9	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 and shall submit copy of certificate). One of the following coupling arrangements should also be supplied with each pipe as per the site requirement.1) Suitable snap fit coupler with rubber O-Ring 2) Spacers3) Tees4) Bend,5) End-capDWC 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.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 policyInspection Charges: (i)Borne by Railways(ii) NonePayment Terms: 100% after Supply	Mtr.	383.47	1500	575205.00

12.15	Supply of RCC pipes of 150mm internal dia (2 meter long) along with collars as per IS No. 458/2003 of NP type. Inspection: Consignee Inspection Charges: None. Payment Terms: 100% after Supply.	MTR	250.38	150	37557.00
12.16	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	RM	29.59	14500	429055.00
12.17	Supply of Half Round RCC pipes & collars of 300 mm outer dia & 250 mm internal dia (2 meter long) along with collars as per IS No. 458/2003 of NP type Inspection: Consignee Inspection Charges: None. Payment Terms: 100% after Supply.	No.	678.31	100	67831.00
12.18	Supply of Half Round RCC pipes & collars of 150 mm internal dia (2 meter long) along with collars as per IS No. 458/2003 of NP type Inspection: Consignee Inspection Charges: None. Payment Terms: 100% after Supply.	No.	333.46	100	33346.00
12.19	Laying of half round RCC pipe after laying the cables in the trenches. (Cable laying is covered separately) Inspection: Consignee Inspection Charges: None. Payment Terms: 100% after Execution.	RM	21.62	300	6486.00
12.20	Supply of Thermo shrink Universal Jointing kit for Quad Cable (for straight joints) as per RDSO spec IRS/TC-77/2012 revision 3 With latest Amd. Inspection: RDSO Inspection Charges: Borne by Railways Payment Terms: 100% after Supply	NO	2148.73	50	107436.50
12.21	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	NO	1157.45	40	46298.00

12.22	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 DWC-HDPE pipe/ GI pipes coupling etc. as per direction of Engineer In charge. 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. Inspection: Consignee Inspection Charges: None. Payment Terms: 100% after Execution.	Mtrs.	1202.97	2300	2766831.00
12.23	Horizontal Drilling by using manual pushing method at minimum depth of 1.5 meter below the formation level of earth as per decision of Engineer in charge .Pipe Supply is not covered under this item Inspection: Consignee Inspection Charges: None. Payment Terms: 100% after Execution	per meter	122.74	1600	196384.00
12.25	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. Inspection: Consignee Inspection Charges: None. Payment Terms: 100% after Supply	No.	328.68	300	98604.00
12.26	Transportation at site and Installation 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. Inspection: Consignee Inspection Charges: None. Payment Terms: 100% after Execution	No.	82.17	300	24651.00

12.32	Transferring of Signaling/Telecom cables from existing Location box to New Location box . The work include breaking/ Dismantling of Existing foundation of locations, excavating and removing / segregating coils of 2C/6C/12C/19C/24C/30C/Quad cables which may be about 10 mtrs. in length. These cables are to be disconnected and removed from the existing location one by one as per the instruction and under the supervision of Railway staff present at site. The cable is then to be inserted and terminated in new location box. The item includes neatly dressing of cable, making wiring tree etc.The material required to dressing /lacing will be arranged by contactor. The work is required to be done systematically and with due precaution during the block or disconnection within the time that may be allowed. The excavation work to be done carefully without damaging the cable to avoid undue failure. (Termination charges will be given separately). Note: Proportionate payment will be made if cable of other length. One No unit = One cable of 10 m length) Inspection: Consignee Inspection Charges: None. Payment Terms: 100% after Execution	No.	361.92	325	117624.00
12.33	Shifting of Exposed cables. The item includes Removal of exposed cable from existing trench & laying the same in new trenches. Digging, Placing of capping/Half round RCC pipe covered separately. Inspection: Consignee Inspection Charges: None. Payment Terms: 100% after Execution	KM	6860.47	7	48023.29
12.37	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. SDO/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 Railway 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. Inspection: Consignee Inspection Charges: None. Payment Terms: 100% after Execution	Cu. Mtr	274.28	4300	1179404.00

12.40	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. Payment Terms: 100% after Execution	No	12506.58	7	87546.06
12.41	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 cable laid includes the length of the cable coiled for termination purposes. Inspection: Consignee Inspection Charges: None. Payment Terms: 100% after Execution	RM	9.10	45500 0	4140500.00
12.42	Cement concrete work for miscellaneous items in the ratio 1 : 3 : 6 . Item includes excavation, ramming, curing and plastering with cement & sand mixture (aggregate not exceeding 3.8 cm.) (Aggregate cement & sand to be supplied by the contractor). Inspection: Consignee Inspection Charges: None. Payment Terms: 100% after Execution	Per Cu. Mtr.	3628.26	15	54423.90
12.43	Providing brick masonry in ratio 1:6 cement and mortar including plastering with 1:4 cement and sand mixture both sides, 20 mm thick each with contractor's owned class II bricks, including excavation, curing, grouting, bolting etc. wherever required. Bricks sand and cement to be supplied by the contractor.Inspection: ConsigneeInspection Charges: None.Payment Terms: 100% after Execution	Per Cu. Mtr	1990.54	15	29858.10
	Chapter-13: Earthing, Measuring Instruments, Multimeter, Earth Tester, Clamp meters, Fault Locators, ELD(Earth Leakage Detector) etc.		0.00		
13.1	Supply of Earth Leakage Detector (ELD) 12 Channels as per RDSO Specn.RDSO/SPN/256/2002 or latest. Inspection: RDSO Inspection Charges:Borne by Railways Payment Terms: 100% after Supply.	No.	158443.22	6	950659.32

13.2	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.	No.	39610.81	6	237664.86
13.3	Supply of basic material to construct unit maintenance free earth as per RDSO Specs. No RDSO/SPN/197/2008 or latest and conforming to RDSO Drg.No.SDO/RDSO/E&B/001 dtd.19.09.08 . It consist of following: (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. (b) Earth enhancement material supplied in sealed bags of minimum 10 kg = 3 nos. © Copper strip of 150x25x6 mm, to terminate earth rod = 1 no. (d) Copper strip of 300x25x6 mm (MEEB) = 1 no. (e) Copper strip of 150x25x6mm (SEEB) = 1 no. (ii) 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) (iii) 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) (iv) Supply of 10 sq. mm multi strand single core PVC insulated copper cable as per IS: 694 for connecting various equipments to SEEB (v) Supply of copper lug sleeve for 3/16 cable Inspection: RDSO Inspection Charges:Borne by Railways Payment Terms: 100% after Supply.	Lot	17530.73	35	613575.55
13.4	Installation of Unit Maintenance Free Earth as supplied under item no. 13.3 of Chapter 13 of SOR. It includes (i) Digging the earth to the required depth. (ii) Insertion of electrode. (iii) Filling of earth enhancing compound (Approx.30 Kg) (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. (v) This also includes CC cover 1.5 ft x 1.5 ft. 1 ft wall thickness 2 inch with cover 3 inch thickness. 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.	Set	7861.68	35	275158.80

	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 sub equip-potential busbar in relay room, power room and panel room. 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. Note: The installation of this item shall be carried out by the contractor as per RDSO Specn.No.RDSO/SPN/197/2008 or latest and conforming to RDSO Drg.No.S DO/RDSO/E&B/001 or latest. Inspection: Consignee Inspection Charges: None Payment Terms: 100% after execution and testing.				
13.7	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 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.basic material for one earth pit is given below:(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.(b) Earth enhancement material supplied in sealed bags of minimum 10 kg = 3 nos.© Copper strip of 150x25x6 mm, to terminate earth rod = 1 no.(d) Copper strip of 300x25x6 mm (MEEB) = 1 no.(e) Copper strip of 150x25x6mm (SEEB) = 1 no.(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)(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)(h) Supply of 10 sq. mm multi strand single core PVC insulated copper cable as per IS: 694 for connecting various equipments to SEEB(i) Supply of copper lug sleeve for 3/16 cableNote: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: ConsigneeInspection Charges:NonePayment Terms: 100% after Supply.	station	151992.97	6	911957.82

13.8	Installation, testing and commissioning of Ring Earth for EI system which includes installation of all components of earthing & bonding system like earth electrode, earth enhancement material, earth pit, equip- 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 Railway for Approval before execution. Installation of one earth pit includes (i) Digging the earth to the required depth. (ii) Insertion of electrode. (iii) Filling of earth enhancing compound (Approx.30 Kg) (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. (v) This also includes CC cover 1.5 ft x 1.5 ft. 1 ft wall thickness 2 inch with cover 3 inch thickness. 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. 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 sub equip-potential busbar in relay room, power room and panel room. 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 size 300 mm x 300 mm x 300 mm (Inside dimension) of approximate 50 mm thick with pulling hooks to cover the earth pits. 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 commissioning.	station	37998.24	6	227989.44
13.10	Supply of Digital Multimeter of Fluke 287 Industrial or superior True RMS with temperature, Analog bar graph, Digital display, Backlight, 1000V AC/DC, measure up to 10A, 20A for up to 30 second . Inspection: Consignee Inspection Charges:None Payment Terms: 100% after Supply.	No.	44045.61	8	352364.88

13.11	Supply of Professional AC/DC clamp meter 3 ¼ digit , true RMS measurement, For Measurement of DC/AC currents up to 1000A, Voltage up to 600V, resistance up to 40 MΩ and frequency up to 1 MHz with set of leads & carrying case. Model - DCM 39A or equivalent/ higher make Motwane/Stanlay/Fluke/Megger Inspection: Consignee Inspection Charges:None Payment Terms: 100% after Supply.	No.	13946.28	10	139462.80
13.12	Supply of Handheld Digital Earth Clamp Tester for clamp on earth/ground resistance measurement up to 1000 ohms. Accuracy 0.1 - 0.99 Ω: 1%, 1 - 49 Ω: 1.5% Also measure current leakage up to 20A. No spines required for measurement Model - DECT-2 or equivalent / higher version make Motwane/Stanlay/Fluke/Megger. Inspection: Consignee Inspection Charges:None Payment Terms: 100% after Supply.	No.	84854.46	1	84854.46
13.13	Supply of electronic Cable route tracer/locator with underground cable and pipe locating receiver and cable avoidance tool that provide location of armoured OFC , signalling and telecom , power cable etc. make : C Scope Stanley/3M Dynatel , model: DXL-4 DBG /2273M-iD 30 or superior. Inspection: Consignee Inspection Charges:None Payment Terms: 100% after Supply.	No.	416265.75	2	832531.50
13.14	Supply of Road Measuring Cycle, made of Aluminum with 05 digit counter, foldable with bag.Inspection: Consignee Inspection Charges:None Payment Terms: 100% after Supply.	No.	4298.60	4	17194.40
13.15	Supply of Digital Cable Insulation Tester for measurement of cable insulation resistance with auto range 0-500 V DC. Motwani or from any reputed make. Inspection: Consignee Inspection Charges:None Payment Terms: 100% after Supply.	No.	8689.42	8	69515.36
13.17	Supply of Cable Fault Locator to localize the faults of underground cables. Aplab make (Model No.3049) OR C Scope Stanley make(Model TS-90) or superior from any reputed make. It also includes supply of all accessories required to localize faults of underground cables. Inspection: Consignee Inspection Charges:None Payment Terms: 100% after Supply.	No.	57230.47	1	57230.47
13.18	Supply of Digital Earth Resistance Tester for measurement of earth resistance with 3.5 digital LCD, 12.5 mm screen segment and Range -0.5 Ohms to 500 Ohms. WACO or from any repudiated make. Inspection: Consignee Inspection Charges:None Payment Terms: 100% after Supply.	No.	8758.40	8	70067.20
	Chapter 14: Miscellenous Signalling items, Painting, lettering				

14.1	Supply of E type locks complete with keys as per RDSO Drg.No.SA-3376, 3377 & Spec.No.IRS(S) 30/64 or latest. Ward to be specified by Engineer-in-charge. Inspection:Consignee subject to procurement from RECOMMENDED LIST OF FIRMS FOR MECHANICAL SIGNALLING ITEMS if value of whole item in work less than 5 lakhs Inspection Charges: None Payment Terms: 100% after Supply	No.	1827.93	10	18279.30
14.2	Supply of seal plier as per sample got approved from site engineer incharge. Inspection:Consignee Inspection Charges: None Payment Terms: 100% after Supply	No.	1052.83	15	15792.45
14.3	Supply of Vacuum Cleaner, Eureka Forbes or from any reputed make only as per specification given below:- Voltage-230V AC,50Hz, Input Power(IEC)-1000 Watt, Suction of the motor 1700 mm of water column , Airflow-30 litres/second, Dust collection capacity- 61(dry), 81(wet), Variable power option-2 Speed, Blower function, Air filtration-2 Stage, Hepa filter, Dust collection type-Washable dust bag, On board accessory storage. Inspection:Consignee Inspection Charges: None Payment Terms: 100% after Supply	No.	22344.97	1	22344.97
14.4	Supply of Safety lock Godrej or Navtal make size as approved by site engineer. Inspection:Consignee Inspection Charges: None Payment Terms: 100% after Supply	No.	111.94	30	3358.20
14.5	Supply of hand cuff lock Godrej or Navtal make size as approved by site engineer. Inspection:Consignee Inspection Charges: None Payment Terms: 100% after Supply	No.	344.34	800	275472.00
14.6	Supply of Obstruction test piece 3mm/5mm as per sample approved by Engineer incharge. Inspection:Consignee Inspection Charges: None Payment Terms: 100% after Supply	No.	2460.28	13	31983.64
14.8	Painting of two coats of synthetic enamel paint over one coat of primer on the following after scraping & cleaning surface wherever necessary with contractor's own supply of paints. Wherever required contractor shall apply coating of epoxy paint also as per instructions of site-in-charge. Epoxy paint will be supplied by Railways.NOTE:- The paint and primer should be from Asian Paints/ Nerolac / Dulux / Berger. The primer / enamel paints (Aluminum synthetic, black enamel, brilliant white and yellow) will be as per (IS 5660 of 1970) / (IS 2932 of 1974). Inspection:Consignee Inspection Charges: None Payment Terms: 100% after Execution				0.00

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14.8(i)	Apparatus Case Full Size. (Outside & inside)	No	253.80	150	38070.00
14.8(ii)	Apparatus case Half Size. (Outside & inside)	No.	229.90	100	22990.00
14.8(iv)	Main Signal Post with Signal Units, Surface base and complete fittings as per North Western Railways standard practice.	No.	350.53	30	10515.90
14.8(v)	Shunt signal post with signal unit, surface base as per North Western Railway's Standard Practice.	No.	219.65	20	4393.00
14.8(vi)	Point Machine with ground connections complete (Point Machine with Black enamel only outside and ground connections with Red Oxide)	No.	106.98	50	5349.00
14.8(ix)	Painting & Lettering of power operated lifting barriers (ELB) includes Operating console, Aluminum Lifting barriers of 24 fit long, 2 pedestal driving & driven mechanism, 2 Electric motors, 2 stop boards, 2 Nos Boom light, 2 Nos of Boom rest & Boom locking arrangements etc. (All Items at one LC gate to be taken as one LOT)	No.	3237.89	1	3237.89
14.9	Finishing walls with Deluxe Multi surface paint system for interiors and exteriors using Primer as per manufacturers specifications with two or more coats applied @ 1.25ltr/10 sqm. Over and including one coat of Special primer applied @ 0.75 ltr/10 sqm. Inspection: Consignee Inspection Charges: None Payment Terms: 100% after Execution	Per Sq mtr.	70.20	500	35100.00
14.10	Lettering / Numbering Termination particulars, equipments names etc., legibly and neatly inside location boxes. This includes supply of paints of Asian Paints/ Nerolac / Dulux / Berger make. Inspection: Consignee Inspection Charges: None Payment Terms: 100% after Execution				0.00
14.10(i)	Full Case.	No.	119.50	150	17925.00
14.10(i)	Half Case	No.	81.94	100	8194.00
14.12	Dismantling of Concrete foundation/ Demolishing RCC/CC/Stone work /Cutting Tarcarpenting/ CC Flooring/ Precast concrete slab/ Brick work including leading the debries inside Railway limit or outside Railway limit as directed by site in charge. This work to be done by contactors with his own vehicle and labour. Inspection: Consignee Inspection Charges: None Payment Terms: 100% after Execution	Cu. Mtrs.	584.98	10	5849.80
14.17	Complete painting and varnishing work at a station (5/6 or more 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	Station	50626.69	1	50626.69

	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 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. Inspection:Consignee Inspection Charges: None Payment Terms: 100% after Execution				
14.18	Dismantling of existing lever frames/signal fittings/point fittings/lifting barriers (within station limit)/indoor and outdoor equipment and all other released material of S&T at way side station (5/6 Line or more line). All the released material will be transported to the place/location as decided by site engineer. The item includes i). Mechanical Signalling gears like levers, down rods, locking trough, Rodding, wire transmission, signal posts and hoods etc. ii). Electrical Signalling gears like relays, batteries, indicators, SM slide control and all released wire transmission for slot, telephone, selector control and their related items etc. Inspection:Consignee Inspection Charges: None Payment Terms: 100% after Execution	Station	74615.60	1	74615.60
14.19	Hiring of JCB machine(in good condition) for levelling and dressing ground/ dismantling structures including disposal of debris through dumpers etc with contractors labour , JCB machine , machine operator, fuel etc. The contractor shall arrange for road permit for all the states for operation as per instructions of engineer incharge and vehicle shall not be more than 3 years old . Payment shall be made for actual working hrs at site. Inspection:Consignee Inspection Charges: None Payment Terms: 100% after Execution	hrs.	1090.59	200	218118.00
14.27	Supply & fixing of Crank Handle Box & SM's key box of size 450 mm x 250 mm x150 mm and made of 12 mm thick teakwood with a glass front, lock and sealing arrangement. All material like lock, teakwood, handles, hinges, glass sheet of 3 mm thick will be supplied by the contractor. Box will be polished and description will be written as per instructions of Engineer in charge. Inspection:Consignee Inspection Charges: None Payment Terms: 100 % after Execution	No.	1830.92	6	10985.52

14.28	Supply & fixing of KLCR boxes & fixing of KLCR Relays in ASM office. It includes supply of any minor bracket, nuts, bolts, teakwood, sun mica, lock, drilling hole etc as directed by engineer at site. It also includes supply and wiring of push buttons along with LEDs for KLCR circuit. Rly will supply only KLCR relays and contractor has to wire KLCR relays. It includes supply of all the related wiring material. Inspection:ConsigneeInspection Charges: NonePayment Terms: 100 % after Execution	No.	1722.47	1	1722.47
	Chapter- 15: Telecom items(Conference system, IPIS, OFC equipments, Control equipments, LC gate phones etc.)				
15.1	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.	Mtr.	18.74	6100	114314.00
15.2	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.	No.	3316.73	2	6633.46
15.6	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. Inspection: Consignee Inspection Charges: None. Payment Terms: 100% after Execution.	No.	12752.20	5	63761.00
15.7	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. 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:(i) RDSO if value of item in work more than 5 lakhs or as per extant policy (ii) Consignee subject to procurement from RDSO	No.	193957.98	1	193957.98

	approved vendors if value of whole item in work less than 5 lakhs or as per extant policy Inspection Charges: (i) Borne by Railways (ii) None Payment Terms: 100% after Supply				
15.11	Supply 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 supply of all the accessories of HDPE duct like end caps, collars, bends, couplers etc. 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 Railways (ii) None Payment Terms: 100% on Supply	km.	48313.26	67	3236988.42
15.12	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. Inspection: Consignee Inspection Charges: None. Payment Terms: 100% after Execution.	km.	12078.31	64	773011.84
15.13	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.	km.	10804.77	64	691505.28
15.14	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.	No.	5263.87	30	157916.10

15.15	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. Inspection: Consignee Inspection Charges: None. Payment Terms: 100% after Execution.	No.	36716.41	1	36716.41
15.17	Supply & Installation of Professional 19" Equipment Racks 12U for housing of network equipment. Inspection: Consignee Inspection Charges: None. Payment Terms: 100% after Execution.	No.	7358.68	1	7358.68
15.18	Supply & Installation of 19" Rack 17U with power strip and all fitting accessories for housing of network equipment. Inspection: Consignee Inspection Charges: None. Payment Terms: 100% after Execution.	No.	17545.25	1	17545.25
15.20	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 Railways (ii) None Payment Terms: 100% on Supply	No.	127514.14	1	127514.14
15.22	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.	No.	37035.61	1	37035.61
15.23	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.	No.	77027.97	5	385139.85

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15.24	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.	No.	19256.99	1	19256.99
15.25	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 Railways. Payment Terms: 100% after Supply.	No.	244224.00	1	244224.00
15.34	Supply of OTDR 32 DB model JDSU MTS8126SR or similar. Inspection: Consignee Inspection Charges: None. Payment Terms: 100% after Supply.	No.	255404.19	3	766212.57
15.35	Supply of Fusion Splicing Machine model Fujikura FSM-60S or similar. Inspection: Consignee Inspection Charges: None. Payment Terms: 100% after Supply.	No.	374955.33	3	1124865.99
15.36	Supply of Laser source and Power meter. FOD make (Source FOD 2107 and Power meter FOD 1202) or similar. Inspection: Consignee Inspection Charges: None. Payment Terms: 100% after Supply.	No.	173892.57	3	521677.71
15.37	Supply 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 Supply.	Nos	1232.67	4	4930.68
15.38	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	308.17	4	1232.68
15.39	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	1963.08	4	7852.32
15.40	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	490.77	4	1963.08

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15.45	Supply of DLP trunk 80X50mm with required all changeable internal/external angle, changeable flat angle, flat junction. Clips, joint for cover, end cap etc. make Legrand or superior. Inspection: Consignee Inspection Charges: None. Payment Terms: 100% after Supply.	Mtr.	654.77	200	130954.00
15.46	Fixing & wiring (Laying) of DLP trunk 80X50mm with required all changeable internal/external angle, changeable flat angle, flat junction. Clips, joint for cover, end cap etc. make Legrand or superior. Cable will be supplied by Railway and all other fixing material will be supplied by contractor. Inspection: Consignee Inspection Charges: None. Payment Terms: 100% after execution.	Mtr.	163.69	200	32738.00
15.47	Supply of DLP trunk 32X20mm with required all changeable internal/external angle, changeable flat angle, flat junction. Clips, joint for cover, end cap etc. make Legrand or superior. Inspection: Consignee Inspection Charges: None. Payment Terms: 100% after Supply.	Mtr.	110.87	500	55435.00
15.48	Fixing & wiring (Laying) of DLP trunk 32X20mm with required all changeable internal/external angle, changeable flat angle, flat junction. Clips, joint for cover, end cap etc. make Legrand or superior. Cable will be supplied by Railway and all other fixing material will be supplied by contractor. Inspection: Consignee Inspection Charges: None. Payment Terms: 100% after execution.	Mtr.	27.72	500	13860.00
15.49	Supply of frame, surface box and white cover plates for Two modules. This also includes supply of RJ-11 Telephone sockets with level holder Jack type, RJ-45 LAN sockets Jack Type (Tool less) and blanking plates for one modules. Make: Legrand or superior. Inspection: Consignee Inspection Charges: None. Payment Terms: 100% after Supply.	Nos.	571.96	10	5719.60
15.50	Fixing of frame, surface box and white cover plates for Two modules. This also includes fixing of RJ-11 Telephone sockets with level holder Jack type, RJ-45 LAN sockets Jack Type (Toolless) and blanking plates for one modules. Make: Legrand or superior. Inspection: Consignee Inspection Charges: None. Payment Terms: 100% after execution.	Nos.	142.99	10	1429.90

15.51	Final location joint survey of proposed cable route plan(Quad/OFC Cable) and submission for approval of Railway. The details instruction/guidelines regarding joint survey and preparation of cable route plan are enclosed in Tender document. Contractor will submit two copies of prints with soft copy for checking by Railways. If alterations are suggested by Railways, then again two copies of prints will be provided for advance approval after carrying out all the alterations as submission of final cable route plan on 75 microne standard polyester film which includes details of entire section in which Quad /OFC Cables are laid. Once Railway has approved/signed tracings for cable route plan then contractor will submit 6 (Six) sets of zerox copies for cable route plan in proper binding form. Inspection: Consignee Inspection Charges: None. Payment Terms: 100% after execution.	km.	985.48	12	11825.76
15.62	Supply of OFC single mode 6 fibre unarmoured cable. Make Molex/ AMP/Finolex or similar. Inspection: Consignee Inspection Charges: None. Payment Terms: 100% after supply.	meter	28.25	3000	84750.00
15.63	Supply of Electronic LC gate telephone system in 1+6 configuration with inbuilt voice recorder . It includes supply of 'surge protection and line connection unit /circuit' and centralised power supply system with battery as per RDSO Spec no. RDSO/SPN/TC/51/2011 Revsion 3.0 amnedment 1.0 or latest. 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 Railways (ii) None Payment Terms: 100% after Supply	No.	65503.57	1	65503.57
15.64	Installation of Electronic LC gate telephone system in 1+6 configuration with inbuilt voice recorder . It includes installation of 'surge protection and line connection unit /circuit' and centralised power supply system with battery as per RDSO Spec no. RDSO/SPN/TC/51/2011 Revsion 3.0 amnedment 1.0 or latest. All the material required for fixing and installation of station telephone init and gate telephone(slave telephone) will be supplied by the contractor.Inspection: ConsigneeInspection Charges: None.Payment Terms: 100% after execution.	No.	18329.15	1	18329.15

15.65	Supply of LC Gate Telephone(Slave Telephone) of Electronic LC gate telephone system as per RDSO specification No. RDSO/SPN/TC/51/2011 Revision 3.0 or latest. This slave telephones are compatible/suitable for existing Master Telephones installed in section. 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 Inspection Charges: (i)Borne by Railways (ii) None Payment Terms: 100% after Supply	No.	5370.75	2	10741.50
15.66	Supply of Emergency Socket Box made of FRP material as per RDSO Specification No. RDSO/SPN/TC/44/2002 Version 2.0 Amemdment No. 3 or latest. Inspection: Consignee Inspection Charges: None. Payment Terms: 100% after Supply.	No.	4364.82	10	43648.20
15.67	Fabrication and erection of emergency rail post along the side of Rly track as per the location given by site engineer. It includes supply, fixing and wiring of socket box on emergency rail post. It includes supply of all the items except the Rails and Cable which will be arranged/provided by Railway. The contractor will complete all related work along with excavation if required for erection/installation of emergency rail post. 6-Pin emergency socket will be supplied as per RDSO Spen.No.IRS:TC42/87. Each socket box should have inbuilt universal lock facility with key as per sample approved by site engineer. Note: Contractor will supply the emergency socket box only after sample got approved from site engineer. Inspection: Consignee Inspection Charges: None. Payment Terms: 100% after execution.	No.	2249.41	10	22494.10
15.69	Painting of emergency post and sockets in sections as per insructions of the site engineer in charge. This shall include all material, labour and transportation required for painting of emergency post and sockets in section. Inspection: Consignee Inspection Charges: None. Payment Terms: 100% after execution.	No.	248.70	10	2487.00
15.70	Supply of VF Transformers (2T/3T), 1120/470 Ohms as per RDSO Speen.No. IRS: TC-7612000 with Amnd I or latest for emergency joints in 6-Quad Cable. Inspection: Consignee Inspection Charges: None. Payment Terms: 100% after Supply.	No.	923.13	30	27693.90
15.76	Supply of wireless N 150 ADSL 2 Plus 4 port router MODEM make Techroutes/DIGISOL or superior. Inspection: Consignee Inspection Charges: None. Payment Terms: 100% after Supply.	No.	1491.47	50	74573.50

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15.94	Supply of power cable 3 core 2.5 sq mm multi strand (36/0.3 mm dia) cable as per IS 694:1990 reaffirmed 1995 or latest suitable for railway electrification area shall be of reputed make like Delton, LAPP, Finolex, or superior. Inspection: Consignee Inspection Charges: None. Payment Terms: 100% after supply.	Metre	33.02	5000	165100.00
15.106	Supply of SFP Optical/Electrical 1 Gbps or 100/1000 Mbps Electrical as required. Make: Cisco, Eoptical or similar suitable for Neon. Inspection: Consignee Inspection Charges: None. Payment Terms: 100% after Supply.	No.	4025.00	20	80500.00
15.58	Supply, installation and complete wiring of optical fibre cable termination box for 6 fibres complete with base housing, base mountings with fixing arrangement etc. & splicing of fibre with low loss of pigtail cables. Splice losses in no case should be more than 0.1 dB. Necessary 0dB connectors should be provided in OFC termination box. Inspection: Consignee Inspection Charges: None. Payment Terms: 100% after execution.	No.	3347.14	10	33471.40
	SOR-Total				87713223.43
	NON-SOR ITEMS				
NS-1	Supply and installation of earth electrode including MS plate for signalling equipment as leverframe, apparatus case, signal, relay rack, block instrument etc as per instruction of site engineer.	No.	6800.10	100	680010.00
NS-2	Tool Kit for signal maintenance with following items (i). Insulated combination plier of 6" = 1 No (ii). Insulated long nose plier (Road wise) 6" = 1 No (iii). Insulated wire stripper 6" = 1 No (iv). Insulated Screw driver set (5 piece) = 1 set (v). "Side cutting plier 6" = 1 No (vi). Hex with fraction 12" = 1 No (vii). Double end spanner set (6 to 32 mm) = 1 set (viii). Adjustable spanner set 8" = 1 No (ix). Ball pin hammer 200 gm = 1 No (x). Soldering iron 25 w = 1 No (xi). Torch cell LED (3cell) exothermic/Jeep = 1 No (xii). Auto Ranging digital multimode (Meeco/Rishabh) = 1 No	Set	6636.99	10	66369.90
NS-3	Supply of magneto Telephone Desk Type (push button) spec No. TC-79/2000 with Amendment No. 3 or latest.	No.	2761.86	50	138093.00
NS-4	Fixing and wiring of outdoor relays. It includes all the necessary material for wiring of outdoor relays. Note : Relay will be supplied by railways.	No.	638.34	500	319170.00
NS-5	Supply and installation of OFC Joint closure conforming to TEC Spec. and splicing of Optic Fibre Cable' (48 Fibres) and testing of fibre for 1310 :1550 nm.	No.	10204.76	10	102047.60
NS-6	Supply and Installation of Rack mountable 48 Fibre management system (FMS) conforming to RDSO/SPN/TC-3712000(rev-3) amdt-1 or latest similar to COMSCOPE make or better, suitable for splicing and front patching 48F cable with all accessories and terminating the optical fibre cable with splicing and front patching in FMS in the	No.	22847.41	10	228474.10

	equipment room.				
NS-7	Supply of Multi section digital axle counter complete set with all accessories consisting of complete indoor and outdoor equipment including including reset box, and monitoring console as per RDSO specification no. RDSO/SPN/176/2013(ver. 3) with latest amendment /revision of required track section. It includes transportation to SSE depot and from SSE depot to site. Inspection by RDSO (1 Number =1 DP).Note: 1. If any housing is required to keep outdoor equipment, it has to be supplied with the equipment with no extra cost. 2. Maintenance free ear thing (supply and installation) for track device/mushroom housing to be done by the contractor if required by system design. No separate payment will be made. 3. Automatic resetting will be provided by providing soft supervisory track section as per scheme plan. All hardware software for auto resetting to be provided by the contractor. 4. All other hardware like extra cards modem etc's required for commissioning will be supplied by the contractor. Separate Evaluator to be provided for up and Dn line as well as at station or RH as decided by the site engineer. ABS scheme will be as per letter no. SG/42/NWR/HQ/Vol VII dtd.31.05.2022	No.	341701.93	200	68340386.00
NS-8	Installation, Testing and Commissioning of Multi Section Digital Axle Counter (MSDAC) Complete set with all accessories Consisting of complete indoor and outdoor equipment including reset box and monitoring console as per RDSO Specification No. RDSO/SPN/176/2013(ver. 3) with latest amendment/revision of required track section. It includes transportation to SSE depot and from SSE depot to site (1 Number = 1 DP). Note: It includes supply of HDPE pipe for laying of transmitter and receiver cable, digging of trench under track up to location/mushroom housing. All other accessories required for commissioning will be provided by the contractor.	Per DPR	11150.11	225	2508774.75
NS-9	supply of Push button telephone Pulse/tone switchable telephone set with radial, mute , pause, flash tone/Pulse facility as per TEC spec No. GR/TEL-02/04 sept 02 with amendment 2 including latest amendment.	No.	606.19	25	15154.75
NS-10	Installation, testing, commissioning of of Push button telephone for connecting with way side equipment's as per specs.	No.	38.24	10	382.40
NS-11	Supply of 8 port Gigabit Lite Managed PoE Layer 2 Switch make HP/CISCO/JUNIPER or other reputed make with similar or better specs.	No.	14297.60	20	285952.00
NS-12	Supply, fixing and wiring of 10 Pair CT Box and termination of cable as per details approved by site Engineer. CT box to be supplied only after sample/ drawing approved by Engineer incharge. This item also covers the termination and sealing of Block DP's.	No.	1574.14	10	15741.40

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NS-13	Supply, fixing and wiring of 20 Pair CT Box and termination of cable as per details approved by site Engineer. CT box to be supplied only after sample/ drawing approved by Engineer in charge. This item also covers the termination and sealing of Block DPs.	No.	1753.58	10	17535.80
NS-14	12 V, 7 Ah Sealed Lead Acid Maintenance Free type (SMF) Battery as per RDSO Spec. No. RDSO/PE/SPEC/AC/0180-2016 (Rev-0),	No.	755.20	50	37760.00
NS-15	Supply, installation, testing & commissioning of Wi-Fi smart mesh Router D-Link EXO DIR 2600/Juniper/HP/Cisco or other reputed make with similar or better specs.	No.	6589.18	10	65891.80
NS-16	Fault Diagnostic terminal , as per specification attached in tender booklet.	No.	137824.00	2	275648.00
NS-17	Supply, installation, testing & commissioning of 28 port Fiber L-3switch with 24 SFP and 4 combo ports of reputed make like Cisco/Juniper/HP or other reputed make with similar or better specs.	No.	55600.16	5	278000.80
NS-18	Supply, installation, testing & Commissioning of L-2 switch (24 port 10/100/1000 mbps Base T & 4 SFP ports) AC type make HP/Cisco/Juniper or other reputed make with similar or better specs.	No.	15019.95	10	150199.50
NS-19	Supply of E1 to Ethernet convertor (1E1) E1 to multiple PDH link convertor, E1 port, 4 Ethernet UTP ports make – Tech route/ANDA/Zyxel or any other reputed make with similar or better specs.	No.	14314.58	10	143145.80
NS-20	Supply of Media convertor distance 20 Km with 10/100 Mbps make Mrotek//Zyxcel//ANDA/Team engineers or any other reputed make with similar or better specs.	Pair	7658.60	10	76586.00
NS-21	supply of IP based LAN extender with 4 Ethernet ports speed support up to 5mbps .biz workable up to 5km make CPC/ RAD/ANDA Telecom/team engineers or any other reputed make with similar or better specs with 1 year OEM replacement warranty.	Pair	13875.29	10	138752.90
NS-22	Supply of armored 6 core SM fiber cable suitable for indoor and outdoor; Make Finolex/Molex/ D link or other reputed make as per technical specifications attached	Metre	17.28	5000	86400.00
NS-23	Supply installation testing and commissioning of 12 port wall/rack Mount fully loaded LIU with 12 SC adapter 2x 6 adapter plate for Switch location as per technical specifications attached.	No.	2937.40	6	17624.40
NS-24	Supply installation, testing and commissioning of CAT6 24 Port fully populated Patch Panel 19" Rack Mounted Make D-Link or other reputed make as per technical specifications attached.	No.	4042.21	10	40422.10
NS-25	Supply of UTP CAT6 2 Mtr Patch Cord RoHS Complaint make Molex/Systemax/Avaya/D link or other reputed make.	No.	128.63	50	6431.50
NS-26	Supply of UTP CAT6 1 Mtr Patch Cord RoHS Complaint make Molex/Systemax/ Avaya/ D link or other reputed make.	No.	121.07	50	6053.50

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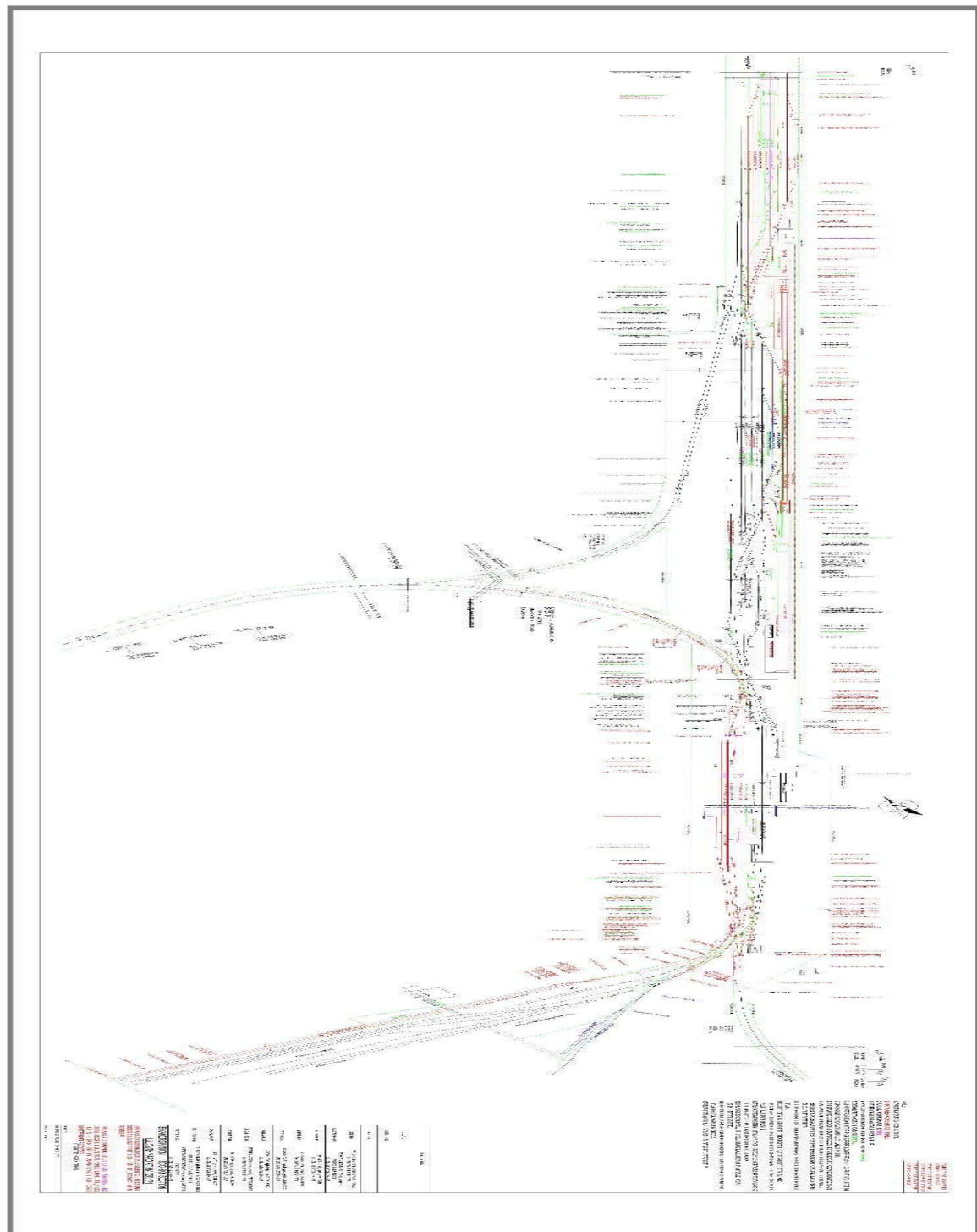
NS-27	Supply of 1 KVA UPS off line inbuilt Battery (9Ah/12volt) Capacity :-1.0/216 (KVA/VAH) rated out Put :-Single phase Sine wave 230voltAc/50Hz Volt , Switching over Time :-9 Mill. Sec. Type Of Battery-SMF VRLA, make- PC/Microtek/Luminous or any other reputed make with 2 years warranty.	No.	3500.55	10	35005.50
NS-28	Supply 25 Watt VHF digital radio set Preferred Make-Motorola/SIMOCO/ Kenwood or similar with SMPS Power Supply Unit, 6 db Antenna and Antenna cable as per RDSO specification RDSO/SPN/TC/107/2018 Rev 0.0. or latest.	No.	34220.00	10	342200.00
NS-29	Supply of single mode Patch Cords LC-SC/LC-LC 5mtrs of reputed make.	No.	188.61	30	5658.30
NS-30	Supply of single mode SC/APC - SC/APC Patch Cords (1 Mtr) of reputed make.	No.	140.87	30	4226.10
NS-31	Supply of single mode Patch Cords LC-SC/LC-LC 3 mtrs (3M/TE connectivity/R&M or other reputed make	No.	133.77	30	4013.10
NS-32	Multi function Machines Printer, Laser	No.	81192.30	3	243576.90
NS-33	Supply of Portable service terminal as per specifications attached.	No.	80388.25	3	241164.75
NS-34	Supply of data input and dignostic terminal for creation of testing and failure reports and database management of control communication as per specs- all in one ,processor i7 , RAM 16GB, hard disc 500 GB SSD, windows 11 Pro,MS. office 21 or higher sepcification , Make HP, DELL ,ASSER or simmlar reputetated brand (Screen size 23")	No.	67985.32	8	543882.56
NS-35	Supply, fabrication, installation and fixing of panel operator console with arrangement to fix up to 85" VDU's - 2Nos. Reset boxes, and other S&T gadgets.	No.	339590.23	1	339590.23
NS-36	Design, Manufacture, Supply of Hot Standby Architecture Electronic Interlocking (EI) System Complete as Per RDSO Specification RDSO/SPN/192/2019 With Latest Amendment.(Distributed EI 5+1) Note: It mainly consist of Microprocessor Equipment's, Interface Equipment's, EI vendor specific Interfacing Relays , In-built event Logger, In-built Power Supply Equipment's, 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.	Station	118740002.50	1	118740002.50
NS-37	Supply of Essential Spares (10% Of Main Equipment/ Module for EI System) of the Input Cards/ Modules as specified by OEM.	Station	6806614.00	1	6806614.00

NS-38	Installation, Wiring, Programming, Testing & Commissioning of Complete Yard for Data In-Put & Configuration, Simulation & Functional Testing, Diagnostic & Trouble Shooting and Commissioning of Electronic Interlocking System as per Interlocking Plan	Job	5537500.00	1	5537500.00
NS-39	Supply of HDPE pipe 4"/110mm for HDD crossing as per IS Spicification4984: 2016 or latest	Metre	395.10	1000	395100.00
NS-40	Supply and Installation of Modular power supply arrangement for VDU (43"" 85""") and industria IPC (Embedded PC) with input and output redundancy arrangement and Hot plug able Modules. 1. Input O- ringdiode module with potential free -1 No contacts (PFC) for two110 V DC sources from IPS and single 110 V DC bus. 2. Isolated Inverters(Master / slave) - 02Nos. Input- 110 V DCO utput: 120 V AC/220VA 500VA 3. Isolated DC-DC convertors- 02 nos. Input: 110 v DC Output:24 V DC/ 10A 4. 3 USS rack with back panel mother board / frontpanel power connectorsinverter autochangeover switch and allrequired over switch andall required protectioncircuits as per RDSOspecification. MakeGallant or similar(Inspection by RITES)	Set	230100.00	3	690300.00
NS-41	Supply of cable fault locator as per specification attached .Make Stanlay Kick plus advance cable maintenance test set or superior. Inspection RITES	No.	653829.37	2	1307658.74
NS-42	Supply of GNSS based cable route tracer kit with receiver with built in mount for GNSSreceiver,12W or higher power ransmitter with >=130V Voltage boost, suitable for detecting & mapping underground cables withaccuracy up to 2 5 cm, with current direction up/downarrows.Supply shall include locating receiver with RTK receiver powered by locatorreceiver,transmitter,compatible dual Bluetoothandroid phone, mobileapplication pre-installed inandroiddevice with 5 yearssubscription & PC databasesoftware access for directmap generation &downloadincluding depth data, 5years subscription for GNSScorrection service &standard accessories, perspecification attached.Make/Model: RycomPathfinder PLDL Routelocator withTrimble DA2GNSS receiver or similar.Detailed specification as perAnnexure-II. InspectionbyRITES	No.	1581845.46	3	4745536.38
NS-43	SUPPLY OF RODO METER (ANALOG) SPEC. MECHANICAL 5 DIGIT COUNTER, ABSPLASSTICSWHEEL WITH RUBBER TYRE, MEASURE FORWARD AND BACK ARD,TELESCOPIC HANDLE PRECISIONMEASURING WHEEL. MAKE SIMILAR TO STANLEY OR FREE MAN OR BOSCH ORJCB OR Similar ACCEPTEDMAKE--FREEMANSMW01	No.	3001.92	3	9005.76
NS-44	Bosch Plastic Handheld Electric Blower, Warranty 12 months Brand: Bosch	No.	4881.00	3	14643.00
NS-45	Corded Brushed Electric Drill 250 Watt Brand: BOSCH LIMITED	No.	4872.00	3	14616.00

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NS-46	Supply of Auto CAD 2020 or Latest including specialized toolsets AD commercial New single -User 3 Year subscription(Autodesk) as per TS	No.	199302.00	2	398604.00
NS-47	Smart Television TV55 inch 4K ultra HD, Brand LG or simillar .Resolution: 4K Ultra HD (3840x 2160) Refresh Rate: 60 Hertz 178 Degree wide viewing angle Connectivity: 3 HDMI ports to connect set top box, Blu Ray players, gaming console 2 USBports to connect hard drives and other USB devicesSound : 20 Watts Output Open Baffle Speaker Dolby Audio Clear Phase	No.	53200.00	3	159600.00
	Non SOR-Total				214619505.82
	SOR-Total				87713223.43
	Grand Total				302332729.25

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Appendix-AB**Technical Requirement for EI**

Design, manufacturing & supply of EI equipment with software installation, testing & commissioning of Electronic Interlocking system. The EI equipment shall conform to RDSO specification RDSO/SPN/192/2005 with latest version & amendment, The EI system feature of 'Hot standby' should be achieved through implementation of hardware only. i.e. by provision of additional cards/modules, accessories, sub systems etc.

20.0 Requirements for EI Items :

Technical requirement for EI system includes: -

1. Design, manufacture, supply (with software), installation, testing and commissioning of Electronic Interlocking system. The EI equipments shall conform to RDSO specification RDSO/SPN/ 192/ 2005 with latest amendment and shall be procured from RDSO approved source only. EI with 'Hot standby' architecture only shall be supplied in terms of RDSO TAN no – STS/E/TAN/3012 version 3 dated 28.06.21 or latest. All TAN issued by RDSO related to EI needs to be followed.
2. The successful bidder shall submit an undertaking from RDSO approved EI OEM, before the supply of material, to confirm compliance with extant RDSO guidelines and to meet contract specific requirements. (Railway Board letter no. 2013/Sig/01/(pt)Dup dated 17.02.2022).
3. After the award of contract, successful bidder have to submit an undertaking from RDSO approved EI OEM for covering supply of the equipment of EI , Installation, testing and commissioning of EI to confirm compliance with extant RDSO guideline including after sales support required during the warranty period and beyond the warranty period, before supply of equipment is taken.
4. After the award of contract, successful bidder has to submit an undertaking from RDSO approved OEM of Data Logger, FEP, MSDAC/HASSDAC, AFDAC, ELD, IPS, FACS, SSBPAC etc. for covering supply of the equipment, Installation, testing and commissioning to confirm compliance with extant RDSO guideline including after sales support required during the warranty period and beyond the warranty period, before supply of equipment is taken.
5. EI system will be installed, wired, tested and commissioned by OEM's Engineer as per directives issued by RDSO from time to time. Pre-commissioning checklist of EI as issued by RDSO, will be complied by OEM's engineer and will be signed jointly with the Railways site engineer before commissioning of EI. 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

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OEM) after following all the guidelines/instructions issued by RDSO from time to time.

6. 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.
7. Power supply system and arrangement for EI, interface relays, control VDU, CCIP panel processor, 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. Power supply arrangements for VDU monitor & embedded PC is to be made as per RDSO TAN no – STS/E/TAN/3012 version 3 dated 28.06.21 or latest.
8. Various interconnecting cables should be numbered as well as provided name stickers for easy identification. Connectivity diagram should be suitably displayed.
9. The panel processor required for CCIP, 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.
10. There should be synchronization between data logger and EI for which requisite hardware/ Software shall be supplied by contractor.
11. 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.
12. 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.
13. 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 Railways guidelines.
14. Vendors specific guidelines/instructions issued by RDSO for EI system from time to time shall be implemented by OEM.
15. Tentative/Indicative ESP of station/stations is/are enclosed at Appendix AA. The tenderer should furnish complete details of cards/modules/ sub-modules connectors etc. for each station in the proforma enclosed herewith in Appendix-AF. Please give full details of quantities (station wise) & unit rates item wise.
16. All essential spares shall be tested and kept secured for use during failures.
17. The work is to be carried out in accordance with Signalling/Interlocking

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Plans for the stations, issued by the Railways. These Signalling/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.

Note: Contractor will provide logistic facilities for execution of work, free of cost whenever the same will be required specially during NI.

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OEM's Site Installation Certificate
(For EI, Data logger, FEP, IPS, HASSDAC, AFDAS & ELD)

To,

PCSTE/NWR/JP

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

Appendix-AD

Materials to be supplied by the contractor, the cost of which is to be included in the labour charges of concerned item of bill of quantities.

These shall include the following materials in addition to any other material, which may be considered necessary for complete and satisfactory execution of the work, according to specification:

1. Bolts, nuts, rivets, spring washers, square/round washers of all type and sizes.
2. Foundation bolts of all sizes.
3. Split pins of all sizes.
4. Lubricants such as grease, spindle oil, axle oil, graphite etc.
5. Kerosene oil.
6. Spirit, varnish, polishing material etc.
7. Cotton waste.
8. Sulphuric acid.
9. Distilled water.
10. Steam coal.
11. Emery paper and sand paper.
12. Dressing thread and other dressing material.
13. Screws, MS wood, nails of all sizes etc.
14. Hasps / staples, locking bolts and handles.
15. Hinges of all types.
16. Solder, resin for soldering.
17. Various sizes of MS angles, flats, plates and bars etc.
18. Any other minor items for satisfactory completion of the work.
19. Ordinary port land cement (required for any item of the **bill of quantities**), as per IS code 296 shall be supplied in bags. Shall not be supplied of older than 3 months. It shall have ISI mark on the bag along with date of manufacture.
20. Sand, stone & other aggregates.
21. All materials and equipment mentioned in contract **bill of quantities**.
22. Vendor specific relays required for EI to make it functional which are not supplied by Railway.
23. All other hidden material/accessory that is not appearing in the **bill of quantities** but required for installation shall also be supplied by the contractor.
24. All type of measuring instrument /testing Eqpt required for testing the installation will be arranged by the contractor.

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Appendix-AE

Materials to be supplied by Railways:

1. LED for main and subsidiary signals.
2. Signalling cables.
3. Integrated Power Supply (IPS).
4. Any other items which is listed in **bill of quantities** where Railway may decide to supply.

All the materials supplied by Railways will be loaded/unloaded and transported from the place of issue and to the site by the contractor at his own cost. Security & upkeep of issued Railway materials will be the liability of the tenderer.

Note: Materials supplied by the Railway for execution of the work, shall be made available to the contractor at any store in North Western Railway. These materials are to be transported to the site of work by the contractor and balance materials after completion of the work, if any, shall also be transported back to the designated store in North Western Railway by the contractor at his own expenses.

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Appendix-AF (Desirable)

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 SOR- of **bill of quantities**)

Note:-

1. Tenderer shall furnish detail quantity breakup for the EI system offered against SOR of **bill of quantities** according to the format given in Appendix-AF above.
2. Yard Plans attached in Appendix-AF are tentative and Railway may modify/change any drawing at any stage, tenderer shall be bounded to work with altered plan without any extra claim.
3. Approved SIP of stations and referred SOR drawings can be collected from the office of Dy.CSTE/Sr. DSTE.
4. The approximate cost /quantities shown against the SOR/NS /**bill of quantities** of items, rates and quantities are for rough guidance only. These are subject to variation depending upon the needs of the Railway and Railways reserve the right to increase /decrease the cost/quantities as per site conditions.
5. All items are for complete job including labour and material and all lead, lifts, ascents, descents, crossing of Railway lines, obstructions, leading, loading, unloading handling, re-handling, all taxes, Octroi, royalty etc.
6. The tenderer/s are required to submit all the required documents including the credentials along with the original offer. Tenderer/s may please note that no separate correspondence will be made in this regard.

I/we clearly understand that I/we am/are not entitled to any other payment what so ever except at the tendered rate quoted against each item for fully completed works as per conditions of contract

Signature of tenderer/s_____

Address_____

SIGNATURE OF TENDERER

INDEMNITY BOND

Indemnity Bond for safe custody of Railway 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 General Manager, North Western Railway or for him all Railway materials which have been handed over to us against the contract for Tender no. ----- dt. ----- for the work of "-----" by the Railway 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 Railway.

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 Railway or as directed otherwise and shall indemnify the Railway 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 General Manager, North Western Railway or his nominee.

Should any loss, damage or deterioration of materials occur or surplus materials disposed off and a refund becomes due, the Railway 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 General Manager, North Western Railway 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:

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ANNEXURE-TS2**(Annexure III of SOR with updated specifications)****Specifications for Work Station**

Make	APPLE/DELL/HP/ASUS
Operating System	Pre Installed Genuine Windows 11 operating system or latest Mac OS.
Processor	Intel Core i7 processor of 13 th or above generation or latest Mac OS.
Media	Inbuilt Webcam, Micro phone & Speaker
Display	15.6 inch FHD Backlight Anti glare Display
RAM	16GB DDR5
Storage	1TB SSD Hard disk drive (SSD)
Battery back up	Minimum 8C 83Wh Battery
Bluetooth connectivity	Bluetooth (inbuilt)
Warranty	1 Yrs Warranty
Additional Software	Required to communicate with EI and Data logger
MS Office Software	Original MSOffice 2021 or latest
Carry bag	Carry bag branded
Antivirus	Antivirus latest (Licensed version with 3 Year validity)
Portable Hard Disk drive	2 TB or more
Pen drive	512 GB or more(2 NOS)

NOTE: - Above specifications can suitably modified and approved by Engineer-in- charge as per availability of model in the market.

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ANNEXURE-TS4
(Item No. 5 of Schedule –A , Chapter-2 of SOR)

SPECIFICATION OF FAILURE ANALYSIS SYSTEM

1. The FAS shall be PC based system with the following configuration: -

(a) Processor- i7 (13th Generation), All in one PC

16GB+ DDR5 RAM, fast SSD storage (512GB to 1TB+)

23.8" Screen with inbuilt speakers

2 serial and 1 parallel port

Speakers

Keyboard

Optical Mouse

Windows 11 Professional

Front end communication module 56 KBPS Data Cum Fax Modem (External)

Front end communication module with 16 mega bits of RAM and error/congestion display

Necessary interface for communication with Data logger

(b) Windows 11 Pro Operating System (Licensed version).

(c) MS Office latest version (Licensed version).

(d) Norton/Quick Heal Antivirus Total Security (Licensed version).

(e) Mono Laser Multi Function Printer A4 size make HP /Canon or similar with one spare toner.

2. The FAS shall be connected to FEP over cable. The contractor shall provide necessary communication interfaces for reliable data transmission.

3 . The FAS shall store various statistics regarding type of Signalling equipment's, maintenance practice, yard diagram, failure and alarm logic table etc. in standard database. It should be possible to edit the database through user-friendly programs.

4. Train movement monitoring:

It should be possible to extract train-running information from status of various track circuits and points indication, along with time stamp and display on time distance chart on real time basis. Separate data base shall be created for above purpose.

5. An UPS of 1/2 hour capacity should be supplied and installed for FAS.

6. The FAS shall be retrieve data from FEP on need basis process and generate reports as per following format:

(i) Log of failures in report format.

(ii) Analysis/classification of failures in various groups.

(iii) Graphical presentation of failures.

(iv) Reports – Daily/Weekly/Monthly/Annual/ Specific etc.

(v) On line failure monitoring and generation of Audio/Visual Alarm.

6.1 Graphical Display of events:

The system shall be capable of displaying animated yard layout of each station and shall have all track circuits signal status, LC gate point status dynamically linked with respective signal status. It should be possible to graphically display events on line on real time basis historically reply of user selectable time zone.

6.2 Necessary furniture for installing FAS (computer table godrej make model 3009 or similar and chair Godrej make model PCH 7045 or similar) shall be provided by the contractor.

7. APPLICATION SOFTWARE:

7.1 The software provided along with FEP and FAS shall be modular and event driven. The system shall have following facilities window based:

- a) Network management and re-configuration.
- b) Data retrieval from all data loggers and display.
- c) Fault alarm prompt & listing.
- d) Data base management.
- e) Debugging tools.
- f) Report generation on line, history and graphical (analog).

7.2 The system shall generate alarm in case of problem noticed in any of the data logger connected or communication error between data loggers. It should be possible to alter configuration details of individual data logger. The network management shall take care of all networking function, packet transfer and communication protocol.

7.3 The tender shall furnish complete detail of software along with the offer. The report shall be generated in standard database format (ODBC support) so as to analyze above using SQL.

7.4 The system shall be capable of generating on line alarms based on logic table supplied by the Railways.

7.5 Reports:

The system shall be supplied along with front-end software to generate reports as under:

- a) Log of entries/events in report form.
- b) Graphical reports of analog signals.
- c) Analysis of failures/alarms in various groups.
- d) Graphical display of events.

The system shall be capable of displaying animated yard layout of each station and shall have all track circuits, signal status, LC gate, point status dynamically linked with respective signal status. It should be possible to graphically display events on line on real time basis or historically replay by user selectable time zone.

7.6 The application software shall be supplied on Compact disks in 02 copies along with executable files, required link files, library files, documentation, database files & fault logic entry utility.

TECHNICAL SPECS FOR MAINTENANCE & VDU CONTROL TERMINAL
(Item no 4 of Schedule A, Chapter-1)

(As per RDSO TAN No. STS/E/TAN/3007 Ver 1.0 of 02.11.12 or latest reproduced below)

Make	Embedded Fan less 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

TOOL KIT FOR HASSDAC**(Item no 13 of Schedule A, Chapter-7)**

Sr. No.	Item	Quantity
1	Portable Data Analyzer (i7 13 th Generation or superior) As per approval of Work Incharge.	01No.
2	Fluke Multimeter Compatible for measurement of HASSDAC Parameters or as recommended by Work Incharge.	01No.
3	Train Simulator (Model TS267P)	01No.
4	Extender Card	01No.
5	Dummy Wheel	01No.
6	Ring spanner (17-19,24-26) (Taparia make or superior)	01No.Each
7	Open end spanner (17-19,24-26) (Taparia make or superior)	01No.Each
8	Socket Spanner with Handle (Taparia make or superior)	01No.
9	Torque wrench (Jaicom JPR or Superior)	01No.
10	Screw driver (902,935)	01No. each
11	Marking Jig for Drilling (Drg No. F008300 on D29 & D29A)	01No
12	Dummy load to check power supply resistance	01No

**Technical Requirement for Monitor/LCD Display for Item no 10,12 of SOR
Schedule A Chapter- 1.**

(to be supplied with Maintenance Terminal/VDU Control Terminal) (To be supplied
under item No. 08,10 of SOR Schedule A)

Data Description	Data sheet for Monitor of VDU control terminal
LCD Type	LED/LCD Type Grade A Industrial
Display Size	As per site requirement.
Resolutions	Minimum 1920 x 1080
Display Color	16.7 M color
Brightness	450cd/m2
Contrast ratio	5000 : 1 (Typical) or 4000:1
Viewing angle	178° x 178°
LCD MTBF	50,000 hrs.
Signal Input	HDMI / DVI-D / VGA / S-Video / RCA
Power Supply	DC INPUT :24V DC Consumption: Max. 200 Watt, Standby 20 Watt
Mounting	Wall-mount / Stand mount
Temperature	0 to 50 Degree Celsius (Operation) -5 to 60 Degree Celsius (Storage)
Relative Humidity	5~90%, Noncondensing
Shock	10G peak acceleration (11ms duration)
Vibration	5~500Hz, 1GRMS random vibration

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Certification	FCC, CE
Warranty	3 Years
Power Adapter	External: Screw type

Note:-

1. **Tenderer should submit an Inspection certificate from an authorized institution for items to be supplied under SOR A Item no 8, 10. Inspecting agency must certify the configurations of Computer and Monitor as per attached Technical specifications.**
2. **The Parameters mentioned above are the minimum requirement. However, the contractor should check the site requirement and supply material as per requirement. In this regard, the decision of Engineers in charge of Railway shall be final.**

Technical Requirement of Item no. NS-16

All in One PC 13th Generation or above, Processor i7- Intel Make, 16GB+ DDR5 RAM, fast SSD storage (512GB to 1TB+), Monitor:-27 Inch, FHD, Warranty-Minimum 2 Years & UPS 1.0 KVA, Backup time minimum:30 Minutes Warranty 2 years or higher on battery & UPS. As per requirement. However, the contractor should check the site requirement and supply material as per requirement. In this regard, the decision of Engineers in charge of Railway shall be final.

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**COMPLETION DRAWINGS OF
STATION**

INDOOR & OUTDOOR DRAWINGS (Annexure 1.13 of SOR-2020)

(i) Design & submission of three sets of paper copies-

SN	Description	Unit	Qty.
1	Design of 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 route plan (Block section)(if any as instructed by Railway Engineer) & submission of three copies for approval	Set	1
5	Design of cable distribution plan & submission of three copies for approval	Set	1
6	Design of Track Bonding plan & submission of three copies for approval	Set	1
7	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		
	(f) Input & Output bit chart		
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, ST after incorporating all the corrections	Nos	1
---	---	-----	---

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2	Supply of original tracing of SWRD after incorporating all the corrections	Nos	1
3	Supply of original tracing of RCC after incorporating all the corrections	Nos	1
4	Supply of original tracing of FPD 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 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 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, ST	Nos	3
2	Supply of Ammonia print of approved SWRD	Nos	3
3	Supply of Ammonia print of approved cable route plan (station section)	Nos	3
4	Supply of Ammonia print of approved cable route plan (Block section) (if	Nos	3

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	any as instructed by Railway Engineer)	.	
5	Supply of Ammonia print of approved cable Distribution plan	Nos	3
6	Supply of Ammonia print of approved Track bonding plan	Nos	3
7	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.	Nos	3
	(b) Relay Disposition chart	.	
	(c) Contact analysis and fuse particulars.		
	(d) Panel Termination Chart		
	(e) CT Rack Particulars		
	(f) Input & Output bit chart		
8	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		
9	Supply of Ammonia print of approved Location box drawings (including contact analysis, Fuse particulars etc.)	Per Stn	3
10	Supply of Ammonia print of approved Goomty drawings (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, ST	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	Per Stn	1
4	Supply of eight sets of Ammonia print of approved completion FPD	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	Per Stn	1
8	Supply of eight sets of Ammonia print of approved completion Track	Per	1

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	bonding plan	Stn	
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

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LIST OF ESSENTIAL SPARES FOR EI SYSTEM (Item no 37 of Schedule B)**SOR Items (Quantity of Various items in a unit lot)****1. For M/s ANSALDO Make EI System:**

S.N.	Description	Unit	Quantity
1	MLK II CPU PCB	Nos	10% of Quantities installed at station
2	MLK II Power Supply PCB	Nos	10% of Quantities installed at station
3	MLK II Vital Input PCB 24V DC	Nos	10% of Quantities installed at station
4	MLK II Vital Output PCB 24V DC	Nos	10% of Quantities installed at station
5	MLK II Non-Vital I/O PCB 24V DC	Nos	10% of Quantities installed at station
6	SYNC PCB (MDSC)	Nos	10% of Quantities installed at station
7	COMMS PCB	Nos	10% of Quantities installed at station
8	DC-DC convertors	Nos	10% of Quantities installed at station

2. For M/s MEDHA Make EI System:

S.N.	Description	Unit	Quantity
1	Vital interlocking computer card	Nos	10% of Quantities installed at station
2	Communication processor card	Nos	10% of Quantities installed at station
3	Communication interface card	Nos	10% of Quantities installed at station
4	CIU voltage & health monitoring card	Nos	10% of Quantities installed at station
5	Power supply card Type-B (CIU)	Nos	10% of Quantities installed at station
6	RS232 OFC converter	Nos	10% of Quantities installed at station
7	Single mode RS485 OFC BI-directional converter	Nos	10% of Quantities installed at station
8	IOCOM CPU card	Nos	10% of Quantities installed at station
9	IOCOM voltage & health monitoring card	Nos	10% of Quantities installed at station
10	Input WFM CPU card	Nos	10% of Quantities installed at station

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11	Output WFM CPU card	Nos	10% of Quantities installed at station
12	WFM relay driver card	Nos	10% of Quantities installed at station
13	OCM vital cut-off card	Nos	10% of Quantities installed at station
14	Power supply card type-B (OC)	Nos	10% of Quantities installed at station
15	Power supply card type-C	Nos	10% of Quantities installed at station
16	24V EMI filter	Nos	10% of Quantities installed at station
17	DC-DC convertors	Nos	10% of Quantities installed at station

3. For M/s SIEMENS (Invensys) Make EI System:

S.N	Description	Unit	Quantity
1	Processor Module	Nos	10% of Quantities installed at station
2	Processor Module Backplane	Nos	10% of Quantities installed at station
3	Parallel Input Module (50V)	Nos	10% of Quantities installed at station
4	Relay Output Module (50V)	Nos	10% of Quantities installed at station
5	I/O back plate connector - Crimp – PIM	Nos	10% of Quantities installed at station
6	I/O back plate connector - Crimp – ROM	Nos	10% of Quantities installed at station
7	DC-DC convertors	Nos	10% of Quantities installed at station

4. For M/s KYOSAN Make EI System:

S.N	Description	Unit	Quantity
1	I/O card,FIO7-[P]	Nos.	10% of Quantities installed at station
2	I/O card ,EXTFIO7-(P)	Nos.	10% of Quantities installed at station
3	I/O card,DID	Nos.	10% of Quantities installed at station
4	Watch Dog (SM-480) Timer Relay	Nos.	10% of Quantities installed at station

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5	IF card, FSIO2-B	Nos	10% of Quantities installed at station
6	IF card,FSIO2B-EX	Nos	10% of Quantities installed at station
7	CPU card,F486-4I	Nos	10% of Quantities installed at station
8	Power card ,IPU6C	Nos	10% of Quantities installed at station
9	I/O card,ET-PIO2	Nos	10% of Quantities installed at station
10	DC-DC convertors	Nos	10% of Quantities installed at station

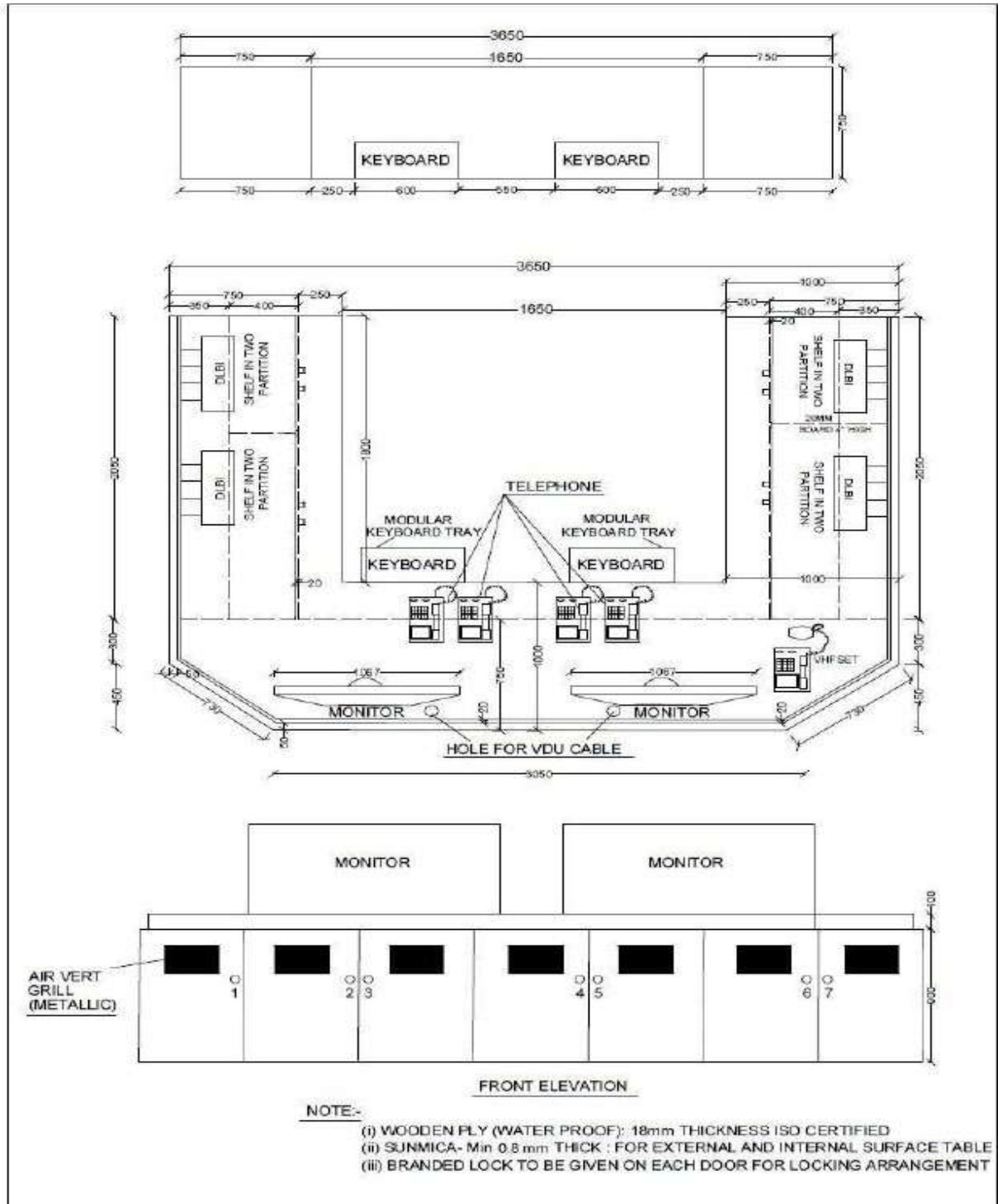
Spare material by other RDSO's approved vendors of EI, if any, shall be supplied according to the same guidelines used for assessment of existing vendors i.e. 10% of used material extant to minimum 1 number .

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TENTATIVE DRAWING OF HOUSING CABINET FOR VDU CONTROL TERMINAL

(As Supplied in Item No. NS-35 of Non SOR Schedule-B)

(This drawing is tentative only. Tenderer should prepare and get it approved by Railways.



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Part-V

SAFETY PRECAUTIONS

1. MEASURES TO BE ENSURED PRIOR TO START OF WORK

- 1.1** The contractor shall not start any work without the presence of railway supervisors at site.
- 1.2** The methodology in detail for execution of the work at site shall be approved by engineering in charge of the organization executing the work and copies of the same shall be available with contractor's supervisor, railway supervisor, concerned officer of the section in whose jurisdiction the work falls.
- 1.3** Before permitting the execution of certain works like earthwork in formation, bridge work, supply of ballast, transportation of rails, sleepers and other material, track linking, platform/any other civil work close to the running track etc. for new/existing rail lines, gauge conversion, doubling, traffic facility work, ROB/RUB, open lines engineer-in-charge (ADEN/DEN/Sr. DEN/concerned officer) of the section shall ensure that he received the prior intimation/confirmation of the following aspects from Assistant Engineer/Assistant Officer In charge of the work of the executing agency i.e. Construction, S&T, Electrical, Mechanical, Rail Tel, RVNL etc.
- Name and address of the contract assigned to execute the work.
- i) Name of the Contractor's supervisor
 - ii) Name of the supervisor/assistant engineer/assistant officer of the construction organization/other organizations who are going to be site in charge/in charge of work site.
 - 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 Railway 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-XXXIII** by a railway officer not below the rank of Assistant level officer 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 Railways to assess the precautions to be taken at site for working of trains and materials required for protection.
 - vii) Written advice to sectional Supervisor and concerned officer 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 Railway supervisor as well as by the contractor supervisor as a token of their having understood the safety precautions to be observed at site.
- 1.4** No work shall which is to be done near running track shall commence unless permitted by Railway.
- 1.5** Supplementary site specific instructions, wherever considered necessary shall be issued by the Engineer in Charge
- 1.6** 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.

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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 Railway'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 Railway's representative shall be ensured before plying of vehicle or working of machinery.
 - d. Railway'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 may be.
 - b. Presence of a Railway's Supervisor shall be ensured at worksite.
 - c. Railway'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 Railway's representative. The road vehicle driver shall always face the Railway track during the course of turning/reversing his vehicle. Presence of an authorized 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 Railway'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 concerned officer 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 Assistant Engineer/Assistant officer and the list of such changes with numbers of individual vehicle, name and license particulars of the driver shall be given to concerned officer 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 in case 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 sunset 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 dated 31.03.2014 issued by PCE 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, railway 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.

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- 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 railway 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 Railway'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 may be.
 - 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 Railway's representative and contractor's representative.
 - b. The selected locations shall be marked by lime in advance.
 - c. Presence of an authorized Railway'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:

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- (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 Carriage and Wagon 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 ADEN/DEN. 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

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(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. Railway 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 Railway 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- XXXIII** 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 Railway, charges at the rate of Rs. 500/- per man day shall be recovered from Contractor.

6.0 SPECIAL CONDITIONS FOR WORKING OF ROAD CRANES

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 Railways 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 Railway. 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 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 dated 31-03-2014 issued by PCE office shall be referred which shall be collected from executive after award of contract.

Annexure-XXXIII

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

END OF DOCUMENT

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