

SOUTHERN RAILWAY

S&T / PROJECT ORGANIZATION

TENDERDOCUMENT

MADURAI DIVISION:

PROVISION OF DOUBLE DISTANT FOR RAISING OF SECTIONAL SPEED TO 130 KMPH IN B-ROUTE AT ALL STATIONS / LC GATES IN TPJ-DG SECTION (96 RKM) & DG-TEN SECTION (220 RKM) OF MADURAI DIVISION

E- Tender Notice No: T_SG_PROJ_2024_03_OT Dt. 04.06.2024

Estimated Cost of the Work	Rs. 44,90,19,370.59 /-
Cost of Tender Document	NIL
Cost of Bid Security (EMD)	Rs.23,95,100/-
Validity of Offer	90 Days from date of tender opening
Completion Period	12 Months
Last Date & Time for submission of Tender	14:00 hrs. Of 25.06.2024
Date and Time for opening Technical Bid (Packet-I)	After 14:30 hrs. of 25.06.2024

Office of Deputy Chief Signal & Telecommunication Engineer/Project/TPJ,
Southern Railway,
TIRUCHCHIRAPPALLI – 620001.

Signature of Tenderer & Seal

PACKET- I
TECHNICAL BID DOCUMENT
(TWO PACKET SYSTEM)

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CHAPTER-1

TENDER NOTICE

SOUTHERN RAILWAY

TENDER NOTICE

E- Tender Notice No: T_SG_PROJ_2024_03_OT Dt. 04.06.2024

Office of the Deputy Chief Signal &
Telecommunication Engineer,
Project,
Tiruchchirappalli-620001.

- 1.0 Deputy Chief Signal Telecommunication Engineer/Project/TPJ, Southern Railway, Tiruchchirappalli-620001 for and on behalf of 'President of India' invites OPEN E-Tender from the competent, experienced & established contractors having sufficient experience in similar work and satisfying minimum eligibility criteria on the prescribed form for the under noted work:

1	Name of the Work	PROVISION OF DOUBLE DISTANT FOR RAISING OF SECTIONAL SPEED TO 130 KMPH IN B-ROUTE AT ALL STATIONS / LC GATES IN TPJ-DG SECTION (96 RKM) & DG-TEN SECTION (220 RKM) OF MADURAI DIVISION
2	The estimated cost of the work	Rs. 44,90,19,370.59 /-(Rupees Forty Four Crores Ninety Lakhs Nineteen Thousand Three Hundred and Seventy point Five Nine only)
3	Bid Security (EMD)	Rs. 23,95,100/- (Rupees Twenty Three Lakhs Ninety Five Thousand And One Hundred only) (Payment of Bid Security should be accepted through e payment gateway or submitted as Bank Guarantee bond only)
4	Completion period	12 Months
5	Last date and Time of online submission (closing) of tender document	25.06.2024 up to 14.00 Hrs.

6	Validity of offer	90 days from the date of opening of tender
7	The website address, time, and Date from which tender documents will be available	On Indian Railway Website, i.e., <u>www.ireps.gov.in</u>
8	Date and time of opening of Technical Bid (Packet – I)	After 14.00 Hrs of 25.06.2024
9	Website Particulars for bid submission	<p>a) Bids are to be submitted online only.</p> <p>b) Tenderers must register on the Indian Railways E-Procurement System (IREPS) site, i.e., www.ireps.gov.in, to participate in the E-tender system. If required, necessary changes, Corrigendum / Addendum would be posted on this site only.</p> <p>c) Bidders will be able to submit their original/ revised bids up to closing date & time only.</p> <p>d) Manual bids/offers are not allowed against this tender. Therefore, any manual offer received shall be ignored.</p>
10	Cost of the Tender Document	NIL
11	Participation of Joint Venture	Allowed for this tender as per Railway Board Guidelines
12	Bid Capacity	Applicable for this tender
13	Price Variation Clause	Applicable for this tender

Further particulars can be obtained from the Indian Railways Website www.ireps.gov.in. Tenderers who wish to participate in tenders invited on www.ireps.gov.in have to register on the website mandatorily. Please refer to the website for more details. Tenderers can submit their Bid Security through e payment gateway or shall upload as Bank Guarantee bond in IREPS website. Other than above means will not be accepted as Bid Security for tenders invited on IREPS (E-Tender portal).

Deputy Chief Signal & Telecommunication Engineer,
Project, TPJ, Tiruchchirappalli-620001
For & on behalf of the President of India

****** END OF CHAPTER -1 ******

CHAPTER -2

SPECIAL CONDITIONS OF CONTRACT

CHAPTER - 2

SPECIAL CONDITIONS OF CONTRACT

2.1 GENERAL INSTRUCTIONS:

- i) This Chapter shall be read in conjunction with Indian Railways Standard General Conditions of Contract (GCC) and S&T SOR 2011, which shall be subject to modifications, additions, or supersession by these Special Conditions of Contract (SCC) and/or specifications/conditions, if any, which is part of this Tender Document.
- ii) The regulations for tenders and contracts shall be read in conjunction with the General Conditions of Contract which are referred to therein, and wherever there is a conflict between the Special condition of this contract with GCC and SCC of S&T SOR 2011, then SCC of this contract prevails.
- iii) It may be noted that the “General Conditions of Contract (Works) – April 2022” together with its correction slips are attached to the tender form.
- iv) Any deviations from these Special Conditions of Contract, Technical Requirement & Specifications, Schedule of Material & Supplies and/or any condition of tender document, if any, stated by the tenderer in his tender or subsequently introduced by the Railway shall be a part of the Contract only to such extent as having been explicitly accepted by the Railway and incorporated in the contract. Details shall be given in **Form No – 3** (in Forms and Annexures part of chapter 3).
- v) All offers are required to be submitted online on www.ireps.gov.in before the last date and time indicated in the Tender Notice.
- vi) Manual offers are not allowed for this tender. If any manual tenders are received, the same shall be ignored.
- vii) 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.
- viii) If the tenderer requires any additional information regarding the tender may be obtained from the Office of Dy. Chief Signal Telecommunication Engineer/Project/TPJ, Southern Railway, office hours from Monday to Saturday.

2.2 RULES & GENERAL INFORMATION TO TENDERER:

- (i) Non- transferable tender documents may be downloaded by a registered bidder from www.ireps.gov.in. Bids are to be submitted online before the expiry of time and date of tender opening. Payment regarding the cost of Bid Security (Earnest Money Deposit) shall be through e payment gateway or shall submit as Bank Guarantee bond only in IREPS website. The notice header can be seen at www.ireps.gov.in. **FDRs are not acceptable against Bid Security (Earnest Money Deposit) for this tender.**
- (ii) Tenderer(s) are advised to refer to the “User Manual for Contractors” available in the ‘Learning Centre’ tab in the left navigation block on the home page of the E-Tendering portal www.ireps.gov.in for detailed instructions on submitting Bid Security/Bids online.
- (iii) Permitting downloading of the tender document by Railway is a facility for the convenience of Tenderer(s). In case, tender document is not uploaded on the website or download failure or incomplete document downloaded, Railway shall not be responsible in anyway. Railway shall not be liable for any direct/indirect loss of business/Profit resulting from the inability to use this facility.
- (iv) The tender document is not transferable, and the cost of the tender form is Zero; hence tenderers have the facility to download to enable more participation.
- (v) The tenderer shall maintain the integrity of the downloaded tender document and shall not make any change/alteration/deletion/tampering in the downloaded documents. Suppose the tenderer(s) deliberately give(s) wrong information in his/their tender, create(s) circumstances for the acceptance of his/their tender. In that case, Railway reserves the right to reject such tender at any stage. The tenderer’s offer shall be rejected, and full Bid Security shall be forfeited if it is detected after submitting an offer that they have made any modification in downloaded documents. If such modification is noticed after award of contract, Railway is liable to terminate the agreement on Contractor’s

- default. In addition, Railway reserves the right to act against the firm as deemed fit, which may include banning business dealings with the firm, and the firm is also liable to be prosecuted as per the law. In case of any dispute over the discrepancy noted in the tender document submitted by Tenderer, the master document kept with Railway shall prevail. The decision of Railway thereon shall be final and binding on the tenderer/contractor. The Tenderers shall give the declaration in Form - 9 while submitting the tender. [Refer Forms & Annexures of Chapter-3 of Tender Document]
- (vi) The tenderer(s) shall keep him updated about any modification in E-tender notice and E-tender document issued by Railway through newspapers, website, or any other means and shall act accordingly. Tenderers are advised to download the tender documents well in advance and submit the tender before the stipulated date and time. The tenderer's responsibility is to check any corrections or modifications published subsequently in the IREPS Web site. The same shall be considered while submitting the tender. The Tenderers shall download the corrigendum (if any) and upload it with the main tender document with their digital signature. Tender documents not accompanied by published corrigendum(s) are liable to be rejected.
- (vii) The tender shall be signed by individuals or individuals legally authorized to enter into commitments on behalf of the tenderer. Any individual(s) signing the tender documents or other documents connected in addition to that should specify whether he is signing:
- a. As a sole proprietor of the firm or attorney of the sole proprietor.
 - b. As a partner or partner of the firm.
 - c. As a Director, Manager, or Secretary or official with Power of Attorney as per memorandum/article of association in a Limited Company.
 - d. Individual(s) signing the tender documents must state that they are authorized to sign the same and submit documentary proof.
- (viii) Every tenderer shall state in the tender his postal address fully and clearly. Any communication sent in time to the tenderer by post at the said address shall be deemed to have reached the tenderer duly and in time. He shall also

give telephone and fax numbers for communication. Essential documents shall be sent by registered post.

- (ix) Incomplete and conditional tenders will generally not be considered and will be rejected. However, the Railway reserves the right to reject any special conditions stipulated by the tenderer as deemed unacceptable to the Railway. For example, suppose any deviations from the General Conditions of Contract /Special Conditions of Contract/ Technical Specifications & Requirements/Schedule of works & Supplies are proposed by the tenderer. In that case, they should be mentioned on the statement of deviation in **Form No.3** (in Forms & Annexures part of Chapter - 3) and not elsewhere in the tender document. If the tender has no exceptions, the **Statement of Deviations** shall submit a “NIL’ statement. If the tenderer does not include this with the tender, it shall be conclusive evidence that all contract conditions are entirely acceptable to the Tenderer.
- (x) All the relevant documents shall be uploaded along with the tender form as per the terms and conditions of the tender.
- (xi) All supporting documents to the offers shall be typed, written/printed neatly in indelible ink in English, and scanned with sufficient resolution for uploading on the E-tendering portal. A clear hard copy can be taken for the same. Each page of the offer can be duly signed by the tenderer & should bear the seal of the firm. Photocopies of all the certificates etc., submitted by the tenderer should be self-attested as true copies unless required to be attested by the Notary public by other conditions of the tender. No scribbling is permissible in the tender documents. Tenders containing erasures and alterations in the tender documents are liable to be rejected. Any correction made by the tenderer(s) in his/their entries must be attested by him/ them.
- (xii) **Errors, Omission & Discrepancies (in the tender document):**
 - a. The contractor(s) shall not take any advantage of any misinterpretation of the conditions due to typing or any other error and if in doubt, shall bring it to the notice of the tender inviting authority without delay. In case of

any contradiction, only the printed rules and books should be followed, and no claim for the misinterpretation shall be entertained.

- b. Suppose a tenderer finds discrepancies in, or omissions from the drawing or any of the tender documents or has any doubt about their meaning. In that case, he should at once notify Dy. Chief Signal Telecommunication Engineer/Project/TPJ, Southern Railway, Tiruchchirappalli-620001, who may send a written clarification to all Tenderers or upload the Amendment & Corrigendum in www.ireps.gov.in as required.
- (xiii) After the opening of the tender, any document/credential about the firm's Technical & Financial eligibility and constitution will neither be asked nor be entertained/considered under any circumstance & nor claim or representation whatever in this regard, from the tenderer, shall be entertained.
- (xiv) 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.
- (xv) The comparative tabulation of bids received against the open E-tender will be available online to participate firms immediately after opening the Bid by Railway. However, the tenderer or his authorised representative may attend the office of Deputy Chief Signal & Telecommunication Engineer, Project, TPJ, Southern Railway, Tiruchchirappalli-620001.
- (xvi) The date of inviting tender shall be the date of publishing a tender notice on the IREPS website.

2.3 NAME OF THE WORK:

PROVISION OF DOUBLE DISTANT FOR RAISING OF SECTIONAL SPEED TO 130 KMPH IN B-ROUTE AT ALL STATIONS / LC GATES IN TPJ-DG SECTION (96 RKM) & DG-TEN SECTION (220 RKM) OF MADURAI DIVISION

2.4 BRIEF SCOPE OF WORK:

The scope of this work is broadly for the execution of works such as

- i) Excavation of trench in all kinds of soil, closing of trench as per standard practice with cable markers and other associated cable laying works using Horizontal Directional Drilling, Masonry duct, Provision of DWC/GI pipes etc.,
- ii) Laying of signaling cables, power and telecom cables as per the site requirement.
- iii) Supply and Laying of DWC Split pipe of 120/103 mm Dia, in already dug cable trenches.
- iv) Signal foundation, Supply and erection of Signal posts and CLS units (3 & 4 aspects) along with all its accessories such as ladder with platform, , surface base, Offset bracket, ground type shunt signal units, Earthing,
- v) Supply, Casting and concreting of full GRS and half GRS box. Termination of cables in location boxes/CT Rack etc.,
- vi) Erection/Removal of existing Goods warning board as per approved signalling plan.
- vii) Provision of track circuits and installation of point machines as per site requirement.
- viii) Wiring of relays in location boxes, relay room and carrying out alteration in the existing Relay rack and location boxes etc.,

- ix) Design, supply of alteration circuit diagrams, FAT, SAT and commissioning of EI alterations should be done.
- x) Carrying out SM Panel/VDU / LC panel alterations, wherever required as per the schedule of works.
- xi) Preparation of As-made circuit diagram after physical completion of work
Clarification about the latest policies/ practices for execution of work can be received from the Office of Deputy Chief Signal & Telecommunication Engineer/Projects/TPJ, Southern Railway, Tiruchchirappalli-620001.

xii) **LIST OF STATION**

TPJ-DG-TEN Section EI Details on Station wise:		
Sl.No.	Station	Interlocking (EI)
1	Pungudi	Medha
2	Kolathur	Medha
3	Manaparai	Medha
4	Vaiyampatti	Medha
5	Kalpattichatram	Medha
6	Ayyalur	Medha
7	Vadamadura	Medha
8	Tamaraipadi	Medha
9	Dindigul Jn.	Medha
10	Madurai Jn.	Kyosan
11	Tiruparankundram	Kyosan
12	Tirumangalam	Kyosan
13	Kalligudi	Kyosan
14	Virudunagar Jn.	Kyosan
15	Tulukapatti	Kyosan
16	Satur	Kyosan
17	Nalli	Kyosan
18	Kovilpatti	Kyosan
19	Kadambur	Kyosan
20	Vanchi Maniyachchi Jn.	Kyosan
21	Gangaikondan	Kyosan
22	Talayuthu	Kyosan
DG-MDU Section RRI Details on Station wise:		
1	Ambaturai	
2	Kodaikkanal Road	
3	Vadippatti	
4	Sholavandan	
5	Samayanallur	
6	Kudal Nagar	

2.4.1 CONTRACTOR'S SCOPE OF WORK:

- i) The contractor has to make all supplies as per schedule of works except the items mentioned under heading "Works to be done by Railways" in the tender document under Para 2.4.2
- ii) The contractor shall be responsible for employing of qualified personnel for supervision and execution of work as per GCC Clause No 26.
- iii) The contractor shall be responsible for supply of equipment/materials as per Technical specification & Requirement in line with Tender schedules.
- iv) The contractor shall be responsible for proper execution of work in line with Tender schedules
- v) Supply of outdoor/underground cables such as 2x2.5 sq.mm Cu cable, 3x10 sq mm, multi core Signalling cable of 1.5 Sq.mm conductor size, Power cable of 2C*25/35/75 Sq.mm Aluminium conductors, 4/6-Quad and OFC Cables.
- vi) Supply of all types of plug-in Relays with plug boards, fixing bolts and nuts, and retaining clips except those supplied by the contractor as specified in the tender schedule
- vii) Supply of Full - GRS, Half -GRS - GRS boxes
- viii) Cable trench, laying of cable and closing of trench and other associated cable laying works.
- ix) Supply and Laying of DWC Split pipe of 120/103 mm Dia, in already dug cable trenches.
- x) Foundation for location box and signals, erection of location boxes, signals along with accessories, wiring of Relays, equipment, Relay room wiring, Panel alterations etc., as per site requirements
- xi) Lifting of materials/cables from designated stores/workshops to the site. Stacking the materials received and providing security arrangements to avoid any damage/loss of materials.
- xii) The contractor shall be responsible for Supply of Technical documents for the equipments offered by him
- xiii) Arranging the OEM Engineers for proper technical guidance during the work when needed as per RDSO Guidelines.
- ix) Design change in the VDU logic, carrying out FAT along with Railway officials, assisting Railways in SAT and commissioning.
- xi) Wiring from cable termination rack to relay racks and to EI Rack and to Dataloggers etc.,
- xii) Testing and commissioning of Double distant work
- xiii) Submission of Asmade documents.

2.4.2 WORK TO BE DONE BY THE RAILWAYS:

Following works shall be done by Railways:

- i. Supply of approved Signalling plan of the station/section
- ii. Unregulated 230V AC.
- iii. Supervision of testing and commissioning of installation/equipment. This activity shall be done once tenderer has completed the testing of complete installation and offers it to Railways for their testing, verification and validation. For any installation activities like drilling, soldering etc., necessary electric power supply shall be arranged by contractor.
- iv. Supervising the entire project execution being carried out by the contractor. Making personnel available for operation of equipment after commissioning

2.5 QUALIFYING & ELIGIBILITY CRITERIA:

2.5.1 SIMILAR NATURE OF WORK:

Similar work: *“Any signal interlocking works involving EI or RRI or PI or IBS or IBH or LC gate or yard modification or UFSBI or Track circuit (AFTC or DC TC) or Axle Counter (SSDAC or MSDAC or HA-SSDAC) or Automatic signalling”.*

The appropriate level of satisfactory performance certificate shall be obtained from Indian Railways /Govt./PSUs/Quasi Govt. is from JA grade officer in Indian Railways or equivalent.

- a) Along with the offer the tenderer should submit an undertaking for “Alteration to Software ,wiring ,Testing and commissioning (including FAT & SAT etc) of existing EI equipment as per RDSO Spec No: RDSO/SPN/192/2005 or latest as per approved signalling plan & Table of control for existing EI at PUG-DG (M/s MEDHA make) & at MDU-TAY (M/s KYOSAN make).

This work involves alteration to the existing Electronic interlocking as per the Signalling Plan & Table of Control issued by Railways and the latest RDSO & HQ guidelines by modification to the existing Interface and Interlocking circuit, modification to the application logic software of VDU & MT, Alteration to the

Relay Rack wiring as per the modified interface circuits including supply of necessary wiring material, upgradation & validation of Data logger & alteration in data logger wiring up to CMU , Testing of modified logics, commissioning and submission of As-made documents. Any additional cards are required for the above work shall be supplied by contractor.

Asmade documents for EI:

After testing and commissioning of the entire installation, Six copies of final 'as made' details ashereunder shall have to be supplied duly incorporating all particulars for the station. All 'As made' shall be prepared by the contractor in AutoCAD latest Version and submitted in compact discs in duplicate. All 'As made' documents/plans shall be made by the contractor in Tracing sheets to RAILWAY STANDARD only as laid down in the schedules (SOR) and shall be handed over to the Railways, duly signed. However, contractor shall hand over along with the Tracing sheets , 8 copies in each, duly making book-let neatly bound. Out of 6 sets, 4 sets of Binded booklets and 2 sets shall be kept in thick plastic cover (2 sheets back to back in one plastic cover) duly filled in plastic folder and handed over to Railways. Any correction made during testing shall be incorporated before submitting 'FINAL' 'As made' Diagrams..

After awarding of Contract, MOU with RDSO approved source OEM ie M/s. KYOSAN and M/s MEDHA covering alteration to Software, wiring, Testing & Commissioning of existing Electronic Interlocking equipment and other associated works at respective stations/IBS in connection with the above work including after sales support required during the warranty to be submitted by the tenderer.

- b) In the MOU, Original equipment manufacturer shall:
 - i) Offer technical support for Alteration to Software, wiring, Testing & Commissioning of existing Electronic Interlocking equipment
 - ii) Undertake certification of Factory Acceptance Test.
 - iii) Undertake verification and certification of pre-commissioning check list as per RDSO guidelines.
 - iv) Sign on the Application for Technical System approval by RDSO where ever applicable to ensure that the installation is as per the RDSO stipulations.
 - v) Offer Warranty for equipment as per the condition laid in the tender document and

RDSO specification for a period of one year from the date of commissioning.

Note for Item 10.1:

Work experience certificate from private individual shall not be considered. However, in addition to work experience certificates issued by any Govt. Organisation, work experience certificate issued by Public listed company having average annual turnover of Rs.500 crore and above in last 3 financial years excluding the current financial year, listed on National Stock Exchange or Bombay Stock Exchange, incorporated/registered at least 5 years prior to the date of closing of tender, shall also be considered provided the work experience certificate has been issued by a person authorized by the Public listed company to issue such certificates.

2.5.2 TECHNICAL ELIGIBILITY: -

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

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

(OR)

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

(OR)

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

Work experience certificate from a Private individual shall not be considered. However, in addition to work experience certificates issued by any Govt Organisation, the work experience certificate issued by Public Listed Company has an average annual turnover of Rs. 500 Crores 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 five 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 the 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 the company in support of above work experience certificate.

The tenderer shall submit a certificate to this effect in the format given in **Form No.1A for physically completed works and in Form No 1B for substantially completed works** (in Forms & Annexures part of Chapter - 3) of the tender document. Certificates to be duly certified by minimum JAG Officer.

Note:

- 1) Substantially Completed Work means an ongoing work in which payment equal to or more than 90% of the present contract value (excluding the payment made for adjustment of Price variation (PVC), if any) has been made to the contractor in that ongoing contract and no proceedings of termination of contract on Contractor's default has been initiated. The credential certificate in this regard should have been issued not prior to 60 days of date of invitation of present tender.
- 2) In case a work is started prior to 07 (seven) years, ending last day of month previous to the one in which tender is invited, but completed in last 07 (seven) years, ending last day of month previous to the one in which tender is invited, the completed work shall be considered for fulfilment of credentials.
- 3) If a work is physically completed and the concerned organization issues a completion certificate to this extent, but the final bill is pending. In that case, such work shall be considered for fulfilment 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.

- 5) 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.
- 6) In case a work is considered similar in nature for fulfilment 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) If a bidder has successfully completed work as a 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 a note for item 10.1 part I of GCC, the same shall be considered to fulfil credentials.
- 8) In the case of a 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 a newly formed partnership firm. For example, partner A had a 30% share in the previous entity, and his share in the present partnership firm is 20%. Therefore, 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 a copy of previous partnership deed(s), dissolution deed(s), and proof of surrender of PAN No.(s) in case of dissolution of a partnership firm(s), etc.
- 9) In the case of an existing partnership firm, if anyone or more partners quit the partnership firm, the credentials of the 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 of 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 a copy of previous partnership deed(s), dissolution deed(s), and proof of surrender of PAN No.(s) in case of dissolution of a partnership firm(s), etc.

- 10) In case of existing partnership firm if any new partner(s) joins the firm, without any modification in the name and PAN/TAN no. of the firm, the credentials of partnership firm shall get enhanced to the extent of credentials of newly added partner(s) on the same principles as mentioned in item 6 above. For this purpose, the tenderer shall submit along with his bid all the relevant documents which include copy of previous partnership deeds, dissolution/splitting deeds and proof of surrender of PAN No.(s) in case of dissolution of partnership firm etc.
- 11) 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.
- 12) 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.
- 13) If the percentage share among partners of a partnership firm is changed, but the partners remain the same. In that case, the firm's credentials before such modification in the share will continue to be considered for the firm as it is without any change in their value. Further, if a partner of a partnership firm

retires without taking away any credentials from the firm, the credentials of the partnership firm shall remain the same as it is without any change in their value.

- 14) In a partnership firm "AB" of A&B partners, in case A also works as proprietary firm "P" or partner in some other partnership firm "AX," credentials of A in proprietary firm "P" or in another partnership firm "AX" earned after the date of becoming a partner of the firm AB shall not be added in partnership firm AB.
- 15) In case a tenderer is LLP, the credentials of the tenderer shall be worked out on the above lines similar to a partnership firm.
- 16) In case company A is merged with company B, then company B would also get company A's credentials.

2.5.3 FINANCIAL ELIGIBILITY: -

The tenderer must have minimum average annual contractual turnover of V/N crores:where

V= Advertised value of the tender in crores of Rupees

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

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

The tenderers shall submit requisite information as per Annexure-9, along with copies of Audited Balance Sheets duly certified by the Chartered Accountant/ Certificate from Chartered Accountant duly supported by Audited Balance Sheet.

2.5.4 SUB-SECTION CLAUSE: -(Not Applicable for this tender)

A. In view of the sub-sectioning, if eligible Tenderer/firm becomes L-1 only in one tender, the tender will be awarded to the lowest eligible Tenderer/firm.

OR

If the Tenderer/firm becomes L-1 in more than one tender for above mentioned Tender Notice, then evaluation of Tenderer/firm for his/its eligibility for award of all such tenders shall be done, duly considering the work experience (i.e., 30% percent

for three similar works (or) 40% for two similar works (or) 60% for one similar work) of combined value of such tenders and Financial capability of 150% percent of combined value of such tenders, in which the Tenderer/firm is L-1.

B. In case the Tenderer is lowest in more than one tender under consideration, however, falls short of above sub-sectioning eligibility criteria, then the Tenderer will be considered for awarding any of the work(s) at the sole discretion of the Railways. The decision of the Railway will be final and binding on the Tenderer.

2.5.5 BID CAPACITY: -

The tenderers who meet the minimum eligibility criteria will be qualified only if their available bid capacity is equal to or more than the total bid value of the present tender. The available bid capacity shall be calculated as under:

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

Where

A = Maximum value of construction works executed and payment received in any one financial year during the current and last three financial years immediately preceding the current financial year, upto date of opening of 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 prescribed proforma of Railway for statement of all works in progress and also the works which are awarded to tender but yet not started upto the date of inviting of tender.

Note:

- 1) Tenderer to note that the list of documents to be submitted by tenderer was enclosed as Form-8 (in Forms and Annexures Part of Chapter-4) for assessing Bid capacity.

- 2) In case, tenderer failed to submit the above document/statement as per Form-8 along with offer, their/his offer shall be considered as incomplete and will be rejected summarily.
- 3) 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.
- 4) The supporting documents to assess the Bid capacity has to be enclosed in Technical Bid document only i.e., Packet-I.

2.5.6 SUBMISSION OF UNDERTAKING AFTER AWARD OF LOA: -

The tenderer shall necessarily satisfy the Eligibility conditions listed below:

- i) After award of the contract and before supply of EI materials, Undertaking shall be submitted from RDSO approved EI OEM covering supply of equipment for EI, Installation, Testing and commissioning of EI by the same RDSO approved source including after-sales support required during the warranty period, and beyond the warranty period, before supply of equipment is undertaken. Further, the tenderer shall ensure that Undertaking shall include following:
 - a) Offer technical support for supply, installation, and commissioning of the equipment.
 - b) Submission of Interface and Application Logics for approval.
 - c) Undertake certification of Factory Acceptance Test.
 - d) Undertake verification and certification of the pre-commissioning checklist as per RDSO guidelines.
 - e) Submission and Signature of the Application for Technical System approval by RDSO to ensure that the installation is per the RDSO stipulations.
 - f) Impart training to Railway officials at their factory premises and at site.

- g) Offer Warranty for equipment as per the condition laid in the tender document and RDSO specification for one year from the date of commissioning.
- h) Guarantee to supply spares for a minimum of 7 years after the expiry of the warranty period.
- i) Support Railways for entering into AMC/ARC, if any, at a later date after the expiry of the warranty period.

Note:

- 1) The successful bidder shall submit an undertaking from RDSO approved EI OEM, before the supply of EI materials.

2.6 GUIDELINES FOR PARTICIPATION OF JOINT VENTURE FIRMS:

- (i) Separate identity/name shall be given to the Joint Venture firm.
- (ii) Number of members in a JV firm shall not be more than THREE.
- (iii) A member of JV firm shall not be permitted to participate either in individual capacity or as a member of another JV firm in the same tender.
- (iv) The tender form shall be purchased and submitted only in the name of the JV firm and not in the name of any constituent member. The tender form can however be submitted by JV or any of its constituent member or any person authorized by JV through Power of Attorney to submit tender.
- (v) Bid Security shall be deposited by JV or authorized person of JV through E-payment gateway or Bank Guarantee Bond either in the name of JV, or in the name of all members of JV as per MOU irrespective of their share in the JV.
- (vi) One of the members of the JV firm shall be its Lead Member who shall have a majority (at least 51%) share of interest in the JV firm. The other members shall have a share of not less than 20% each in case of JV firms with up to three members. In case of JV firms with foreign member (s), the lead member has to be an Indian firm with a minimum share of 51%.

- (vii) A copy of Memorandum of Understanding (MOU) duly executed by the JV members on stamp paper, shall be submitted by the JV along with the tender. The complete details of the members of the JV firm, their share and responsibility in the JV etc., particularly with reference to financial, technical and other obligations shall be furnished in the MOU. The MOU format for this purpose is enclosed as **Annexure-1** (in Forms & Annexure part of chapter 3).
- (viii) Once the tender is submitted, the MOU shall not be modified/alterd/ terminated during the validity of the tender. In case the tenderer fails to observe / comply with this stipulation, the full Bid Security (EMD) shall be forfeited. In case of successful tenderer, the validity of this MOU shall be extended till the currency of the contract expires.
- (ix) Approval for change of constitution of JV shall be at the sole discretion of the Railways. The constitution of the JV shall not normally be allowed to be modified after submission of the tender bid by the JV, except when modification becomes inevitable due to succession laws etc. and in any case the minimum eligibility criteria should not get vitiated. However, the Lead Member should continue to be the Lead Member of the JV. Failure to observe this requirement would render the offer invalid.
- (x) Similarly, after the contract is awarded, the constitution of JV shall not be normally allowed to be altered during the currency of contract except when modification become inevitable due to succession laws etc. and in any case the minimum eligibility criteria should not get vitiated. Failure to observe this stipulation shall be deemed to be breach of contract with all consequential penal action as per contract conditions.
- (xi) On award of contract to a JV, a single performance guarantee shall be submitted by the JV as per tender conditions. All the Guarantee's like Performance Guarantee, Bank Guarantee for Mobilization Advance etc., shall be accepted only

in the name of the JV firm and no splitting of guarantee amongst the members of the JV firm shall be permitted.

- (xii) On issue of LOA (Letter of Acceptance), the JV entity to whom the work has been awarded, shall form a legal entity if not already formed, which shall have the same shareholding pattern, as was declared in the MOU/JV agreement submitted alongwith the tender. The entity shall be got registered before the Registrar of the companies under “The Companies Act-2013” (in case JV entity is to be registered as Company) or before the Registrar/Sub-Registrar under the ‘The Indian Partnership Act, 1932’ (in case JV entity is to be registered as Partnership Firm) or under “The LLP Act 2008” (in case JV entity is to be registered as LLP). A separate PAN shall be obtained for this entity. The documents pertaining to this entity including its PAN shall be furnished to Railways before signing the contract agreement for the work. In case the tenderer fails to observe/comply with this stipulation within 60 days of issue of LOA, contract is liable to be terminated.
- (xiii) This JV agreement shall be submitted by the JV firm to the Railways before signing the contract agreement for the work. This agreement should invariably be made on the basis of agreed terms and conditions as made in the MOU. In case the tenderer fails to observe/comply with this stipulation, the full Bid Security (EMD) shall be forfeited and other penal actions due shall be taken against partners of the JV and the JV. This joint venture entity so registered, in the registered documents, shall have, inter-alia, the following clauses:
- a) **Joint and several liabilities:** The members of the JV entity to which the contract is awarded shall be jointly and severally liable to the Railway for execution of the project in accordance with General and special conditions of the contract. The members of the JV entity shall also be liable jointly and severally for the loss, damages caused to the Railways during the course of execution of the contract or due to non-execution of the contract or part thereof.

- b) **Duration of the Joint Venture Registered Entity:** It shall be valid during the entire currency of the contract including the period of extension, if any and the maintenance/warranty period after the work is completed.
- c) **Governing laws:** The Joint Venture Registered Entity shall in all respect be governed by and interpreted in accordance with Indian Laws.
- (xiv) **Authorised Member:** Joint Venture members in the JV MOU shall authorise one of the members on behalf of the Joint Venture 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/correspondences with respect to the contract would be sent only to this authorised member of the JV.
- (xv) No member of the Joint Venture shall have the right to assign or transfer the interest right or liability in the contract without the written consent of the other members and that of the Railways in respect of the said tender/contract.
- (xvi) Documents to be submitted/uploaded by the JV along with the tender:
 - (A) In case one or more of the members of the JV is/are partnership firm(s), the following documents shall be submitted :
 - 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 authorised by partnership firm, to enter into the Joint Venture Agreement on a stamp paper.
 - c) A notarized or registered copy of Power of Attorney (duly registered as per prevailing law) in favour of the individual to sign the MOU/JV Agreement on behalf of the partnership firm and create liability against the firm.
 - 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.

- (B) In case one or more members is/are proprietary firm or HUF, the following documents shall be enclosed:

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/she is in position of "KARTA" of Hindu Undivided Family (HUF) and he/she has the authority, power and consent given by other partners to act on behalf of HUF.

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

- a) A copy of the resolution of the Directors of the Company, permitting the company to enter into a JV agreement.
- b) A Copy of Memorandum and 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.

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

- a) A copy of LLP Agreement
- b) A copy of Certificate of Incorporation of LLP
- c) A copy of resolution passed by partners of LLP firm, permitting the Firm to enter into a JV agreement
- d) 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.
- e) 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.

- (E) In case one or more members of the JV is/are Society/s or Trust/s, the following documents shall be submitted:
- a) A copy of Certificate of Registration
 - b) A copy of Memorandum of Association of Society/Trust Deed
 - c) A copy of Rules & Regulations of the Society
 - d) A copy of Power of Attorney, in favour of the individual to sign the tender documents and create liability against the Society/Trust.
- (F) All the members of the JV shall certify that they are not 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 on the date of opening of bids either in their individual capacity as members of the JV in which they were/are members.

2.6.1 PROSPECTIVE JOINT VENTURE FIRM SHALL SATISFY THE MINIMUM ELIGIBILITY CRITERIA AS GIVEN BELOW:

2.6.1.1 Technical Eligibility Criteria - (in conjunction with Para 2.5.2 above)

The technical eligibility for major component of work as per para 2.5.2 above, shall be satisfied by either the JV in its own name & style ' or ' Lead member of the JV' and technical eligibility for other component(s) of work as per para 2.5.2 above, shall be satisfied by either the 'JV in its own name & style' or 'any member of the JV'.

Each other (non-lead) member (s) of JV, who is/are not satisfying the technical eligibility for any component of the work as per para 2.5.2 above, shall have technical capacity of minimum 10% of the cost of any component of work mentioned in technical eligibility criteria. i.e., each other (non-lead) member of must have satisfactorily completed or substantially completed during the last 07 (seven) years, ending last day of month previous to the one in which tender is invited, one similar single work for a minimum of 10% of cost of any component of work mentioned in technical eligibility criteria.

Note:

- a) The Major component of the work for this purpose shall be the component of work having highest value. In cases where the value of two or more component of work is same, any one work can be classified as Major component of work.
- b) Value of completed work done by a member in an earlier JV shall be reckoned only to the extent of the concerned member's share in that JV for the purpose of satisfying his/her compliance to the above-mentioned technical eligibility criteria in the tender under consideration.
- c) Details of Similar Works executed shall be given in the format given in Form No. 1 (in Forms & Annexures Part of Chapter-3).

6.1.2 Financial Eligibility Criteria - (in conjunction with Para 2.5.3 above):

The JV shall satisfy the requirement of "Financial Eligibility" mentioned at Para 2.5.3 above.

Note:

- a) The Financial capacity of the Lead partner of JV shall not be less than 51% of the Financial eligibility criteria mentioned in Para 2.5.3 above.
- b) The arithmetic sum of individual "Financial Capacity" of all the members shall be taken as JV's "Financial Capacity" to satisfy the requirement.
- c) Contractual payment received by a member in an earlier JV shall be reckoned only to extent of the concerned member's share in that JV for the purpose of satisfying compliance of the above-mentioned financial eligibility criteria in tender under consideration.
- d) Details shall be given in the format given in **Form No.2** (In Forms & Annexure part of chapter 3).
- e) Separate forms should be used for each JV member as required and then consolidated as per format in **Form No.2** (In Forms & Annexure part of chapter - 3).

2.7 BID SECURITY(EMD):

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

Value of the Work	Bid Security
For 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

Note:

- (i) The Bid Security shall be rounded off to the nearest ₹100. This Bid Security shall be applicable for all modes of tendering.
 - (ii) Any firm recognized by Department of Industrial Policy and Promotion (DIPP) as 'Startups' shall be exempted from payment of Bid Security detailed above.
 - (iii) Labour Cooperative Societies shall submit only 50% of above Bid Security detailed above.
- (b) It shall be understood that the tender documents have been issued to the tenderer and the tenderer is permitted to tender in consideration of stipulation on his part, that after submitting his tender he will not resile from his offer or modify the terms and conditions thereof in a manner not acceptable to the Engineer. Should the tenderer fail to observe or comply with the said stipulation, the aforesaid amount shall be liable to be forfeited to the Railway.
- (c) If his tender is accepted, this Bid Security mentioned in sub para (a) above will be retained as part security for the due and faithful fulfilment of the contract in terms of Clause 16 of the Standard General Conditions of Contract. The Bid Security of other Tenderers shall, save as herein before provided, be

returned to them, but the Railway shall not be responsible for any loss or depreciation that may happen thereto while in their possession, nor be liable to pay interest thereon.

- (2) The Bid Security shall be deposited either in cash through e-payment gateway or submitted as Bank Guarantee bond from a scheduled commercial bank of India or as mentioned in tender documents. The Bank Guarantee bond shall be as per **Annexure 8** and shall be valid for a period of 90 days beyond the bid validity period.
- (3) **In case, submission of Bid Security in the form of Bank Guarantee, following shall be ensured:**

A scanned copy of the Bank Guarantee shall be uploaded on e-Procurement Portal (IREPS) while applying to the tender.

- i. The original Bank Guarantee should be delivered in person to the official nominated as indicated in the tender document within 5 working days of deadline of submission of bids.

The original Bank Guarantee should be delivered in person to the official nominated as indicated in the tender document before closing date for submission of bid (i.e, excluding the last date of submission of bids)

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.

The Tender Security shall remain valid for a period of 90 days beyond the validity period for the Tender.

- ii. 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

iii. The Bank Guarantee shall be placed in an envelope, which shall be sealed.

The envelope shall clearly bear the identification “**Bid for the “Name of Work”**” 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.

iv. The envelope shall be addressed to the officer and address as mentioned in the tender document.

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

a) For the due performance with the stipulation to keep the offer open till such date as specified in the tender, under the tender conditions.

b) After submitting his tender, he will not resale 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 Bid Security mentioned above shall be forfeited by the Railway.

Note:

If the tenderer withdraws his offer within the validity date of his offer, the full Bid Security shall be forfeited.

ii) The Bid Security will not be accepted in cash, FDR (Fixed Deposit Receipt), or banker's cheques/Demand Drafts.

iii) The tenderer shall not submit any bids online unless the tenderer has deposited requisite Bid Security online / submitted as Bank Guarantee bond. on the E-Tendering portal of Indian Railways www.ireps.gov.in.

iv) No interest shall be payable on Bid Security by Railways.

- v) No previous Bid Security or Security Deposit, etc., submitted earlier in connection with any tender (s), will be adjusted towards the present, nor will any such request or correspondence be entertained.
- vi) Any firm recognized by the Department of Industrial Policy and Promotion (DIPP) as 'Startups' shall be exempted from payment of Bid Security
- vii) Labour Co-operative Societies shall deposit only 50% of the above Bid Security deposit detailed above.
- viii) If the tender is accepted, the amount of Bid Security will be retained and adjusted as part of the security deposit for the due and faithful fulfilment of the contract.
- ix) The deposit shall be forfeited without prejudice to any other right or remedies if the tenderer does not execute the contract agreement after acceptance of the tender within 7 (seven) days after receipt of notice issued by the railways that such documents are ready and or the tenderer does not commence the work within fifteen days from date of issue of the acceptance letter.
- x) If the 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 towards Full Security Deposit or the Part Security deposit equal to or more than Bid Security, the Railway shall return the Bid Security so retained to the Contractor.
- xi) The Bid Security of the unsuccessful tenderer(s) will, save as hereinbefore provided, be returned to the unsuccessful tenderer(s) within a reasonable time. Still, the Railway shall not be responsible for any loss or depreciation that may happen to the security for the due performance of the stipulation to keep the offer open for the period specified in the tender document or to the Bid Security while in their possession nor be liable to pay interest thereon.

2.8 STUDY OF LOCAL CONDITIONS:

The intending tenderer is advised to carefully study the Tender Document, Technical specifications, Schedule of supplies, and other instructions. The tenderer shall inspect the proposed site of work and acquaint himself with the site conditions, working hours, the layout of the land, trees, and shrubs that he

will have to cut, type of strata likely to be met while excavation, stacking space for materials, approach roads, pathways available, etc., and all relevant items connected with execution for the work. No claim shall be entertained for the contractors making his arrangements for approach roads from outside Railway land, and contractors will bear entire expenses such as road taxes, payment for the right of way, etc., to outsiders and for constructions of approach roads, etc.,

It will be imperative for the tenderer to fully acquaint themselves with all the local conditions and other factors that would affect the performance of the contract and the cost of the stores. Therefore, after the offer is accepted by the Indian Railway, no request for the change of rate or time schedule of delivery of stores/execution of work shall be entertained on account of any local condition or factors.

The tenderer may undertake a study/survey of Signalling systems/practices used in Railways and assess the work. If the tenderer desires a field visit before furnishing his offer, he may apply to Dy. Chief Signal Telecommunication Engineer/Project/TPJ, Southern Railway, Tiruchchirappalli-620001, for permission in this regard. The Railway shall grant such permission, but the tenderer's expenses in this regard shall be borne completely.

Any submission of an offer by the tenderer shall be deemed to have been done after a careful study and examination of this tender document and site conditions with a complete understanding of the implication thereof. It will be understood that the tenderer has/have got herself/himself/themselves clarified on all the points and interpretation by proper authorities of the Indian Railway Administration. These conditions and specifications shall be deemed accepted unless otherwise commented explicitly upon by the Tenderer in his offer. Failure to adhere to anyone or all these instructions may render his offer liable to be ignored without any reference.

2.9 CLARIFICATION REQUIRED BY THE TENDERER:

Specifications, Drawings, Plans, etc., related to the above subject work can be obtained from the office of Dy. Chief Signal Telecommunication Engineer/Project/TPJ, Southern Railway, Tiruchchirappalli-620001.

Suppose a Tenderer finds discrepancies in or omission from the drawing or any of the Tender document or should he be in doubt as to their meaning. In that case, he should at once notify the Railway, i.e., authority inviting tenders by post or email to dycsteprojtpj@gmail.com, who may send a written clarification to all Tenderer(s). Before participating in the tender, any clarification regarding discrepancies should be submitted in writing to Dy. Chief Signal Telecommunication Engineer/Project/TPJ, Southern Railway, Tiruchchirappalli-620001.

2.10 SUBMISSION OF TECHNICAL BID (PACKET-1) INCLUDING DOCUMENT'S REQUIRED:

The online Tender shall be accompanied by relevant documents of technical conditions and requirements mentioned in the tender document. Furthermore, all uploaded documents shall be digitally signed by the tenderer. Hence, the tenderer(s) must ensure that these documents are uploaded, duly signed digitally, with their offer.

The Tender shall be submitted with the following documents:

- i) Offer letter complete along with tender document including tender forms (First sheet & Second sheet), complete tender document downloaded from the website including its addendums/corrigendum's if any, duly signed digitally.
- ii) The tenderer shall specify whether the tender is submitted on his own (Proprietary Firm) or on behalf of a Partnership Firm / Company / Joint Venture (JV) / Limited Liability Partnership (LLP)/ Registered Society / Registered Trust / HUF etc. In addition, the tenderer(s) shall enclose the attested copies of the constitution of their concern and a copy of the PAN Card along with their

- tender. Tender Documents in such cases are to be signed by such persons as they may be legally competent to sign them on behalf of the firm, company, association, trust, or society, as the case may be. Refer to Para 14 of Tender Form Second Sheet [in Forms & Annexures of Chapter-3] regarding documents to be submitted by the tenderer.
- iii) Requisite Bid Security shall be submitted online; otherwise, the tenderer shall not be able to participate in the E-tendering process. Bid Security (EMD) shall only be submitted online through Net-Banking/Debit/Credit cards or payment gateway. A scanned copy of the Bank Guarantee shall be uploaded on e-Procurement Portal (IREPS) while applying to the tender. The original Bank Guarantee should be delivered in person to the official nominated as indicated in the tender document within 5 working days of deadline of submission of bids. before closing date for submission of bids (i.e. excluding the last date of submission of bids). 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 the offer.
- iv) The documents required for ascertaining Technical & Financial capability as specified in Qualifying Criteria, i.e., Para 2.5 of Chapter-2 of this Tender document, shall be enclosed in the offer. In addition, the tenderer should upload, duly signed digitally, detailed documents to fulfill each condition stipulated above in the criteria.
- v) **Certificate(s) from organizations:** (In English or transcript in English with a copy of original document) describing work, the organization for whom executed approximate value of the contract at the time of award, date of award, and date of scheduled/actual completion of work. Date of actual start, the actual date of physical completion, and the final value of the contract) regarding meeting Eligibility Criteria Para 2.5.2 for satisfactory and physical completion as per **Form No.1A/1B** (in Forms & Annexures part of Chapter -3). The performance certificate (s) from user Railway (with contact details of FAX, phone, and E-Mail of issuing authority) satisfying the above conditions and satisfactory working of the system shall be furnished.

Note:

The experience certificate should have been issued by an officer, not below JA Grade

- vi) The detailed list of year-wise contractual payments received in **Form No. 2** (in Forms & Annexure part of Chapter 3) regarding meeting eligibility criteria Para 2.5.3. The attested certificate from employer/client shall include description of work, an organization for whom executed approx. Value of contract at the time of award, date of award and date of scheduled completion of work, the actual date of physical completion, year-wise payments made, and total payment made up to the date of tender opening as per **Form No. 8** (in Forms & Annexures part of Chapter-3) and/or audited balance sheet duly certified by chartered accountant shall be submitted in the support.
- vii) Year-wise details of Audited Balance Sheets certified by registered chartered accountant/company auditor for the last THREE/FOUR Financial years. Client certificates from other than Govt organization should be duly supported by Form 16A/26AS generated through TRACES of Income Tax Department of India.
- viii) A certified copy of Partnership Deed and affidavit for proprietorship firms.
- ix) List of similar types of work completed and works on hand duly indicating the description of work, contract value, date of award of contract, and details of contractual amount received duly certified by employer in Form-8 (in Forms and Annexures Chapter-3).
- x) Certification regarding employment of a retired Engineer of the Gazetted Rank or any other Gazetted officer working before his retirement.
- xi) The tenderer shall also enclose in their offer that they accept all the terms and conditions of Railways. Furthermore, the tenderer shall indicate paragraph by paragraph for each section and each clause and sub-clause of the entire tender document that complies in every respect with the requirements of each clause and sub-clause if not precisely how they differ from the requirements of the tender. In the latter case, the tenderer shall enclose a separate **-Statement of**

Deviations as per Form No. – 3 (in forms and annexure part of chapter 3) given, indicating only the deviations for any clause or sub-clause of GCC, Special Conditions of Contract, Specification and Schedule of Works and Supplies, etc., which they propose with ‘detailed justifications for deviations proposed.’ Railway reserves the right to accept or reject these deviations, and the Railway’s decision thereon shall be final.

If the tender has no exceptions, the **Statement of Deviations** shall submit a “NIL” statement. If the tenderer does not include this with the tender, it shall be conclusive evidence that all contract conditions are entirely acceptable to the Tenderer.

- xii) List of Personnel, Organization available on hand and proposed to be engaged for the subject work. Similarly, a list of Plant & Machinery available on hand and proposed to be inducted and hired for the tendered work.
- xiii) The tenderer shall submit a copy of certificate stating that all their statements/documents submitted along with bid are true and factual. Standard format of the certificate to be submitted by the bidder is enclosed as **FORM- 9 of Chapter 3** (Annexure-V). In addition to FORM- 9, in case of other than company / proprietary firm, FORM- 9A of Chapter 3(Annexure-V(A)) shall also be submitted by the each member of a partnership firm/ Joint Venture (JV)/ Hindu Undivided Family (HUF)/ Limited Liability Partnership (LLP) etc.,as the case may be. Non submission of above certificate(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 are/is qualifying the Qualifying Criteria mentioned in the Tender Document.
- xiv) 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.
- xv) as per make in India policy 2017 issued by Govt of India, the tenderer at the time of tender, bidding or solicitation shall be required to provide self-certification that the item offered meets the minimum local content and shall give details of the location(s) at which the local value addition is made.

- xvi) In cases of procurement for a value in excess of Rs. 10 crores, the tenderer shall be required to provide a certificate from the statutory auditor or cost auditor of the company (in the case of companies) or from a practicing cost accountant or practicing chartered accountant (in respect of suppliers other than companies) giving the percentage of local content.
- xvii) Non-compliance with any of the conditions set forth therein above is liable to result in the tender being rejected.
- xviii) Any other information desired to be submitted by the tenderer.

Note:

- 1) No scribbling is permissible in the tender documents. Tenders containing erasures and alterations in the tender documents are liable to be rejected. Any correction made by the tenderer in his entries must be self-attested.
- 2) Tenderer must furnish duly filled – CHECK LIST given under **Annexure 11** – (in forms and Annexure part of Chapter-3) of the tender document along with all supportive documents.
- 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. However, 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.
- 4) In case any information submitted by the tenderer is found to be false, forged, or incorrect during the process for evaluation of tenders, it shall lead to forfeiture of the tender Bid Security besides banning business for a period of up to two years.
- 5) In case of any information submitted by the tenderer is found to be false forged or incorrect after the award of contract, the contract shall be terminated. Bid Security (EMD), 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 the

agency shall be banned from doing business for a period of up to FIVE years

2.11 SUBMISSION OF FINANCIAL BID (PACKET-II):

- i. All rates must be submitted in the tab for financial offer only on the E-tendering portal. The financial bid will be opened subsequently (on a date which will be notified later) for the tenderer who fulfil the laid down technical and financial eligibility criteria. The offers which are found techno-commercially ineligible will be dismissed.
- ii. Rates of stores, materials and works are to be quoted according to the (online web portal) proforma of "Schedule of work and supplies" (Financial Bid). Rates in the offer should be in Indian Rupees only. Offers in foreign currency will not be accepted.
- iii. Tenderers are requested to quote the Overall Single Percentage with the estimated value of the Tender for schedules in **Schedules - A (S&T SOR) and Schedule-B (S&T Non-SOR) Single percentage for each schedule**, and **Schedule-C (S&T Non-SOR) Single Rate for each schedule item** in the Financial Bid in IREPS online web portal only.
- iv. The tenderer shall quote the complete rate for all items of works given in the schedule of works and supplies in the Financial Bid in IREPS portal only to complete entire scope of work and make system completely functional. Offer received for only part of schedule will not be considered and bid shall be rejected.
- v. No Rates to be quoted/enclosed in Technical Bid document otherwise offer is not considered for evaluation.

2.12 VALIDITY OF OFFERS:

- 2.12.1 The tenderer shall keep the offer open for a minimum of **90 days** from the date of opening of tender. Within that period, the tenderer cannot withdraw her/his/their offer subject to the period being extended further if required by

mutual agreement from time to time. Any contravention of the above condition will make the tenderer liable for forfeiture of his Bid Security.

2.12.2 It is understood that the tender document has been sold/issued to the Tenderer, and the Tenderer is/are permitted to tender in consideration of the stipulation on her/his/their part that after submitting her/his/their subject to the period being extended further 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 forgoing stipulation, the amount deposited as Bid Security for the due performance of the above stipulation shall be forfeited by the Railways.

2.13 COMPLETION PERIOD:

- a) The time schedule for the entire work is of utmost importance. The entire work must be fully executed within **12 Months** from the date of issue of Letter of Acceptance (LOA). The contractor shall depute an adequate number of competent Engineers/qualified staff to survey, install, test, and commission the equipment/system at the site.
- b) Expected time schedule for supply, installation, and commissioning of the System shall be as follows:
- c) Please note that Railway will provide all the arrangements as furnished vide 2.4.2 as per the contractor's requirement. Further Railways will ensure no undue delay in arranging Plans, approvals, sanctions, etc.

Sl.No	Description of Supply & Execution of work	Time Schedule for Completion
1	Placement of orders for all the materials	Within 1 week after issue of LOA
11	Commencement of cable trenching, laying & other outdoor works	Within 1 Month from issue of LOA

111	Completion of all outdoor works for all station and LC gates	Within 8monthsfromissueofLOA
1V	Completion of whole Project	Within 12 months from issue of LOA

2.14 OPENING OF TENDERS

The tender will be opened online as per the stipulated date and time mentioned in the Tender Notice and Website in the office of Dy. Chief Signal Telecommunication Engineer/Project/TPJ, Southern Railway, Tiruchchirappalli-620001, in the presence of Tenderer/ representatives (whoever chooses to attend). In the event of the specified date of bid opening being declared holiday for the Railway, the Bids shall be opened at the same time and location on the next working day. The tenderer/representatives, who are present during the opening of Bids, should sign a register as a token of their attendance.

2.15 RIGHT OF RAILWAYS TO DEAL WITH TENDERS:

The authority for the acceptance of the tender will rest with the Railway administration for and on behalf of the President of India, who shall not be bound to accept the lowest or any tender or assign any reason for declining to consider non-acceptance or rejection of a tender. However, Railway administration reserves the right to accept any tender in respect of the whole or any portion of the work specified in the tender document, reduce the scope of the work, or accept any tender for less than the tendered quantities without assigning any reason whatsoever.

Railway administration also reserves the right to cancel any or all tenders at any stage. Furthermore, the Railway reserves the right to accept or reject the deviations proposed by the tenderer, and Railway's decision thereon shall be final. The deviation quoted by the tenderer will become part of the Contract Agreement only to the extent to which they are mentioned explicitly as accepted in the Letter of Acceptance.

2.16 ACCEPTANCE OF TENDER:

A letter of acceptance (LOA) of the offer will be issued by the Railway Administration to the successful Tenderer that his offer has been accepted, on receipt of which he shall submit a Performance Bank Guarantee (PBG) bond of 5% of the cost of work and shall execute a formal Contract Agreement with the President of India acting through Dy.CSTE/Project/TPJ, Southern Railway, Tiruchchirappalli-620001 or his authorized representative for carrying out the work according to the tender's terms and conditions, including "General Conditions of Contract" of Indian Railway and Special Conditions/Specifications of this tender. Upon issuing of LOA, the contract for the work shall be deemed to have been awarded to the tenderer, and accordingly, the completion period will be reckoned from the date of issue of LOA irrespective of the date of signing of contract agreement subsequently.

2.17 SIGNING OF AGREEMENT:

The tenderer(s) whose offer is accepted will be required to present themselves or their duly authorized representative in the office of Dy. Chief Signal Telecommunication Engineer/Project/TPJ, Southern Railway, Tiruchchirappalli-620001, to execute the contract document within seven days of receipt of notice that the contract documents are ready. 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.

2.18 COMMENCEMENT OF WORK

Upon receipt of LOA, the successful tenderer shall commence the work by submitting a detailed time schedule in terms of Chapter 2 – Special Conditions of Contract, for completion of work within the stipulated completion period.

2.19 CONSIGNEE:

Consignee for the material supplied by the contractor shall be as follow:-

- i) Signalling items and all accessories shall be supplied to the Authorised representative of Dy.CSTE/Project/TPJ at the store of the nominated consignee, i.e., Stores/Proj/TPJ.
- ii) After supplying the material by the contractor, the same shall be issued to the contractor against indemnity Bond. The contractor shall provide proper storage space, ensuring protection from theft, fire, and flooding. The contractor shall obtain authorization from Railway before transporting the material to the worksite. The contractor shall submit monthly statements of material delivery/issues to the site, indicating dates and quantity of equipment received and issued every month, along with an overall summary.

Any change/addition required in consignee shall be done after mutual consultation between contractor and Railway.

2.20 CONTRACTOR 'S OFFICE & STORES DEPOT:

The contractor shall, within a month of issue of letter of acceptance (LOA) of tender, establish an office and storage depot at a convenient place for receiving & storing equipment and materials and progressing fieldwork expeditiously in consultation and with the approval of the Engineer-in-charge, where all correspondence should be sent. **The contractor will intimate office address along with Telephone/Fax, E-mail, and name of Key-personnel responsible for the execution of work.** Any communication sent to the contractor by post at his said address shall be deemed to have reached the contractor duly and in time. The critical document shall be sent by Registered post.

2.21 ADDRESS CHANGES:

Any change in the address of the contractor shall be forthwith intimated in writing to the Railway. The Railway will not be responsible for any loss/inconvenience suffered by the Contractor on account of his failure to comply with this.

2.22 SECURITY DEPOSIT:

The Security Deposit shall be 5% of the contract value. The Bid Security submitted by the Contractor with his tender will be retained/encashed by the Railways as part of security for the due and faithful fulfilment 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 Deposit or 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 total 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.

Further, suppose Security Deposit has been submitted as Term Deposit Receipt/Bank Guarantee Bond in the total amount. In that case, the Bid Security deposited by the Contractor with his tender will be returned by the Railways.

Note:

- 1) After the work is physically completed as certified by the competent authority, Security Deposit recovered from the running bills of a Contractor can be returned to him, if he so desires, in lieu of Term Deposit Receipt/irrevocable Bank Guarantee for equivalent amount from Scheduled Bank, to be submitted by him.
- 2) 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.
- 3) 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.
- 4) 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 GCC will be payable with interest accrued thereon.

2.23 REFUND OF SECURITY DEPOSIT:

Security Deposit mentioned in para 2.22 above shall be returned to the Contractor after the following:

- a) Final Payment of the Contract as per GCC Clause 51.(1) AND
- b) Execution of Final Supplementary Agreement or Certification by Engineer that Railway has No Claim on Contractor AND
- c) Issue of Maintenance Certificate on expiry of the maintenance period as per GCC clause 50.(1)
- d) Before releasing of Security Deposit, the contractor shall submit a certificate to the Engineer or Engineer's representatives that "I have uploaded the correct details of contract labours engaged in connection with this contract and payments made to them during the wage period in Railway's Shramikkalyan portal at www.shramikkalyan.indianrailways.gov.in

2.24 PERFORMANCE GUARANTEE:

The procedure for submission of Performance Guarantee is outlined below:

- (a) The successful bidder shall have to submit a Performance Guarantee (PG) within 21 (Twenty-one) days from the date of issue of Letter of Acceptance (LOA). Extension of time for submission of PG beyond 21 (Twenty-one) days and up to 60 days from the date of issue of LOA may be given by the Authority who is competent to sign the contract agreement. However, a penal interest of 12% per annum shall be charged for the delay beyond 21 (Twenty-one) days, i.e., from the 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. If the contract is terminated, Railway shall be entitled to forfeit Bid Security and other

dues payable against that contract. Furthermore, suppose a tenderer has not submitted Bid Security on the strength of their registration as a Start-up recognized by the Department of Industrial Policy and Promotion (DIPP) under the Ministry of Commerce and Industry. In that case, DIPP shall be informed to this effect.

The failed Contractor shall be debarred from participating in re-tender for that work.

- i. The successful tenderer(s) shall submit the Performance Guarantee (PG) in any of the following forms, amounting to 5% of the original contract value:
 - 1) A deposit of Cash.
 - 2) Irrevocable Bank Guarantee.
 - 3) Government Securities including State Loan Bonds at 5% below the market value.
 - 4) Pay Orders and Demand Drafts tendered by any Scheduled Commercial Bank of India
 - 5) Guarantee Bonds executed or Deposits Receipts tendered by all Scheduled Banks.
 - 6) Deposit in the Post Office Saving Bank.
 - 7) Deposit in the National Savings Certificates.
 - 8) Twelve years National Defence Certificates.
 - 9) Ten years Defence Deposits.
 - 10) National Defence Bonds and
 - 11) Unit Trust of India Certificates at 5% below market value or at face value, whichever is less. Also, FDR in favour of FA&CAO/CN/MS (free from any encumbrance) may be accepted.
- ii. The Performance Guarantee shall be submitted by the successful tenderer(s) after the Letter of Acceptance (LOA) has been issued but before the signing of the contract agreement. This P.G. shall be initially valid up to the stipulated completion date plus 60 days beyond that. However, if 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.

- iii. The value of PG to be submitted by the contractor is based on Original Contract value and shall not change due to subsequent variation(s) in the original contract value.
- b) The Performance Guarantee (PG) shall be released after the physical completion of the work based on the 'Completion Certificate' issued by the competent authority stating that the contractor has completed the work in all respects satisfactorily. Before releasing of Performance Guarantee, the contractor shall submit a certificate to the Engineer or Engineer's representatives that "I have uploaded the correct details of contract labours engaged in connection with this contract and payments made to them during the wage period in Railway's Shramikkalyan portal at 'www.shramikkalyan.indianrailways.gov.in'"
- c) The Security Deposit shall be forfeited whenever the contract is rescinded, and the Performance Guarantee shall be encashed. The balance work shall be got done independently without Risk & Cost of the failed contractor. The failed contractor shall be debarred from participating in the tender for executing the balance work. If the failed contractor is a JV or a Partnership firm, then every member/partner of such a firm shall be debarred from participating in the tender for the balance work in their individual capacity or as a partner of any other JV /partnership firm.
- d) 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.

iv) Details of BG shall be given in the format as shown in **Form No. 4** (in forms and annexure part of chapter 3).

2.25 PROGRAMME OF WORK EXECUTION:

- i) Time is the essence of this contract, and the time schedule shall be strictly adhered to. The entire work as per the Contract will have to be completed within **12 Months** from the Date of issue of letter of acceptance, on a progressive basis. The Tenderer shall be responsible for the progress of work on a progressive basis from the date of issue of the acceptance letter. Since the progress of the work is critically related to the supply of material by the contractor, **he shall be responsible for the supply of duly inspected Material on a progressive basis** so that the work can be completed within the **stipulated period**.
- ii) The contractor shall employ an adequate number of supervisors, technicians, and supporting staff commensurate with the working area available. He will also arrange required materials and equipment to complete the job most expeditiously to ensure that the work is completed within the stipulated period and to the entire satisfaction of the Engineer incharge.
- iii) The Contractor is expected to have worked out a detailed program for execution of the work well before the issue of "Letter of Acceptance" by Railway and submit a Detailed Time and Activity Schedule within 15 days from issue of LOA, for the execution of work aiming at completing the entire work within the stipulated completion time. The Engineer-In-Charge shall thereafter approve this schedule.
- iv) Railway reserves the right to modify the schedule while approving the same as well as at any stage during execution if the situation so warrants. Once approved, in the event of any slippage from the time schedule, especially when resulting in time over-run of the work, the contractor shall submit a revised schedule duly justifying the circumstances without any delay. The Engineer-In-Charge shall approve the revised schedule only when considered justified in his

opinion; otherwise, it may attract penal action on the contractor as per the provision of this contract.

- v) The Contractor shall be held responsible for the execution of the work according to the Programme given for the execution of the work in full compliance with the approved documents, drawings, and various clauses of technical specification and requirement. Failure to comply with any of these will be dealt with as per provisions of GCC.
- vi) The contractor will program his work in such a manner so as not to interfere in the working and movement of trains. No extra payment shall be allowed on this account and for taking any precautions or wastage of contractor's labor, time, etc., due to train working.
- vii) No facility whatsoever, e.g., provisions of approach road and provision of the temporary level crossing, etc., shall be provided by Railway for carting materials. However, approach roads within the Railway limits can be used for carting materials.

2.26 INSPECTION OF MATERIAL:

- i. The Inspecting authority of the equipment/materials to be supplied against this contract shall be RDSO/RITES/Consignee, which is mentioned against each schedule of work/supplies in Chapter-4 of this tender document. Generally, the equipment materials to be supplied against this work with IRS/RDSO design or specification and TEC specification will be inspected by RDSO. However, suppose for any reason, inspections of materials are not undertaken by RDSO. In that case, the inspection may be carried out by RITES, or a Railway representative specifically nominated by the Railway for the work.
- ii. Whenever materials are inspected by Authorized Representatives of the Railways/Consignee, the Tenderer will be required to furnish manufacturers/supplier's Guarantee Certificate and performance guarantee for such items. Standard RDSO Drawing referred to in this schedule & technical

specification may be collected on payment from RDSO, Lucknow by contractor, if required.

- iii. The Contractor shall give sufficient time notice to RDSO/RITES/Railway's representative when the material is ready for testing/inspection. All facilities as may be necessary shall be provided for carrying out the tests.

2.27 INSPECTION CHARGES:

Inspection charges, if any levied by RDSO/Inspecting Agency, shall be borne by the contractor. Also, the tests/analysis required from outside agencies, if any, cost of such tests/analysis shall be borne by the contractor.

2.28 MATERIALS AND WORKMANSHIP:

- i) Wherever RDSO specification is prescribed for any material in the tender, the same shall have to be procured from the RDSO approved/recommended firms only.
- ii) Any material to be used for this work shall not be procured from any sources banned for business dealing with Indian Railways under any circumstances.
- iii) If the total value of an item to be supplied as per RDSO/IRS specification is less than Rs. 5 Lakhs (Rupees Five Lakhs only), the same shall be inspected by Consignee subject to supplies being from sources approved by RDSO. However, certain specified items irrespective of value shall invariably be inspected by RDSO as per the extant policy of Indian Railways. [Railway Board Letter No: 2000/RS(G)/379/2 Dated 06.09.2017].
- iv) If the inspection agency requires any modification from RDSO to RITES/Consignee, approval is to be taken from an officer, not below the rank of JAG.
- v) The material should be in properly packed condition, and the consignee reserves the right to reject the material even though it was passed by RDSO/nominated inspecting authority of Railways if it is received in damaged or defective condition.

- vi) All materials shall be procured from the reputed manufacturers or their authorized dealers. Such materials are to be approved by the purchaser's Engineer. The Contractor may be required to furnish the manufacturer's test certificate along with manufacturer's/supplier's guarantee certificate wherever called for by the Engineer. The Railway may also inspect the material again at the Consignee depot.
- vii) Materials shall be procured from RDSO approved vendors as per RDSO specifications if available.
- viii) In case materials are to be inspected by consignee, then materials shall be supplied from the firms approved by not below the rank of JAG.
- ix) All the materials and workmanship used in this work shall be of extremely good quality and high class in every respect and is expected to give trouble-free service.

2.29 STORES - RECEIPT & ACCOUNTAL:

- i) Proper requisition and receipt exchange shall be done on a suitable Proforma as mentioned in **Form No. 6 & 7** (in Forms & Annexures part of Chapter - 3) between the Contractor and the Railway's authorized representative.
- ii) The Contractor shall issue a receipt along with the demand slip for the materials required for the work and obtain a receipt when any material is returned to stores. These transactions shall be done with the consignee.
- iii) All stores drawn by the contractor shall be accounted for either as installed as per recorded site measurements or as surplus stores returned to the respective Consignee (stores).
- iv) On submitting every "on account bill," the contractor has to submit a material statement duly signed by Stores/Project/TPJ, Concerned SSE-Incharge, and contractor to the bill passing authority.

2.30 LOADING/UNLOADING & TRANSPORTATION OF MATERIAL:

- a) The Contractor shall deliver the material at the Depot of respective Consignees. Material to be supplied by Railways for the execution of the work and the material delivered by the Contractor will be transported from the Consignee depot or any other nominated depot notified by Railway to site by the Contractor at his own cost. This includes loading and unloading materials at the consignee depot and site by the contractor.

Alternatively, suppose the worksite is ready, and work is in progress, physically. In that case, the materials can be brought to the site directly and supplied with prior approval of the Engineer incharge after appropriate accounting by the consignee. Empty cable drums and balance materials after completion of work, if any, should be returned at the nominated Depot i.e., Stores/Proj/TPJ by the contractor at his own cost. The contractor will have to furnish an Indemnity Bond **Form No.5** (in Forms & Annexures part of Chapter-3) for the Security of the Railway material issued to him.

Indemnity Bond will be released after commissioning of work and when the contractor returns all balance material. The security of the material brought to the site of work will remain with the Contractor till commissioning.

- b) The contractor shall bear the cost of transit insurance required as per rules.
- c) The nominated depot from where Contractor has to collect the materials is from TPJ& PTJ and MS. No payment will be made to the contractor for shifting materials from the nominated depot to the worksite.
- d) The material issued to the contractor, if found defective/unserviceable after transporting at the site, the same shall be transported & handed over to the Consignee Depot by the contractor without any extra cost.

2.31 SECURITY OF MATERIAL:

Once the material is handed over to the contractor, the contractor shall be responsible for the security of the material irrespective of the fact that the material is kept in Railway premises. The contractor shall make adequate arrangements at the site as deemed necessary for guarding the same from thefts or damage of any sort. In the event of any loss, the contractor shall be

responsible to that effect and shall execute an indemnity bond for the materials, which has been supplied by the Railway and will remain in his custody. The cost of stores lost/damaged 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.

2.32 RETURN OF SURPLUS STORES:

The Contractor shall return the stores at his own cost found to be surplus to Consignee. The contractor shall account for all material that is issued to him. A register shall be maintained at the site, which the Contractor shall sign as a token of receipt of material. All the issued material shall either be used in the installation or returned to Consignee.

2.33 RETURN OF RELEASED STORES:

Released material/equipment shall be returned and systematically deposited to Consignee. Proper care of material shall be taken while releasing & transporting the stores.

2.34 PACKING AND FORWARDING:

- a) Packing shall conform to Para 14 of RDSO Specification No RDSO/SPN/192/2019 Ver 2 or latest
- b) The contractor shall pack at his own cost the stores sufficiently and properly for transit by Rail/Road, Air, and/or Sea as provided in the contract to ensure their being free from loss or damage on arrival at their destination.
- c) All containers (including packing cases, boxes, tins, drums, and wrappings) in which the contractor supplies the stores shall be considered as non-returnable and their cost as deemed to have been included in the contractor price.
- d) Each packing delivered under the contract shall be marked by the contractor at his own expenses. Such marking shall be distinct (all previous irrelevant marking being carefully obliterated and shall clearly indicate the description and quantity of stores, the name and address of the Contractor with a distinctive

number of mark sufficient for the purpose of identification). All marking shall be carried out with such material as may be found satisfactory by the inspecting officer as regard quickness of drying, fastness and indelibility. Materials and Equipment meant for each section shall be separately packed in separate boxes and marked with name of section, consignee and Railway.

- e) The inspecting officer may reject the store if the stores are not packed and/or marked as aforesaid and in case where the packing materials are separately prescribed, if such materials are not in accordance with the term of contract such rejection of the stores by the inspecting officer shall be binding on the contractor and he shall arrange for removal of such rejected store within 7 days.

2.35 FREIGHT AND INSURANCE:

The freight and insurance cost for the material to site of work shall be borne by the contractor.

2.36 CONSIGNEE'S RIGHT OF REJECTION:

- i) Notwithstanding any approval which the Inspecting Officer may have given in respect of the stores or any materials or the work or workmanship involved in the performance of the contract (whether with or without any test carried out by the Contractor or the Inspecting Officer) and notwithstanding delivery of the stores where so provided to the interim consignee, it shall be lawful for the consignee, on behalf of the purchaser, to reject the stores or any part, portion of consignment thereof within a reasonable time after actual delivery thereof to him at the place or destination specified in the contract if such stores or part, portion of consignment thereof is not in all respects in conformity with the terms and conditions of the contract whether on account of any loss, deterioration or damage before dispatch or delivery or during transit or otherwise howsoever.
- ii) The Railway shall have full right to reject any material that the Railway may consider to be defective or inferior in quality of material, workmanship, and design or otherwise, not in accordance with the specifications and drawings

specified by the Railway and the Railway's decision shall be final, even though they might have been inspected by RDSO/RITES. The contractor shall remove forthwith any such material rejected and replace them promptly at his own cost.

2.37 CONSEQUENCES OF REJECTION (Rejected stores):

When any stores delivery at the depots is rejected, the contractor shall remove this within 7 days, from the date of rejection. Such rejected stores shall lie at the consignee's risk from the date of rejection. If the Contractor does not remove the stores within this period, the Railway or his nominee shall have the right to dispose of such stores, as though fit, at the contractor's risk and account. The Railway shall also be entitled to recover from the contractor, handling and ground rent/demurrage and any other charges for the period during the rejected stores are not removed after the period aforementioned.

2.38 EXECUTION OF WORKS:

2.38.1 SPECIFICATIONS, DRAWINGS: All the work shall be executed in strict conformity to the provisions of the contract document and according to detailed drawings, specifications and instructions as may be approved from time to time by Railway and OEM, based on detailed design and engineering carried out by the contractor in line with requirements as per contract document. The contractor shall be responsible for ensuring that the work throughout is executed in the most substantial, proper and workman like manner with the quality of material and workmanship in strict accordance with the specifications and as per sound industrial practices and to the entire satisfaction of the Railway. In case of any doubts regarding any particulars of construction and any ambiguities in the plans, the decision of the Railway's Engineer shall be final and binding on the contractor.

Specifications, drawings, requisites, and requirements referred to in the body of this specification form an essential part thereof. The sources of the drawings & specifications referred to in this Tender, can be obtained from Engineer-in-charge. However, a list of such sources has been enclosed as **Annexure - 2 & 4**.

Installation shall comply with the requirements to the following Indian Railways manuals/books and respective Zonal Railway practices in vogue- Indian Railways.

- Signal Engineering Manual (latest edition).
- Indian Railways Telecom Manual (latest edition)
- Indian Railways Engineering code
- Indian Railways P - Way Manual
- Indian Railways Works Manual
- Indian Railways AC traction Manual
- General & Subsidiary Rules of Indian Railway and Southern Railway.

These books are available on the Indian Railways website and in the office of CSTE/Projects/MAS, Southern Railway, Park Town, Chennai-03.

2.38.2 SUPERVISION & LABOUR:

- Tenderer shall keep sufficient and competent staff as per G.C.C. Clause No.26 at the work site. The work shall be carried out as per Railway's extant practice.
- Qualified Engineers may be deployed for execution of the work as per GCC conditions. Their payments/salary should not be less than the minimum wage act.

Contract value	Deployment of Qualified Engineers	Remarks
200 Lakhs & above	One qualified Graduate Engineer to be employed	In case contractor fails to employ qualified engineer, he shall be liable to pay an amount of Rs.40,000/- for each month or part thereof for the default period.
More than 25 lakhs, but less than 200 lakhs	One qualified Diploma Holder Engineer to be employed	In case contractor fails to employ qualified engineer, he shall be liable to pay an amount of Rs.25,000/- for each month or part thereof for the default period.

- During the execution of the works, the contractor or his representative shall not leave the site where the works are being carried out. At the site of work, the contractor shall always make available one representative who shall be approved by the Railway Administration and who shall be invested with adequate powers by the Contractor so that orders or instruction given to the said representative by the Railway Administration in writing could be considered as duly given or

conveyed to the Contractor himself. Representative of the Railway will check up the work from time to time. Supervision and Erection of work will be done by the contractors with their own labour, till completion and testing of the work.

- iv) The field Supervisor shall receive instructions from the Engineer-in-charge of the work or his representative at site and comply with the instructions. The Contractor shall be responsible for the compliance of such instructions.
- v) If the supervisor acting on behalf of the Contractor disregards the instructions of the Railway's supervisor/representative and does not execute the work to the satisfaction of this Railway supervisor, the Railway's Engineer, in consultation with superior will have the authority to order stoppage of work and/or ask for the replacement of the supervisor, which it shall be binding on the contractor.
- vi) The contractor shall make his own arrangement for accommodation, for his staff during installation, testing & commissioning and till completion. Water for drinking purpose if available at the station location will be given. However, Railways take no guarantee for this facility.
- vii) Compliance of Labour Laws:** To be complied as per GCC Clause 54, 55, 55-A, 55-B, 55-C, 55-D, 57 and 59(2).

viii) Contractor is to abide by the provisions of Payment of Wages act & Minimum Wages act in terms of clause 54 and 55 of Indian Railways General Condition of Contract. In order to ensure the same, an application has been developed and hosted on website 'www.shramikkalyan.indianrailways.gov.in'. Contractor shall register his firm/company etc. and upload requisite details of labour and their payment in this portal. These details shall be available in public domain. The Registration/ updation of Portal shall be done as under:

- i. Contractor shall apply for onetime registration of his company/firm etc. in the Shramikkalyan portal with requisite details subsequent to issue of Letter of Acceptance. Engineer shall approve the contractor's registration in the portal within 7 days of receipt of such request.

- ii. Contractor once approved by any Engineer, can create password with login ID (PAN No.) for subsequent use of portal for all LOAs issued in his favour.
- iii. The contractor once registered on the portal, shall provide details of his Letter of Acceptances (LOA) / Contract Agreements on shramikkalyan portal within 15 days of issue of any LOA for approval of concerned engineer. Engineer shall update (if required) and approve the details of LOA filled by contractor within 7 days of receipt of such request.
- iv. After approval of LOA by Engineer, contractor shall fill the salient details of contract labours engaged in the contract and ensure updating of each wage payment to them on shramikkalyan portal on monthly basis.
- v. It shall be mandatory upon the contractor to ensure correct and prompt uploading of all salient details of engaged contractual labour & payments made thereof after each wage period.

2.38.3 SAFETY OF WORK, TRAINS & PERSONNEL:

- i) The contractor should abide by all the Railway regulations and also ensure that the same are followed by his representatives, agents, servants, or workmen. He is therefore bound under these clauses to give notice to them about the provision of this clause and the consequent liability of the contractor under the agreement. The contractor shall conform to all the Railway Rules relating to safety of personnel and operation of signals and points. In the A.C. electrified areas the special precautions as laid down in AC Traction Manual shall be followed.
- ii) No petroleum spirit within the meaning of the Indian Petroleum Act shall be stored at site or adjacent land until the approval of the Railway and necessary license under the Act has been obtained by the contractor. The tenderer shall also

ensure that approval of the Engineer has been obtained for storing any other inflammable material well in advance.

- iii) The contractor's employees and workers shall not for any reason operate any appliances or installations of the Railway concerning the safety of train movements, but they should whenever necessarily notify the qualified Railway staff who will then take necessary steps. The contractor shall also be responsible for any damage that may cause due to the carelessness of his workmen and will bear the consequences in this regard.
- iv) The work must be carried out most carefully in such a way that they do not hinder the Railway operation except as agreed to by the Railway. The Contractor shall do no work that may interfere with traffic until protection has been provided by the Railway and under supervision of Railway's representative. When the work is required to be carried out on the track itself or as close to the track as may pose a hazard to rail traffic, the work shall be carried out under the supervision of an authorized Railway representative Junior Engineer/Senior Section Engineer (JE/SSE). Whenever trackside work are undertaken by the contractors, areas for unloading of bulk materials should be clearly demarcated and barricades provided if necessary with the consent of the (SSE/JE) Signal/Telecom, in-charge of the work. Suitable steps shall also be taken to prevent transport vehicles and such other machinery gaining access so near the track as to threaten the safety of running trains. That, whenever it becomes inescapable to allow transport vehicles or mobile machinery to operate in close proximity to the running lines the maximum moving dimensions for the said lines shall be adequately protected by fencing or such other suitable measures. No vehicle will normally be permitted to ply adjacent to the running lines.
- v) The contractor will be responsible for the safety of hired trucks and men etc. working at the site. He will also be responsible for any damage caused to the

- Railway property, staff and passengers travelling on the line on account of his truck/vehicles having been allowed to ply on the bank.
- vi) The contractor shall take all precautionary measures in order to ensure protection of his own personnel moving about or working on the Railway premises and shall have to conform to the Rules and Regulations of the Railway.
 - vii) Suitable ladders for climbing the post and slings for supporting men on the post shall be used. Ropes as required shall be used for erection of the poles. The size of the rope shall be adequate. The contractor shall take necessary precaution for working near the power lines. If at any time the Railway finds the safety arrangements are inadequate or insufficient, the contractor shall take immediate corrective action as directed by the Railway's representative at site. However, it is not obligatory on the part of the Railway's to give such directions. The issue or non-issue of any direction in the matter by the Railway shall in no way absolve the contractor of his sole responsibility to adopt safe working methods. The stonebreakers, if employed shall be provided with protective goggles and protective clothing and seated at sufficiently safe intervals.
 - viii) Necessary personal safety equipment as considered adequate by the Engineer-in -Charge should be kept available by the contractor for the use of the persons employed on the site and maintained in condition suitable for immediate use and the contractor should take adequate steps, to ensure proper use of equipment by these concerned. When not in use, electrical apparatus shall be switched off. No paint containing lead or lead products shall be used except in the form of paste or ready mixed paints. Suitable face masks should be supplied by the contractor for use by the workers when paint is applied in the form of spray.
 - ix) Within the station premises and especially on passenger platforms, the contractor shall ensure sufficient free space for movement of passenger traffic.

He must cover and protect the excavations carried out in such areas with a view to avoid any accidents.

- x) In case of an accident of any nature, the contractor will indemnify the Railway for any losses caused by him as a result of the accident.
- xi) The contractor will not be entitled to any compensation for any damage or loss sustained by him during execution of the work, for any idle labour transport or any loss or deterioration of the material or tools.
- xii) During testing and commissioning, signal aspects shall be displayed or changed, and slot given to adjoining cabin/ground frame only as authorized by Railway. During testing and commissioning, point setting shall be changed only as authorized by the Railway. The contractor shall do no work that may interfere with traffic until protections has been provided by the Railway and under the supervision of Railway's representative. While testing and commissioning of the system, the contractor shall not work without authorization from the Railway's Engineer in-charge of the work.
- xiii) The contractor shall also be responsible for any damage that he may cause due to the carelessness of his workmen and will bear the consequences in this regard.

2.38.4 WORKING IN AUTOMATIC SIGNALLING SECTION:

The tenderer(s) attention is drawn to fact that while working in part of Automatic section where traffic density is very heavy and the trains move at a high speed, the contractor should exhibit extreme alertness where space between the work area and the track is very less. For the work to be done near track viz. digging, cable laying, trunking/capping etc. contractor will be fully responsible to safeguard the life of his workmen working in this area and also not to cause any disruption to train traffic or any unsafe condition for the train movement.

Necessary required equipment as may will be put into service by the contractor viz. Flags, whistles, petromax lights, means of communication etc.

2.38.5 EMERGENCY WORKS:

In the event of any accident or failure occurring in or about the work or arising out of or in connection with the construction, completion or maintenance of the works which in the opinion of the Engineer requires immediate attention, the 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 to the contractor, as to be determined by the Railway.

2.38.6 NIGHT WORKS:

Notwithstanding the provision in the General Conditions of Contract, if the Engineer is satisfied that the work is not likely to be completed in time, except by resorting to night work, he may order the contractor(s) to carry out the works even at night without conferring any right on the contractor for claiming any extra payment for the same. The contractor at his own cost shall make all adequate lighting arrangements and shall take precautions to avoid any mishap during night.

2.38.7 MAINS POWER SUPPLY:

Testing of installation/equipment shall be done under supervision of Railway officials or by Railway officials themselves, from the electric supply provided by the Railways. However, for any installation activity, like drilling, soldering etc., contractor, if so desires, to use tools / machines for prolonged duration, electric power supply (230V), if available, can be arranged by the Railways on usual payment, as per extant procedure. **Non-availability of Mains Power will not be a reason for the slow progress of work.** If Electric Supply is not available, the contractor shall make his own arrangement i.e., by providing suitable Generator set or any other means acceptable to Railways.

2.38.8 OBLIGATION TO CARRY OUT ENGINEER 'S INSTRUCTIONS:

The contractor shall also satisfy the Engineer that adequate provision has been made: - To carry out his instructions fully and with promptitude. To ensure that parts required to be inspected before use are not used before inspections; and to prevent rejected parts being used in error. Where, parts rejected by the inspector have been rectified or altered, such parts shall be segregated for separate inspection and approval before being used in the work.

2.39 INSPECTION OF WORKS

- i) The Engineer or his representative may inspect and test the various portions of the work at all stages and shall have full power to reject all or any portion of the work that he may consider to be defective or inferior in quality of materials, workmanship of design in comparison to what is called for in the specification. In the event of rejection of any work already executed and not in accordance with specification as in this tender and/or as determined by the Engineer or which the Contractor has been apprised, the Contractor shall carry out alterations/replacements to such works to the satisfaction of the Engineer for which no additional expenses will be borne by the Railway.
- ii) The responsibility of providing facilities for inspection lies with the contractor. He shall be responsible for providing required facilities i.e. tools, equipment for inspection at the place of work, for which no additional payments shall be made. For the purpose of inspection, the contractor shall make a written request for inspection of sites to be done next day.
- iii) 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 reasonable period from the date the complete system is taken over. For the purpose of taking over, joint inspection will be carried out by nominated representative of Railways.

- iv) 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.
- v) 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.
- vi) Before the cables are actually laid, Railway's representative and the Engineer's representative shall jointly inspect the quality and depth of trenches, chases, quality of bricks and arrangements for tamped filling. The measurement of length for all these items, which is found to be suitable, will be recorded by the Engineer's representative who will permit the laying of cables after issuing the certificates that the above works have been done as per required Specifications.

Note: The designated PSS Agency nominated by competent authority for supervision and inspection of works will act as on behalf of Railways for execution and supervision of the works.

vii) SITE ORDER BOOK:

An Inspection Register/Site Order book shall be maintained at the site of work by the contractor, wherein the Engineer in-charge of the work or his executive subordinate shall record instructions regarding the working etc. It is expected that the Contractor or his representative at the site shall note such instructions whenever asked upon to do so and take action accordingly. His non-noting the logbook entries shall not be considered sufficient grounds for non-compliance of the instructions.

This register shall have entry on day-to-day basis regarding the progress of work. Record should also be kept with joint signature of Railways & firms representative for all release material too. This should be produced during the inspection & check of Railway engineer in charge or his authorised representative along with drawing showing new installation locations.

2.40 PROGRESS REPORTING:

- i) The contractor shall submit to Railways at his own cost periodic progress reports at regular intervals regarding the state and progress of work. The details and pro-forma of the report will mutually be agreed after award of the Contract. Such reports shall be for weekly work progress (manpower, equipment and work development) and monthly progress review reports. All actions as directed by Railway's representative to such reports shall be promptly attended to by Contractor.

The purchaser's engineer shall also conduct monthly meetings with the contractor to assess and review the programme of works. The action proposed to progress the work as planned, difficulties, assistance required etc. shall be clearly brought out and remedial action taken. The minutes of these meetings shall be jointly signed by Railway and contractor.

2.41 CLEARANCE OF SITE:

- 2.41.1 Contractor at his own expenses clean the site, set out all works and provide all necessary labours, pits, string, steel to enable the Railways or any of his representatives to check all setting out and the contractor will correct all errors at his own expenses.
- 2.41.2 At the end of the work in each section the contractor shall as a part of his contractual obligation leave the area completely cleared of rubbish and obstruction of all kinds according to the instructions of the Railway's representatives. Besides, he shall take execution of work to avoid the presence of loose earth and ballast on platforms, in drains, on the track formation and pathways, in the vicinity. If within fortnight of completion of the particular item of site work, the refuse is not cleared, the Railway, will arrange to get them removed at the cost of the contractor. However, before the Railway actually gets the site cleared, intimation in writing shall be given to the Contractor.

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

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

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

2.42 COMPLETION OF WORKS:

As soon as in the opinion of the Engineer, the work has been completed (i.e, which will be considered as date of commissioning of complete system), the Engineer shall issue a completion certificate duly indicating the date of completion in respect of the work and the warranty period of the work shall commence from the date of completion mentioned in such certificate.

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

2.43 WARRANTY:

Contractor is responsible for Warranty of all the materials supplied and installed by him for a period of ONE year from date of issue of completion certificate, which will be considered as date of commissioning of complete system. Completion certificate will be issued by JAG officer after obtaining "No Due" certificate from SSE-Incharge stating that all works are completed in all respects.

During the period of warranty contractor shall be responsible for:

- i) The contractor shall guarantee that all material & equipment to be supplied and installed as per this contract shall be free from defect and fault in design, material, workmanship, and manufacture and shall be of the highest grade and consistent with established and generally accepted standard for materials of the type ordered and in full conformity with the contract specification.
- ii) The contractor shall be responsible to the extent expressed in this clause for any defects that may develop under the conditions provided for by the contractor

and under proper use, arising from faulty materials, design, or workmanship on the plant or from faulty erection of the equipment under the supervision of the contractor, but not to do so by the purchaser who shall state in writing in what the portion is faulty.

- iii) Warranty includes Predictive Maintenance and Break-Down Maintenance.
 - a) Predictive Maintenance: As the system installed is Vital and Safety in nature, regular maintenance is required to up-keep the system to improve the maintenance and working. Hence, OEM representative has to carry out maintenance of EI system on Monthly basis or as recommended by RDSO/Southern Railway.
 - b) Break Down Maintenance: In case of failure of EI system, the OEM representative shall reach the spot within 1 hour of receipt of such failure information through Phone/SMS/E-mail/FAX from Railways. If failure is due to EI system, and failure is not able to restore after one hour of such information a penalty of Rs. 2500/- per hour will be deducted from the contractor. Failure due to Outdoor cable cuts will not be considered for penalty.
- iv) 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 become unworkable due to any cause whatsoever. The decision to attend to any damage or defect in work shall be final and binding on the contractor.
- v) If it becomes necessary for the contractor to replace or renew any defective portions of the system under this clause, the **provision of the above clauses shall apply to the replaced/renewed equipment for the period of six months from the date of such replacement or renewal or until date of warranty period whichever may be later**. If any defect is not remedied within reasonable time, the Railway may proceed to do the work at contractor's risk and

expenses, but without prejudice to any other rights, which the Railway may have against the contractor in respect of such defects.

- vi) If the replacement or renewals are of such a character as may affect the efficiency of the system, **the Railway shall have the right to give the contractor within one month from such replacement or renewal notice in writing that test on completion will be carried out at his cost.** Should such tests show that the plant sustains the guarantee in the contract; the cost of the tests shall be borne by the purchaser. Should the guarantees not be sustained, the cost of the tests shall be borne by the contractor.
- vii) Until the completion of work, the contractor shall have the right to entry with permission of Railways, at his own risk and representatives, whose names shall have previously been communicated, in writing, to the Railways at all reasonable working hours upon all necessary parts of the works for the purpose of inspecting the working and the records of the plant and taking notes there from and if he desires at his own risk and expense, making any tests, subject to the approval of the purchaser which shall not be unreasonably withheld.
- viii) All inspections, replacement or renewals carried out by the Contractor during the maintenance period shall be subject to the same condition of the contract.
- ix) All replacement and repairs and design change that the Railway shall call upon the contractor **to deliver or perform under this warranty period shall be delivered and performed by the contractor within three months**, promptly and satisfactorily.
- x) 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.
- xi) During failure analysis/de-bugging, if any design deficiency is pointed out by the Railway, the contractor shall rectify it at his own cost.

2.44 COMPREHENSIVE ANNUAL MAINTENANCE CONTRACT:

----- (Not Applicable)-----

2.45 VARIATION IN CONTRACT QUANTITIES:

In addition to Clause 42 of GCC. The procedure detailed below shall be adopted for dealing with variations in quantities during the execution of works contracts.

{Authority : (1) Item-9 to Railway Board's letter no. 2007/CE-I/CT/18, Dated 28.09.07 and (2) Item-2 to Railway Board's letter no. 2007/CE.I/CT/18/Pt.XII, Dated 31.12.10}

Individual Items in the contract shall be operated with quantity variation of plus or minus 25%, and payment would be made as per the agreement rate. In case an increase in the quantity of an individual item by more than 25% of the agreement quantity is considered unavoidable, then the same shall be executed at the following rates

- i. 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 items of works.
- ii. 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.
- iii. 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.
- iv. Variation in quantities of individual items beyond 150% will be avoided and permitted only in exceptional unavoidable circumstances and shall be paid at 96% of the rate awarded for that item in that particular tender.
- v. 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). For this purpose, a minor value item is

defined as an item whose original agreement value is less than 1 % of the total original contract value.

A. 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.

B. 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;

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

- vi. No variation limit shall apply in the case of foundation work, and the Contractor shall carry out the work at agreed rates irrespective of any variation.
- vii. As far as Standard SOR items are concerned, the variation limit of 25% would apply to the value of the SOR schedule(s) as a whole and not on individual SOR items. However, in the case of NS items, the limit of 25% would apply on the individual items irrespective of quoting the rate (single percentage rate or individual item rate).
- viii. Execution of quantities beyond 150% of the overall agreement value should not be permitted and, if found necessary, should be only by negotiating with a contractor, with the prior personal concurrence of Principal FA&CAO/FA&CAO(C) and approval of General Manager
- ix. In cases where the decrease is involved during execution of the contract:
 - i) The contract signing authority can decrease the quantities of items up to 25% of the individual item.

- ii) For a decrease beyond 25% for individual items or 25% of contract agreement value, the approval of an officer not less than the rank of S.A. Grade may be taken after obtaining "No Claim Certificate" from the contractor and with finance concurrence.

Note:

- 1) In case of need for the introduction of any new items (New NS Items) not covered in the schedule of quantities and rates to provide for any additional activity not covered in the original scope of contract shall be done at the rates, terms, and conditions mutually decided between Railway and contractor. The assessment of rates for extra item(s) shall be arrived at based on the prevailing market rates of labour, machinery & materials and by taking guidance from the following documents in order of priority:
 - i) S&T SOR from Different Zonal Railways if available
 - ii) Market Analysis
- 2) In case there is a need for introducing SOR items that are originally not available in the tender and further required to be included as per site conditions. Then the rate for such New SOR items shall be applicable at the same originally accepted percentage by the contractor and Railways. However, the cumulative value of all such extra item(s) together (modified by the respective tender percentage) shall not exceed 10 % of the original contract value.

2.46 PRICE VARIATION CLAUSE:

As per GCC 2022 clause no. 46A, Price variation shall be applicable in this contract across all schedules.

Applicability: Price Variation Clause (PVC) shall be applicable as per GCC April 2022 & advance correction slip N.1 (2022/CE-1/CT/GCC-2022/Policy) dt: 14.07.2022.

2.47 RIGHT OF RAILWAYS TO KEEP BACK FROM THE CONTRACT ANY PORTION OF WORK:

The successful tenderer will, however, have no claim or right in the execution of work which in the opinion of the Engineer should be carried out departmentally or otherwise, and the Railway reserves the right to keep back from the contract and carry out the work or any portion of work through any other agency, it may think without assigning any reason, any time after the acceptance of the tender. Therefore, no claim

for compensation/loss or whatsoever on this account will be entertained by the Railway. 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.

2.48 APPROVAL AND MEASUREMENT OF WORK: (Measurement of Works by Railway & PSSA)

The contractor shall obtain written approval from the Railway supervisor after completing the various sub-items of each work mentioned in the schedule. The contractor should ensure that correct measurements have been made for such work, which is not possible to measure subsequently and shall remain hidden. e.g., Measurement of cable trench before laying of cables and back filling.

i) The contractor shall sign the e-measurement book (e-MB) as a token of acceptance of the measurement entered by the supervisor incharge of the work in IR-WCMS.

ii) **MEANING AND INTERPRETATION BY RAILWAY TO BE FINAL**
All measurements, method of measurement, meaning and intent of specifications and interpretation of Special Conditions of Contract, given and made by the Railways or by the Railway's Engineer shall be final and binding and shall be considered "excepted matter" (matters not arbitrable) in terms of conditions laid down in the General Conditions of Contract.

iii) The date and time on which 'on account' or 'final' measurements are to be made shall be communicated to the Contractor who shall be present at the site and shall sign the results of the measurements (which shall also be signed by the Engineer or the Engineer's representative) recorded in the official measurements book as an acknowledgement of his acceptance of the accuracy of the measurements. Failing the Contractor's attendance, the work may be measured up in his absence and such measurements shall,

notwithstanding such absence, be binding upon the Contractor whether or not he shall have signed the measurement books provided always that any objection made by him to measurement shall be duly investigated and considered in the manner set out below:

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

2.49 EXTENSION OF COMPLETION PERIOD:

Extension to the contract will be granted by Railways as per Clause of GCC 17-A & B.

Note: In case Extension for Delay is due to Railways i.e., Clause 17A, then Railways 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.

2.50 LOSS SUSTAINED DUE TO DEFAULT AND DELAY:

In the event of any loss to the Railways on account of execution and/or delay in completion of the work or any part thereof by agencies engaged by the contractor, the contractor shall be liable to reimburse the loss to the purchaser without prejudice to the other rights and remedies of the purchaser, and the reimbursement in full or in part as the case may be, shall be met, at the option of the purchaser from out of all or any of the following sources viz:

- ii) Any amount due and payable to the contractor by the purchaser on any account whatsoever.
- iii) The Contractor's security deposit in the hands of the purchaser as far as available, and any other assets whatsoever of the contractor.

In the event of reimbursement from out of sources (i) and/or (ii) above mentioned, the Railway shall have the right of appropriation Suo-moto

2.51 CONTRACTOR'S LIABILITIES FOR COST AND DAMAGES

Withholding and lien regarding sums claimed will be applicable as per Clause of GCC 52 & 52-A.

2.52 SYSTEM OF QUOTING RATES:

The Tender consists of 3 Schedules, i.e., Schedule-A comprising of S&T SORItems, Schedule- B (Non SOR items), and Schedule - C (Non SOR items - Cables & Relays) comprising of Non-SOR items, the tenderer has to quote a single percentage for each Schedule-A&B and the contractor has to quote Rate for each schedule items for Schedule- C.

Note: The Railway assessed rate for Schedule-A comprising of S&T SOR Items are given after 100% escalation.

The prices quoted by the Tenderer shall include the prices of materials, including all incidental charges for transport, packing, loading/unloading, and handling of materials, the cost for arranging dispatch by rail/road direct from manufacturer's premises, and completing all necessary formalities in all respect. In addition, the prices shall include all taxes, duties, insurance, Royalty, land levies applicable to this Works Contract. Therefore, the tenderer should quote their prices, considering the rate of GST as applicable for this contract as per extant Government orders from time to time.

The Unit prices offered against the various items in schedules will include beside labour the following elements of cost: -

- i. Cost of all materials required for preparing the cable routes, laying the cables, and all other incidentals connected and excluding the materials supplied by the Railways.
- ii. Special tools & installation materials for cable laying etc.,
- iii. Cost of transportation of material supplied by the Railway from a place of delivery to the worksite.
- iv. Return of released materials left over cables and other materials from the site of work and handing over to the Engineer at specified locations or stores depot.
- v. Return of damaged materials due to transportation.
- vi. Cost of preparation of detailed documentation, completion plans/drawings.
- vii. All other miscellaneous expenses are necessary for the execution of work and fulfilling contractual obligation.

- viii. Conditions for reimbursements of levy/tax/cess if levied after receipt of tenders
- a) 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 entered in the tender forms are adequate and all-inclusive to accord with the provisions in Clause-37 of the standard GCC (Annexure 5 of Chapter 3) for the completion of works to the entire satisfaction of the engineer.
 - b) Tenderers shall 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. Furthermore, tenderers shall ensure that the full benefit of Input Tax Credit (ITC) likely to be availed by them is duly considered while quoting rates.
 - c) The successful tenderer is liable to be registered under CGST/IGST/UTGST/SGST Act shall submit GSTIN and 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 the deposition of applicable GST to the concerned authority.
 - d) In case the successful tenderer is not liable to be registered under CGST/IGST/UTGST/SGST Act. In that case, the Railway shall deduct the applicable GST from his/their bills under reverse charger mechanism (RCM) deposit the same to the concerned authority.
1. 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.

2. 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.
- e) Contractor shall be liable to pay/refund the amount collected as GST to the Indian Railways along with interest and penalties, if any imposed by the authorities, in case GST input tax credit of Indian Railways is denied/rejected by the tax authorities due to reasons mentioned below but not limited to:

Wrong/incorrect invoice s is sued by Contractor;

No-filing of GST returns;

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

Any other non-compliance done by Contractor;

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

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

Note:

However, if rates of existing GST (i.e, 18%) or cess on GST for Works Contract is increased or any new tax /cess on Works Contract is imposed by Statute after the date of opening of tender but within the original date of completion/ date of completion extended under clause 17 & 17A and the Contractor thereupon properly pays such taxes/cess, the Contractor shall be reimbursed the amount so paid.

Further, if rates of existing GST (i.e, 18%) or cess on GST for Works Contract is decreased or any tax/cess on Works Contract is decreased / removed by Statute after the date of opening of tender, the reduction in tax amount shall be recovered from Contractor's bills/Security Deposit or any other dues of Contractor with the Government of India.

NOTE: As per Railway Board letter No.2017/AC-II/1/6/GST/Main/Vol.III dt:22.07.2022, GST rate on the works contract is revised to 18%.

2.53 TERMS OF PAYMENT:

The Contractor will be entitled to be paid from time to time by way of "On Account payment" for the supply of materials and works as in the engineer's opinion who has executed in terms of the contract.

All bills shall be subject to any deduction or recovery which the Railway may be entitled to make under contract.

The Contractor shall be entitled to be paid from time to time by way of "On Account" payment as per clause 46(i) of General Conditions of Contract. While processing payment of any 'On Account Bill' contractor shall submit a certificate to the Engineer or Engineer's representatives that "I have uploaded the correct details of contract labours engaged in connection with this contract and payments made to them during the wage period in Railway's Shramikkalyan portal at 'www.shramikkalyan.indianrailways.gov.in' till ____Month, ____Year."

ON ACCOUNT PAYMENT:

Such "On Account Payments" will be made to supply equipment materials indicated in the supply schedule on receipt of materials in good condition at the Stores of Stores/Proj/TPJ.

a) **Supply Items:**

For supply items of tender, Schedule **90% (Ninety Percent)** of the value of each consignment shall be paid **on receipt of materials at consignee store depot and production of the following documents:**

- i) Store receipt certificate issued by consignee.
- ii) Original Inspection certificate issued by Inspecting Official viz. RDSO/RITES/Railway Representative or Inspection Waiver Certificate issued by the competent authority.
- iii) Manufacturer's certificate for the equipment that the materials are in accordance with the contract specifications.
- iv) Challan/Invoice in duplicate. The payment of supply items should be accepted as per the time frame mentioned in SCC.

The contractor has to furnish an indemnity bond see **Form No.5** (in Forms & Annexures part of Chapter - 3) before payment is claimed, indemnifying the Railway Administration until completion of the work, against all damages, costs, charges, expenses, loss, and liability, which the Railways may sustain, incur or be put to, by reasons or in subsequence directly or indirectly due to the Contractor not fulfilling the portion of the Contract involving the installation, testing and commissioning of the items supplied by the Contractor.

5% of the value of material shall be paid after successful installation and testing of the equipment, certified by a Railway representative.

5% value of the supply items shall be paid in the final bill (as per GCC Para.51(1)).

b) **Installation Items:**

90% of the value of installation rate as per agreement shall be paid as on accounts bills only **on production of certificate by the site engineer** that relevant portion of the installation has been completed.

5% of the value of installation rate as per agreement shall be paid after successful submission of all “As-Made” documents.

5% value of installation rate as per agreement shall be paid in the final bill (as per GCC Para.51 (1)).

c) **Supply and Installation of Items:**

70% of the value of material as per agreement shall be paid as on accounts bills only **on production of the certificate as brought out in para above.**

20% of the value of material as per agreement shall be paid after successful completion of the installation of the work.

5% of the value of material as per agreement shall be paid after successfully submitting all “As-Made” documents.

5% value of material as per agreement shall be paid in the final bill (as per GCC Para.51 (1)).

d) **For Testing & Commissioning Items:**

95% of the value of the item commissioned shall be paid after successful completion /commissioning of the system by the Railway’s representative.

5% value of the item commissioned shall be paid in the final bill (as per GCC Para.51 (1)).

e) **For As-Made Documents:**

95% of the value of the item supplied shall be paid after certification by Railway’s Representative.

5% value of the item supplied shall be paid in the final bill (as per GCC Para.51 (1)).

f) **For submission of documents:**

- a) 30% of the value shall be paid after Submission of SWR Copies
- b) 30% of the value shall be paid after Submission of TSAA Documents
- c) 20% of the value shall be paid after the Submission of Approved Rule Diagrams and Blueprint Copies.
- d) 20% of the value shall be paid after Submission of NI Drawings/Plans

g) **For Usage of M-sand in lieu of river sand Schedule A & B:**

As per SOR 2011, 26 SOR items have a component of River sand as per the SOR working sheet. Due to scarcity and ban on River sand, an alternative option is using M-sand, which PCE and PCSTE already approved. The following 26 SOR schedules have the component of sand, which are detailed below:

S.No	SOR .No	Description of work
1	10_108	Provision of GI Pipes 50mm/100mm dia over RCC Bridges
2	10_110	Provision of GI Pipes 50mm/100mm dia over Rocky Areas
3	10_119	Placing of cable markers and concreting (RCC Type)
4	10_201	Casting of foundation and erection of apparatus case - Full size
5	10_202	Casting of foundation and erection of apparatus case - Half size
6	10_203	Casting of foundation and erection of apparatus case - Quarter size
7	10_204	Erection of CT boxes and concreting (for cable toughing)
8	10_205	Erection of CT boxes and concreting (for point machines)
9	10_206	Fabrication and Erection of apparatus case - full size on embankment

S.No	SOR.No	Description of work
10	10_207	Fabrication and Erection of apparatus case - half size on embankment
11	10_208a	Shifting of apparatus case (full)
12	10_210a	Termination on 25/60mm PBT terminals (new location) (Phynolic sheet)
13	10_210b	Termination on PBT fuse block (new location) (Phynolic sheet)
14	10_211a	Termination of cables on 25/60mm PBT terminals (existing location)
15	10_211b	Termination of cables on PBT fuse block (existing location)
16	10_218	Casting of concrete foundation for colour light Signals
17	10_220	Casting of foundation for ground type shunt Signal
18	10_234	Supply and provision of earth electrodes (GI)
19	10_308a	Provision of interconnections -up to 5 roads
20	10_308b	Provision of interconnection - more than 5 roads (same floor)
21	10_308c	Provision of interconnections -more than 5 roads (different floors)
22	10_403	Erection and concreting of ground lever frames
23	10_405	Interlocking of level crossing gates with lifting barriers
24	10_407	Provision of Boom locking arrangement
25	10_416	Erection and painting of goods warning boards

S.No	SOR .No	Description of work
26	10_421	Construction of masonry platform for Signal post telephone

If the tenderer uses M-sand in lieu of River sand for Schedule – A and B, it is proposed to deduct 0.5% of the accepted rate for that particular item.

2.54 FINAL PAYMENT:

i)Final payment of 5% (Five Percent) of contract value shall be made after Warranty Period is completed as per Para 2.41 of SCC and as per para 51(1) of GCC.

ii)The contract for this work will be considered complete after completion of Warranty Period as per Para 2.41 of SCC.

iii)For releasing of Final Bill, contractor shall submit a certificate to the Engineer or Engineer's representatives that "I have uploaded the correct details of contract labours engaged in connection with this contract and payments made to them during the wage period in Railway's Shramikkalyan portal at 'www.shramikkalyan.indianrailways.gov.in' till ____Month, ____Year."

On the basis of (i), (ii) and (iii) above for all the works in all the section covered in this contract, and reconciliation of materials issued, the final bill for the balance payment for each item of work shall be submitted by the Contractor along with a clear 'No Claim Certificate'.

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 up to the date of completion and on the rates accepted in Bill of quantities and for extra works on rates determined under Clause 39(of GCC 2022) 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 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.

Note:

For releasing of Final Bill, contractor shall submit a certificate to the Engineer or Engineer's representatives that "I have uploaded the correct details of contract labours engaged in connection with this contract and payments made to them during the wage period in Railway's Shramikkalyan portal at 'www.shramikkalyan.indianrailways.gov.in' till ____Month, ____Year."

2.55 POST PAYMENT AUDIT:

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

been made in respect of any works done or alleged to have been done by him under the contract.

2.56 MODE OF PAYMENT TO CONTRACTOR:

All payments to contractors/suppliers will be made through National Electronic Fund Transfer (NEFT) system. It is mandatory to enclose, MANDATE Form given in (**Annexure-3** of Chapter-3 Forms & Annexure) which will require to be filled in along with the offer. Indian Financial System Code (IFSC) of the concerned bank shall be given in the MANDATE form or through Letter Of Credit (LC) arrangements.

In case Tenderer seeks payment through Letter of Credit then the option can be exercised at the time of bidding only. Special condition for Letter of Credit in works tender vide Railway Board Lr No 2018/CE-I/CT/9 Dt 04.06.2018 are given below:

- (i) For all the tenders having advertised cost of Rs. 10 Lakhs or above, the contractor shall have the option to take payment from Railways through a letter of credit (LC) arrangement.
- (ii) This option of taking payment through Letter Of Credit (LC) arrangement has to be exercised in IREPS (Indian Railway Electronic Procurement System -the e-application on which tenders are called by Railways) by the tenderer at the time of bidding itself, and the tenderer shall affirm having read over and agreed to the terms and conditions of the Letter Of Credit (LC) option.
- (iii) The option so exercised, shall be an integral part of the bidder's offer.
- (iv) The above option of taking payment through Letter Of Credit (LC) arrangement, once exercised by tenderer at the time of bidding, shall be final and no change shall be permitted, thereafter, during execution of contract

- (v) In case tenderer opts for payment through Letter Of Credit (LC), following shall be the procedure to deal release of payment through Letter Of Credit (LC).
 - (a) The Letter Of Credit (LC) shall be a sight LC
 - (b) The contractor shall select his Advising/Negotiating bank for Letter Of Credit (LC). The incidental cost towards issue of Letter Of Credit (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 Letter Of Credit (LC) based on online requests received from Railway Accounts Units for tenders opened in financial year 2018-19. SBI branches where the respective Railway Accounts Office has its Account (local SB1branch) will be the issuance/reimbursing branch for Letter Of Credit (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 Letter Of Credit (LC) value, towards issue of LC and operation thereof shall be borne by the contractor and shall be recovered from his bills
 - (d) The Letter Of Credit (LC) shall be opened initially for duration of 180 to 365 days in consultation with contractor. The Letter Of Credit (LC) shall be extended time to time as per the progress of the contract, on the request of the contractor. The value of Letter Of Credit (LC) to be opened initially as well as extended thereafter shall be finalised by the engineer in consultation with the contractor on the basis of expected progress of work
 - (e) The Letter Of Credit (LC) terms and conditions shall inter-alia indemnify and save harmless the Railway from and against all losses, claims and demands of every nature and description brought or recovered against the Railways by reason of any act or omission of the contractor, his, agents or employees, in relation to the Letter of Credit (LC). All sums payable/borne by Railways on this account shall be considered as reasonable compensation and paid by contractor

- (f) The Letter Of Credit (LC) terms and conditions shall inter-alia provide that Railways will issue a Document of Authorisation 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 Letter Of Credit (LC) shall be the Document of Authorisation
- (h) The Document of Authorisation shall be issued by Railway Accounts Office against each bill passed by Railways
- (i) On issuance of Document of Authorisation, a copy of Document of Authorisation shall be posted on IREPS for download by the contractor. A digitally signed copy of Document of Authorisation shall also be sent by Railway Accounts Office to Railway's bank (Local SBI Branch)
- (j) The contractor shall take print out of the Document of Authorisation available on IREPS and present his claim to his bank (advising Bank) for necessary payments as per LC terms and conditions. The claim shall comprise of copy of Document of Authorisation, Bill of Exchange, and Bill
- (k) The payment against Letter Of Credit (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 w.r.t. the digitally signed Document of Authorisation 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 Letter Of Credit (LC), provided the sum total of payments to contractor is within the amount for which Letter Of Credit (LC) has been opened
- (o) The Letter Of Credit (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 Letter Of Credit (LC).

2.57 FINAL SETTLEMENT:

(NOT APPLICABLE)

On expiry of the warranty period as per Para 2.41 of SCC, a fresh Performance Guarantee (PG) shall be submitted based on the value of Annual Maintenance Contract (AMC) for entire 5-year period. On submission of the required PG against AMC, the security deposit of this tender will be refunded to the Contractor.

2.58 DEDUCTION FROM ON ACCOUNT BILLS:

All costs, damages or expenses, which Railways may have paid or Bills/Invoice of Contractor, as and when it is understood that such expenses have been incurred or paid for. 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.

2.59 DEDUCTION OF TAXES & PENALTIES:

Railways will deduct applicable Taxes such as GST as per extant rules and any other cess to be levied by Government of India. Wherever the law makes it statutory for the purchaser to deduct any amount towards Tax on works contract, the same will be deducted and remitted to the concerned authority. The Contractor and all personnel employed by him shall pay such taxes like Income Tax as are payable under statutory laws of India and the Railways will not accept any liability for the same. In terms of provisions of finance act and income tax act enforce deduction of income tax, surcharge & cess at source shall be made from the contractor and the amount so deducted may be credited to the central government. All other statutory deductions, such as GST, etc., at the rates as applicable at the time of payment, shall be made both from on account bills as well as final bills as per rules in force.

Note:

- 1) Income Tax and surcharge, if any, as notified by the Income Tax department will be deducted at source from each bill, unless otherwise authorized by Income Tax Department.
- 2) If rates of existing GST or cess on GST for Works Contract is increased or any new tax /cess on Works Contract is imposed by Statute after the date of opening of tender but within the original date of completion/date of completion extended under clause 17 & 17A and the Contractor thereupon properly pays such taxes/cess, the Contractor shall be reimbursed the amount so paid.
- 3) Further, if rates of existing GST or cess on GST for Works Contract is decreased or any tax/cess on Works Contract is decreased / removed by Statute after the date of opening of tender, the reduction in tax amount shall be recovered from Contractor's bills/Security Deposit or any other dues of Contractor with the Government of India
- 4) Deduction of Labour Cess as per extant instructions from Railway Board
- 5) Deduction of Penalties imposed on the contractor by Railway due to default in work i.e., cable cuts, damage to Railway property etc.,as per extant Railway Board Guidelines.

2.60 INSURANCE:

2.60.1 INSURANCE FOR PERSONS EMPLOYED BY CONTRACTOR

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

2.60.2 INSURANCE OF MATERIALS & INSTALLATIONS:

The contractor shall take out and keep in force a policy or policies of Insurance for all materials including Railway supply materials, equipment irrespective of whether used up in the portion of work already done or kept for the use in the balance portion of the work until such works are provisionally handed over to the Railways. For this purpose, the works are deemed to have been provisionally handed over when work completion certificate is issued. The Contractor shall not be liable for losses/damages to the materials either used up in the portion of work done or his material kept for use at site, in consequence of mutiny, or other similar causes over which the Contractor has no control, and which cannot be insured. Such losses or damages shall be the liability of the Purchaser and if required by the Railways, be made good by the contractor, at the cost of the Purchaser. The Contractor should, however, ensure the stores brought to site, against risks in consequence of war and invasion, as required under the Emergency Risk (Goods) Insurance Act in force from time to time.

It may be noted that the beneficiary of the insurance policy should be Railways, or the policies should be pledged in favour of Railway. The contractor shall keep the policy/policies current till the installations are provisionally handed over to the Railways. It may also be noted that in the event of contractor's failure to keep the policy current and alive, renewal of the policy will be done by the Railways for which the cost of the premium plus 20% of premium shall be recovered from the contractor. For purpose of enabling the contractor to take the insurance cover in connection with this contract, the Railways' engineer will advise the approximate price of all the Railway's supply materials to the contractor.

2.61 RATES DURING NEGOTIATION:

The tenderer shall not increase his quoted rates in case the Railway Administration negotiates for reduction of rates. Such a negotiation shall not amount to cancellation or withdrawal of the original offer and the rates originally quoted will be binding on the tenderer.

2.62 VITIATION:

In the event of vitiation occurring due to increase or decrease in quantities, among the first, second and third lowest valid tenderers etc., the vitiation shall be to the contractor's account. The total value of the work done shall be calculated at the rate offered by those tenderers and the amount payable shall be limited to the lowest aggregate value as worked out. Vitiatioin shall be applicable as per Railway Board Ir.no.2017/Trans/01/Policy Dt 08.02.2018.

2.63 LABOUR CAMPS:

Applicable as per GCC Clause 59 (1).

2.64 PAYMENT OF WAGES:

Contractor is to abide by the provisions of Payment of Wages act& Minimum Wages act in terms of clause 54 and 55 of Indian Railways General Condition of Contract. In order to ensure the same, an application has been developed and hosted on website www.shramikkalyan.indianrailways.gov.in. Contractor shall register his firm/company etc. and upload requisite details of labour and their payment in this portal. These details shall be available in public domain. The Registration/updation of Portal shall be done as under.

- (a) Contractor shall apply for one time registration of his company/firm etc. in the Shramikkalyan portal with requisite details subsequent to issue of letter of Acceptance Engineer shall approve the contractor's registration on the portal within 7 days of receipt of such request.
- (b) Contractor once approved by any Engineer, can create password with login ID (PAN No.) for subsequent use of portal for all LOA's issued in his favour.
- (c) The contractor once registered on the portal shall provide details of his letter of Acceptances (LOA)/Contract Agreements on Shramikkalyan portal within 15 days of issue of any LOA/or approval of concerned

engineer. Engineer shall update (if required) and approve the details of LOA filled by contractor within 7 days of receipt of such request.

- (d) After approval of LOA by Engineer, Contractor shall fill the salient details of contract labours engaged in the contract and ensure updating of each wage payment to them on Shramikkalyan portal on monthly basis.
- (e) It shall be mandatory upon the contractor to ensure correct and prompt uploading of all salient details of engaged contractual labour & payment made thereof after each wage period.

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

2.65 ASSIGNMENT OR SUBLETTING OF CONTRACT:

The Contractor shall not assign or sublet the contract or any part thereof or allow any person to become interested therein in any manner whatsoever without the special permission in writing of the Chief Engineer, save as provided below. Any breach of this condition shall entitle the Railway to rescind the contract under Clause 62 of these Conditions and also render the Contractor liable for payment to the Railway in respect of any loss or damage arising or ensuing from such cancellation; provided always that execution of the details of the work by petty Contractor under the direct and personal supervision of the Contractor or his agent shall not be deemed to be sub-letting under this clause.

In case Contractor intends to subcontract part of work, he shall submit a proposal in writing seeking permission of Chief Engineer for the same.

While submitting the proposal to railway, Contractor shall ensure the following:

- (a) (i) Total value of work to be assigned to sub-contractor(s) shall not be more than 50% of total contract value.
 - (ii) The subcontractor shall have successfully completed at least one work similar to work proposed for subcontract, in last 5 years, ending date of submission of proposal by Contractor to Railway, costing not less than 35% value of work to be subletted, through a works contract directly given to him by a Govt. Department; or by a Public listed company having average annual turnover of Rs 500 crore and above in last 3 financial years excluding the current financial year, listed on National Stock Exchange or Bombay Stock Exchange, registered at least 5 years back from the date of submission of proposal by Contractor to Railway and work experience certificate issued by a person authorised by the Public Listed Company to issue such certificates.
- In case contractor submits subcontractor's work experience certificate issued by public listed company, the contractor shall also submit along with work experience certificate, the relevant copy of work order, bill of quantities, bill wise details of payment received duly certified by Chartered Accountant, TDS certificates for all payments received and copy of final/last bill paid by company in support of above work experience certificate.
- (iii) There is no banning of business with the sub-contractor in force over IR.
- (b) The Contractor shall provide to the Engineer a copy of the agreement to be entered into by Contractor with subcontractor. No subcontractor shall be permitted without a formal agreement between Contractor and subcontractor. This agreement shall clearly define the scope of work to be carried out by subcontractor and the terms of payment in clear & unambiguous manner.
 - (c) On receipt of approval from Chief Engineer, Contractor shall enter into a formal agreement legally enforceable in Court of Law with subcontractor and submit a copy of the same to the Engineer.

- (d) The Contractor shall intimate to the Engineer not less than 7 days in advance, the intended date of commencement of subcontractor's work.
- (e) Once having entered into above arrangement, Contractor shall discontinue such arrangement, if he intends to do so at his own or on the instructions of Railway, with prior intimation to Chief Engineer.
- (f) The Contractor shall indemnify railway against any claim of subcontractor.
- (g) The Contractor shall release payment to the Sub-contractor(s) promptly and shall endeavour to resolve all issues amicably and speedily with the Sub-contractor(s), so that the execution of work is not affected in any manner whatsoever.
- (h) In addition to issuance of work experience certificate to Contractor, the Engineer, when, based on documents, is satisfied that subcontracted work has been carried out by subcontractor, shall issue work experience certificate to the subcontractor also for the portion of work subcontracted and successfully completed by the sub-contractor.

Note:

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

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

2.66 SETTLEMENT OF DISPUTES:

2.66.1 Matters Finally Determined by the Railways: (Refer GCC Clause 63)

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

DEMAND FOR ARBITRATION: Refer GCC Clause 64 for complete details

2.66.2 Dispute Adjudication Board (DAB): This clause is applicable in the tender having advertised value more than Rs 50 Crore. (Refer Clause 63.2 of GCC 2022 for complete details)

2.67 FORCE MAJEURE: (Refer GCC Clause 17)

If at any time, during 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, act of the public enemy, Civil Commotion, Sabotage, serious loss or damage by Fires, explosions, epidemics/pandemics, strikes, lockouts or acts of God (here-in-after referred to as 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 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.

*****END OF CHAPTER - 2*****

CHAPTER -3

FORMS & ANNEXURES

FORM No. 1A**TECHNICAL CREDENTIALS****{Only for Technical Eligibility Criteria (completed similar work)}****[Refer Para 2.5.1 and 2.5.2 of Tender Document]**

For the most eligible contractors who had completed similar works, Tenderers shall have to submit the following details along with tender duly attested by the tenderer. The tenderer shall also enclose relevant certificate/documents issued by the concerned authority in this regard:

1.	Name of work.	
2.	Contract awarding Authority.	
3.	Contact agreement No.	
4.	Name of the firm.	
5.	Date of award.	
6.	The original value of the contract.	
7.	The original date of completion.	
8.	(a) Whether work has been physically Completed	
	(b) Actual date of completion.	
9.	The final value of the contract.	
10.	Whether working as a main contractor	
11.	Whether working in an individual capacity or a Joint venture.	
12.	Whether working as a Sub - Contractor	
13.	If the work was executed as a joint venture firm, the share of each partner to be given.	
14.	The brief scope of work.	
14.	Reference with Page No. in the submitted document.	

Signature by officer JAG/ above

Signature & Date

Seal

TECHNICAL CREDENTIALS**{Only for Technical Eligibility Criteria (for substantially completed similar work)}****[Refer Para 2.5.1 and 2.5.2 of Tender Document]**

For the most eligible contractors who had completed similar works, Tenderers shall have to submit the following details along with tender duly attested by the tenderer. The tenderer shall also enclose relevant certificate/documents issued by the concerned authority in this regard:

1.	Name of work.	
2.	Contract awarding Authority.	
3.	Contact agreement No.	
4.	Name of the firm.	
5.	Date of award.	
6.	The original value of the contract.	
7.	The original date of completion.	
8.	(a) Whether work has been Substantially completed	
9.	The present value of the contract (Excluding PVC if any)	
10.	PVC amount paid to the contractor if any	
11.	Whether working as a main contractor	
12.	Whether working in an individual capacity or a Joint venture.	
13.	Whether working as a Sub - Contractor	

14.	If the work was executed as a joint venture firm, the share of each partner to be given.	
15.	The brief scope of work.	
16.	Reference with Page No. in the submitted document.	

It is certified that there is NO proceedings of termination of contract on Contractor's default has been initiated

Signature by officer JAG/ above

Signature & Date

Seal

FORM No.2**FINANCIAL CREDENTIALS****[Refer Para 2.5.3 of Tender Document]**

The tenderer is required to submit the contractual payments received for the last FOUR years and the current financial year upto the date of invitation of tender. In addition, the tenderer shall also enclose relevant certificates/ documents issued by the concerned authority.

	Previous 4 th Financial Year	
	Previous 3 rd Financial Year	
	Previous 2 nd Financial Year	
	Previous 1 st Financial Year	
	Current Financial Year till the date of opening of the tender.	
	Grand Total	
2.	Whether the certificate issued for the Contractual Payment received is audited & certified by a chartered accountant.	Yes/No
3.	Whether the Contractual Payment received for which the certificate is issued more than required as per the eligibility criteria of the tender.	Yes/No
4.	Reference with Page No. in the submitted document	

Note: Tenderers should upload/submit to this effect any of the following authentic documents/certificates for evaluating the above financial eligibility criteria.

- a) Attested certificate(s) issued by Executive or Nominated Authority of the

Government Departments or Semi-Government / Public sector undertakings for the value of work done for them during the qualifying period including current financial year certifying the bill amounts paid Agreement-wise and Date-wise or attested photocopy of such certificate. Such certificates will be accepted only from Govt. / Govt. bodies / PSUs authorities. Certificates issued by Private bodies will not be considered.

b) Audited Balance Sheets indicating contractual receipts from the works done for Govt. / Govt. bodies / PSUs / Pvt. organization in the P&L account of the Balance Sheet, duly certified by the Chartered Accountant for the completed financial years. For the current financial year, Provisional balance sheets issued by Chartered Accountant indicating contractual receipts and supported by income tax Form-26AS.

NOTE:

- (i) Financial Year shall normally be reckoned as 1st April to 31st March of the Next Year. However, for Turnover Criteria, the Financial Year as applicable to the Company / Tenderer to be considered if it defers from the above.
- (ii) Current Financial Year is reckoned as the incomplete Financial Year in which Tender submission dates fall.
- (iii) Chartered accountant statements duly indicating yearly receipts will not be considered unless backed by audited balance sheets or provisional balance sheets with 26AS statements of the income tax department.
- (iv) If the tender is not accompanied by the certificate(s) supporting financial eligibility as above, the tender shall be rejected. No post-tender correspondence will be entertained.
- (v) Attestation of documents may be self-attested or attested by a gazetted officer or certified by Chartered Accountant

FORM No. 3

STATEMENT OF DEVIATIONS
PROFORMA FOR STATEMENT OF DEVIATIONS

The following are the particulars of deviations from the tender document:

Chapter No. XXX

SL No.	CLAUSE	DEVIATION	REMARKS (INCLUDING JUSTIFICATION)
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Note: Tenderers are advised to submit the deviations from the entire tender document, including Annexures. Where there is no deviation, the statement should be uploaded duly signed with an endorsement indicating no deviations. If the tenderer does not submit the deviations, they will be treated as NIL deviations to the entire tender document.

BANK GUARANTEE

In consideration of the President of India acting through the **FA&CAO, Construction, Southern Railway, Egmore**(hereinafter called "the Government") having agreed to exempt Shri _____. (Hereinafter called "the contractor"), from the demand under the terms and conditions of the agreement bearing No Dated.....made between the president of India acting through the **FA&CAO, Construction, Southern Railway, Egmore** and _____. ("the said contractor") for "(work should be mentioned here)" .

Whereas according to the terms and conditions of the said Agreement it has been stipulated to furnish a Bank Guarantee for Rs...../- in a form and from a Bank acceptable to the Administration.

And whereas the Contractor has approached the Bank to give the said Bank Guarantee on their behalf In favour of the Administration for an amount of Rs...../- (Rupees..... only) which the Administration has agreed to accept.

We Bank do hereby undertake to pay the amount due and payable under this Guarantee without any demur, merely on a demand from the Government stating that the amount claims is due by way of loss or damage caused to or would be caused to or suffered by the Government by reason of any breach by the said Contractor of any of the terms or conditions contained in the said Agreement or by reason of the Contractor's failure to perform the said Agreement. Any such demand made on the Bank under this Guarantee on or before shall be conclusive as regards the amount due and payable by the Bank. However, our liability under the Guarantee shall be restricted to an amount not exceeding Rs...../- (Rupees..... only).

We, undertake to pay the Government any money so demanded notwithstanding any dispute or disputes raised by the Contractor in any suit or proceedings pending

before any Court, Tribunal or Arbitrator relating thereto, Out liability under this present being absolute and unequivocal. The payment so made by us under this Guarantee shall be valid discharge of our liability for payment hereunder and the Contractor shall have no claim against us for making such payment.

We, also undertake to pay unconditionally whenever any claim or claims for payment of a sum or sums of money arise/arise out of or under the said Agreement or any other Contract/Contracts entered into by the said Contractor within the jurisdiction of Indian Railways including Production Units of Railway on account of any defaulter whatsoever under the terms and conditions which govern the said Agreement. The Government order will be fully binding on us and the Contractor shall have no claim against us for making such payments.

We Bank further agree that the Guarantee herein contained shall remain in full force and effect during the period that would be taken for the Performance of the said Agreement and that it shall contained 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 (Government) certifies that the terms and conditions of the said Agreement have been fully paid and its claims satisfied or discharged or till Agreement have been fully and properly carried out by the said Contractor and Guarantee is made on us in writing on or before the we shall be discharged from all liability under this Guarantee thereafter.

In the event of the period of the Contract being extended and the contractor fails to extent the validity of this Guarantee, a mere demand or claim made on the Bank by the Government on or before the date of discharge of this Guarantee to the effect that the Contractor has failed to extend the validity of this Guarantee can be conclusive as regards the amount due and payable by the Bank under this Guarantee, unless the Contractor extends the validity and the Bank shall pay the amount forthwith to the Government.

The Government shall be at liberty without our knowledge or consent from time to time to grant or allow extension of time or give indulgence to the Contractor or to

modify the terms and conditions of the said order with the Contractor without effect or impairing the Guarantee or our liability hereunder.

The decision of the Government whether any default has occurred or has been committed by the Contractor in the performance, observance or discharge of the terms and conditions of the said order shall be conclusive and binding on us.

The Guarantee is a continuing one and will not be revoked except with the prior written consent of the Government.

The Guarantee herein contained shall not be affected by any change in the Constitution of the Bank or of the Contractor.

The said Contractor from time to time or to postpone for any time or from time to time any of the powers exercisable by the Government against the said Contractor and to forbear or enforce any of the terms and conditions relating to the said Agreement and we shall not be relieved from our liability by reasons or any such variation or extension being granted to the said Contractor or for any Forbearance act or omission on the part of the Government or any indulgence by the Government to the said Contractor or by any such matter or thing or thing whatsoever which under law relating to sureties would but for the provision have effect of so relieving us.

Notwithstanding anything herein contained our liability under this Guarantee shall be limited to the sum of Rs...../- (Rupees only);

stand completely discharged and all your rights under this Guarantee shall stand extinguished if no claim or demand is made upon us in writing and received by us on or before.....

Lastly, we..., Bank undertake not to revoke this Guarantee during its currency except with the previous consent of the Government in writing.

Dated theday of.....

(Authorised signatory of the Bank with date and seal)

WITNESSES:

Witness No.1

NAME:

ADDRESS:

PHONE:

SIGNATURE:

Witness No.2

NAME:

ADDRESS:

PHONE:

SIGNATURE:

* The executing Bank shall choose the option and if it wants to retain the Clause the heading may be removed or if it wants to remove entire clause it can be removed including the heading.

PROFORMA FOR INDEMNITY BOND

I/We M/s._____ (hereinafter called the Contractor) which expression includes his successors and assignees in favour of the president of India acting through the Deputy Chief Signal Telecommunication Engineer/Project /TPJ, Southern Railway, Tiruchchirappalli-620001 (herein after called the Railway")

Whereas the parties hereto have entered into an agreement vide letter of Acceptance No_____ dated _____for the purpose of executing the said contract until such time the materials hereinafter mentioned are duly erected or otherwise handed over to the Railway.

Whereas I/We_____ (name of the contractors)am/are required to hold in custody for and on behalf of the railway in trust all-important and indigenous signalling material which have been handed over to me for installation of _____ (name of the work)the vide Letter of Acceptance_____(LOA No and Date) for the purpose of executing the said contract until such time the materials are duly erected and are handed over to Railways. Whereas I/we M/s_____(name of the contractors) are required to furnish an Indemnity Bond.

Now by this indemnity bond, we hereby undertake that we hold in my custody for and on behalf of the president of India and his property in trust of the said imported and indigenous signalling materials handed over to us for the purpose of execution of the said contract until such time the materials duly erected or otherwise handed over to the Railways.

We shall be entirely responsible for the safe custody and protection of the said important and indigenous signalling materials against all risk till they are duly erected or otherwise delivered to **Deputy Chief Signal Telecommunication Engineer/Project/TPJ, Southern Railway, Tiruchchirappalli-620001** to any other officer as he may direct otherwise and shall indemnify the Railway against any loss, damage or deterioration in respect of the said materials which are in possession.

The said material shall at all times be open for Inspection by any authorized Officer of the Railways.

Should any loss, damage, or deterioration occur or refund becomes due, the President of India shall be entitled to recover from us the compensation for such loss or damage or deterioration the amount is to be refunded without prejudice to any other remedies available to Railways and also by deduction from any sum due or any sum which at any time hereinafter may become due to us for this work under other Contract with any other department of the Railways.

The value of the above materials for the purpose of Indemnity that can be claimed this indemnity Bond shall not exceed Rs _____ (Rupees _____)

In the event of any loss or damage or deterioration as aforesaid, the assessment of such loss or damages or deterioration and the assessment of the compensation thereof would be made by the President of India or his authorized nominee, and the said assessment shall be final and binding upon us.

In witness where off we partner of _____ (name of the contractor) have executed this indemnity bond on the date, month and year first written at _____ dated this _____

Signed at _____ on this day of _____

WITNESSES:

Witness No.1

NAME:

ADDRESS:

PHONE:

SIGNATURE:

Witness No.2

NAME:

ADDRESS:

PHONE:

SIGNATURE:

FORM No. 6

RECEIPT CERTIFICATE (FOR SUPPLY ONLY)

From: Sr. Section Engineer (Signal/Telecom/ ----- Division
No.

Date:

1. Contract No.
2. Name of Work.
3. Item No. as in Schedule of work.
4. Description of Item.
5. Material Inspected by:
6. Dispatch particular & date.
7. Qty as per dispatch particular
8. Qty received.
9. Qty short received.
10. Condition on Stores Received.
11. Name of Firm & Address.
12. Place of receipt.
13. Date of receipt
14. Ledger No.
15. Name & designation of Stores In-charge

Signature of Stores -in-Charge

FORM No.7

REQUISITION-CUM-RECEIPT FOR THE MATERIAL

Requisition Serial No: _____

Date: _____

To: Stores/Proj/TPJ

Please issue the materials for the execution of the ongoing work.

Name of the work

Name of the Contractor:

Site Supervisor: SSE in-charge:

S.No	Description of material	Unit	Scheduled /planned Qty	Qty so far collected	Qty Now required	Qty now collected

Contractor / Authorized SSE/PROJ/PROJ Dy.CSTE/XSTE/AXSTE/P/TPJ

Representative

Qty issued as per requisition slip vide challan

No. _____

Dated: _____

OS/Store/Proj/TPJ

Form No.8i. List of Works Completed

Description of work	Organization for whom executed	Approx. value of the contract at the time of award (Rs.)	Date of award	Date of scheduled completion of work	Date of actual completion	The final value of contract (Rs.)

ii. List of Works in Hand

Description of work	Contract Value	Approx. value of balance work yet to be done	Date of award

Form No.9/(Annexure-V of GCC)

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

I.....(Name and Designation)** appointed as the attorney/ authorized signatory of the tenderer.

M/s._____ (hereinafter called the tenderer) for the purpose of the tender documents for the work of **“PROVISION OF DOUBLE DISTANT FOR RAISING OF SECTIONAL SPEED TO 130 KMPH IN B-ROUTE AT ALL STATIONS / LC GATES IN TPJ-DG SECTION (96 RKM) & DG-TEN SECTION (220 RKM) OF MADURAI DIVISION ”** as per the E- Tender Notice No:T_SG_PROJ_2024_03_OT Dt. 04.06.2024 of Southern Railway, do hereby solemnly affirm and state on 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 tender conditions and have signed all the pages in confirmation thereof.
3. I/We hereby declare that I/We have downloaded the tender documents from the Indian Railway Website www.ireps.gov.in. I/We have verified the document's content from the website, and there is no addition, no deletion, or alteration to the content of the tender document. However, 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 the same shall be binding upon me/us.**
6. **I/We hereby 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 at any time during process for evaluation of tenders, it shall lead to forfeiture of the Bid Security and may also lead to any other action provided in the contract including banning of business for a period of upto two year. Further, I/we (*insert name of the tenderer*) ** _____and all my/our constituents understand that my/our offer shall be summarily rejected.
9. I/We also understand that if the contents of the certificate submitted by us are found to be false/forged at any time after the award of the contract, it will lead to termination of the contract, along with forfeiture of Bid Security/Security Deposit and Performance guarantee and may also lead to any other action provided in the contract including banning of business for a period of upto two year.
10. I/We have read the clause regarding restriction on procurement from a bidder of a country which shares a land border with India and certify that I am/We are not from such a country or, if from such a country, have been registered with the competent Authority. I/We hereby certify that I/we 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 purposes. Details as appropriate are to be filled in suitably by the tenderer.

Form 9A (Annexure-V (A) of GCC)

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

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

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

SEAL AND SIGNATURE
OF THE CONSTITUTION FIRM / CONSTITUENT PARTNER

Place:

Dated:

**SOUTHERN RAILWAY
TENDER FORM (FIRST SHEET)**

E- Tender Notice No: T_SG_PROJ_2024_03_OT Dt. 04.06.2024

Name of the work: PROVISION OF DOUBLE DISTANT FOR RAISING OF SECTIONAL SPEED TO 130 KMPH IN B-ROUTE AT ALL STATIONS / LC GATES IN TPJ-DG SECTION (96 RKM) & DG-TEN SECTION (220 RKM) OF MADURAI DIVISION

To
The President of India,
Acting through the Dy.CSTE/Projects/TPJ,
Southern Railway, Tiruchchirappalli-620001.

- 1.0 I/We _____(name of the tenderer) have read the various conditions to tender attached hereto and agree to abide by the said conditions. I/We also agree to keep this offer open for acceptance for a period of **90 days** from the date fixed for closing of the tender and in default thereof, I/We will be liable for forfeiture of my/our "Bid Security". I/We offer to do the work for _____ Railway, at the rates quoted in the attached bill(s) of quantities and hereby bind myself/ourselves to complete the work in all respects **within 12 months** from the date of issue of letter of acceptance of the tender.
- 2.0 I/We also hereby agree to abide by the Indian Railways Standard General Conditions of Contract, with all correction slips up-to-date and to carry out the work according to the Special Conditions of Contract and Specifications of materials and works as laid down by Railway in the annexed Special Conditions/Specifications, Schedule of Rates with all correction slips up-to-date for the present contract.
- 3.0 A Bid Security of Rs._____ (enter amount mentioned as per tender notice) has already been deposited online / submitted as Bank Guarantee bond. Full value of

the Bid Security shall stand forfeited without prejudice to any other right or remedies in case my/our Tender is accepted and if:

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

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

5.0 We are Labour Co-operative Society and our Registration No. is _____ with _____ and hence required to deposit only 50% of Bid Security.

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

Signature of Witnesses:

Signature of Tenderer(s)

(1) _____

Date _____

(2) _____

Address of the Tenderer(s)

TENDER FORM: (SECOND SHEET)

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

- (a) Tender Forms – First Sheet and Second Sheet
- (b) Special Conditions/Specifications (enclosed)
- (c) Bill(s) of quantities (enclosed)
- (d) Standard General Conditions of Contract and Standard Specifications (Works and Materials) of Indian Railways as amended/corrected up to latest correction slips, copies of which can be seen in the office of Chief Signal and Telecommunication Engineer/Projects or obtained from the office of the Chief Signal and Telecommunication Engineer/Projects, Southern Railway on payment of prescribed charges.
- (e) Standard Schedule of Rates (SSOR) as amended / corrected up to latest correction slips, copies of which can be seen in the office of Chief Signal and Telecommunication Engineer/Projects or obtained from the office of the Deputy Chief Signal and Telecommunication Engineer/Projects/TPJ,Southern 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 Chief Signal and Telecommunication Engineer, Southern Railway at any time during the office hours. The drawings are only for the guidance of Tenderer(s). Detailed working drawings (if required) based generally on the drawing mentioned above, will be given by the Engineer or his representative from time to time.

3. The Tenderer(s) shall quote his / their rates as a percentage above/below/at par for each Schedules – A & B in online and tenderer shall quote individual rates in IREPS. The Tenderer(s) shall quote his / their rates as a single **percentage above/below/AT-PAR for each Schedule – A (S&T SOR) and Schedule-B (S&T Non SOR)**. 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 **12 (Twelve) months** from the date of issue of acceptance letter.
6. **Bid Security:**
 - (a) Subject to exemptions provided under para 5(1) (a) of Part-1 (ITT) of GCC 2022. The tender must be accompanied Bid Security deposited in cash through e-payment gateway/as Bank Guarantee bond, failing which the tender shall be summarily rejected.
 - (b) The Tenderer(s) shall keep the offer open for a minimum period of 90 days 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 the Chief Signal and Telecommunication Engineer/Projects of Southern Railway. Should the tenderer fail to observe or comply with the foregoing stipulation, the amount deposited as 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 fulfilment of the contract in terms of Clause 16 of the Standard General Conditions of Contract.

(ii) The Bid Security mentioned in sub para(a) above submitted as Bank guarantee bond, will be encashed as part security for the due and faithful fulfillment of the contract in terms of Clause 16 of the Standard General Conditions of Contract.

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

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

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

particular tender or tenders. 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.

8. If the tenderer(s) deliberately gives / give wrong information in his / their tender or creates / create circumstances for the acceptance of his / their tender, the Railway reserves the right to reject such tender at any stage.
9. If any partner(s) of a partnership firm expires after the submission of its tender or after the acceptance of its tender, the Railway shall deem such tender as cancelled/contract as terminated under clause 61 of the Standard General Conditions of Contract, unless the firm retains its character as per partnership agreement. If a sole proprietor expires after the submission of tender or after the acceptance of tender, the Railway shall deem such tender as cancelled / contract as terminated under clause 61 of the Standard General Conditions of Contract.

10. Eligibility Criteria:

10.1 Technical Eligibility Criteria:

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

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

(OR)

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

(OR)

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

- (b) (1) In case of tenders for composite works (e.g. works involving more than one distinct component, such as Civil Engineering works, S&T works, Electrical works, OHE works etc. and in the case of major bridges – substructure, superstructure etc.),

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

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

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

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

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

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

technical eligibility. Such subcontractor must fulfill technical eligibility criteria as follows:

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

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

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

Note for Item 10.1:

Work experience certificate from private individual shall not be considered. However, in addition to work experience certificates issued by any Govt. Organisation, work experience certificate issued by Public listed company having average annual turnover of Rs 500 crore and above in last 3 financial years excluding the current financial year, listed on National Stock Exchange or Bombay Stock Exchange, incorporated/registered at least 5 years prior to the date of closing of tender, shall also be considered provided the work experience certificate has been issued by a person authorized by the Public listed company to issue such certificates.

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

10.2. Financial Eligibility Criteria: The tenderer must have minimum average annual contractual turnover of V/N or 'V' whichever is less; where

V= Advertised value of the tender in crores of Rupees

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

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

The tenderers shall submit requisite information as per Annexure-9, along with copies of Audited Balance Sheets duly certified by the Chartered Accountant/ Certificate from Chartered Accountant duly supported by Audited Balance Sheet.

10.3 Bid Capacity: The tender/technical bid will be evaluated based on bid capacity formula detailed as Annexure-10.

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

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

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

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

- 1. Substantially Completed Work means an ongoing work in which payment equal to or more than 90% of the present contract value (excluding the payment made for adjustment of Price variation (PVC), if any) has been made to the contractor in that ongoing contract and no proceedings of termination of contract on Contractor's default has been initiated. The credential certificate in this regard should have been issued not prior to 60 days of date of invitation of present tender.*
- 2. In case a work is started prior to 07 (seven) years, ending last day of month previous to the one in which tender is invited, but completed in last 07 (seven) years, ending last day of month previous to the one in which tender is invited, the completed work shall be considered for fulfillment of credentials.*
- 3. If a work is physically completed and completion certificate to this extent is issued by the concerned organization but final bill is pending, such work shall be considered for fulfillment of credentials*
- 4. In case of completed work, the value of final bill (gross amount) including the PVC amount (if paid) shall be considered as the completion cost of work. In case final bill is pending, only the total gross amount already paid including the PVC amount (if paid) shall be considered as the completion cost of work.*

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

- 5. If a bidder has successfully completed a work as subcontractor and the work experience certificate has been issued for such work to the subcontractor by a Govt. Organization or public listed company as defined in Note for Item 10.1 Para 10 of the Tender Form (Second Sheet), the same shall be considered for the purpose of fulfillment of credentials.*
- 6. In case a work is considered similar in nature for fulfillment of technical credentials, the overall cost including the PVC amount (if paid) of that completed work or substantially completed work, shall be considered and no separate evaluation for each component of that work shall be made to decide eligibility.*

7. *In case of newly formed partnership firm, the credentials of individual partners from previous propriety firm(s) or dissolved previous partnership firm(s) or split previous partnership firm(s), shall be considered only to the extent of their share in previous entity on the date of dissolution / split and their share in newly formed partnership firm. For example, a partner A had 30% share in previous entity and his share in present partnership firm is 20%. In the present tender under consideration, the credentials of partner A will be considered to the extent of $0.3 \times 0.2 \times \text{value of the work done in the previous entity}$. For this purpose, the tenderer shall submit along with his bid all the relevant documents which include copy of previous partnership deed(s), dissolution deed(s) and proof of surrender of PAN No.(s) in case of dissolution of partnership firm(s) etc.*
8. *In case of existing partnership firm, if any one or more partners quit the partnership firm, the credentials of remaining partnership firm shall be re-worked out i.e., the quitting partner(s) shall take away his credentials to the extent of his share on the date of quitting the partnership firm(e.g. in a partnership firm of partners A, B & C having share 30%, 30% & 40% respectively and credentials of Rs 10 crore; in case partner C quits the firm, the credentials of this partnership firm shall remain as Rs 6 crore). For this purpose, the tenderer shall submit along with his bid all the relevant documents which include copy of previous partnership deed(s), dissolution deed(s) and proof of surrender of PAN No.(s) in case of dissolution of partnership firm(s) etc.*
9. *In case of existing partnership firm if any new partner(s) joins the firm without any modification in the name and PAN/TAN no. of the firm, the credentials of partnership firm shall get enhanced to the extent of credentials of newly added partner(s) on the same principles as*
10. *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.*
11. *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.

- 12. 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.*
- 13. 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.*
- 14. 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.*
- 15. In case a tenderer is LLP, the credentials of tenderer shall be worked out on above lines similar to a partnership firm.*
- 16. In case company A is merged with company B, then company B would get the credentials of company A also.]*

11. Tenderer Credentials:

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

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

- (i) Certificates and testimonials regarding contracting experience for the type of job for which tender is invited with list of works carried out in the past.

- (ii) Audited Balance Sheet duly certified by the Chartered Accountant regarding contractual payments received in the past.
- (iii) The list of personnel / organization on hand and proposed to be engaged for the tendered work. Similarly list of Plant & Machinery available on hand and proposed to be inducted and hired for the tendered work.
- (iv) A copy of certificate stating that they are not liable to be disqualified and all their statements/documents submitted along with bid are true and factual. Standard format of the certificate to be submitted by the bidder is enclosed as **(Form 9 of Chapter 3)** (Annexure-V). In addition to **(Form 9 of Chapter 3)** (Annexure-V), in case of other than company / proprietary firm, **(Form 9A of Chapter 3)** (Annexure-V(A)) shall also be submitted by the each member of a partnership firm/ Joint Venture (JV)/ Hindu Undivided Family (HUF)/ Limited Liability Partnership (LLP) etc. as the case may be. Non submission of a copy of certificate by the bidder shall result in **summarily** rejection of his/their bid. It shall be mandatorily incumbent upon the tenderer to identify, state and submit the supporting documents duly self attested/ digitally signed by which they/he are/is qualifying the Qualifying Criteria mentioned in the Tender Document.
- (v) The Railway reserves the right to verify all statements, information and documents submitted by the bidder in his tender offer, and the bidder shall, when so required by the Railway, make available all such information, evidence and documents as may be necessary for such verification. Any such verification or lack of such verification, by the Railway shall not relieve the bidder of its obligations or liabilities hereunder nor will it affect any rights of the Railway there under.
- (vi) (a) In case of any information submitted by tenderer is found to be false, forged or incorrect at any time during process for evaluation of tenders, it shall lead to forfeiture of the tender Bid Security besides banning of business for a period of upto Two years.

(b) In case of any information submitted by tenderer is found to be false, forged or incorrect after the award of contract, the contract shall be terminated. Bid Security, Performance Guarantee and Security Deposit available with the railway shall be forfeited. In addition, other dues of the contractor, if any, under this contract shall be forfeited and agency shall be banned for doing business for a period of upto Two years.

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

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

14. Documents to be Submitted Along with Tender

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

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

(a) Sole Proprietorship Firm:

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

(b) HUF:

- I. A copy of notarized affidavit on Stamp Paper declaring that he who is submitting the tender on behalf of HUF is in the position of 'Karta' of Hindu Undivided Family (HUF) and he has the authority, power and consent given by other members to act on behalf of HUF.
- II. All other documents in terms of Para 10 of the Tender Form (Second Sheet) above.

(c) Partnership Firm:

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

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

(e) Company registered under Companies Act 2013:

- I. The copies of **MOA (Memorandum of Association) / AOA (Articles of Association)** of the company
- II. A copy of Certificate of Incorporation
- III. A copy of Authorization/Power of Attorney issued by the Company (backed by the resolution of Board of Directors) in favour of the individual to sign the tender on behalf of the company and create liability against the company.
- IV. All other documents in terms Para 10 of the Tender Form (Second Sheet) above.

(f) LLP (Limited Liability Partnership):

- I. A copy of LLP Agreement
- II. A copy of Certificate of Incorporation
- III. A copy of Power of Attorney/Authorization issued by the LLP in favour of the individual to sign the tender on behalf of the LLP and create liability against the LLP.
- IV. An undertaking by all partners of the LLP that they are not blacklisted or debarred by Railways or any other Ministry / Department of the Govt. of India from participation in tenders / contracts as on the date of

submission of bids, either in their individual capacity or in any firm/LLP or JV in which they were / are partners/members. Concealment / wrong information in regard to above shall make the contract liable for determination under Clause 62 of the Standard General Conditions of Contract.

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

(g) Registered Society & Registered Trust:

- I. A copy of Certificate of Registration
- II. A copy of Memorandum of Association of Society/Trust Deed
- III. A copy of Power of Attorney in favour of the individual to sign the tender documents and create liability against the Society/Trust.
- IV. A copy of Rules & Regulations of the Society
- V. All other documents in terms of Para 10 of the Tender Form (Second Sheet) above.

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

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

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

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

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

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

(a) Should a tenderer

i) be a retired Engineer of the gazetted rank or any other gazetted officer working before his retirement, whether in the executive or administrative capacity or whether holding a pensionable post or not, in the Engineering or

any other department of any of the railways owned and administered by the President of India for the time being, OR

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

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

AND

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

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 16.a), b), c) above has not been furnished, contract is liable to be dealt in accordance with provision of clause 62 of the Standard General Condition of contract.

JOINT VENTURE (JV) IN WORKS TENDERS

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

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

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

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

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

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

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

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

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

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

17.9 Similarly, after the contract is awarded, the constitution of JV shall not be normally allowed to be altered during the currency of contract except when modification become inevitable due to succession laws etc. and minimum eligibility

criteria should not get vitiated. Failure to observe this stipulation shall be deemed to be breach of contract with all consequential penal action as per contract conditions.

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

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

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

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

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

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

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

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

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

- (i) A notarized copy of the Partnership Deed or a copy of the Partnership deed registered with the Registrar.
- (ii) A copy of consent of all the partners or individual authorized by partnership firm, to enter into the Joint Venture Agreement on a stamp paper,
- (iii) A notarized or registered copy of Power of Attorney in favour of the individual to sign the MOU/JV Agreement on behalf of the partnership firm and create liability against the firm.
- (iv) An undertaking by all partners of the partnership firm that they are not blacklisted or debarred by Railways or any other Ministry / Department of the Govt. of India from participation in tenders / contracts as on the

date of submission of bids, either in their individual capacity or in any firm/LLP in which they were / are partners/members. Any Concealment / wrong information in regard to above shall make the bid ineligible or the contract shall be determined under Clause 62 of the Standard General Conditions of Contract.

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

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

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

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

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

- (i) A copy of LLP Agreement
- (ii) A copy of Certificate of Incorporation of LLP
- (iii) A copy of resolution passed by partners of LLP firm, permitting the Firm to enter into a JV agreement

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

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

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

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

17.14.7 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.

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

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

(a) For Works without composite components

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

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

(b) For works with composite components

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

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

Note for Para 17.15.1:

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

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

17.15.2 Financial Eligibility Criteria

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

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

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

17.15.3 Bid Capacity

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

18. Participation of Partnership Firms in works tenders:

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

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

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

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

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

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

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

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

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

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

(a) Joint and several liabilities:

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

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

The partnership deed/partnership firm agreement shall normally not be modified/altered/ terminated during the currency of contract and the maintenance period after the work is completed as contemplated in the conditions of the contract. Any change carried out by partners in the constitution of the firm without permission of Railway, shall constitute a breach of the contract, liable for determination of the contract under Clause 62 of the Standard General Conditions of Contract.

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

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

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

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

18.11 Evaluation of eligibility of a partnership firm:

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

19.0 Advances to Contractor -

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

(Signature)

(Designation)

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

VENDOR MANDATE FORM

Tender notice No.

PARTICULARS OF THE TENDERER:

(a) Name.....

(b) ADDRESS:

(i) Holding No. / Premises:.....

(ii) Room No. :.....

(iii) Street Name :.....

(iv) City/Village/Town

.....

(v) District :.....

(vi) State :..... Country:.....

(vii) PIN :.....

(c) Phone No..... Mobile No.....

Fax No.E-mail-id.....

(d) PAN No.....

GST Registration No.....

Signature of Tenderer

CHECK LIST FOR VERIFICATION OF PARTNERSHIP DEED/TENDER

A. Stamp Duty, Place, Date of Execution

- 1) Firstly, the date of purchase of stamp paper on which Partnership Deed [PD] is executed is to be noted. The date of purchase of stamp paper should be prior or on the same date of execution of the Partnership Deed.
- 2) The date and place of execution of PD is to be verified. Also the date on which the business has come into force is to be noted. The date of execution shall synchronise with other related dates/events.
- 3) Then it is to be verified whether PD is executed on stamp paper of proper value. The value of the stamp paper depends in which state it is executed. In A.P. it was, Rs. 300/- and increased to Rs. 500/- with effect from 1-8-2005, Karnataka Rs. 500/- & Maharashtra Rs. 300/-.
- 4) A partnership firm cannot be one of the parties in a Partnership Deed since partnership firm has no legal personality under law.

B. Nomination of Managing Partner

- 1) Whether any one of the partner is nominated as Managing partner.

Generally, a partner nominated as Managing partner is doomed to have the power to sign tenders, agreements, documents, represent the firm etc., unless otherwise prohibited under any clause.

- 2) In case no Managing partner is appointed it has to be verified whether any other partner is given power to apply for tenders, sign agreement, represent on behalf of firm etc.
- 3) In the absence of any partner or managing partner is given power to represent firm, then whether any General Power Attorney is executed empowering the attorney to apply for tenders.

It may be noted that except for the company in any other case the attorney should not be allowed to sign Agt./Subsidiary Agt./Rider Agt. as it would amount to sub-letting of contract. [The attorney can only execute work, sign MB's and other documents provided he is given the power to do so].

C. Authentication of Partnership Deed.

- 1) Whether all the partners have signed on all pages of the PD.
- 2) On the last page of PD the signatures of all partners should be witnessed by two witnesses which is compulsory otherwise the PD cannot be treated as valid.
- 3) In case the PD is notarized by the notary public even if the witnesses have not signed, the PD can be treated as valid.
- 4) Where the tenderer submits certificate issued by the Registrar of firm it shall be a conclusive proof that the PD is properly executed and cannot be questioned that it is witnessed or notarized.

D. Signing the Tender

- 1) Who signed the tender on behalf of the firm is to be checked and satisfied that it is the person who is authorized in the deed as mentioned above. If there is no Managing Partner in a Partnership Deed or that one or more individual person is not authored either in the deed or under GPA then the tender shall be signed by all the partners.

- 2) It has to be checked whether the Stamp of the firm or Managing Partner or the designation of the person who signed is affixed in the tender.
- 3) The signature of the managing partner or other partners to be verified whether it is same in the PD as well as in tender.
- 4) Whether the tender is signed at the required nominated places.

E. Execution of GPA.

- 1) If there is a nominated managing partner he can execute GPA otherwise all partners have to execute GPA.
- 2) Where the tender firm submits GPA, then it is to be verified whether the attorney has signed the tender and signature also to be verified.

Where an attorney signs the tender, he should sign on behalf of the firm. That is the firm's stamp is to be affixed and he should sign on behalf of the firm [as authorized signatory].

FORM No. 14

Declaration regarding Sole proprietor/Partner/Joint Venture

I/we hereby solemnly declare that I/We ** is/are participating as a Sole Proprietor (or) a Partnership Firm (or) Joint Venture for the T_SG_PROJ_2024_03_OT Dt. 04.06.2024

Signature of Tenderer

**** - Name of the Contractor in case he is a sole proprietor (or) Partnership Firm**

Name (or) Joint Venture Name

Note:

Vide Railway Board Lr No 2002/CE-I/CT/37 JV Pt VIII Dt 14.12.2012, Joint Venture firm are allowed for participation for this tender.
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Annexure-1

INSTRUCTIONS FOR SUBMITTING THE TENDERS AS JOINT VENTURE

On Non-judicial stamp of Rs. 100/- MEMORANDUM OF UNDERSTANDING
FOR JOINT VENTURE AGREEMENT

This memorandum of understanding executed this_____ day of _____ 20__ between_____ (Name of Co.)_____ a company registered under the Companies Act1956 having its registered office at _____ represented through its Director/Authorized Representative_____ (hereinafter referred to as_____ which expression shall unless repugnant to the context thereof includes it successors) of the **FIRST PART.**

AND/OR

M/s. _____ a partnership firm constituted under the Indian Partnership ACT1932, having its registered office at_____, represented through its partner Shri_____ /Authorized Representative Shri _____ (hereinafter referred to as _____ which expression shall unless repugnant to the context thereof includes its successors) of the **FIRST PART.**

AND/OR

M/s. _____a proprietary concern having its registered office at _____Represented through its sole proprietor Shri _____ (hereinafter referred to as_____ which expression shall unless repugnant to the context thereof includes it successors) of the **FIRST PART.**Whereas, the party of the First part i.e. M/s._____ details to be supplied of the expertise in their field. Whereas, the party of the Second part M/s._____ details to be supplied of the expertise in their field. Whereas, the party of the third part M/s._____ details to be supplied of the expertise in their field.

AND whereas parties to this MOU have agreed to co-operate with each other to associate jointly and to form a Joint Venture to participate in the Southern Railway Tender. **Now**, therefore, in consideration of the promises and mutual promises and of the undertaking contained herein, it is hereby agreed between the parties of the MOU as follows:

1. The purpose of MOU:

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

2. The name of the Joint Venture shall be_____

3. The parties, hereto, represent that:

- a) They are in **possession** of all approvals and valid authorization for the purpose of execution of this MOU.
- b) They have not entered into any agreement/MOU of equal or similar nature with any third-party for this **E-Tender No.** _____.

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

M/s. _____ %

M/s. _____ %

M/s. _____ %

“That M/s. _____ shall be the lead member of JV firm who shall have a majority (at least 51%) share of interest in the JV firm. The other members shall have a share of not less than 20% each (in case of firm with upto three member) The other members shall have a share of not less than 10% each (in case of JV firm with more than three members). In case of JV firm with foreign member(s), the lead member has to be an Indian firm with a minimum share of 51% (strike out which is not applicable) And all right, interest, liabilities, obligations, work experience and risks (net profits or net losses) arising out of the contract shall be shared or borne by the Parties in proportionate to these shares. Each of the parties shall bound by guarantees, sureties required for the work as well as its proportionate share in working capital another financial requirements.

3.The parties to this MOU undertake:

- a) That after submission of the tender, the MOU shall not be modified/alterd/terminated during the validity of the tender including extension and maintenance period except when modification becomes inevitable due to succession laws etc., but in no case the minimum eligibility criteria would be vitiated.
- b) That after the contract is awarded the constitution of the JV Firm shall not be altered during the currency of contract except when modification becomes inevitable due to Succession Law etc., “but in no case the minimum eligibility criteria would be vitiated”.

- c) That with respect of the Southern Railway Tender neither party, nor any subsidiary company of either Party, not any joint venture company or any other entity, in which the party/parties, is or are in any way interest, shall complete together with or through any third party, nor shall be parties advise, consult for, engage in or otherwise assist in any way person or entity or any affiliate thereof in respect of any orders or contracts related to this tender.
- d) That none of the members of joint ventures is black listed and/or debarred by the Railway Board or and other ministry or department of Govt. of India/State Govt. from participation in contract/under in the past either in individual capacity or the JV Firm or partnership firm in which they were/are members/partners.

3. Joint & Several Liability:

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

- 6. Shri_____ be authorized partner/person on behalf of the Joint Venture to deal with tender, to sign the agreement or enter into contract in respect of the said tender, to receive payment, to witness joint measurement of work done, to sign measurement books, and similar such action in respect of Southern Railway tender/Contract. All notices /correspondence with respect to the contracts would be sent only to this authorized partner/person of the JV firm.

7. Notwithstanding anything herein, in respect of the Railway Tender, with regard to the internal relationship, the inter se liabilities between the parties shall be in proportion to their respective scope of work and shall be subject to the provisions of this MOU.

8. Responsibility:

Each Party shall assume and accept full responsibility for its Scope of Work and the obligations imposed in the Contract and in this MOU as if it was, with regard to this Scope of Work, an independent partner contracting individually with the Customer. In the event of any defect and damage or any claim arising from the Customer under the Contract or any third party in relation to or as a consequence of any failure to meet the performance specification the Party, within whose Scope of Work the claim arises, shall be entirely responsible for the claim and shall indemnify and hold harmless the other Party from any liability, demand, claim burden cost, expense attorney's fees and costs arising from thereof.

9. Assign ability:

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

10. Use of Machinery, Instruments, Labour Force etc:

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

11. Duration of MOU:

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

a) Applicable Law:

The MOU and any arrangement/agreements regarding the performance shall be construed and interpreted in accordance with and governed by the Laws of India and shall be subject to the exclusive jurisdiction of the courts at the place where MOU is executed/signed between the parties.

b) Settlement of Disputes:

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

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

M/s._____M/s.

_____ All
correspondence and notices to the Joint Venture firm shall be addressed to the
Lead Member i.e. M/s._____/Shri_____ at the
address stated herein below:-

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

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

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

Signature: -

Shri_____ of

M/s._____

1) Witness Name:

2) Address :

Signature: -

Shri_____ of

M/s._____

1) Witness Name:

2) Address:

Signature: -

Shri_____ of

M/s._____

1) Witness Name:

2) Address:

Annexure – 2

SIGNALING & OTHER DETAILS OF THE SECTION**SOUTHERN RAILWAY**

Available soft copy of the Plan/Sketch of stations and Block sections is enclosed with the tender document and also can be collected from the office of Deputy Chief Signal & Telecommunication Engineer/Project/TPJ, Southern Railway, Tiruchchirappalli -620001.

If tenderer requires clarification same may be clarified with this office by sending a letter or E-mail. If tenderer feels to have survey before submitting the offer same may be permitted and the expenses must be borne by tenderer.

S.No	Station/Block section	Block Working
1	PROVISION OF DOUBLE DISTANT FOR RAISING OF SECTIONAL SPEED TO 130 KMPH IN B-ROUTE AT ALL STATIONS / LC GATES IN TPJ-DG SECTION (96 RKM) & DG-TEN SECTION (220 RKM) OF MADURAI DIVISION	Absolute block working

Annexure-3

PROFORMA FOR NEFT MANDATE FORM

FROM:

Date:

To,

FA&CAO/ CN/MS,

Southern Railway,

Chennai.

Sub:- Willingness to Receive Payment through RBI's NEFT System.

We refer to the National Electronic Fund Transfer (NEFT) System being set up by Southern Railway, Chennai-03 for remittance of our payments using RBI's NEFT scheme and confirm that we are agreeable to our payments being made through the above scheme to our under noted Account:

NAME OF ORGANISATION AND ADDRESS	:
MICR CODE OF BANK	:
IFS CODE OF BANK	:
BANK NAME	:
BRANCH NAME	:
BANK ADDRESS	:
BRANCH TELE/FAX NO.	:
BANK ACCOUNT NO.	:
TYPE OF ACCOUNT	:

A Xerox copy of the cheque leaf is attached herewith for necessary action at your end.

Encl : As stated above

Signature & Stamp

Confirmed by Bank

SOURCES FOR Specifications / DRAWINGS

1. IRS Drawings and Specification including RDSO Specific – Director General, R.D.S.O., Lucknow.
2. TEC Drawings & Specifications – Telecommunications Engineering Centre, KurshidLalBhawan, Janpath, New Delhi – 110 001.
3. Standard Specifications (BSS & ISS, etc.) – Indian Standard Institution, 9, Mathura Road, New Delhi.
4. Railway Publications such as Railway Rules, Codes and Practices, etc. – Government of India, Ministry of Railways, Rail Bhawan, New Delhi.
5. Central Government Laws and Acts – Government of India, Ministry of Information, Publications Division, Tilak Road, New Delhi.
6. Manual of Instructions for Installation of S&T Equipment 25KV 50 Hz, single phase Electrified section – Director General, R.D.S.O., Lucknow.
7. General and Subsidiary Rules of Indian Railways and Southern Railways
8. RDSO Specifications for Electronic Interlocking System
9. Indian Railways Signal Engineering Manual (IRSEM)-Indian Railways Institute of Signal Engineering and Telecommunications, Secunderabad

Note: For bidding the list is not exhaustive and any specification /drawings as required can be obtained on request from office of Dy. CSTE/Projects /TPJ.

GENERAL CONDITIONS OF CONTRACT (WORKS)

April 2022

With correction slips

(Uploaded Separately in IREPS)

SOR VOL.II BOOKLET
(Uploaded Separately in IREPS)

RDSO SPECIFICATION
RDSO/SPN/192/2019 ver2 or latest
FOR ELECTRONIC INTERLOCKING SYSTEMS
(Uploaded Separately in IREPS)

Annexure -8

(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	SBIN000RAIL
IFSC TYPE	BRANCH
BANK NAME	STATE BANK OF INDIA
BRANCH NAME	RAIL
CITY NAME	NAVI MUMBAI
ADDRESS	SECTOR-11, CBD BELAPUR, NAVI MUMBAI
DISTRICT	NAVI MUMBAI
STATE	MAHARASHTRA
BG ENABLED	YES

11. The

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

Date

Place..... Bank's Seal and authorized signature(s)

[Name in Block letters]

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

[P/Attorney] No.

Witness:

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

Bank's Seal

[P/Attorney]No.

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

Annexure-9

AVERAGE ANNUAL CONTRACTUAL TURNOVER CERTIFICATE

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	INR 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 - 10

SOUTHERN RAILWAY
TENDERER'S CREDENTIALS (BID CAPACITY)

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

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

Where,

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

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

B = Existing commitments and balance amount of ongoing works with tenderer as per prescribed proforma of Railway for statement of all works in progress and also the works which are awarded to tender but yet not started upto the date of inviting of tender.

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 11

CHECKLIST TO THE TENDER

Name of work: PROVISION OF DOUBLE DISTANT FOR RAISING OF SECTIONAL SPEED TO 130 KMPH IN B-ROUTE AT ALL STATIONS / LC GATES IN TPJ-DG SECTION (96 RKM) & DG-TEN SECTION (220 RKM) OF MADURAI DIVISION

CHECK LIST OF ITEMS TO BE COMPLIED BY THE TENDERERS

S.No	Description of Item	Clause	Compliance	Remarks
1	Have you submitted your bid online on IREPS keeping in mind that your Technical Bid documents will be evaluated independent of your Financial Bid and only if your offer is found technically eligible financial components of your offer will be considered?	2.10	Yes/No	
2	Have you submitted Offer letter complete along with Original/Downloaded Tender document including tender forms (First Sheet & Second Sheet) duly signed with your digital signature?	2.10(i)	Yes/No	
3	Have you submitted requisite Bid Security (EMD) online or uploaded scanned bank guarantee bond?	2.7/Ann-8	Yes/No	
4	Have you submitted the document pertaining to participation in tender as Sole Proprietor/Partner/Director/JV	2.2 (vii)	Yes/No	

S.No	Description of Item	Clause	Compliance	Remarks
5	Have you submitted you complete Postal Address	2.2 (viii)	Yes/No	
6	Have you uploaded the Tender Documents and its addendum/ corrigendum duly signed digitally	2.10(i)	Yes/No	
7	Have you uploaded the credential to establish the eligibility? The documents required for ascertaining Technical & Financial capability as Specified in Qualifying Criteria i.e. Para 2.5 of Instructions to Tenderer shall also be enclosed in the offer. Tenderer should also submit Form 1 & Form 2 along with required Annexure.	2.10(iv), 2.5.1, 2.5.2, 2.5.3 2.6	Yes/No	
8	Have you furnished Completion & Performance Certificate regarding meeting Eligibility Criteria 2.5 for satisfactory and physical completion similar work from the executive of user Railway? (with contact details of FAX, phone and E-Mail of issuing authority) (Duly filled & signed Form 1. This Form should be accompanied with certificate from user Railways)	2.5.2	Yes/No	

S.No	Description of Item	Clause	Compliance	Remarks
9	Have you furnished the details of year-wise contractual payment received during the last Three financial years & current year on Form-2 regarding meeting Eligibility Criteria?	2.5.3	Yes/No	
10	Whether the details of contractual amount received have been duly certified by Employer/Client or Chartered Accountant?	2.5.3	Yes/No	
11	Have you furnished the details of year wise turnover and balance sheet from registered Chartered Accountant for the last three Financial Years?	2.5.3	Yes/No	
12	Have you furnished Certified copy of JV agreement (MOU) in enclosed format (Annexure-1), in case of offer is from JV firm?	Ann 1	Yes/No	
13	Have you enclosed Power of Attorney, Partnership Deed if any, Constitution of firm & copies connected to legal document?	2.10(v iii)	Yes/No	
14	Have you kept the offer valid for a minimum period of 90 DAYS from the date of opening of tender?	2.12	Yes/No	
15	Have you quoted completion period	2.13	Yes/No	

S.No	Description of Item	Clause	Compliance	Remarks
16	Have you furnished a copy of Schedule of Works & Supplies (Chapter 4) with price blank out along with Technical Bid? (Note: Rate shall be offered only in Financial Bid in IREPS web Portal only)	2.11	Yes/No	
17	Have you enclosed a declaration that the tenderer accept all the terms and conditions of Railways? In case of deviations, have you furnished –Statement of Deviations as per Form-3?	2.10(xi)	Yes/No	
18	Documentary evidence necessary to establish that tenderer possesses the requisite skill, technical expertise, technical and skilled manpower and necessary equipment to execute complete work covered in the schedule with stipulated specifications /details.	2.10(xi i)	Yes/No	
19	Have you enclosed List of Personnel, Organization available on hand and proposed to be engaged for the subject work?	2.10(xi i)	Yes/No	
20	Have you submitted the List of Works Done and List of Works on hand	2.10 (ix), Form 10	Yes/No	
21	Have you submitted the copy of Certificate as per Form 9/Form9A	2.10(xiii), Form 9	Yes/No	
22	Have you submitted the NEFT mandate form	Annexure-3	Yes/No	

S.No	Description of Item	Clause	Compliance	Remarks
23	Have you noted the applicability of GST ACT 2017 for this tender	2.52	Yes/No	
24	Have you read and agreed to the terms and conditions of the LC (Letter of Credit) in case tenderer opted for Letter Of Credit (LC) mode of payment.	2.56	Yes/No	
25	Have you read and agreed to Payment of wages Act	2.64	Yes/No	
26	Tenderer to note that payment/advances/releasing of PG and SD will be done only when the required details are entered in ShramikKalyan Portal only.	2.64	Yes/No	
27	Did you ensure that while uploading the technical bid document pertaining to Packet-I, no financial implications with rates was enclosed. Otherwise the offer will be rejected.	2.11	Yes/No	
28	All the financial implications with rates and the quoting of schedules has to be done in FIN.OFFER.TAB only for this tender	2.11	Yes/No	
29	Have your certificate regarding employment of Retired Gazetted officer	2.10 (x)	Yes/No	
30	Provisions of Make in India Policy 2017 issued by Govt of India (certificate of Local content)	2.10(xiv & xv, xvi)	Yes/No	

**** END OF CHAPTER - 3 ****

CHAPTER – 4

SCHEDULE OF WORKS AND SUPPLIES

Instructions for Quoting Rates:

SL No.	Schedule	Scope	Instruction/Remarks
1	Schedule -A& B	SOR&NON SOR Items (S&T)	Detailed schedule has been uploaded on IREPS web site www.ireps.gov.in . Tenderer has to submit percentage above/below / At par for Each Schedule of A& B.
2	Schedule -C	NON SOR Items (S&T)	Detailed schedule has been uploaded on IREPS web site www.ireps.gov.in . Tenderer has to submit percentage Single rate for each schedule item.

Schedule of works and supplies available in Chapter-4 is to facilitate the tenderer to understand the scope of work and for reference only. However, rate shall be quoted in IREPS web portal only.

SCHEDULE _A

Sl.N o.	SOR No	Description of Work	Units	Qty	Rate	Amount
1	10_101	Excavation of cable trench in all kinds of soil except hard rocky areas including clearing of roots of trees, rocks, bushes etc. to a depth of 1.0 Mtrs and to a width of 0.3 Mtrs. Laying of cables is not included in this schedule.	Mtrs	238000	34.65	8,246,700.00
2	10_104	Removing/breaking of existing RCC slabs on the passenger Platform, trenching to a depth of 0.6m to accommodate the additional cables, replacing the slabs removed after the cables are laid and replastering with cement mortar, refilling the trench by ramming and consolidating it as per the instructions of Railway Representatives at site. (Laying of cables is not included in this schedule).[Cement, river sand and all other miscellaneous materials required for the work shall be supplied by the Contractor].	Mtrs	6500	169.95	1,104,675.00
3	10_105	Excavation of trench along route of existing cable duct, opening the slabs to accommodate additional cable laying, REPOSITIONING the slabs removed after the cables are laid and PLASTERING with cement mortar, and refilling the trench by ramming and consolidating it as per the instructions of Railway Representatives at site. (Laying of cables is not included in this schedule.) [Cement, river sand and all other miscellaneous materials required for the work shall be supplied by the Contractor].	Mtrs	4000	116.7	466,800.00

4	10_106	Excavation of trench to a depth of 1 Mtr. for track crossing of cables, laying of DWC/ RCC pipes with collar/coupling, refilling of trench by ramming and consolidating it as per the instructions of Railway representative at site. During excavation of trench it has to be ensured that the excavated soil does not mix with the ballast available. The depth of 1m trench shall be from the bottom of sleepers for track crossings. Laying of cables is not included in this schedule. (Supply of DWC/RCC pipes with couplers/ collars is not included in this schedule).	Mtrs	1000	208.35	208,350.00
5	10_107	Excavation of trench to a depth of 1 Mtr. for road crossing of cables, laying of DWC/ RCC pipes with collar/ coupling, refilling of trench by ramming and consolidating it and resurfacing it to the original position. Laying of cables is not included in this schedule. (Supply of DWC/RCC pipes with couplers/ collars is not included in this schedule)	Mtrs	1000	270.83	270,830.00
6	10_108	Provision of GI pipes (50/100mm dia) for cable laying with offset at both ends and with couplings over RCC Bridges/ Drainage/ Culverts with concrete masonry supports of size 300mm x 300 mm x 300 mm at an interval of 2m. The ends of the pipes shall be closed with brick masonry abutments work so that no cable is exposed, The work shall be carried out as per the instructions of Railway representative at site. (Supply of GI pipes with couplings and laying of cables is not included in this schedule). [Stone jelly of size 20/25mm, bricks, sand, cement and all other miscellaneous materials	Mtrs	11250	181.95	2,046,937.50

		required for the work shall be supplied by the Contractor				
7	10_110	Provision of GI pipes (50/100mm dia) for cable laying in hard rocky area with off sets at both ends duly supported by concrete blocks of size 300mm x 300mm x 300 mm at an interval of 2m. The ends of the pipes shall be closed with brick masonry abutments work so that no cable is exposed, The work shall be carried out as per the instructions of Railway Provision of GI pipes (50/100mm dia) for cable laying in hard rocky area with off sets at both ends duly supported by concrete blocks of size 300mm x 300mm x 300 mm at an interval of 2m. The ends of the pipes shall be closed with brick masonry abutments work so that no cable is exposed, The work shall be carried out as per the instructions of Railway	Mtrs	21500	168.08	3,613,720.00
8	10_111	Laying of signaling/power/telecommunication cables as per cable plan in cable trenches, masonry ducts, RCC Pipes, DWC pipes, GI Pipes etc. (Supply of cables is not included in this schedule).	Mtrs	628980	9.83	6,182,873.40
9	10-115	Refilling of cable trench 1m depth by 0.3m width throughout, with earth after laying of cables, and consolidating the trench by ramming and leveling	Mtrs	238000	8.33	1,982,540.00
10	10_118	Supply of RCC cable markers as per drawing No.CSTE/CN/ OFC/1. The lettering on the cable marker shall be "SIG" / "TELE" / "OFC" as per the instructions of Railway representative at site.	Nos	7289	166.29	1,212,087.81

11	10_119	Digging of pit to a depth of 800mm of size 300mmX 300mm, casting of concrete foundation of size 300mmX300mmX300mm and Placing of RCC cable markers on top of the foundation and refilling the pit and consolidating it by ramming. The cable markers shall be provided at an interval of 20 Mtrs. Within station limits and 50 Mtrs. outside station limits throughout the cable route, diversions and also a every track/ road crossing.	Nos	7289	121.43	885,103.27
12	10_121	Supply of Double walled corrugated pipe - 103.5mm inner dia & 120mm outer dia conforming to specification No. IS 14930(Part 2): 2001 with one coupler for every 6m of pipe as specified in Vol.II of the Tender document.	Mtrs	2000	263.2	526,400.00
13	10_122	Supply of GI pipes - 50mm dia - 3.65mm thick as specified in Vol.II of the Tender document.	Mtrs	3000	343.2	1,029,600.00
14	10_123	Supply of GI pipes - 100mm dia- 4.5mm thick as specified in Vol.II of the Tender document	Mtrs	15875	838.8	13,315,950.00
15	10_201	Excavation of pit, casting concrete foundation and erection of apparatus case full size as per Drg. No.SG/CN/02/6 and fixing of 2 Nos. of 'E' type locks, one for the front door and another for the back door, fixing of one hard wood shelf plank 37mm thick and painting the apparatus case inside and outside with one coat of red-oxide and two coats of aluminium paints. (Supply of apparatus case is not included in this schedule). [Foundation bolts & nuts, 'E' type locks, cement, river sand, stone jelly of size 20/25 mm, hardwood plank of 37mm thick, paints, varnish, fixing bolts & nuts and all other miscellaneous materials required	Nos	120	9875.3	1,185,036.00

		for the work shall be supplied by the Contractor.]				
16	10_202	Excavation of pit, casting concrete foundation and erection of apparatus case half size as per Drg, No.SG/CN/02/7, fixing one 'E' type lock for the front door and latching arrangement for the back door, and fixing of one hardwood shelf plank 37mm thick and painting the apparatus case inside and outside with one coat of red-oxide and two coats of aluminium paints	Nos	662	6966.6	4,611,889.20
17	10_209	Termination of new main/tail cables on the existing terminals/ fuse blocks in apparatus cases/ battery boxes/ CT boxes/ cable termination racks as per approved circuit diagram. The terminal particulars are to be repainted/corrected on the doors of apparatus cases/ battery boxes/ cable termination boxes and FTOT index board as instructed by Railway representative at site. This work includes closing the opening created for entry of new cables in the apparatus cases with masonry brick work and sealing the bottom of the apparatus cases/ cable termination racks with cable compound. [Paints, wire PVC 3/0.75mm and 16/0.2mm copper, sealing compound, bricks, cement, river sand and all other required miscellaneous materials shall be supplied by the contractor].	Per Term inal block	1250	39.78	49,725.00

18	10_210a.	Termination of main, tail, Signaling and power cables and internal wiring on terminal/ fuse blocks in new apparatus cases, cable termination boxes and in gate Lodges excluding cable termination rack at relay room. The work includes fixing of all new cables by teakwood clamp on teakwood base plank, fixing of Phynolic synthetic industrial fibre base fine weave cotton fibre board 6mm thick for terminal board to suit each apparatus case, varnishing all teakwood items, fixing of terminals/ fuse blocks on the terminal board, drilling of necessary holes, termination of cables, wiring, identification of cables using aluminium tags with letters punched neatly, as per approved circuit diagram and cable plan, painting of particulars on sleeves and also on the inner side of the doors of apparatus cases. After terminations are over, the side openings of apparatus case foundation shall be closed with brick work, cement plastered, the inter-space filled with river sand up to base level and the bottom surface shall be sealed with sealing compound. (Supply of PBT terminals and Fuse blocks is not covered in this schedule). [Cement, teakwood cable clamp 50mm x 50mm, base planks 100mm x 25mm, Phynolic synthetic industrial fibre base fine weave cotton fibre sheet - 6mm thick to IS specification 2036 - 1995 - Type F5, PVC/Nylon sleeves, varnish, paints, bolts, nuts and washers, Non-deteriorating type of fuses of various capacities, Aluminium cable tags, sealing	Per Term inal block	37762	93.16	3,517,907.92
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		compound, country bricks 220mm x 100mm x 60mm, copper bus bars, brass screw, river sand, wire PVC3/0.75mm copper and other miscellaneous materials shall be supplied by the Contractor]. a. Termination on 25/60mm PBT terminals (new location)(Phynolic sheet)				
19	10_210b.	b. Termination on PBT fuse block (new location) (Phynolic sheet)	Per Fuse Block	975	113.56	110,721.00
20	10_211a.	Termination of main, tail, Signaling and power cables and internal wiring by fixing additional terminals/ fuse blocks on the existing terminal boards of apparatus cases, cable termination boxes etc. The work includes fixing of all new cables by teakwood clamp on teakwood base plank, varnishing all teakwood items, fixing of terminals/ fuse blocks, on the existing terminal boards, drilling of necessary holes, termination of cables, wiring, identification of cables using aluminium tags with letters punched neatly, as per approved circuit diagram and cable plan, painting of particulars on sleeves and also on the inner side of the doors of apparatus cases. After terminations are over, the side openings of apparatus case foundation shall be closed with brick work, cement plastered, the inter-space filled with river sand up to base level and the bottom surface shall be sealed with sealing compound.(Supply of PBT terminals and Fuse blocks is not covered in this schedule).[Cement, teakwood cable clamp 50mm x 50mm, base planks 100mm x 25mm, PVC/Nylon sleeves, varnish, paints,	Per Terminal block	7000	81.68	571,760.00

		bolts, nuts and washers, Non-deteriorating type of fuses of various capacities, Aluminium cable tags, sealing compound, country bricks 220mm x 100mm x 60mm, copper bus bars, brass screw, river sand, wire PVC3/0.75mm copper and other miscellaneous materials shall be supplied by the Contractor]. a. Termination of cables on 25/60mm PBT terminals (existing location)				
21	10_211b.	b. Termination of cables on PBT fuse block (existing location)	Per Fuse Block	400	102.08	40,832.00
22	10_212a.	Manufacture and supply of M.S. relay frames of suitable size to hold up to 4/ 8/ 12/ 20 relays /plug in type HMU as required by Railways and fixing them in apparatus cases for all types of signal control circuits, LC gate control circuit and Point control circuits, fixing of plug boards, relays, resistors and electrolytic condensers on Phynolic synthetic industrial fibre base fine weave cotton fibre sheet - 6mm thick to IS specification 2036 - 1995 - Type F5, wiring and termination as per approved circuit diagram and painting the particulars. (Supply of all types of relays, plug boards, connectors, retaining clips and plug in type HMU is not covered in this schedule). [Wire PVC copper, 3/0.75mm and 16/0.2mm copper, Phynolic synthetic industrial fibre base fine weave cotton fibre sheet - 6mm thick to IS specification 2036 - 1995 - Type F5, for fixing resistors and condensers, MS flats 25mm x 6mm brass bolts and nuts, paints, soldering materials, resistors, condensers and all other	Set	128	2673.25	342,176.00

		miscellaneous materials required for the work shall be supplied by the contractor]. a. Wiring of Signal/ point/ LC control circuit (upto 4 relays/Plug in type HMU)				
23	10_212b.	b. Wiring of Signal/ Point/ LC control circuit (up to 8 relays/plug in type HMU)	Set	33	4739.6	156,406.80
24	10_216a.	Alterations to painted termination/ wiring particulars of functions in the existing apparatus cases, cable termination boxes, etc., on the PVC/ nylon sleeves and painting of new nomenclature on the existing signaling gadgets. This work includes carrying out alterations of particulars on the inner side of the doors of apparatus cases, re-numbering of apparatus cases and cable termination boxes. [Paints and all other miscellaneous materials required for the work shall be supplied by the Contractor] a. Alteration to painting particulars (apparatus case - Full size)	Nos.	310	884.85	274,303.50
25	10_216b.	Alteration to painting particulars (apparatus case - half size)	Nos.	540	464.1	250,614.00
26	10_218	Excavation of pit, casting concrete foundation as per Drg.No.SG/CN/02/9 using metallic templates, for erection of colour light signals up to 4 aspects. [Foundation bolts, cement, river sand, stone jelly of size 20/25mm dia and all other miscellaneous materials required for the work shall be supplied by the Contractor].	Nos	77	5008.2	385,631.40

27	10_219	Erection of surface base, signal pole, mounting of colour light signal up to 4 aspects complete on Signal pole/ Off-set bracket, (for LED/ filament bulbs) with lenses, triple pole lamp holder, filament switching units, CLS transformer, current regulators (whichever is applicable), fixing of ladder with platform complete and concreting of ladder shoe, fixing of number plates, marker board, lens guard, fixing of speed limit board wherever necessary, termination of tail cables, wiring of signal unit with PVC wire 3/0.75mm copper, provision of EWS locks, and painting of one coat of red oxide and two coats of aluminium/ enamel paints. When the aspect is fixed on Offset bracket using 'U' bolts and nuts, a through bolt shall be provided by drilling a hole in the signal pole to prevent the offset bracket from sliding down.	Nos	77	5501.2	423,592.40
28	10_227	Excavation of pit in and around the existing signals very carefully without causing damage to the working cables and shifting the Signals along with the concrete foundations for approximately 1m to a nearby position so as to clear the infringement from the nearest track centre as instructed by Railway representative at site. The existing cable coils shall be released carefully so as to give access for shifting. Necessary masonry work and earth work shall be carried out in and around the signals after shifting as instructed by Railway representative at site. [All materials required for the work shall be supplied by the Contractor].	Nos.	30	2591.25	77,737.50

29	10_228	Removal of existing CLS units, fixing of new CLS units with LED aspects/ lamps, holders etc., up to four aspects, directly or using off set brackets duly drilling holes on the signal poles, provision of EWS locks wherever necessary, termination of tail cables and wiring using wire PVC3/0.75mm copper and painting of aspect. The new tail cables shall be taken through the signal poles and the unwanted cables duly released.(Supply of CLS unit with LED aspects/ lamps holders, CLS transformers is not included in this schedule.)[EWS locks, Wire PVC 3/0.75mm copper lenses guard, wire netting arrangements, paints and all other miscellaneous materials shall be supplied by the Contractor].	Nos	91	5999.25	545,931.75
30	10_229	Manufacture and supply of Enameled Number plates as per drawing No.TY/08/2008 with fixing arrangements and fixing them on the existing Signals as per the instructions of Railway representative at site. [Enameled number plates with fixing arrangements with bolts and nuts shall be supplied by the Contractor)	Nos	170	339	57,630.00
31	10_231,b	Provision of track circuit in (other than point zone)	Nos	38	3862.4	146,771.20
32	10_234	Provision of earth electrodes as per drawing No.SG/SN/02/13 and earthing of metallic sheath and armour of all cables in all apparatus cases, relay room, equipment room, SM's room for block and control, and earthing of all equipments in apparatus cases, power room, relay rack, cable termination rack, control panel, signals, lever frames with MS flat 35mm X 6mm/19c cable (MS flat for closer by areas and MS flat/19c	Nos	714	1799	1,284,486.00

		cable combination for farther areas) as per the instructions of Railway representative at site. The work includes painting of earth resistance value on the earth pit. (Supply of 19C cable is not covered in the scope of this schedule). [MS flat for earthing 35mm X 6mm, cement, GI earth electrodes, common salt, charcoal, country bricks, river sand, soldering materials and all other miscellaneous materials required for the work shall be supplied by the Contractor].				
33	10_238,a	Supply of Colour light Signal pole 140mm dia, 4.6m/ 3.6m tall with necessary inspection as per specification/ drawing/ description enclosed in this document. a. Supply of colour light Signal pole (4.6m)	nos	104	3318	345,072.00
34	10_239	Supply of surface base to suit CLS Signal pole 140mm dia with necessary inspection as per specification/ drawing/ description enclosed in this document.	nos	77	4118	317,086.00
35	10_240,a	Supply of ladder with platform and shoes to suit CLS pole 4.6m/ 3.6m tall, with necessary inspection as per specification/ drawing/ description enclosed in this document. a. Supply of ladder with platform and shoes for 4.6m CLS pole	nos	104	3203	333,112.00
36	10_243,a	Supply of Colour Light Signal Multi Unit type -complete for 4/ 3/ 2 aspect with mounting socket, with necessary inspection as per specification/ drawing/ description enclosed in this document. a. Supply of colour light Signal unit - 4 aspect	nos	82	12584	1,031,888.00
37	10_243,b	Supply of Colour Light Signal Multi Unit type -complete for 4/ 3/ 2 aspect with mounting socket, with necessary inspection as per	nos	98	10296	1,009,008.00

		specification/ drawing/ description enclosed in this document. b. Supply of colour light Signal unit - 3 aspect				
38	10_249,a	Supply of PBT terminals 25mm/ 60mm centre and PBT Fuse blocks with necessary inspection as per specification/ drawing/ description enclosed in this document. a. Supply of PBT terminal - 25mm centre	nos	52012	44	2,288,528.00
39	10_249,b	b. Supply of PBT terminal - 60mm centre	nos	6850	60	411,000.00
40	10_249,c	c. Supply of PBT fuse block (without ND fuse)	nos	975	82	79,950.00
41	10_251,a	Supply of apparatus cases (full/ half/ quarter size) to suit Southern Railway standard with necessary inspection as per specification/ drawing/ description enclosed in this document: a. Supply of apparatus case - Full size	nos	125	12012	1,501,500.00
42	10_251,b	b. Supply of apparatus case - Half size	nos	710	8580	6,091,800.00
43	10_253	Supply of lamp proving relays for LED aspects with plug boards, connectors and retaining clips with necessary inspection as per specification/ drawing/ description enclosed in this document.	nos	520	3591	1,867,320.00
44	10_301,a	Concreting and erection of cable termination rack 500/210/140 Terminals capacity on teakwood base frame of size 50mmx150mm of suitable length and width with rectangular slot in the centre for taking in the cables, and painting as per standard practice.(Supply of cable termination racks is not included in this schedule).[Foundation bolts and nuts with washers, cement, sand, stone jelly, teak wood base frame 50mmx150mm of suitable length and breadth, paint, varnish and all other	Nos	10	5271.75	52,717.50

		miscellaneous materials required for the work shall be supplied by the contractor] a. Concreting and erection of cable termination rack -210/140 terminal capacity				
45	10_302a.	<p>Fixing of PBT terminal block/ PBT fuse block, rubber grommets, clamping of cables using teakwood cable clamps and base planks, termination of cables, provision of ND type fuses of required capacities, provision of copper bus bar for supply terminals, wiring, provision of termination particulars diagram board using plywood of thickness 12mm – teakwood finish of size 1800mm x 1200mm with Aluminium grooved channel frame in the relay room. The blank spaces over the top of the cable termination rack shall be covered with phynolic sheet of thickness 3mm wherever required. The termination and cable core particulars shall be painted on the PVC/ nylon sleeves. The work also includes identification of cables using aluminium tags provided on each cable with letters punched neatly.</p> <p>(Supply of PBT terminal blocks 25mm & 60mm centers and PBT Fuse blocks is not covered in the schedule)</p> <p>[Wire PVC 3/0.75mm copper, brass bolts and nuts and washers, for fixing PBT terminal/Fuse Block, other fixing bolts and nuts, rubber grommets, PVC/ Nylon sleeves, copper bus bars, teakwood 50mm x 50mm for cable clamps, 25mmx 100mm for base planks, phynolic sheet 6mm thick of size 1200mm x 1800mm with aluminium grooved channel frame, phynolic sheet 3mm</p>	Per Term in al Block	3062	90.82	278,090.84

		thick, paint and all other miscellaneous materials shall be supplied by the Contractor]. a. Fixing of PBT terminal blocks (25mm/60mm centre) and termination				
46	10_302b.	b. Fixing of PBT fuse block with ND fuses and termination	Per Fuse Block	300	108.82	32,646.00
47	10_303b	Concreting and erection of Relay Rack - 56 relay Capacity	Nos	10	1629.75	16,297.50
48	10_304	Fixing of plug boards, 50 way terminal blocks with 2BA terminals, and wiring of relays as per the approved circuit diagram using wire PVC 16/0.2mm copper. Suitable wire supporting tray with cover made of PVC shall be provided horizontally and vertically in the relay racks.. While running the wires on the aluminium ladder proper care shall be taken to provide smooth materials like rubber beading in the openings on Phynolic sheets, to avoid damage to wires. The work also includes wiring of contacts for data logger and terminating them in tag blocks, provision of relay index board. (Supply of relays, plug boards, connectors and retaining clips is not covered in this schedule). [Wire PVC 16/0.2mm copper, tag blocks, 2BA terminals, hard wood plank of size 600mmx 900mmx25mm with decolum finish, MS angles of size 25mmX25mmX6mm, relay fixing bolts and nuts, teakwood plank 25mm thick for fixing resistors and condensers, phynolic sheet 6mm thick of size 1200mmX1800mm with aluminium grooved channel frame for relay index board, paints, soldering materials, bunching thread, wire wound resistance,	Per Relay	652	565.27	368,556.04

		condenser, wire supporting tray with cover of suitable size made of PVC, paint, varnish and all other miscellaneous materials required for the work shall be supplied by the Contractor].				
49	10_305	Fixing of additional plug boards, 50 ways terminal blocks and wiring of additional relays as per the approved circuit diagram using wire PVC 16/0.2mm copper. Additional wire supporting tray with cover made of PVC shall be provided wherever required. Alterations to Relay particulars shall be incorporated in the relay Index board. (Supply of relays, plug boards, connectors and retaining clips and 50 way terminal boards is not covered in this schedule). [Wire PVC 16/0.2mm copper, 2 BA terminals, teakwood plank 25mm thick for fixing resistors and condensers, soldering materials, bunching thread, wire wound resistance, condenser, wire supporting tray with cover of suitable size made of PVC, paint, varnish and all other miscellaneous materials required for the work shall be supplied by the Contractor)	Per Relay	588	392.7	230,907.60
50	10_306	Carrying out alterations to the existing relays in the relay racks /apparatus cases as per the approved circuit diagram using wire PVC 16/0.2mm copper. The work includes painting alterations and releasing the unwanted wires carefully without disturbing the existing wiring. [Wire PVC 16/0.2mm copper, soldering materials, bunching threads, condensers, resistances and teakwood plank for fixing them and all other miscellaneous materials	Per Relay	787	376.04	295,943.48

		required for the work shall be supplied by the Contractor].				
51	10_308,a	<p>Erection,concreting and wiring of SM's control panel (up to 5 roads)Provision of Interconnections between relay racks,cable termination racks, SM's control panel, battery room, power room, termination and wiring. The work involves laying of underground cables in the duct as well as with clamping arrangements on the walls, supply and fixing of aluminium ladders and supports with 3mm thick phynolic sheet for running the cables in the relay room. Interconnection shall be carried out with signaling multi core cable (skinned/ unskinned) and power cables as per the instructions of Railway representative at site. The work also include termination of the interconnection cables on 50 way terminals in the relay rack/ control panel, cable termination rack etc. After the interconnection cables are laid, the ducts shall be filled with river sand and closed. Wherever required the cables shall be taken to other floors in the building by clamping them on MS angles and flats grouted on the walls. (Supply of interconnection cables is not included in this schedule).[2BA terminals, Aluminium ladder arrangements using 37mmx37mmx5mm aluminium angles and 25mmx6mm aluminium flats, aluminium supports, phynolic sheet - 3mm thick for bottom of aluminium ladders, MS angles and flats, bolts and nuts,concreting materials, and all other materials required for the work shall be</p>	LS	17	41768.15	710,058.55

		supplied by the contractor]. a. Provision of interconnection at stations (up to 5 roads).				
52	10_308,c	c. Provision of interconnection at stations [more than 5 roads] where relay room and panel room are in different floors.	LS	4	95105	380,420.00
53	10_309	Installation of power equipments like battery chargers, transformers, transformer rectifiers, invertors, DC-DC convertors etc., in the apparatus cases and wiring the same using wire PVC 7/1.4mm and 3/0.75mm copper as per the approved wiring diagram and painting of particulars in the inside of the doors of the apparatus cases. The work also includes provision of protective arrangements in bare terminals carrying high voltages. (Supply of power equipments is not included in this schedule). [Wire PVC 7/1.4mm and 3/0.75mm copper, protective arrangements, paint and all other miscellaneous materials required for the work shall be supplied by the Contractor].	Nos.	125	923.25	115,406.25
54	10_310	Carrying out alterations to the existing SM's control panel. The work includes drilling of holes on the Top plate wherever required, fixing and wiring of knobs, buttons, counters, LEDs with holder, closing of unwanted holes, carrying out painting alterations on the panel, termination of additional cables and carrying out alteration to the existing wiring as per approved circuit diagram, releasing of unused wires, and painting of particulars as per the instructions of Railway representative at site.(Supply of knobs, buttons and counters is not included in the scope of this	LS	98	8631	845,838.00

		schedule).[LED lamps with holder, paint, soldering materials and all other miscellaneous materials required for the work shall be supplied by the Contractor].				
55	10_317	Supply, installation and wiring of Transformer rectifier 110VAC/24V DC - 2A capacity at Power room/ apparatus cases and connecting it to the relevant circuit as per approved circuit diagram using wire PVC 3/0.75mm copper and painting of particulars as per Railway practice.[Transformer rectifier 110V AC/24VDC - 2A capacity, wire PVC 3/0.75mm copper and all other miscellaneous materials shall be supplied by the Contractor].	Nos	65	5924	385,060.00
56	10_318	Supply, installation and wiring of Transformer 110VAC/110VAC-500VA capacity at Power Room/Apparatus cases and connecting it to the relevant circuit as per approved circuit diagram using wire PVC 3/0.75mm copper and painting of particulars as per standard Railway practice.[Transformer 110V AC/110VAC - 500VA capacity, wire PVC 3/0.75mm copper and all other miscellaneous materials shall be supplied by the Contractor]	Nos	70	5224.1	365,687.00
57	10_337	Provision of signaling arrangement during Non-Interlocked working of Signals and Points, such as erection and wiring of temporary relay racks and wiring of relays, SM's slide instruments, wiring alterations in the cable termination rack, apparatus cases, signals, Control panel etc, as per the instructions of Railway representative at site.(Supply of relay rack, relays, and SM slide instruments is not	Per station	20	18178.95	363,579.00

		included in this schedule).[All other miscellaneous materials required for the work shall be supplied by the Contractor].				
58	10_406	Casting concrete foundation of size 900mmX900mmX900mm for pedestal, 400mmX400mmX600mm for meeting post, fixing of lifting barrier boom, contact makers, termination of cables, wiring and painting as per the instructions of Railway representative at site. (Supply of pedestals, meeting posts, contact maker, electric lifting barriers, rail posts, cranks and 'A' type foundation is not covered in this schedule). [Concreting materials, bolts and nuts, wire PVC 3/0.75mm copper and all other miscellaneous materials required for the work shall be supplied by the Contractor].	Per boom	10	11003.25	110,032.50
59	10_416	Painting, erection and concreting of Goods warning boards on rails as per the Signalling plan. The work includes manufacturing of clamps and fixing the board to the rails, supply and fixing of scotch lite reflectors and concreting the rail post to a size of 600mm x 600mm x 900mm. (Supply of goods warning boards is not covered in this schedule. Rails of different lengths will be supplied by Railways and the Contractor has to cut them to the required lengths). [Stone jelly of size 20/25mm dia, river sand, cement, M.S. flats, scotch lite strips (14 Nos) for each board, fixing bolts and nuts, paint and all other miscellaneous materials shall be supplied by the Contractor].	Nos	26	2929.95	76,178.70

60	10_427,a	Testing and commissioning the entire signalling installations jointly with the Railway representative at site at the stations/ LC gates covered under various schedules of the Contract, and ensuring that all the signalling gears are installed and adjusted as per the existing rules. The work also involves supply of required number of bound registers with good quality papers with all updated details of cable meggering, relays, batteries, block joints, route cancellation, relay room key entries, block instrument key, earth resistance etc., and handing over to Railways. (Supply of 'As made' is not covered in this schedule). a. Testing and commissioning of stations (upto 5 roads)	Per station	5	21018.75	105,093.75
61	10_427,b	b. Testing and commissioning of stations (with more than 5 roads)	Per station	2	36725.25	73,450.50
62	10_427,c	c. Testing and commissioning of LC gates	per LC	77	8128.5	625,894.50
63	10_428	Submission of all relevant final 'As made' of circuit diagrams, contact analysis charts, termination particulars of apparatus cases and cable termination rack, power supply arrangements, relay index board, cable plans, cable route plans, red boundary plans and all other particulars covered under various schedules. All 'As made' shall be prepared by the Contractor in AUTOCAD 2000 or latest and submitted in CDs. One copy of the 'As made' check print shall be submitted before Testing the circuits. The final negatives shall be made in tracing sheet (80 to 90gsm). All 'As made' except cable plan, cable route plan, bonding diagram &	per sheet	2415	206.55	498,818.25

		power supply diagram shall be prepared in A3 size. On approval the contractor shall submit along with the negatives, 8 copies in each, duly making booklet neatly bound. Out of 8 sets, 2 sets of drawings and other plans shall be kept in transparent plastic cover (2 sheets back to back in one plastic cover) and handed over to Railways. Also the contractor has to supply one set of As made in 'Reproduction Film'. The approved circuit diagram will be issued by Railways in soft copy as well as two sets of hard copies. Wherever alterations to existing circuits are involved, the existing as-made circuit diagrams will be supplied by Railways either in CDs or RP film. The Contractor shall incorporate the details of all the new wirings and alterations in the CD/ RP film and submit them to Railways. On approval 8 copies shall be made for As-made circuit diagrams also as mentioned above.				
64	10_503	Breaking of concrete and releasing of STOP board/Warning board/LEGEND boards long with ails, accounting and stacking them neatly at a place as instructed by Railway representative at site. Also the resultant pits shall be re-surfaced and consolidating by ramming and levelling.	Nos.	91	854.25	77,736.75
65	10_510	Dismantling and releasing of existing Colour light Signals complete (upto 4 aspects) with or without Route Indicators, calling on signals, shunt signals etc., carefully without any damage to the gadgets, accounting and stacking them neatly at a place as instructed by Railway representative at site. The work	Nos	39	1666.5	64,993.50

		includes breaking the concrete foundation, closing the resultant pit and resurfacing it by ramming and levelling				
66	10_521a.	Transportation of Signalling materials by road as per the instructions of Railway representative at site. The work also includes loading and unloading of the materials. a. Transportation of Signalling materials upto 100kms	Per Ton. Km	6350	12.3	78,105.00
67	10_521b.	b. Transportation of Signalling materials more than 100km	Per Ton. Km	4000	7.52	30,080.00
68	10_522	Engaging mechanical excavators like JCB or other machineries for regarding and levelling the formation, dismantling any infringing structures, clearing and removing debris etc., with all leads and lifts etc., complete and as per the instruction of Railway representative at site.	Per hour	400	650	260,000.00
TOTAL						76,843,573.86
Escalation 100%						76,843,573.86
Total for Schedule-A						153,687,147.72

SCHEDULE - B

S.No.	DESCRIPTION OF WORK	QTY	RATE	UNIT	TOTAL
NS 1	<p>Alteration to Software ,wiring ,Testing and commissioning (including FAT & SAT etc) of existing EI equipment as per RDSO Spec No: RDSO/SPN/192/2005 or latest as per approved signalling plan & Table of control for existing EI at Dindugal Jn station & Madurai Jn station.</p> <p>This work involves alteration to the existing Electronic interlocking as per the Signalling Plan & Table of Control issued by Railways and the latest RDSO & HQ guidelines by modification to the existing Interface and Interlocking circuit, modification to the application logic software of VDU & MT, Alteration to the Relay Rack wiring as per the modified interface circuits including supply of necessary wiring material, upgradation & validation of Data logger & alteration in data logger wiring up to CMU , Testing of modified logics, commissioning and submission of As-made documents. Any additional cards are required for the above work shall be supplied by contractor. (Inspection by RDSO)</p>	2	3,438,203.00	Nos	6,876,406.00
NS 2	<p>Alteration to Software ,wiring ,Testing and commissioning (including FAT & SAT etc) of existing EI equipment as per RDSO Spec No: RDSO/SPN/192/2005 or latest as per approved signalling plan & Table of control for existing EI at VPT & MEJ stations</p> <p>This work involves alteration to the existing Electronic interlocking as per the Signalling Plan & Table of Control issued by Railways and the latest RDSO & HQ guidelines by modification to the existing Interface and Interlocking circuit, modification to the application logic software of VDU & MT, Alteration to the Relay Rack wiring as per the modified interface circuits including</p>	2	2,173,846.00	Nos	4,347,692.00

	supply of necessary wiring material, upgradation & validation of Data logger & alteration in data logger wiring up to CMU , Testing of modified logics, commissioning and submission of As-made documents. Any additional cards are required for the above work shall be supplied by contractor. (Inspection by RDSO)				
NS 3	<p>Alteration to Software ,wiring ,Testing and commissioning (including FAT & SAT etc) of existing EI equipment as per RDSO Spec No: RDSO/SPN/192/2005 or latest as per approved signalling plan & Table of control for existing EI at PUG, KLS, MPA & IBP, VPJ & IBP, KFC, AYR, VDM ,TMP ,TDN, TMQ, KGD, TY, SRT, NLL, CVP & IBP, KDU & IBP, TAY, GDN & IBP stations.</p> <p>This work involves alteration to the existing Electronic interlocking as per the Signalling Plan & Table of Control issued by Railways and the latest RDSO & HQ guidelines by modification to the existing Interface and Interlocking circuit, modification to the application logic software of VDU & MT, Alteration to the Relay Rack wiring as per the modified interface circuits including supply of necessary wiring material, upgradation & validation of Data logger & alteration in data logger wiring up to CMU , Testing of modified logics, commissioning and submission of As-made documents. Any additional cards are required for the above work shall be supplied by contractor. (Inspection by RDSO)</p>	18	1,465,000.00	Nos	26370000.00
NS 4	Road crossing/ Track crossing through Horizontal boring method at a depth of more than 1mtr from the bottom of sleeper/road and inserting 120mm outer dia and 103.5mm inner dia DWC pipe as per specification No.IS 16205 (part 24):2018 or latest with amendments and pushing of cables in DWC pipe through it. (DWC pipe 103.5mm inner dia and 120mm outer dia with couplers shall be supplied by contractor)	2500	1,056.53	metre	2,641,325.00

NS 5	Wiring of Inputs from Relay to Intermediate tag block & from intermediate tag block to Datalogger equipment (Tag block, wire coil, and all other materials are to be supplied by the contractor)	475	180.00	Nos.	85,500.00
NS 6	Upgradation of existing Remote Terminal Unit RTU from 32 digital to 64 digital inputs as per RDSO specification No. 99/2006 with latest amendments. (Inspection : Consignee)	8	56,699.00	Per RTU	453,592.00
NS 7	Supply of Goods Warning Board retro reflective type with MS angle of 75 X 75 X 6 MM X 3900 MM long (MS angle spec .No : IS:2062/1999) (Inspection : Consignee)	21	5,461.32	Nos	114,687.72
NS 8	Supply and installation of earthing arrangement as per RDSO specification No.RDSO/SPN/197/2008 with latest amendment for indoor equipments and field units. (Inspection by RDSO)	5	23,612.89	Nos	118,064.45
NS 9	Supply of Cable termination racks size 880mm X 2 meters made of 50mmX50mmX6mm thick MS angle with stainless steel nuts and bolts for fixing of the rack with powder coated and drilling suitable holes to suit hylam sheet and relay frames complete as per standard practice with tripod bases and reels insulators (for K rack,P rack ,and power rack) and with cable ladder of width 400mm and length of 2mtr .The Thickness of angle be to be 5mm.two angles of 40mmX40mmX5mm to be supplied at both ends and supporting flats of 25mmX5mm (Inspection by Consignee)	4	7,077.20	Nos	28,308.80
NS 10	Supply of Fuse Cylindrical 4 Amps (ND Fuse) as per RDSO Spec No.IRS.S.78/92 or Latest with amendments. Inspection by RDSO.	450	76.41	Nos	34,384.50
NS 11	Supply of Fuse Cylindrical 2 Amps (ND Fuse) as per RDSO Spec No.IRS.S.78/92 or Latest with amendments. Inspection by RDSO.	850	70.74	Nos	60,129.00
NS 12	Supply of Track lead Junction Box as per RDSO Drg.No.SA-20101/M complete with 450mm long 25mm dia pipe, terminals and stump	10	1,975.00	Nos	19,750.00

NS 13	Excavation of cable trench in hard laterite soil 300mm width and 400 mm depth and concreting for a width of 300 mm and thickness of 150mm placing bricks above the cable breadth wise horizontally. Concreting shall be of the ratio 1 cement: 2 sand: 4 jelly of size approximately 20 mm supply and laying of cables and bricks are not covered in this schedule (Cement, sand, jelly and all other miscellaneous materials shall be supplied by the contractor)	1000 0	460.00	metre	4,600,000.00
NS 14	Providing in position cement concrete of specified proportion including the cost of cement, centering and shuttering with 1:3:6 composition (1 cement : 3 sand : 6 grade stone aggregate 25mm nominal size) Cement, M-sand, stone jelly of 25mm and all other miscellaneous materials required for the work shall be supplied by the contractor) for covering GI pipes / concreting around location box foundations as per the instruction of railway representative at site. Watering on concrete for minimum 3 days shall be done by the contractor.	100	10,304.00	CUM	1,030,400.00
NS 15	Excavation of cable trenches except hard rocky areas to a depth of 0.5 Mtrs and to a width of 0.3 Mtrs	2000	71.05	metre	142,100.00
NS 16	Refilling of cable trench throughout with earth and consolidating the trench of depth 0.5 Mtrs and to a width of 0.3 Mtrs	2000	10.15	metre	20,300.00
NS 17	Supply and laying of DWC split pipe of 120/103mm in already DUG cable trench. (Supply Inspection by RITES)	9800 0	206.16	metre	20203680.00
NS 18	Supply of reflective under ground warning tape made up of LDPE , 100 microns, and 150mm width, the warning tape printed with warning message " S&T Railway Cable" (Inspection by consignee)	1850 00	4.84	metre	895,400.00
NS 19	Placing of warning tape while closing the Cable trench at a depth of 300mm from the ground.	1850 00	1.24	metre	229,400.00
NS 20	Supply of Multimeter similar to Fluke 117 Multimeter with Non-Contact voltage, Automatic AC/DC voltage selection or better (inspection by consignee)	5	19,699.00	Nos	98,495.00

NS 21	Supply of Rodometer (Measuring wheel) similar to Stanley or Fluke or better make (Inspection by Consignee)	4	4,092.00	Nos	16,368.00
NS 22	Supply of Digital AC/DC clamp meter handheld True RMS similar to Mecro Model 1080 TRMS or better (Inspection by Consignee)	4	5,480.00	Nos	21,920.00
NS 23	Preparation of Cable route plan and As made drawing from Orthomosaic map by conducting Lidar equipped Drone with Ground Control Points implemented using DGPS. This includes mapping of S&T assets such as Signals, Point Machines, Axle Counters, Cables, LC gates, Station, IBP, OHE Mast and Hectometer posts. This includes submission of map as a GIS project file as soft copy and of Cable route plan and As made in hard copies upto 2 copies. (Marking of newly laid cable route and marking of existing cable route will be done by contractor by foot with Railways staff in field for navigating buried cables.)	100	133,613.00	kms	13,361,300.00
NS 24	Supply of High Density Polyethylene Pipes (HDPE) of 110 mm Outer Dia, 10 mm Wall Thickness, along with required couplers as per specification No.IS 4984: 2016 with latest amendments and Material Grade:PE80.(Inspection by rites.)	3000	760.50	metre	2,281,500.00
NS 25	Horizontal Drilling at a approximately depth of 1.65/1.2m below the formation level of the earth including insertion of HDPE pipes along with couplings etc.(Supply of HDPE DUCT is not included).	500	1,100.00	metre	550,000.00
NS 26	HDD boring including insertion of High Density Polyethylene Pipes (HDPE) of size 110mm outer dia in the bore drilled along with couplers required, pulling of different size of signalling cables through HDPE duct by machine as instructed by railway representative. Boring trench shall be minimum 1.5m to 2mts below the platform, Track and yard/midsection. Radio or any other detection system should be used for avoiding damage to existing underground utilities. Minimum horizontal distance of	2500	2,500.00	metre	6,250,000.00

50m to 100m should be taken up with a launching point. Transportation of HDD machine, fuel and other materials required for boring and pulling of cable etc. (Supply of HDPE DUCT is not included).				
Total for Schedule-B				90,850,702.47

SCHEDULE - C

S.No.	DESCRIPTION OF WORK	QTY	RATE	UNIT	TOTAL
NS 27	Supply of PVC insulated underground unscreened armoured railway signaling cable copper conductor size 24 core x 1.5 sq mm as per RDSO spec. No. IRS-S-63/2014 rev. 4.0 or latest (Inspection by RDSO)	334680	408.28	metre	136,643,150.40
NS 28	Supply of Railway Signalling Cable, 12 Core x 1.5 sq mm. conforming to RDSO Spec. No. IRS:S:63/2014(Rev. 4.0) or latest. (Inspection by RDSO)	251300	234.82	metre	59,010,266.00
NS 29	Supply of integrated RED aspect Main LED signal, 110 V AC Retrofittable in existing CLS Housing and compatible with AC LED ECR as per RDSO Specification No. RDSO/SPN/199/2010 (Rev 1.1) or latest with amendments. (Inspection by RDSO)	50	8,500.00	Nos	425,000.00
NS 30	Supply of integrated GREEN aspect Main LED signal, 110 V AC Retrofittable in existing CLS Housing and compatible with AC LED ECR as per RDSO Specification No. RDSO/SPN/199/2010 (Rev 1.1) or latest with amendments. (Inspection by RDSO)	276	8,500.00	Nos	2,346,000.00
NS 31	Supply of integrated YELLOW aspect Main LED signal, 110 V AC Retrofittable in existing CLS Housing and compatible with AC LED ECR as per RDSO Specification No. RDSO/SPN/199/2010 (Rev 1.1) or latest with amendments. (Inspection by RDSO)	183	9,500.00	Nos	1,738,500.00
NS 32	Supply of Relay Non-AC immune , plug-in type , Style QN1 , DC Neutral line , 24 V , 8F - 8B contacts ,Front and Back contacts Metal to Carbon with Plug board , Retaining Clip and connectors confirming to BRS: 930 , IRS - S23 (as applicable).Inspection by RDSO	300	3186.00	Nos	955,800.00

NS 33	Supply of Relay , AC Immune, plug in type, Style QNA1 , DC neutral line, 24 V , 8F, 8B contacts, front and back contacts metal to carbon, with plug-board , retaining clip and connectors conforming to BRS:931A, IRS: S 60, IRS: S 34 & IRS: S 23 (as applicable).Inspection by RDSO	923	3304.00	Nos	3,049,592.00
NS 34	Supply of QSPA1 relays with plug boards, connectors and retaining clips as per IRS specification (Inspection by RDSO)	12	13,382.00	Nos	160,584.00
NS 35	Supply of QTA2 - track relays with plug boards, connectors and retaining clips as per IRS specification (Inspection by RDSO)	12	12,719.00	Nos	152,628.00
TOTAL FOR SCHEDULE-C					204,481,520.40

SUMMARY

SCHEDULE-A	153,687,147.72
SCHEDULE-B	90,850,702.47
SCHEDULE-C	204,481,520.40

CHAPTER-4A

**DETAILED GUIDELINES FOR SCHEDULE OF
WORKS & SUPPLIES**

Supply of materials as per the scope of schedule of works shall be with inspection as detailed below:

I. WITH RDSO INSPECTION:

1. All types of plug-in type relays with plug boards, fixing bolts and nuts, and retaining clips as described in the schedule.
2. LED Signals.
3. Railway signalling copper cable of different core.
4. 48F OFC (armoured) cable.
5. EI cards
6. Transformer rectifier 110V AC/24V DC, 5A
7. PBT terminals 25mm and 60mm centre
8. PBT fuse block as per schedule
9. ND type fuses as per RDSO Spec. No.: IRS: S-78/92 (to be procured from RDSO approved supplier)
10. Wire PVC 16/0.2mm, 3/0.75mm and 7/1.4mm copper
11. Supply of Maintenance Free Earthing as per RDSO/SPN/197/2008

II. WITH RITES INSPECTION

12. Supply of apparatus case-Full/Half
13. GI Pipe (50/100mm Dia), and GI Earth Electrodes
14. OFC integrated access device & accessories
15. DWC Pipe
16. Thermo shrinkable Jointing kit for Six Quad

III. WITH CONSIGNEE INSPECTION

17. GI wire, 50mmX6mm/40mmX6mm M.S. flat and Common salt for Earthing.
18. Foundation bolts, nuts & washers for apparatus cases of size 20mmx460mm to Drg.No.SA 112 A/M
19. EWS locks with keys (one key for 10 locks)

20. Hard wood shelf plank 37mm thick for apparatus cases.
21. Phynolic synthetic industrial fibre base fine weave cotton fibre sheet - 6mm thick to IS specification 2036 - 1995 - Type F5 sheet of 6mm thick for termination of cables in apparatus cases and diagnostic panel, and 3mm thick for FTOT/ relay rack blanking.
22. HRC fuse block and fuses of required ratings
23. T.W. planks 25mm thick, for fixing track feed resistance, anti-tilting arrangements for shelf type relays, for fixing EKT and for manufacturing Termination Box, Tool Box.
24. TW planks 50X150mm, 50mmx50mm, 25mmx100mm and 25mmx150mm thick for control panel frame, cable clamps and fixing cables.
25. Rubber mat.
26. Coloured twine balls.
27. Copper Battery lugs and eye lugs.
28. Copper eyelets for 16/0.2mm and 1/1.5 sq.mm wires
29. Copper tape 20mm x 1.5mm for Bus Bar.
30. Cotton waste, Grease Yellow, Honey Bee Wax and insulating tapes.
31. Electrolytic Condensers of rating depending on the circuitry requirements. The voltage rating shall not be less than twice the working voltage of the circuit.
32. Emery and sand papers& Fire Wood.
33. Fixing bolts and nuts (brass) for Terminal blocks and Fuse Blocks in FTOT & for fixing plug in type relays, 50 Way terminal boards etc.
34. Flexible conduit Pipes.
35. Kerosene Oil& Oil axle mineral.
36. Lead wool for packing signal poles.
37. MS angles 25mmx25mmx6mm, 50mmx50mmx6mm for manufacturing relay fixing frames.
38. MS flats 50mmx6mm & 25mmx6mm for manufacturing relay frames, Signal collar rings, clamps for bridges, boards, for fixing equipment's in apparatus cases

and also for fixing 'E' type locks on doors of apparatus cases, and for latching arrangement.

39. Paints of all kinds for IS Specification including anticorrosive paints.
40. Petroleum jelly.
41. Phenolic Laminated Sheet (Hylam sheet)
42. Pipe locks/G.I. Locks/NAVTAL locks-6 levers/Padlocks - 50mm with keys.
43. PVC hose pipes of sizes.
44. PVC sleeves of sizes.
45. PVC/Nylon sleeves (Sq.type) for writing cable core particulars
46. Raw wood varnish.
47. River sand (Coarse/Fine) or M-sand (Coarse/Fine)
48. Rosin core best quality.
49. Rubber gromites, rubber mat
50. Solder soft high grade.
51. Split pins for all mechanical fittings.
52. Cement
53. Stone Jelly (20-25mm)
54. Tags for terminals.
55. Terminal lugs (copper) for all sizes of wires.
56. Turpentine
57. Wire netting arrangement for CLS units
58. Wood screws (Brass of sizes & nails of sizes)
59. Reinforcement steel as per schedule
60. Paint for 6 PSC sleepers with yellow and white bands
61. CYPRUS silane Althatic, Urethane Resin Blend Solvent

TECHNICAL SPECIFICATION

DETAILED GUIDELINES FOR WORKS & SUPPLY SCHEDULES

1.0 The detailed specification for the works which are to be carried out by the contractor are as stipulated here under:-

1.1. The work shall be carried out according to the drawings approved by the Railways and shall conform to the provision in Signal Engineering Manual and Schedule of Dimensions. The contractor shall be solely responsible for the proper execution of the work as per specification.

2.0 Planning for cable route

2.0.1 A foot survey along the track shall be done to determine the best route for the cable.

2.0.2 The route shall be shown clearly on a cable route plan showing the actual alignment of track, giving offsets from permanent way or permanent structures. The diagram shall indicate the various road and track crossings, crossing with power cables, water and sewage mains and other points of importance. It is preferable to chart the route on a route plan on which the existing routes of power cables, etc. are shown. Changes, if any, shall be incorporated in the chart/plan.

2.0.3 While planning cable route plan, any future yard modification/doubling etc. shall also be kept in view.

2.0.4 As far as possible low lying areas, platform copings, drainages, hutments, rocky terrains, points and crossings, shall be avoided.

2.0.5 Cable route plan shall also be approved by Divisional officials.

2.0.6 Wherever JCB/Mechanized trenching or any kind of digging cases near existing cables is resorted, instructions contained in Railway Board's JPO No. 1/SG/2004

issued under D.O. letter No. 2004/Sig/G/7 dated 17.12.2004 or latest guidelines issued shall be followed.

2.1 CABLE LAYING:-

2.1.1 CABLE TRENCH:-Excavation of cable trench shall be made in all kinds of soils including clearing roots of trees, rocks bushes etc., to a depth of 1.0M/1.65M and a width of 0.3M/ 0.5M as required, for laying cables. Trenches shall be straight as far as possible and steep angles shall be avoided. Alignment of the main cable route as well as track/ road crossing will be given by Railways. While taking the trench, all the roots of trees, bushes, rocks, if any, should be cleared. The bottom of the trench shall be levelled and got rid of any sharp materials. Proper protection to cables to be given while crossing power cables, pipe lines, etc., as required by Railways.

- a. Signalling/power cables will be laid as close to the track as possible. The cable, track separation distance both within station limits and in the block section shall generally not exceed 6 Meters.
- b. It is desirable that the excavation of trenches is not done in long lengths and does not remain uncovered overnight. It is preferable that trenches are dug, cables laid and refilling done on the same day.
- c. The contractor who supervises the excavation work shall have the shoring materials ready on hand so that on banks where ashes or loose materials are encountered, shoring can be adopted.
- d. During excavation, the earth of the trenches should not be thrown on the ballast. The earth should be thrown by the side of the trenches away from the track. Plastic sheets/gunny bags may be used wherever necessary to cover the ballast.

2.1.2 In RE area the following clear distances shall be maintained between the signalling cables and the OHE mast or other structures likely to develop high potentials or switching stations earth.

a) Minimum distance between the signalling cables and OHE masts or other structures likely to develop high potential or switching stations earth.

DEPTH OF CABLE (Metres)	DISTANCE (Metres)	REMARKS
Upto 0.5	1.0	Provided cable is laid in concrete pipe/DWC pipe for 3M on either side of the mast/structure
	0.5	
More than 0.5	3.2	

b) Minimum distances between signalling cables and OHE mast or switching station earth.

DESCRIPTION	DISTANCE (Metres)	REMARKS
Switching station viz., feeding posts, sectioning post or sub-sectioning post	5.0	Provided cable is laid in concrete pipes/DWC pipe.
	1.0	
Earth, OHE mast or sub-station earth	1.0	

2.1.3 LAYING OF CABLES:- Before the cables are laid, a visual inspection of cable shall be made and it shall be tested for insulation and continuity of the cores. The insulation resistance of a new cable shall not be below 500 M.Ohms per Km. at 20 deg C. The cable insulation should be measured using a 500V insulation Tester (Megger). If there is wide disparity between insulation of different conductors, the condition of the cable should be thoroughly checked before permitting its use. Bedding and armouring shall be inspected to see that there has been no damage during transit or in storage. In case where the wheels are not available or the area is

not convenient for rolling the wheels, along the routes, the drum shall be mounted on the axle at one end of the trench and cable payed out. It should be carried out by adequate number of men, ensuring that the insulation of the cables is not damaged and no kink/twist is formed. In no case shall the drum be rolled on the road for laying of cables and the cable dragged on the ground for laying purposes. The cables shall be laid gently into the trench and not thrown out under any circumstances. Before laying of cable in the trench, a visual inspection shall be adequate for any damage or defect throughout its length. Normally cable laying should be commenced only after the relay room and apparatus cases, cable termination box on the route at the respective stations are ready and the cable should be duly brought inside at the relay room/apparatus cases immediately after the cables are laid, however, if for any reasons the cable is be laid in advance, special care should be taken to ensure that the coiled cable near the relay room/apparatus cases is fully protected before and during the construction of the relay room/apparatus cases and during final termination. The coiled cable shall be buried well in the ground such that the depth from the ground level to the top layer of the coil shall not be less than 1 M and shall be fully covered with a layer of bricks/Split DWC horizontally in its entire length and provided with adequate number of the cable markers. On no occasion, the ends of the cable should be left unsealed unless terminated properly.

Cable laying shall commence after the depth and width of the cable trench, quality of bricks/ Split DWC are jointly inspected by Railway Engineer's representative and contractor's representative and approved.

2.1.4 PLACING OF CABLES:- When several cables of different types have to be laid down in the same trench, they shall be as far as possible in the following order starting from the track side.

i) Telecommunication cables. ii) Signalling cables. iii) Power cables.

2.1.4.1 Cable shall not be normally taken over the running track at the time of cable laying by the contractor as this is likely to cause accident to trains and

damage to cables. If at any time the cable has to be taken across the track either in full drums or in spread out conditions it shall be done only in the presence of Railway's Supervisory staff and also after safety precautions have been taken to post flagmen on all the sides as may be required to stop any trains approaching the site of the fouled line.

2.1.4.2 At each end of the main cable/tail cable/power cable an extra coil length of 6 to 8 Metres should be kept.

2.1.4.3 At the time of commissioning of the cable, the insulation values of the cable should again be checked and the value obtained shall not be below 500 Meg.Ohms per Km at 20 deg.C. If there is wide disparity between insulation of different conductors, the condition of the cable should be thoroughly checked before permitting its use. The reading shall be recorded in a register based on Annexure 'C' for all power cables, main and tail cables.

2.1.4.4 The contractor shall furnish the final as made cable plan and cable route plan and in R.P film with eight prints showing the distance of cables from the nearest track centre.

2.1.5 **LAYING OF CABLE IN RCC DUCTS:**

Cable laying in RCC ducts shall be as per schedule.

2.1.6 **PLACING OF BRICKS:** (If Applicable)

One layer of country bricks of size of approximately 220mm x100mmx60mm shall be placed closely in breath-wise horizontally in the 1m X 0.3m trench over the cables. Two rows of country bricks of size of approximately 220mm x100mmx60mm shall be placed closely in breath-wise horizontally over the cables in the 1m X 0.5m trench.

2.1.7 SEPARATION OF POWER CABLES:-The signalling cable shall be separated from the power cable carrying 230V or above by a row of bricks placed vertically lengthwise between them wherever required.

2.1.8 RE-FILLING THE CABLE TRENCH:

After the bricks/ Split DWC are placed over the cable without any gap between two bricks properly, the excavated earth, shall be again put up in the trench. It shall be ensured that there are no stones or any sharp materials present. The refilled earth shall be consolidated and extra earth also shall be placed on the trench to compensate the shrinkage and consolidation of earth.

2.1.9 TRACK/ROAD CROSSING/MECHANISED OR METALISED ROAD:

Wherever signalling/power cable has to cross the track/road it shall be ensured that:

The cable crosses the track/road at right angles.

The cables do not cross in between or inside points and crossings.

The track/road crossings to be carried out as per the instructions of Railway representative at site.

a) In case of track crossing, work includes removal of ballast, excavation of trench 1m/0.5m below the ground level and across the track at places indicated by the Railways and covering, resurfacing the trenches and ballast to the original condition after placing RCC pipe/pipes in position.

b) RCC Pipes 100mm I.D & 150mm O.D or DWC pipe, shall be provided for track/road crossings. For each track crossings two numbers of RCC pipes with collar each 2M long shall be provided. For each road crossing required number of RCC pipes each 2m long with collar shall be provided depending upon the width of the road.

c) In cases where more than one RCC pipe is used, the bottom-most RCC pipe should be 1m below the bottom surface of sleeper for track crossing and road level for road crossing.

1.1.10 CABLE LAYING ON BRIDGES:-

On bridges, the cables are to be laid through GI Pipes 50mm dia- 3.65m thick/100mm dia-4.5mm thick/DWC pipe with off-set both ends and with coupling wherever required as per Railway requirement. The pipes shall be suitably supported over the bridges/drainage/culverts with brick masonry works of size 300x300x300mm at an interval of 2M in box type bridges and suitable MS clamps at an interval of 1M in Girder bridges. The end of pipes will be closed with brick masonry abutments of size 0.5mx0.5mx0.5m.

2.1.11 CABLE LAYING ON PLATFORM:

The work includes removing/breaking of existing RCC slabs on the Passenger Platform, trenching to a depth of 0.6m to accommodate the additional cables laid, covering the trench after the cables are laid, replacing the slabs removed or re-plastering with cement mortar and restoring to the original condition as per the instructions of Railway Representative at site.

2.1.12 CABLE LAYING IN ROCKY AREA:

Cable Coil Pits: Wherever the cable coil pits are required to be provided, the cable coil pit shall be excavated to a size of 1.5mx1.5m and a depth as instructed by railway representative at site in rear of Relay room/AFTC huts, location boxes etc. After all the cables are drawn and coiled, over the coiled cable one layer of country bricks of size 220mmx100mmx60mm shall be placed throughout entire area of the bottom of the pit without any gap and then refilled with earth and consolidated.

2.1.13 PROVISION OF RCC CABLE MARKERS:-The work involves supply of RCC cable markers as per **drawing No.CSTE/CN/OFC/1**. The lettering on the cable marker shall be "SIG" / "TELE" / "OFC" as per the instructions of Railway

representative at site, digging of pit to a depth of 800mm of size 300mmX300mm, casting of concrete foundation of size 300mmX300mmX300mm and placing of RCC cable markers on top of the foundation and refilling the pit and consolidating it by ramming. The cable markers shall be provided at an interval of 20 Mtrs. within station limits and 50 Mtrs. outside station limits throughout the cable route, diversions and also at every track/road/crossing.

2.1.14 Entry of cable at cabin, relay room, location boxes etc.

- a) All cable entry points in cabin, relay room, battery room, SM's room, location boxes, location huts, junction boxes, etc. must be closed with suitable masonry works, sand covered and plastering to prevent entry of rats etc. RCC slab shall be provided on the cable pit of cabin and relay room/station.
- b) Cable shall be protected on both sides up to a distance of 10 metre beyond building line of cabin, relay room, battery room, SM's room. In case of location boxes, location huts, junction boxes etc. cable may be protected for 1 metre on each side.
- c) Damage to cable is likely to occur if care is not taken in laying cable where the bed changes from solid support such as a foundation/masonry to soft support such as soft soil. The cable must not press against the edge of the solid support. The soft soil near the edge must be tamped and the cable raised slightly.

2.1.15 Cable termination

- a) The cable termination of signalling cables shall be undertaken by providing suitable location boxes/junction boxes on approved type termination.
- b) All the core of the cable (used or spare) shall be terminated on approved type termination in cabin/SM's office or apparatus cases. Each core so terminated will be provided with identification ferrules with letters or/numbers embossed on them as per requirement of circuitry.
- c) Termination of signalling cable on CT rack in relay room and in location boxes shall be done duly using identification marking on cable and on

conductors/terminals. This will enable easy identification of conductors in case of any failures or cable disconnections or cable cut done by outsider/ miscreants. A proper marking and termination practice ensures quick and easy restoration during failures.

d) For quad cable, jointing may be done as per instructions of Telecom Directorate of RDSO. For jointing of signal cable in straight portion arrangement shall be issued by RDSO separately.

2.1.16 Testing of cable

a) Before the cable is laid in the trench, a visual inspection of cable shall be made to see that there is no damage to the cable. It shall be tested for insulation and continuity of the cores. Thereafter, the cable shall be laid into the trench. Record of insulation and loop resistant must be maintained.

b) Testing of all main and tail cables after laying of the cable in trenches and also after termination in apparatus cases, in boxes and relay room shall be done.

c) Any defect noticed during the testing after laying the cable the same will be replaced.

d) All conductors in signalling cables must be tested for their insulation in dry weather every year as per instructions in para 20 below. A comparison of the test results between successive tests carried on a cable under similar conditions will give an indication of the trend towards deterioration of the insulating material over a period of time. If a sudden fall in insulation is observed, the cause shall be investigated and immediate steps taken up to repair or replace the cable.

e) In addition to the regular testing of cables in dry weather, random tests in wet weather may also be carried out, where considered necessary, to localise any sudden deterioration in insulation of cables.

f) After completion of any P.Way work in the vicinity of existing cable, testing of all cable may be undertaken to verify proper working of cable.

2.1.17 Instructions for insulation resistance testing of signalling cable

2.1.17.1 General

- a) These instructions apply only to cables used for Railway Signalling and do not cover open line wires and internal wiring.
- b) Insulation Resistance tests shall be made in such a manner that safe operation of trains is not affected. It shall be ensured that no unsafe conditions are set up by the application of test equipment.
- c) All conductors in signalling cables must be tested for their insulation at the time of commissioning and thereafter in dry weather every year preferably during the same part of the year.
- d) The insulation resistance tests shall be made when conductors, cables and insulated parts are clean and dry.
- e) In addition to regular testing of the cables in dry weather, random tests in wet weather may also be carried out where considered necessary.
- f) Cable conductors may accumulate electrostatic charge. The cable conductors shall be shorted or earthed to completely discharge any accumulated charge (i) before connecting the insulation tester while commencing the test (ii) before the insulation tester is disconnected when the test is completed. This is in the interest of safety of personnel and protection of equipment
- g) A 500V insulation tester shall be used for insulation testing. The fact that the cable has capacitance means that it has to be discharged before a measurement of the insulation resistance can be made. The insulation resistance shall therefore be recorded after the test voltage has been applied for one minute or so when the indicator of the insulation tester shows a steady reading.
- h) Any metallic sheath or metal work of any rack or apparatus case shall be bonded to earth during test.

2.1.17.2 Procedure

- a) Disconnect all cores of a cable at both ends. The disconnection may be made through links of approved type terminals, if provided.
- b) Connect one terminal of the insulation tester to the conductor under test and other terminal to all the other conductors being bunched together and connected to earth.
- c) Similarly test remaining conductors of the cable one by one.
- d) Insulation Resistance so measured shall not be less than 5 mega ohms per kilometer at buried temperature. If the insulation resistance is found to be lower than 5 mega ohms, the cause shall be investigated and immediate steps taken to repair or replace the cable to prevent any malfunctioning of the equipment and circuits.
- e) The results of the insulation resistance tests shall be recorded in approved proforma. A comparison of test results between successive tests carried out on a cable under similar conditions will give an indication of the trend towards deterioration of the insulation resistance of the cable. If sudden fall in the insulation resistance is observed the cause shall be investigated and immediate steps taken to repair or replace the cable

2.1.18 ERECTION OF APPARATUS CASES:-

- a) The work consists of pit excavation, casting foundation with bolts of adequate size having cement concrete of ratio 1:3:6 as per:-
 - i) Drg.No. SG/CN/02/6 (Apparatus case full size) – **For RTU Boxes, Drawing is similar to this with bigger foundation size.**
 - ii) Drg.No. SG/CN/02/7 (Apparatus case half/ Quarter size)
 - iii) The position of apparatus case will be indicated by Railways.
- b) Two 'E' types locks on the doors of full size apparatus case and one 'E' type lock on the front door for half size apparatus cases shall be firmly fixed and tested with 'E' type key . Locking and unlocking shall be smooth with least force. Suitable fixing arrangements for 'E' type lock on the door of apparatus case shall be fabricated by the contractor, if such arrangements does not exist. One hard wood shelf plank

37mm thick, planed and varnished shall be firmly fixed for all types apparatus cases/ battery boxes. Also latching arrangement for the back door shall be provided, if required.

c) All the apparatus cases (Full/Half/Quarter) are to be painted with Aluminium on the outsides and the location numbers are to be painted in 'Bold' letters.

2.1.19 CABLE TERMINATION BOX FOR CABLE THROUGHING, POINT MACHINE:

a) Excavating earth and casting concreted foundation as per **Drg.No. SG/CN/02/8** and C.T. boxes are to be erected on Rail vertically by using suitable size of bolts and nuts. The cables shall be taken through 2 Nos. of G.I. Pipes of size 32mm inner dia and 300mm length fixed at the bottom of the CTB with suitable fixing arrangements. It shall be ensured that there should be no break in the cable core during the process of taking the cables through pipes.

b) In case of CTB for Point machine, one no. of GI pipe 150mm long shall be fixed at the side of the CTB for drawal of jumper wires from point machines/lever locks with proper fixing arrangements. The CTB should be provided with EWS lock.

c) CT Box shall be painted with Aluminium paint and rails with black paint. The circuit particulars shall be painted neatly on the CT Box cover and the location number have to be painted in 'BOLD' letter.

2.1.20. SHIFTING OF APPARATUS CASES/ CT BOXES:

The work consists of excavation of pit around the existing apparatus cases full/ half size and CT boxes, shifting of the location box along with foundation clear of infringement from the track. The pit shall be excavated with maximum care to avoid any possibility of damage to the existing cables. The location box shall then be shifted carefully along with the foundation and cable termination, equipments etc., without disturbing the wiring. While shifting apparatus cases of full size, the brick wall covering the cables shall be broken before shifting the location box. After the

location box is shifted, brick masonry walls shall be constructed on the front and back sides of the location box foundation. River sand shall be filled upto to the floor of the location and the bottom shall be sealed with sealing compound.

2.1.21 CABLE TERMINATION IN APPARATUS CASES/CTB's:

a) At each apparatus case/CTB, the work consists of fixing all cables, fixing of Phynolic synthetic industrial fibre base fine weave cotton fibre sheet - 6mm thick to IS specification 2036 - 1995 - Type board along with terminal blocks and termination of cables/cores (conductors) using PVC/Nylon sleeves.

b) The underground signalling cable-main, tail and power shall be properly secured by wooden clamps of 50mm x 50mm teak wood inside apparatus case on 25mm x 100mm base plank. The cables shall be neatly skinned duly mending and taping of cable ends for termination bunched and terminated on the terminal board at the required place in order as per approved apparatus case circuit diagram. All the aluminium power cables of size 10 Sq.mm and above shall be provided with Aluminium lugs using crimping tool of appropriate size.

c) Railway will indicate approximate total number of cable core, terminations to be made in the apparatus cases/cable termination boxes. The contractor shall fix Phynolic synthetic industrial fibre base fine weave cotton fibre sheet - 6mm thick to IS specification 2036 - 1995 - Type F5 sheet as required by Railway. Terminal blocks with links, fuse blocks with fuse shall be fixed on the terminal board pertaining to each apparatus case and cable termination box using proper size of wood screws. Two suitable holes shall be made on either side of terminal block and fuse block for bringing cable for termination. The contractor shall prepare cable termination and wiring details of apparatus cases and C.T. boxes and obtain the approval of the Railway Engineer before execution as per the approved cable plan. Termination of main cables, tail cables, power cables, core/cores shall be made at the proper terminal as per approved wiring diagram pertaining to each apparatus case and C.T. Boxes. Before final termination, each cable shall be tested for continuity, insulation etc. and readings recorded and jointly tested and signed.

d) As per site conditions, the termination of new cables may be required on the existing terminal blocks or by fixing new terminal/fuse blocks in old apparatus cases which shall be done as per approved circuit diagram wherever required. The terminal particulars are to be re-painted or corrected on the doors of apparatus cases as instructed by Railways. Suitable clamping arrangements have to be made for the new cables and also the bottom the opening of the apparatus cases shall be closed with masonry brick work and sealed with cable compound.

e) After fixing all the signalling cables inside the apparatus case, the side opening shall be closed with masonry work and plastered. The inner side is filled with Sand and finally the bottom is sealed with sealing compound.

f) All the underground cables shall be provided with punched name plates showing total no. of cores, cross section of each core, Aluminium or copper

2.1.22 ALTERATIONS TO TRACK CIRCUIT:

a) Alterations to the existing track circuits involves by shifting the Feed end equipments/ Relay end equipments/block joints and installing them at a different locations and re-wiring them.

b) After completing the installation/alteration of track circuit, it shall be energised, tested, adjusted and readings recorded in track test record.

2.1.23. CABLE TERMINATION RACK [F.T.O.T]:

2.1.23.1. CONCRETING & ERECTION OF CABLE TERMINATION RACK [F.T.O.T]:

a) Cable termination racks shall be erected on suitable teak wood base frame of size 50mm x 150mm in the relay room/ Cable Hut at the required location as directed by Railway with suitable foundation bolts and concreted. The cable termination racks shall be painted soon after installation before cable termination work is taken up. Suitable cable ducts wherever required shall be provided to bring all outside cables to the termination rack. All the cables are to be neatly skinned, fixed by wooden clamps, bunched individually and terminated in order. The cable armours and the

rack shall be earthed. PVC/Nylon sleeves/indication sleeves shall be used for each cable and internal wiring termination and particulars written with paint on the PVC/Nylon sleeves.

b) The un-used space over the top of the cable termination rack shall be blanked using Hylum sheet of 3mm thick and suitable bolts and nuts.

2.1.24 TERMINATION OF CABLES:

The PBT terminal and fuse blocks shall be fixed firmly on the cable termination racks and serially numbered with paint for easy identification. Tags shall be provided for each terminal and painted, giving description of the circuit. Suitable rubber gromite shall be provided on the holes of termination racks. Copper tape of width 20mm x 1.5mm shall be used for providing bus bars. Suitable holes shall be drilled in copper tape for this purpose.

All the cables shall be identified by a punched label, tied on to each cable. Painted cable termination index board using Plywood of thickness 12mm – TW/rough finish as per instructions of site in charge with Aluminium grooved Channel frame of overall size 1200mmx1800mm –1no. shall be fixed in the relay room showing the terminal numbers circuit-wise. In case sufficient space is not available for fixing the board in one piece, it may be provided in parts retaining the overall size as per instructions of site in charge. `As made' terminal particulars shall be prepared in RP Film duly signed and handed over to the Railway at the time of commissioning.

2.2 RELAY ROOM:

a) ERECTION OF RELAY RACK(TPI/SIEMENS): Siemen's relay rack, (to accommodate 56Nos. of 'Q' series relays) shall be anchored using 'J' type foundation bolts and nuts (12mmx100mm) with washers. In places where 'J' type bolts cannot be used, special headed bullet type foundations shall be used. An insulator shall be provided for each foundation bolts and also to the ladders for carrying the cables. A MS wall angle of size 35x35x5mm shall be provided- one end grouted to wall and the

other end fixed to the relay rack as tie. The relay rack shall be painted soon after the installation before plugging of the Plug Board.

b) **WIRING OF RELAYS(NEW/ADDITIONAL/ALTERATION)**: Based on the circuit diagram, contact analysis chart shall be prepared by the contractor. The required number of 50 way terminal boards, plug boards and plug in type relays shall be fixed on the new/existing rack in the nominated places as instructed by Railway representative. The configuration of plug boards should be checked with the contact analysis chart. The nomenclature both on the rear and the front side of the plug board and on front side of the relays in the relay frame shall be painted.

Suitable arrangements shall be made in the relay rack for fixing condenser and resistance unit, required for slow to pick up or slow to release feature. Letter painting shall be made against each unit to identify the circuit for which it is used. Suitable wire supporting Tray made of PVC shall be provided for each row in relay rack to accommodate the complete bunch wherever the new wiring is carried out.

The wiring shall be carried out as per approved circuit diagram. The wiring shall be done on connectors and terminated on terminal clips by soldering process neatly, using high grade solder. PVC flexible wire 650V grade 16/0.20mm copper conductor shall be used. Potential free contacts of various relays required to be monitored by the Data logger should also be wired on the tag block of the data logger. In case of alteration to existing wiring, the wires and relays not required shall be removed. After completing the alteration work, the new wires have to be bunched neatly and brought to original condition. The relay rack wiring shall be tested initially by the contractor and then jointly with Railway Representative. Any addition/ alteration to wiring in the course of testing shall be carried out free of cost by the contractor. Different colours of wire shall be used for identify the power supply circuit wiring. In case of alteration, a different colour of wire from the existing one shall be used for easy identification.

Before plugging, the relays shall be checked visually and defective ones noticed shall be replaced duly reporting the same to the railways.

The painted Relay Index board using plywood of thickness 12mm T.W/rough finish as per instructions of railway representative with Aluminium grooved channel of size 1200x1800mm – 2 Nos. shall be manufactured and fixed in the relay room giving the details of the relays and their position in the relay rack. In case of alteration/additional relay wiring, the relay particulars shall be incorporated in the existing relay index board available in the relay room. If sufficient space is not available for fixing the board in one piece, it may be provided in parts retaining the overall size as per instructions of site in charge.

c) Hardwood stand with decolum finish of size 500mmx700mm of 25mm thick shall be fixed on M.S angles grouted to wall at relay room for keeping 'As made' circuit diagram at suitable height as required by Railway Representative. In case of additional/alteration to existing relay wires, the latest 'as made' circuit diagram shall be kept in the relay room on the existing hardwood stand.

d) The new relay room shall be provided with Double Key Door Lock arrangement.

e) Rubber mat having sufficient width should be placed in front and rear of all the relay rack and FTOT. The mat should not be less than 6mm thick and it should withstand 650V AC.

f) **FUSE BLOWN OUT INDICATION:**

Fuse Blown out indication shall be provided using Hylum sheet 5mm thick and 50mm width and fixing of 5mm LEDs and resistance. The Hylum sheet shall be fixed by the side of the corresponding Fuse Blocks. Separate switch shall be provided for each circuit. This arrangement shall be made near FTOT inside the relay room. conductor and from and to details etc. and also painted inside each apparatus case.

g) The contractor shall submit final 'As made' details for each apparatus case and C.T. box in R.P. Film duly signed. As made shall also show the position of various

equipment fixed in each CT Box, apparatus case and battery box, cable details, from and to etc. PVC/NYLON sleeves shall be provided on each cable and cable core number and name of circuit shall be painted on them.

2.3 WIRING OF SIGNALS/LC GATE CONTROL/TRACK CIRCUIT/POINT CONTROL RELAYS IN LOCATIONS:

Relays, transformers, heavy duty contact relays and other gadgets controlling the above functions shall be firmly fixed on suitable relay frames using MS Angles of size 25mmx25mmx6mm and MS Flats of size 25mmx6mm inside respective apparatus cases. The MS relay frame shall be painted before fixing. Laminated Termite Proof Particles board of 25mm thick of requisite size shall be fixed inside the apparatus case for fixing Resistance and Electrolytic condensers. In case of shelf type relays, the relays shall be mounted on shelf planks with suitable anti-tilting arrangement. If plug in type relays are used, 16/0.2mm flexible copper wire shall be used for wiring. For shelf type relay and point motor circuit, 3/0.75mm copper wire shall be used. There shall be no joint in the wire. For soldering the wire to relay clips of Plug-in-type relays in relay racks, best quality rosin core solder shall be used. The complete wiring shall be tested jointly and linked to tail cable.

- a) The description of all relays, fixed in each apparatus case shall be painted inside apparatus case doors. PVC/Nylon sleeves shall be provided on each wire before termination on terminal block. The name of the circuit and wire where connected shall also be painted on the sleeves.
- b) Wire should be soldered to relay clips and suitable copper eyelets crimped with crimping tools shall be adopted before the termination. The wiring and termination shall be carried out as per the approved circuit diagram. The relays details shall be painted. PVC/Nylon sleeves shall be provided for each wire before termination and the details of circuit and where the wires connected etc., shall be painted on the sleeves. The complete wiring shall be tested.

2.4 ALTERATIONS TO PAINTING PARTICULARS AT LOCATION BOXES:

Consequent to introduction of new circuits or alterations to existing circuits in apparatus cases/CTB, new nomenclature should be painted on the cable sleeve. And also the new particulars should be painted on the inner side of the doors at apparatus cases/CTB.

2.5 FILLING OF EARTH AROUND LOCATIONS:

The work consists of filling of earth around the foundations of signals and apparatus cases for a width of 0.5m on all sides from 150mm below the foundation top to ground level. The earth shall be consolidated after filling.

2.6 INTERCONNECTIONS:

a) Interconnection arrangements between the cable termination rack, relay rack, control panel, power and battery room shall be carried out as follows:-10.1.1 Interconnection between relay rack and FTOT, relay rack to control panel

a) shall be carried out with cable having plain, annealed copper, multi core/single core conductor of 1/1.5 sq.mm PVC insulated, armoured, unsheathed 1100v grade cable.

b) Relay rack to relay rack wiring shall be done with 16/0.2mm PVC copper conductor by soldering process.

c) The inter-connection between the relay rack and power room, power room and FTOT, Block Instruments and FTOT shall be carried out with underground, armoured, sheathed, power/ signalling cables of adequate length. The termination shall be carried out using suitable size of copper eyelets/sockets. Inter-connection between power rack and battery room, shall be carried out by using suitable underground cables.

d) All the interconnecting wires shall be supported by means of Aluminium ladder. Ladder of suitable capacity shall be manufactured using Aluminium angles of size

37mmx37mmx5mm and Aluminium flats of size 25mmx6mm. The inter spacing between two rods of the ladder shall not be more than 125mm. The corners of the ladders as well as the inner path of the ladders shall be of curved shape and shall not damage the insulation of the inter-connection wire. The bends also shall not be steep. The bottom of the ladders shall be provided with hylum sheet of 3mm thickness. The ladder shall be fixed firmly with proper Aluminium flats.

e) The interconnection arrangement includes laying of signalling cables in ducts wherever necessary as indicated by Railways. Wherever cables are taken through cable ducts inside relay room/ battery room etc., the ducts shall be filled with river sand upto the floor level and covered with RCC slabs.

f) All connections/terminations shall be tested by the contractor and after satisfying himself jointly with Railway Representative. Any alterations required shall be carried out by the contractor free of cost.

g) Cable details, functions allotted to each core and terminal numbers shall be prepared in standard size RP film and handed over to Railways.

2.7 MASONARY PLATFORM FOR POST TYPE TELEPHONES:

Excavation of pit, construction of masonry platform as per **Drg.No.SG/CN/02/12** with bricks of approx. size 220mmx100mmx60mm to operate signal Post Telephones near Home Signals and plastering as per the instructions of Railway representative at site.

2.8 EARTHING.

a. All apparatus cases, battery boxes, CT boxes, armours of cables, battery chargers, transformers, power panels, Control panel, Block Instruments/Control test panel/Cable Termination Rack/Relay Racks, etc., shall be earthed. If number of apparatus cases is grouped at a place, one earth shall be provided for all. Otherwise, separate earth is to be provided for each apparatus case. The earth resistance shall not be more than 10 Ohms.

b) This work includes excavation of pit at a given location as per **Drg.No.SG/CN/02/13** on natural soil, supply and fixing earth pipe covering the same with the mixture of 2kgs. of charcoal, 2 kgs. of common salt and earth. A concrete enclosure has to be provided around the earth pipe as per drawing. The earthing shall be done with MS flat of size 35mmx6mm/19 C cable as required by Railways.

2.9 PROVISION OF LOCKS:

Universal locks (EWS Locks)/GI locks/Navtal Locks shall be provided for CLS units, Route Indicators, point machines, apparatus cases, battery boxes and C.T. boxes wherever necessary.

2.10. PAINTING:

- a) Block instruments, Block counters, control panel, EKT's and all signalling gears installed shall be painted in accordance with the standard practice of Southern Railway and as per Signal Engineering Manual.
- b) While painting, initially one coat of primer and afterwards 2 coats of enamel paint shall be applied.
- c) 30.3 The details of paints to be used on the signaling gears are shown below.

S.No.	Signalling Gadgets	Colour to be painted (outside)
I	Signal(Colour Light Signal) & Shunt Signal:	
	(i) Surface base	Black
	(ii) Post	Aluminium
	(iii) Aspect unit complete	Black

II	All types of apparatus cases and cable termination box	Aluminium
III	Track Lead Disconnection Box	Black
IV	SM's Control Frame Instrument	Green Enamel
V	Point machines	Black
VI	Electrical Detectors	Aluminium
VII	Electrical Lever locks & Circuit Controller	Black
VIII	Key Transmitters	Red or Black
IX	(i)Double line SGE Block Instrument (ii)Single Line Token Instrument (iii)Single Line Tokenless Instrument	Green Enamel Grey Enamel Green Enamel
X	(i)Interlocking frame supports, quadrants, lever below quadrants, locking trough, catch handle connection & Indication plates (ii)Down rods between Lever tail and crank (iii)All types of cranks, compensators, Facing point Locks, lock bars & Detectors. (iv)Roddings& Rod Rollers	Black Black Black Red Oxide Paint

XI	(i)Point Lever	Black
	(ii)Lock Lever	Blue
	(iii)LC Gate Control Lever	Chocolate
	(iv)Spare Lever	White
	(v)Signal Lever	Red
XII	Rails	Black

2.11. RELEASING OF S&T GEARS:

- a) An inventory of all the S&T gears to be released in the yard should be taken up jointly with Railway's representative duly indicating as serviceable or unserviceable before NI working commences. The same should be submitted and approved by the Engineering in-charge.
- b) The S&T gears as mentioned in the schedule should be released carefully without damage and stacked at a place indicated by the Railway representative.
- c) All the concrete foundation of the released gears like signals, location boxes, 'A' type bases, etc. should be broken completely. The resultant pit shall be refilled with earth, rammed and re-surfaced. In case of releasing the stands grouted on the walls/floor should be restored to original condition and neatly plastered.
- d) All the unserviceable released materials shall be guarded by the contractor till they are auctioned.

2.12. TRANSPORTATION OF SERVICEABLE MATERIALS:-

The released serviceable materials shall be transported from the work spot to the Stores Depot as mentioned in Vol. I. Loading and Unloading of materials shall be done by the contractor. The released material shall be stacked neatly by the contractor in the Railway Stores.

2.13 WIRES TO BE USED IN S&T INSTALLATION:

The size of various wires/cables to be used for the wiring of signalling and telecommunication gadget is indicated below:

S.No.	Size of wire	Circuits/Equipments
1	16/0.2 mm Copper	Relay rack wiring Panel wiring Plug-in type relay wiring at location
2	7/1.4mm Copper	Power equipments Point control wire(NW, RW & CW)
3	3/0.75mm Copper	Power equipments in locations Relays other than plug-in type Block instrument, Rotary key transmitter All Signals, Electrical detector SM's control instrument Point machine Loop wire at locations

2.14 TESTING & COMMISSIONING INCLUDING AS MADE:

a) The entire installation shall be tested by the contractor and after satisfying himself, the railway shall jointly test along with the contractor. Any alteration during testing shall be carried out at free of cost as required by Railways before commissioning. All 'As made' documents have to be submitted before commissioning. Each installation shall be tested in the presence of the supervisory officials deputed by the Railways as soon as the particular installation/equipment is installed and unless the working of the equipment is actually ensured, it will not mean that the work has been completed to the satisfaction of the railway. This work involves testing and commissioning of the entire installation.

b) **`AS MADE' DETAILS FOR SOR :**

Before testing and commissioning of the entire installation, eight copies of final 'as made' details as hereunder **(as applicable to this work and as per instructions of Site Engineer)** shall have to be supplied duly incorporating all particulars for the station. Circuit diagrams prepared in AutoCAD 2000 or latest will be supplied by Railways in compact discs. All 'As made' shall be prepared by the contractor in AutoCAD 2000 or latest and submitted in compact discs in duplicate. All 'As made' documents/plans shall be made by the contractor in R.P Film **to RAILWAY STANDARD only as laid down in the schedules (SOR)** and shall be handed over to the Railways, duly signed.

- I. 'As made' circuit diagram
- II. 'As made' Cable Plan
- III. 'As made' Cable Route Plan/Red boundary plan
- IV. 'As made' track bonding plans
- V. 'As made' power supply layout diagram
- VI. 'As made' contact analysis chart
- VII. 'As made' relay disposition chart
- VIII. 'As made' Termination particulars of all locations & FTOT

c) However, contractor shall hand over along with the negatives, 8 copies in each, duly making book-let neatly bound. Out of 8 sets, 2 sets of individual circuit and other plans shall be kept in thick plastic cover (2 sheets back to back in one plastic cover) duly filled in plastic folder and handed over to Railways. 2 copies of the above 'as made' details before joint testing is taken up with Railways. Any correction made during testing shall be incorporated before submitting 'FINAL' 'As made' plan.

d) The contractor is required to supply the following or other bound registers 200 pages **as applicable to this work and as per instructions of Site Engineer**, with good quality papers duly filled.

1. Cable meggering register,
2. Relay Register,
3. Earth resistance register.

2.15 PROCUREMENT OF CEMENT:

a) Cement for use in the works shall be procured by the contractor from the main producers/their authorised dealers/ authorised stock yards which shall conform to BIS Specifications.

b) Cement bags preferably in paper bag packing should bear the following information in legible marking:

(i) Manufacturer's name

(ii) Registered Trade Mark of manufacturer, if any (iii) type cement

(iii) Weight of each bag in kgs. or No. of bags/tonne. (v) Date of manufacturer, generally marked as week of the year/year of manufacturer, e.g., 30/93 which means of 30th week of 1993.

c) To ensure quality control, test certificates from the manufacturer should be produced by the contractors, which should confirm to the relevant specifications [latest may be incorporated].

d) Railways may also take samples during the course of the work and get the cement tested to ascertain their conformity to specifications.

e) When such sampling is done, it shall be as per IS Specifications.

f) Test on the cement as per IS: 4301 shall be carried out in the field level. Some of the tests which may be carried out are:

(i) Compressive strength

(ii) Initial and final setting time

(iii) Consistency

(iv) Soundness

3.0 Laying of Telecommunication Cables (Quad):

3.1 HANDLING OF CABLE DRUMS & PAVING OF CABLES:

i. The drums shall be unloaded by the side of the Railway Track from either a crane or any other suitable means very carefully so as not to cause any damage to the cable. The drums at site shall be protected until they are laid.

ii. On each drum there are two ends, A&B. The 'B' end of one cable length shall meet 'A' end of the next cable at a joint. The 'A' end shall be normally on the top unless indicated otherwise on a drum.

iii. The drums shall always be kept upright, i.e. axle in parallel position to the base. The drums shall not be set by jerks but shall be handled slowly and with care. The walls of the drums should not be damaged while moving the drums if required for unrolling.

iv. The drums shall normally be unrolled at the same place and the cable carried by workmen near the trench. The drums shall not be dragged in any case. But where drums of cable have to be moved, would always be rolled in the direction of the arrow, otherwise the coils tend to unwind and the cable may get battered. In case no direction arrow is marked on the drum, remove several battens and determine the direction in which the cable is coiled. The arrow should then be painted on the drum

pointing in the opposite direction in which the upper cable end is coiled so that future handling of the cable drum is facilitated and then replace the battens carefully.

v. The drum should be properly mounted on jacks (or on a cable wheel) making sure that the spindle is large enough to carry the weight without bending and that it is laying horizontally in the bearings so as to prevent the drum creeping to one side or the other while it is rotating. Before attempting to pull off the cable, remove the end protection box attached to the flange of the drum and cut the security ropes so as to leave the cable free to move..

vi. If a portion of the cable only is taken out from the cable drum, the battens should be immediately replaced to prevent damage to the balance of the cable. This is important.

vii. The use of steel bars between the bolt heads to 'jump' or turn the drum around is dangerous to staff and likely to damage the drums. A better method is to use two steel plates with grease between them. By standing the drum on these greased plates, it can be easily elevated round to the desired position.

viii. All care should be taken in handling cable drums with a view to ensure safety not only of the cables but also of the working party handling them. The man should not be allowed to break the cable drum by standing in front but only from side.

3.2 Rewinding and Redrumming of cables.

i. If for any reason it is found necessary to rewind a cable on a drum, cable drum with a proper barrel diameter not less than of the original drum should be chosen.

ii. The drums should be mounted on cable jacks during rewinding operations using proper size of spindles passed through the flange holes, which will not buckle under the lead. The cable should not be bent opposite to the set it is having already.

iii. In the redrumming operations, drums should be so turned that the cable passes from the bottom of the original set with as little gap as possible.

iv. Replace all the lagging on the cable drum.

3.3 CABLE LAYING:

- i. It is advisable to employ the same people at the same place or job while cable is being laid.
- ii. Before commencement of the laying, inspection of the trench and inspection of protection works should be carried out so as to ensure their conformity with the specification. The trench bottom should be clean, smooth and free of small stone. When the soil contains stone or pieces of rock and therefore cannot be raddled, sieved earth about 10 cm. thick should be used both for the bedding on which the cable is laid and for covering the cables.
- iii. The cable drum should be brought as close to the cable trench as possible. It should be lifted with the aid of cable jacks firmly mounted on a support of stone or wood. The spindle should be minimum of 55 mm diameter and have a clearance from ground by 5 to 10 cm.
- iv. Where necessary the cable drum may be placed at such a point so that 2/3 of the cable is laid directly in one direction and the balance in other direction. Care should be taken in such a case to see that there are no kinks or loops in the cable.
- v. The wooden battens on the drums should be carefully removed shortly prior to laying and before the drum is mounted on the jack. The nails on the lagging should be carefully removed.
- vi. While rolling a cable drum for laying, the drum shall be supported on an axle running through its centre, the height of the axle being such that the end frames are free to rotate and do not touch the ground at any point. The cable shall be carefully uncoiled by gently pulling the cable assisted as necessary by carefully turning the drums. The quick pulling of the cable or turning the drums shall be avoided at all costs. Each cable drum shall be broken while laying is in progress to prevent sharp bending or buckling, particular-ly when the cable coils are sticking together.
- vii. The method of mounting the brakes is shown in **Drawing No.OFC/2002/12**

viii. When drums are turned for change of direction, wooden blocks shall be carefully put under the drum bolts, which stand out from the drum discs.

ix. It is customary for the mate to stand in a commanding position where he can view the entire route, and shout evenly timed calls to his men to pull. If there is proper synchronization between the mate's calls and the pulling by the men, the cable will leave the drum without difficulty. It is important that the cable should be pulled with steady and even pulls and not be unnecessarily jerked or strained. On no account should a cable be allowed to twist or kink as this is likely to spring the Armour and fracture the outer serving of the cable. When pulling cable around bends, one or two men should be stationed to give the cable the correct bend when it passes.

x. When the cable drums are exposed to great heat before laying, then danger exists that the individual coils and layers stick together in spite of the half overlay. Special attention should be paid to see that no buckling of the cable occurs while pulling the cable. A man should stand near the drum and loosen the cable carefully by hand and shout a warning whenever the cable cannot be loosened. Separation must be affected as close to the drum as possible as otherwise kinks may result. The rate of pulling should also be slow to prevent possible damage to cable that is being carried when the paying out stops. The drum should be kept in shade where possible.

xi. While laying the cable, employ adequate number of men such that the cable can be conveniently carried by them in both hands without stretched arms. The distance between any two persons carrying the cable shall be from 2 to 10 metres depending upon weight of cable such that the maximum sag of the cable between any two persons is not more than 0.5 metres.

xii. The cable shall be gently drawn by pulling the cable, which may be assisted as required, by smoothly and slowly turning the winch. The cable shall not be twisted on any account

xiii. Before laying is commenced, the cable shall be uncoiled first in a straight line supported by men and then carried to the trench and laid gently & carefully ensuring that cable is not stretched while putting in the trench..

xiv. While laying work is in progress one man must continuously observe the cable along its length in order to determine whether any indentations, holes or other damaged parts are apparent. Such damaged parts have to be protected immediately by the cable jointer provided with the Laying party.

xv. When two or three turns of cable are left on the drum, the pulling should be stopped and the inner end of the cable removed from the slot in the drum. Pulling should then be continued. If this is not done the cable end is likely to be stretched and damaged.

xvi. The ends of the optical fibre cable should have an overlap of 10 M at the end of each drum for jointing purpose.

xvii. The conditions of the cable shall be visually inspected throughout its length and in case any damage or defect is noticed, the trench shall not be filled up until the Engineer's representative is notified to examine and authorize filling of the trench.

3.4 MINIMUM BENDING RADIUS:-

Cables should always be bent (or straightened) slowly, they should never be bent to small radius while handling. The minimum safe bending radius for optical fibre cables should be 30 times the diameter of the cable but wherever possible larger radius should be used .

3.5 CABLE RESERVE:

At the following locations, it will be necessary to provide reserve cable for future possible use or as directed by Railway engineer at site.

a) Where a change to cable line is expected, the reserve to be allowed depends on circumstances.

- b) In freshly banked soil to allow for slipping of the bank an allowance of 30 cm. should be provided for every 10 meters of trench (3 percent). The cable should be laid in a sinuous form.
- c) Near roadways, buildings and culverts, reserve of 5 meters should be allowed at drum end.
- d) On each side of major girder bridge a reserve of 10 meters should be left. For minor bridges 5 meters shall be left.
- e) Where remodeling works on culverts, bridges and track doubling work are going on, it may be necessary to keep loops of cable as an extra reserve pending finalization of its future route.
- f) At the cable hut a loop of 10 meters in the cable pit.
- g) At every joint a loop of 10 meters on either side.

4.0 Six Quad Jointing Procedure

- a) For jointing of 6 Quad cable /PIJF cable jointing pit of depth , 1.0 mtr length of 1 mtr and to a width of 1 mtr has to be made. One layer of country bricks of size 220mmX100mmX60mm should be placed breadth wise above the joint and the pit should be closed and consolidated. The pit surface is levelled by ramming the earth. In case of loose soil or mud bricks or ballast may be used if necessary. A tent may be placed over the pit to protect against adverse weather/dust.
- b) Bend the two cable ends slowly into an "S" shape taking care that the cables are not strained excessively and minimum overlap of 350 mm is available.
- c) Prepare the cable ends as per the detailed installation instructions for making heat shrinkable joints for 6 Quad Cable.
- d) Preliminary checks may be carried out using multimeter for continuity of conductors & breaks/crosses etc. if any. The insulation is measured between all conductors bunched together and screen / Armour by 500V megger. The equivalent average insulation resistance/ conductor/km is obtained by multiplying the megger reading with the number of conductors and the length of cable in Kms.

e) Slip the quad rings on a PE insulated quad of the cable end. Similarly slip another quad ring on the corresponding PE insulated quad of other cable ends. Select a conductor slip a PE sleeve over it. Take the corresponding conductor of the corresponding PE quad of the other cable end. Peel off the PE insulation from these conductors for a length of 50 mm.

f) Bring the two conductors together perpendicular to the cable. Twist the two conductors by rotating giving approximately 10 turns for length of 25 mm. Cut off the surplus wire. Solder half the length of twisted conductors using solder resin core, solder bit flat & blow lamp. Fold the twisted conductors along the main cable conductors and allow it to cool. Draw a PE sleeve over twisted joint in such a way that former projects equally on the two sides of the latter and equally covers the polyethylene insulation of the two conductors. It should be ensured that the PVC sleeve fits properly over the twisted joint and is not able to move easily over it.

g) For tapping joint, select the quad from which the circuit is to be tapped. Cut the quad. Slip numbered group ring over both ends as also on the lead wire bunch of required transformer. Select a conductor in one quad and slip a P.E sleeve over it and its other end. Select a conductor, a short lead wire and transformer lead wire and make twisted joint. With the other end of the short lead and other cut end of same conductor, make another twisted joint.

h) The conductors of remaining PE quads should also be joined accordingly.

i) Complete the joint as per the detailed installation instructions for making heat shrinkable joints for 6 Quads Telecom. cable. (Annexure 4.3).

4.1 Jointing & termination of PIJF & lead sheath derivation cables.

i. Thermo shrink joints of appropriate size for straight through or branch off joints as per DOT specification shall be provided.

ii. All the derivation / PIJF / cables shall be terminated on krone or CT box of suitable size duly mounted on the wall in subscriber premises.

4.2 CAPACITANCE UNBALANCE

a) In the electrified sections, the capacitance unbalances between cable conductors and the cable sheath/ Armour (earth) introduces appreciable noise in the circuits. This can be reduced by polling i.e. connecting cable pairs straight or across at normal joints.

b) In any manufactured length of a cable, the capacitances between conductors of a quad and between conductors of adjacent quads and those between conductors of a pair and the cable sheath (earth) are not perfectly balanced which gives rise to the capacity interference between various circuits and the circuits and earth. Balancing of these capacitances is hence necessary to limit the cross-talk and to bring the cross-talk attenuation within permissible values. This is done by adding extra capacitances between pairs. The permissible limits of capacitance unbalances in balanced cabling is 40 pf for full loading section.

4.3 ACCEPTANCE TESTS FOR 6 Quad AND PIJF CABLES

1) The characteristic impedance of unloaded 6 Quad Telecom. Cable (IRS TC-30) is $470 \pm 10\%$ at 800Hz. When loaded with inductance of 88mH, the characteristic impedance is $1120 \pm 10\%$. Joint tests are to be carried out by Engineer's representative and contractor's representative for accepting the cable from the Contractor.

2) 5.9.1 Testing of V.F. Transformers: Following tests may be conducted on VF Transformers before using in the joint.

a) Continuity and DC resistance of windings: Use an AVO meter to check continuity. Measure DC resistance of primary/ secondary windings with a LCR bridge. The readings obtained should be comparable.

b) Insulation Resistance: Connect one lead of a 500 V megger to one winding connect the other lead of Megger First to another winding and take reading. Next connect it to all other windings connected together and the case and again take the reading. Insulation resistances should not be less than 10,000 Mega ohms.

c) Insertion Loss:- Adjust output level of transmission measuring set to 0 db and connect it across the primary of transformer. Connect a Db. meter on the secondary side □ Db. meter reading should not be more than 1 db.

4.4 LOOP RESISTANCE AND CONTINUITY TEST:

Instrument to be used: Multimeter

a) The multimeter will provide ready means for continuity test and also it will be capable of testing D.C. and A.C. Voltages, D.C. resistance and also low frequency levels for test and maintenance purpose. The input sensitivity shall be at least 100 k ohm per volt of D.C. and 10 K ohm per volt of A.C.

b) The maximum average loop resistance of a pair measured with direct current at 20 deg. C. shall be 56 ohm per km. for the PE quads of 0.9 mm diameter copper conductors. The nominal loop resistance of a pair shall be 55.2 ohms per km at 20 deg. C. This test shall be carried out only on untapped pairs of cable.

4.5 INSULATION TEST

Instrument to be used □ Megohms Meter/Megger

a) The insulation resistance measured between a conductor of a quad and all conductors of all other quads connected together to the sheath and earth shall not be less than 625 megohms per kilometer when measured at 100 volts D.C. after energising for one minute at a temperature of not less than 16 deg. C. The remaining three conductors of the quads under test may be left floating.

The insulation at 16 Deg. C may be found out by the formula □

Insulation at 16 Deg C = Insulation $\times 1.04^{(T-16) \times 9/5}$ at T deg C

b) For measuring insulation all conductors may be bunched together and tied properly with a bare wire and insulation to the sheath/screen measured. The insulation resistance per km can be obtained as – No. of wires tested \times Deflection (Meg) \times Length (KM Megohms per Km.).

4.6 FREQUENCY ATTENUATION & TRANSMISSION MEASUREMENTS:

Instrument to be used □ Transmission Measuring Sets (IRS TC 43□87).

Two Transmission Measurement sets are required for this measurements. One set is kept at one end of the cable and the other at the other end of the cable. Before sending the set to other end the zero errors of all meters are checked. Zero dB tone is sent from one end and the level received at the other end and is measured. Wherever the frequency is changed the zero level should be adjusted again. Zero level of the tone should also be adjusted first before taking any reading. The readings are taken at the following frequencies 300 Hz, 400 Hz, 600 Hz, 800 Hz, 1000 Hz, 1400 Hz, 1600 Hz, 2000 Hz, 2400 Hz, 2800 Hz and 3000 Hz. and recorded. The transmission loss, return loss, insertion loss etc are measured and recorded.

4.7 CROSS□TALK MEASUREMENT

Instrument to be used □

a) Cross talk measuring set (IRS TC□45)

b) oscillator 1 kHz/800 Hz

Zero dB, Tone of 800 Hz is given on one Pair and cross Talk is measured on the other pair in the same quad. Also the Cross□Talk has to be measured in adjacent quads, Cross□Talk is measured at 'Near□End' and also 'Far□End'. The Far□End Cross□Talk attenuation between any two air spaced paper insulated VF pairs at a frequency of 800 Hz shall not be less than 65 dB. The Near□End Cross□Talk shall not be less than 61 db.

4.8 NOISE LEVEL MEASUREMENT □ PSOPHOMETRIC

Instrument to be used – PSOPHOMETER (RDSO SPECN. No. STE/RE/C/SPN(MI)□ 1975 (Latest)

SIEMENS Germany Model No.V 2233(1994) or APLAB India Model No. 1071/R(1995) are presently used for measurement of noise. The detail procedure for measurements is supplied by manufacturer. The far end of test pair is terminated at the resistance equivalent to characteristic impedance of the cable (600 or 470 or 1120 ohms). At near end psophometer is connected. The readings of weighted and unweighted noise can be directly read on the meter. The permissible limit of psophometric voltage is 2 mv.

4.9 Measurement of Circuit elements

Instrument to be used -Impedance Bridge(L > C > R Bridge) {Specn. No.STT/RE/SPN(MI)□1973}

This measures electrical data of components like coils, capacitors and transformers as well as of subassemblies, amplifiers, filters etc. The measurement of resistive and reactive components of impedance and admittance can also be measured with this bridge. These parameters are generally factory tested and need not be measured at site. The impedance bridge can also be used for assessing the distance of cable fault/low insulation quad with reference to healthy quads.

4.10 TOOLS & ACCESSORIES REQUIRED FOR JOINTING OF CABLES & TERMINATION:

S.no.	Description	Qty	S.no.	Description	Qty
1	Pick axes	3	17	Blow lamp-Petrol	1
2	Phowras	2	18	Blow lamp-Kerosene	2
3	Measuring tape (10 m)	1	19	Mirror	1
4	Tent complete with spikes and ropes	1	20	Brush	1
5	Hammer to fix spikes	1	21	Wooden□mallet	1
6	Rammer	1	22	Flat nose pliers	1

7	Jointing trestle	1	23	Diagonal cutting nipper	1
8	Jack Knife	1	24	Wire Stripping pliers	1
9	Pocket Knife	1	25	Solder bit flat	1
10	Combination side□cutting pliers	1	26	Screw driver Set	1
11	Hack saw frame □ adjustable	1	27	Metal rule steel	1
12	Hack saw blade as required	1	28	Open jaw spanner Set	1
13	Long nose plier with side cutter	1	29	Wrench adjustable	1
14	Triangular file	1	30	Scissors ordinary	1
15	Wire brush	1	31	Chisel	
16	File Flat	1			

5.0 Detailed works involved in Non Schedule (NS) works under Schedule B:

- a) **Item No. NS-1, NS-2 & NS-3** : Alteration to Software ,wiring ,Testing and commissioning (including FAT & SAT etc) of existing EI equipment as per RDSO Spec No: RDSO/SPN/192/2005 or latest as per approved signalling plan & Table of control for existing EI at PUG-DG section (M/s MEDHA make) & at MDU-TAY section (M/s KYOSAN make).

This work involves alteration to the existing Electronic interlocking as per the Signalling Plan & Table of Control issued by Railways and the latest RDSO & HQ guidelines by modification to the existing Interface and Interlocking circuit, modification to the application logic software of VDU & MT, Alteration to the Relay Rack wiring as per the modified interface circuits including supply of necessary wiring material, upgradation & validation of Data logger & alteration in data logger wiring up to CMU , Testing of modified logics, commissioning

and submission of As-made documents. Any additional cards are required for the above work shall be supplied by contractor.

Asmade documents for EI:

After testing and commissioning of the entire installation, Six copies of final 'as made' details ashereunder shall have to be supplied duly incorporating all particulars for the station. All 'As makes' shall be prepared by the contractor in AutoCAD latest Version and submitted in compact discs in duplicate. All 'As made' documents/plans shall be made by the contractor in Tracing sheets to RAILWAY STANDARD only as laid down in the schedules (SOR)and shall be handed over to the Railways, duly signed. However, contractor shall hand over along with the Tracing sheets , 8 copies in each, duly making book-let neatly bound. Out of 6 sets, 4 sets of Binded booklets and 2 sets shall be kept in thick plastic cover (2 sheets back to back in one plastic cover) duly filled in plastic folder and handed over to Railways. Any correction made during testing shall be incorporated before submitting 'FINAL' 'As made' Diagrams.

- b) **Item No. NS-4, NS-5 & NS-6** : As per schedule of work.
- c) **Item No. NS-7** : Supply of Goods Warning Board retro reflective type with MS angle of 75 X 75 X 6 MM X 3900 MM long.
- d) **Item No. NS-8** : Supply and installation of earthing arrangement as per specification mention in schedule.
- e) **Item No. NS-9 & NS-10** : As per schedule of work.
- f) **Item No. NS-11 & NS-12** : Supply of Fuse Cylindrical 4 & 2 Amps (ND Fuse) as per RDSO Spec No.IRS.S.78/92 or Latest with amendments.
- g) **Item No. NS-13** : Supply of Track lead Junction Box as per RDSO Drg.No.SA-20101/M.
- h) **Item No. NS-14, NS-15, NS-16 & NS-17** :As per schedule of work.
- i) **Item No. NS-18** : Supply and laying of DWC split pipe of 120/103mm in already DUG cable trench.
- j) **Item No. NS-19 & NS-20** :As per schedule of work.

- k) **Item No.NS-21, NS-22& NS-23** : Supply of RED/Green/Yellow aspect integrated LED signal ,110 V AC retrofittable in existing CLS housing and compatible with AC LED ECR as per RDSO Specification No. RDSO/SPN/199/2010 (Rev. 1.0) or latest.

- l) **Item No.NS-24, NS-25& NS-26** :

The preparation of SWR/GWR requires an approved signaling plan and Rule diagram for the proposed works and existing SWR/GWR of the concerned station. These documents will be issued by the Railways in both Hard and Soft copy formats. The contractor must provide a Draft SWR/GWR Hard copy in A4 sheets for vetting by the Railways. Upon receiving the vetted copy from the concerned Division, the contractor shall correct any discrepancies and issue the final Fair copy in one-sided A4 sheets (Hard copy) as well as a soft copy in Word document format to the Railways. Any comments provided by CRS/GM/PCSTE during the sanctioning process will be incorporated into the respective SWR/GWR, and corrected pages shall be issued in A4 size by the contractor.

- m) **Item No.NS-27, NS-28**:As per schedule of work.

- n) **Item No. NS-29** :As per schedule of work and other conditions as below.

All vehicles provided shall have all the necessary permits/licenses/clearances such as, but not limited to fitness certificate, PUC, full comprehensive insurance, road permit, registration certificate, as per the Motor Vehicles Act, RTO and other applicable laws and statutory bodies, for providing commercial vehicles for this service. All vehicles provided shall be air conditioned and shall be equipped with an emergency medical first aid kit and a fire extinguisher. All vehicles should be always in excellent working condition (both internally and externally). The service provider shall ensure that the vehicles deployed by him are cleaned thoroughly both internally and externally, boot kept clear of dust, rubbish, oil, bad odour and any personal belongings of the driver. All vehicles deployed shall arrive at designated location on time and with full or sufficient tank of fuel. The drivers of the vehicle must possess a valid driver license and must have a minimum 2 years of driving experience. The drivers of the vehicles must have a working mobile number for easy contact by the passenger. It must also always have an active internet connection where google maps can be accessed, to navigate the shortest and/ or fastest route possible avoiding traffic jams. The driver shall be always reachable during duty hours. The drivers of the vehicles deployed should maintain polite & courteous behaviour towards the buyer/ passenger.

“Misbehaviour” which may include, but not limited to, consumption of alcohol during or prior to duty, denial of duty during service hours as defined by user, use of abusive language, theft, shall attract deduction as per provisions of the contract. The vehicle deployed for duty shall at no point of time carry any person other than personnel authorized by the buyer.

The drivers/ staff provided by the service provider shall not be deemed employees of the buyer hence the compliance of the applicable labour laws and acts, Transport Motor workers Act and other relevant laws will be the sole responsibility of the service provider. Buyer shall not be liable for any damages whatsoever to public property and /or any third person due to any accident arising out of and in the course of deployment of service provider's vehicle. The Service Provider shall be solely and exclusively liable for the losses / damages caused by the driver of the Service Provider and shall indemnify the Buyer in case of any such losses / damages. The buyer will in no way be responsible for violation of traffic rules and /or infringement of any other law for the time being in force, either by the driver of the vehicle or by the service provider. During the service period, if the vehicle is seized or detained or requisitioned by Police/Motor Vehicle Authority or any other authorities for whatsoever reasons that will be at the service provider's risk.

o) **Item No.NS-30, NS-31, NS-32, NS-33, NS-34, NS-35, NS-36& NS-37:**

The preparation of SIP/TOC requires existing available SIP/TOC of the concerned station/LC in both Hard and Soft copy (in PDF), which will be provided by the Railways. The contractor is required to submit a Draft SIP/TOC Hard copy in the required size and prescribed format as per the RDSO standardization, latest IRSEM & HQ Policy. Upon receipt of the checked draft copy from the Railways, necessary corrections should be made, and the Final Fair copy of SIP/TOC in the required size (Hard copy) as well as the updated soft copy in AUTOCAD format must be provided by the contractor to the Railways. Any comments provided by Proj.HQ/CTPM during Approval will be incorporated into the respective SIP/TOC, and corrected versions of the SIP/TOC will be issued by the contractor.

p) **Item No.NS-38:** Supply of Multimeter similar to Fluke 117 Multimeter with Non-Contact voltage, Automatic AC/DC voltage selection or better.

q) **Item No.NS-39 :** Supply of Rodometer (Measuring wheel) similar to Stanley or Fluke or better make.

r) **Item No.NS-40:** Supply of Digital AC/DC clamp meter handheld True RMS similar to Mecor Model 1080 TRMS or better.

s) **Item No.NS-41:** As per schedule of work

5.1 Detailed works involved in Non Schedule (NS) works under Schedule C:

- t) **Item No. NS-1 :** Supply of PVC insulated underground unscreened armoured railway signaling cable copper conductor size 24 core x 1.5 sq mm as per RDSO spec. No. IRS-S- 63/2014 rev. 4.0 or latest.
- u) **Item No. NS-2 :** Supply of Railway Signalling Cable, 12 Core x 1.5 sq mm. conforming to RDSO Spec. No. IRS:S:63/2014(Rev. 4.0) or latest.
- v) **Item No.NS-3, NS-4, NS-5& NS-6 :** Supply of QSPA1, QTA2, QN1 and QNA1 relay as per specification mention in schedule of work.

LIST OF DRAWINGS

S.no	Drg No	Description of drawing
1	SG/CN/02/6	FOUNDATION FOR APP. CASE - FULL
2	SG/CN/02/7	FOUNDATION FOR APP. CASE - HALF/QUARTER
3	SG/CN/02/12	MASONARY PLATFORM FOR SIGNAL POST TELEPHONE
4	SG/CN/02/13	MASONARY WORK FOR EARTH ELECTRODE
5	CSTE/CN/OF C-1	RCC CABLE MARKER
6	DRM/J/6735	Track crossing with horizontal boring method with 80mm Dia GI Pipe
7	OFC/2002/4	Arrangement of DWC pipe trunking under metal roads
8	OFC/2002/5	Arrangement of Cable DWC pipe trunking under Track Crossing
9	OFC/2002/6	Arrangement of Cable on Grider Bridges
10	OFC/2002/7	Laying of cable below Culverts in DWC Pipe

S.no	Drg No	Description of drawing
11	OFC/2002/8	G.I Pipes on Culverts
12	OFC/2002/10	Drawing of Chase Cutting in hard rocky
13	OFC/2002/11	Leadings in arrangement of derivation cable for cabins & other locations
14	OFC/2002/12	Methods of Mounting the Brakes

*** * * * END OF CHAPTER 4A * * * ***