SECTION 8A

EMPLOYER'S REQUIREMENT –
GENERAL INFORMATION AND SCOPE OF WORK

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Section 8A

WORKS/EMPLOYER'S REQUIREMENTS

GENERAL INFORMATION & SCOPE OF WORK

Brief Scope

NAME OF WORK: Signaling & Telecommunication works in connection with 1. Shifting of Existing IB Hut between YNK-CSDR from IR Chainage Km 9/700-800 to IR chainage 9/300-400 in order to facilitate Corridor - 4 BSTP work and 2. Other miscellaneous S&T utility shifting works in Corridor 2 & 4 sections.

This work is taken up in order to facilitate civil work for construction of BSRP corridor-2and 4.

1. **This is part of the project for BSRP work between YNK-CSDR section of Bangalore Division. (a) Execution of Outdoor & Indoor signaling works, it includes trenching, cable laying, casting foundations for Location boxes, signal and erection, wiring, MSDAC, HASSDAC installation, provision of earthing arrangements, etc., (b) Clearing of other infringements (S&T Utilities) in RNN-HLE section and BAW-BPHI sections.**

2. **Supervision and Maintenance of the signaling system provided as part of this contract for 12 months after the date of commissioning without any extra payment. The work shall be carried out according to the technical specifications referred; drawings approved by the Bi RIDE and shall conform to the provision of Signal Engineering Manual and schedule of dimensions. The contractor shall be solely responsible for the proper execution of the work as per specification.**

i. Provision of Outdoor and Indoor Signalling arrangements Chennasandhra to Yelahanka section of Bangalore Division on South Western Railway.
ii. Provision of motor operated points, MSDAC, SSDAC and MACLS, Outdoor Modifications related with conversion from Single line to double line & phase works.
iii. Designing and documentation including completion documents of signalling drawings for outdoor work. under employer's requirement.
iv. Supply and installation of signaling equipments viz. signal units and accessories, Block Working with axle counter, location boxes and accessories, track circuit equipments, point machines with ground connection, electric lifting barrier, data logger with networking etc.
v. Erection of Relay rack, CT rack, wiring of relays, testing and alterations in circuits, painting and lettering of all indoor gears, releasing of all indoor gears etc.
vi. Outdoor work of trenching and laying of cables, foundation for signals, location boxes, etc. wiring of location boxes, signal units, points machines, track circuits, axle counter jointing of signaling cables, earthing, RE protection, erection of electrical lifting barrier, painting and lettering of all out door gears, releasing of all outdoor gears.
vii. Providing Engineering Drawings, Data, Operation Manual, etc. for Railways/ Bi-RIDE's approval for the Equipment's/Materials in the Scope of the Contractor.
viii. Packing and Transportation from the Manufacturer's Works to the Site of Equipment's/Materials in the Scope of the Contractor.
ix. Receipt, Storage, Preservation and Safekeeping of Equipment at the Site.
x. Pre-assembly, if any, Erection, Testing and Commissioning of all the Equipment.

xi. Reliability Tests and Performance and Guarantee Tests on Completion of Commissioning wherever applicable.

xii. Removal of S&T infringements or shifting of signalling gears like LC gates, location boxes, signals, cables etc. and telecom gears like cables, EC post etc. to facilitate the progress of earth work and bridge work for Bengaluru Suburban Rail Project (BSRP) Corridor-2 &4

xiii. Handing Over of the including spares if any to Bi RIDE/Railways for further maintenance with all the relevant documents in 6 sets.

The details of equipment to be supplied, transported, erected, assembled, tested & commissioned are indicated in BOQ / Pricing Document schedule of Works. The quantities indicated in the BOQ / Pricing Document Schedule of works are only approximate and may increase or decrease and prices quoted by the Tenderer are deemed to be valid in spite of such variations subject to SCC Clause 10.

Any other items not specifically mentioned but which are essentially required for satisfactory performance & completeness of work should be deemed to be included in the scope of specifications and works and the same shall be executed / carried out by the Tenderer at no extra cost to K-RIDE.

EMPLOYERS REQURIEMENT - SCOPE OF WORK

1. OBJECTIVE

The tendered work is part of the Bengaluru Suburban Rail Project, it can be started immediately. The objective of the contract is Signaling and telecommunication works Outdoor / indoor activities for shifting cables and equipments to new IBS building @ chainage Km-9/300-400 in order to facilitate earth works & 2 Clearing of other infringements (S&T Utilities) in RNN-HLE section and BAW-BPHI sections. as stipulated in the contract. In full recognition of this objective, and with full acceptance of the obligations, liabilities and risks which may be involved, the Contractor shall undertake the execution of the Works. The general and specific requirements of the employer are detailed out in this document for understanding of the bidders and for mandatory compliance by the successful bidder/contractor. The Employer's requirements have been divided into different sections / sub-heads for convenience only. They do not restrict any cross-references. The Contractor shall consider inter-relations between various parts of work. No claim shall be entertained on account of compartmental interpretations.

2. RELEVANT DOCUMENTS

The Engineer shall issue drawings to the Contractor for the execution of works in accordance with the agreed terms and conditions of the Contract Agreement.

The following Documents shall be referred in conjunction with each other by the Contractor for construction work as these are mutually complimentary to each other:

a) Drawings issued by the Engineer.
b) Employer's Requirements as part of Contract
c) Technical Specifications and explanatory notes to the BOQ, as part of Contract
d) Bill of Quantities as part of Contract
e) Indian and International Standards referenced therein.
f) The schedules and any other documents forming part of the Contract.

The Contractor shall always seek advice from the Engineer in the event of conflicts among above cited documents. In case of conflict, the Engineer's decision shall be final and binding.

3. GENERAL

i. Before carrying out the work at site, necessary permissions from various local agencies Railway authority's / road authorities such as BBMP, BESCOM, PWD, GAIL, Traffic Police etc., shall be required to be obtained by the contractor. The Employer shall assist only by way of issue of necessary support letters.

ii. Any services affected by the work must be temporarily supported by the contractor. The work of temporarily supporting and protecting the public utility services during execution of the works shall be deemed to be part of the contract.

iii. The contractor shall take all precautions for safeguarding the environment during the course of the construction of the works. He shall abide by all laws, rules and regulations in force governing pollution and environmental protection that are applicable in the area where the works are situated. The contractor must take all necessary steps to fix, especially dust nuisance during the construction of the works.

iv. The levels, measurements and other information concerning the existing site as shown on the drawings are believed to be correct, but the contractor should verify them for himself and also examine the nature of the ground as no claim or allowance whatsoever will be entertained on account of any error or omission in the levels or strata turning out different during execution from what is shown on the drawings.

v. **DELETED**

vi. The preliminary works such as site clearance, barricading, trail trenching etc., wherever required, shall be taken up simultaneously along with mobilization activities.

vii. **DELETED**

viii. The contractor shall at all-time carryout the work on either side of existing IR tracks/ highway/road/service road in a manner creating least interference to the flow of traffic. The contractor shall take prior approval of the Engineer and traffic police regarding traffic arrangements and diversion of traffic during construction.

All temporary traffic diversion works, which will be required for the smooth flow of running traffic in order to carry out the works without any interruption including all safety precautions, signage, barricading, emergency lighting, traffic marshals, look-out men / watchmen etc.; shall be carried out. The permanent traffic diversions shall be carried out in consultation with traffic police. Contractor hasto provide traffic diversion proposals, traffic marshals, cones, traffic diversion boards etc., as desired by Traffic Police.

ix. **DELETED**

x. **DELETED**

xi. **DELETED**

xii. Restoration of Road and allied works immediately after completion of work up to road level or as per instructions of Engineer.

xiii. **DELETED**

xiv. **DELETED**

xv. **DELETED**

xvi. **DELETED**

xvii. The CONSTRUCTION PROGRAMME AND PROJECT MONITORING is to be given as mentioned in General Conditions of Contract.

xviii. **DELETED**

xix. Maintaining and keeping the Existing Railway banks, structures and adjacent roads clean in the area of work and where construction machineries ply.

xx. Measures to minimize water, air and noise pollution;

xxi. All aspects of quality assurance, including testing of materials and other components of the work, as specified and as directed;

xxii. DELETED

xxiii. Clearing of site and handing over of all the Works, as specified or as directed

xxiv. Maintenance of the completed Work during the maintenance period as directed;

xxv. Submission of completion (i.e., 'As-Built') drawings and other related documents as specified; and

xxvi. The contractor shall not display any name-board for the works without the written permission of the engineer.

xxvii. No labor camp shall be allowed at work site or any unauthorized place.

4. OBTAINING CLEARANCES/CERTIFICATES FROM AUTHORITIES

The contractor shall arrange well in advance stage wise as may be required, submission of all the required documents and drawings for approval from other authorities and installation of the works and their inspection and obtain approval/completion certificates with respect to his work as required for use and connection of the utilities and occupation from the Statutory Authorities. The Contractor shall obtain and deliver to the Engineer, on completion of the works, the final Inspection Report and approval from the Authorities.

5. INTER COMMUNICATION FACILITIES

Telephone and fax services are available at Bengaluru. Should the Contractor wish to use Radio communication on the site, the Employer will recommend to the appropriate authority the application for allocation of radio frequencies to the Contractor

6. SITE INFORMATION-

The project site is located in and around Bengaluru City. Bengaluru is well connected to other parts of the country by Road, Rail and Air. It has an international Airport.

7. RESTRICTIONS IN WORKING

It has to be noted by the Bidder that,

a. The various items of construction work have to be carried out in narrow roads / streets of Bengaluru city/Beside/across/Parallel to the existing railway line where there are buildings adjacent to the road/track and railway traffic may be heavy.

b. There are restrictions for movement of trucks and heavy vehicles (ex: trailers) carrying construction materials, cleaning during the day hours on some roads.

c. There are some one-way roads where traffic can't move in both directions.

d. Generally, at least two lanes of traffic in both directions have to be kept while the works are on, including foundation works.

e. Execution of works will have to be planned in such a manner that they do not obstruct or interfere with the existing roads; railways tracks and other utilities.

f. Where work is required to be carried out at locations adjacent to such Existing IR tracks, roads, utilities, structures, monuments, religious structures, etc., suitable safety and protection arrangements will have to be ensured. Nothing extra will be payable on these accounts. It should also be ensured that no damage is caused to any such element and Engineer/ Employer shall be indemnified against such damage at no extra cost.

8. GENERAL CLIMATIC CONDITIONS

Bengaluru is located in meridians of 12° N latitude and 77°3' E Longitude, spread over an area of 531 sqm km. located at an altitude of 900m, Bengaluru boasts of delightful weather around the year registering maximum temperature of 34° centigrade in summer and minimum temperature of 14° centigrade in winter. Bengaluru receives both the Southwest and Northeast Monsoons, getting an annual average rainfall of 760 mm, generally during the months of May to September/October. Bengaluru falls in Seismic Zone II.

9. WORK CONTENT

9.1 Brief Scope

The proposed work is in connection with the BSTP work of Corridor 2 & 4.

i. Works to be performed shall also include all general works and works of any kind necessary for the due and satisfactory construction, completion and maintenance of the works to the intent and meaning of the drawings adopted and technical specifications, to best Engineering standards and orders that may be issued by the Engineer from time to time, compliance by the agency with all as per Contract document

ii. This work is taken up in order to facilitate civil work for construction of BSTP corridor-4 and 2. Designing and documentation including completion documents of signaling and telecom drawings for cable shifting work. Removal of S&T infringements or shifting of signaling gears like LC gates, location boxes, signals, cables etc. and telecom gears like cables, EC post etc. to facilitate the progress of earth work and bridge work for Bengaluru Suburban Rail Project (BSRP) Corridor-4 & 2

iii. The work to be constructed and maintained as per BOQ, Technical Specification, relevant Codes, and specifications of Indian railway standard, IS, CPWD, KPWD, BESCOM, drawings, best engineering practices and/or as directed by the Engineer. Outdoor work of trenching and laying of cables, foundation for signals, location boxes, etc. wiring of location boxes, signal

units, points machines, track circuits, axle counter jointing of signaling cables, earthing, RE protection, erection of electrical lifting barrier, painting and lettering of all outdoor gears, releasing of all outdoor gears.

Note: The above is not an exhaustive list covering all the works to be done under this Tender. Major works only have been listed for guidance.

9.2 The Scope of Civil & Structural works - DELETED

9.3 Civil Formation- DELETED

9.4 Special stipulations/features

Inspection of S & T Work

9.4.1 The execution is required to be carried as per standard specifications of Bi-RIDE. However, specifications, drawings and other details mentioned in BOQ or in special conditions, wherever applicable will prevail over the standard specifications.

9.4.2 The Signal & Telecom material to be supplied by the contractor as per RDSO Specifications/ Drawings will have to be procured from approved Vendors appearing in Vendor Directories of RDSO and to be supplied duly inspected by RDSO. In case where no manufacturers are available in approved vendors list issued by RDSO, procurement may be done through the firms included in RDSO Vendors for Developmental order as per Railway Board's letter No. 99/RS(G)709/1 dated 18.11.2016 and 2001/RS(G)/779/7 PT 1 dated 29.06.2017.

In case of signaling relays, 20% of requirement of each type of relay can be procured from RDSO approved vendors for developmental order as per Railway Board's letter no. 2001/RS(G)/779/7 Pt 2 dated 25.06.2018.

For procurement through RDSO Vendors for Developmental order, prior approval of K-RIDE's Engineer shall be obtained.

9.4.3 The Signal & Telecom material to be supplied by the contractor as per TEC/DOT/BSNL specification will have to be procured form DOT/TEC approved firms. The inspection of such items will however be carried out by RDSO provided the value is more than value stipulated in inspection policy of RDSO.

9.4.4 In case the contractor is supplying imported equipment's from approved manufacturer, then in addition to manufacture's test certificate, such equipment's shall be inspected by RDSO.

9.4.5 Signal & Telecom items not inspected by RDSO/ RITES for any reason will be inspected by the Engineer / Authorized Representatives of K-RIDE. In case of any difficulty in inspection, K-RIDE may decide the authority of inspection, either by any other Govt. agency or by consignee. Whenever materials are inspected by Authorised Representatives of the K-RIDE/Engineer, the contractor will be required to furnish his or manufacturer's Guarantee Certificate.

9.4.6 The K-RIDE shall have full power to reject any material that it may consider defective or inferior in quality, workmanship, or otherwise not in accordance with the Specification and the K-RIDE'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. Inspected and accepted material, if damaged during transit shall be replaced by the contractor free of cost prior to installation.

9.4.7 Inspection Charges of RDSO and RITES will be borne by the Contractor. In case of Change of Inspection from RDSO/RITES to K-RIDE/Consignee,1% of cost of material to be deducted by K-RIDE, as Inspection Charges.

9.4.8 Items included in the list of items to be inspected by RDSO & RITES and are not inspected by RDSO/RITES for any reason whatsoever and will be inspected by the Authorized Representatives of K-RIDE. The following conditions will apply:

i. Material conforming to RDSO spec/drg. is procured from RDSO approved source.
ii. Contractor shall submit Manufacturer's Guarantee Certificate for the material.
iii. All such cases where change in agency of inspection other than mentioned in the schedule is required will be processed for specific approval of competent authority.

9.4.9 **Procurement and storage of materials**

Procurement of Track, S&T and Electrical Items has to be planned by the contractor in consultation with the Engineer and procurement plan shall be got approved from the Employer before placing any orders for such materials.

Procurement Plan should be prepared in such a manner that those materials which have a shelf life like rubber pads etc may be procured in a staggered manner so that the materials are used before its properties get modified with age. The procurement of materials shall be planned as per the milestone/key activities specified in pursuance to GCC clause 8.3. If the material/product does not remain of required specifications at the time of its actual use, the same will be replaced by the contractor with materials conforming to Specifications at his own cost.

The procurement of materials for the works by the contractor shall also be subject to the following:

(i) Procurement Schedule:

SN	Items	Schedule
1	Supply of items under S&T BOQ	The procurement process should commence after GM/AGM/JGM in-charge of S&T portion of the work, approves the programme of procurement proposed by the contractor such that materials proposed for procurement are expected to be installed within a year of receipt. However, to facilitate formation work, Cables, Wires Location Boxes, Terminals, Level Crossings and other associated items required for replacement/shifting of existing cables/location box/level crossing etc to the extent of 20% of BOQ quantity or higher quantity may be procured at the beginning with the approval of GM of the department.
2	The contractor would make out a list of items for which procurement process to start indicating the expected time of arrival at site and installation as per the period indicated above. The concerned GM/S&T would approve the programme.	

(ii) Based on the above schedule, the contractor shall prepare BOQ Schedule/Bill-wise procurement plan and submit a statement in the following format:

Procurement Plan- Installment No.1				
BOQ Bill No:				
Item No.	**Description**	**BOQ Quantity**	**Quantity planned for procurement**	**Justification for placing order for procurement (lead, likely month of execution/installation)**

Certified that all efforts have been taken to ensure that the quantity of materials being planned for procurement is as per the BOQ and as per the requirement at the site based on approved drawing.

Contractor

The requirement planned is commensurate with the progress of work and as per approved drawing/ design.

Engineer/PMC
Approved

GM/S&T

While submitting the 1st stage payment of the materials, a copy of the above approval certificate should accompany the bill/IPC."

(iii) Reconciliation of materials after each milestone is reached: For procurement of materials in subsequent instalment(s), the contractor shall enclose along with his proposal, a review statement of consumption already made or likely to be made in respect of materials already procured in the following format:

Review of the materials procured up to Previous Installment					
BOQ Bill No:					
Item No.	**Description**	**Quantity procured upto previous Installment**	**Quantity Consumed/ installed**	**Balance Quantity**	**Remarks**

Considering the consumption and further targets, second installment of materials may be approved for procurement.

Contractor

The requirement planned is commensurate with the progress of work and as per approved drawing/ design.

Engineer/GC

Approved
GM (S&T)/Bi-RIDE

9.4.11 If the Contractor is required to purchase certain material(s) from firms in the approved list of RDSO/Zonal Railways / Bi-RIDE, as per terms and conditions of the contract, then the Contractor shall place orders accordingly on firms appearing in the approved list, as specified, on the date of placing the order and provide details of such orders placed to K-RIDE.

In case the contractor places an order on an approved firm, but the firm is subsequently de-listed before the supply is completed, then in such cases, if there are any outstanding orders on the de-listed firm, then wherever the balance delivery period is available, the extent of supply made by the firm within the original delivery period, shall be accepted provided it passes the inspection of RITES/RDSO/inspecting authority specified in the contract. If the de-listed firm fails to deliver the material within the original delivery period, no extension shall be granted by the Contractor to such firms after date of issue of de-listing order. In case where delivery period has expired, no extension shall be granted and all such orders shall be cancelled and a fresh purchase action should be taken.

9.4.12 The plant and materials etc., so procured for the works shall be properly stored on Site and protected against loss, damage or deterioration. For this purpose, the contractor shall make necessary arrangements of store godown/fenced area at site in Railway land as per directions of Engineer. In case the contract is terminated, the Employer shall have the right to take possession of the godown/store and reasonable cost of such store/godown shall be determined by the Engineer and included in the Final Payment Certificate.

Civil Work - DELETED

9.4.5 Power & Traffic Block

(i) Track occupation may be granted at any time during day or night to suit convenience of traffic operations and will ordinarily be granted over a distance covered by one or two consecutive block sections. Work trains will normally be allowed to take advantage of block shadows. Normally the total duration of block on any section will be maximum of 1.5 to 2.5 hours at a stretch in a day, once or more than once. Block provided may be utilized for one or more work trains or track Lorries or ladder trolleys to suit convenience of work.

(ii) Blocks will not ordinarily be given for laying the feeders except where crossing of track is involved, which will have to be laid manually in general.

(iii) Any traffic / power blocks, temporary speed restrictions and caution orders required in connection with execution of works by the contractor, shall be got sanctioned by the Railway authorities well in advance, through the Engineer. The Railways may sanction the same for specific sites within the overall recovery time available in the Railway timetable. The contractor shall have to schedule his program according to the convenience of the Railways. No claim from the contractor for any delay / inconvenience / loss on this account shall be entertained by the Employer/ Engineer.

(iv) The contractor shall undertake the work involving Railway track, Railway Electrification installations in co- ordination with the Engineer and Railways in accordance with the program of work. Where traffic / power blocks are involved, the Contractor shall ensure that interruption to Railway operations, if any, is kept to the bare minimum level.

(v) In order to minimize blocking of the track for work/material trains, the contractor shall consider the working conditions on the section and assess use of alternative method of construction on a part or whole of the work. He should submit clear proposal along with financial implication if any to the purchaser for such special method of saving of blocks that could be obtained along with reduction / redundancy of the facilities being provided by the Railway / K RIDE.

(vi) The protection required for block working i.e., flagmen, flags etc. shall be provided by the contractor. Competency for the above shall, however, be given by the Railway authority. Protection of track by banner flags etc. shall be done in accordance with General Rules of Indian Railway and Subsidiary Rules of the concerned zonal Railway where work is being carried out. Contractors shall provide Safety helmet, Safety belt and Safety Shoes to their staff while working at site.

(vii) In case of theft/breakdown, the contractor shall restore the traffic at the minimum possible time. Failure to do so shall attract suitable penalty.

9.4.6 **Provisional Acceptance**

i) Immediately after completion of work/such part of work, the Contractor shall certify and advise the Engineer in writing that the works are (i) complete (ii) ready for satisfactory commercial service and (iii) ready to be handed over. He will also place at the disposal of the Engineer the required staff for checking it and putting it into operation.

ii) The test or tests as stipulated in approved Technical Specifications shall be carried out jointly by the Railway / Engineer and the contractor within a month after the receipt of the Contractor's notification as stated in sub-Para above.

iii) The provisions contained in the relevant GCC clause shall be followed for taking over of the

installations.

9.4.7 **Use of Rejected/Sub Standard Items/ Equipment**

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

9.4.8 **Guarantee**

(i) The Contractor shall guarantee satisfactory working of the installations erected by him, for a period of 12 (Twelve) months from the date of commercial operation or from the date of Provisional Acceptance by the Engineer whichever is earlier. The guarantee for spares (if any) should be coincident with the guarantee for erected equipment. The provisions contained in the relevant GCC clause shall be followed for rectification of defects.

(ii) During the defect liability period the Contractor shall keep available an experienced engineer and necessary equipment to attend to any defective installations resulting from defective erection and/ or defects in the equipment supplied by the Contractor. The Contractor shall bear the cost of all modifications, additions or substitutions that may be considered necessary due to faulty materials, design or workmanship for the satisfactory working of the equipment. The final decision shall rest with the Engineer/Employer.

(iii) During the defect liability period the Contractor shall be liable for the replacement at site of any parts which may be found defective in the equipment whether such equipment be of his own manufacture or those of his sub- contractor whether arising from faulty design, materials, workmanship or negligence in any manner on the part of the Contractor provided always that such defective parts as are not repairable at site are promptly returned to the contractor if so required by him at his (Contractor's) own expenses. In case of type defects in Contractor's equipment and components detected during guarantee period, Contractor should replace all such items irrespective of the fact whether all such items have failed or not. The contractor shall bear the cost of repairs carried out on his behalf by the Engineer at site. In such a case, the Contractor shall be informed about the works proposed to be carried out by the Engineer/Employer.

(iv) If it becomes necessary for the Contractor to replace or renew any defective portion of the equipment under the Para aforesaid then the provision of the said Para shall also apply to the portions of the equipment so replaced or renewed until the expiration of six months from the date of such replacement or renewal or until the end of the above- mentioned period whichever is later. Such extension shall not apply in case of defects of a minor nature, the decision of the Engineer or his nominee being final in the matter. If any defect is not rectified within a reasonable time during the aforesaid period, the Engineer may proceed to do work at the Contractor's risk and expense, but without prejudice to any other rights and remedies which the Engineer may have against the Contractor in respect of such defects or faults.

(v) The repaired or renewed parts shall be delivered and erected on site free of charge to the satisfaction of Engineer/Employer.

9.4.9 **Accountably and disposal of released materials**

(i) The Contractor shall liaison with the Engineer to finalize the procedure for taking over of the whole or part of the section and for disposal of the released materials.

(ii) If there are any shortages during final reconciliation, their cost will be recovered by the Purchaser from the Contractor at the prices inclusive of all charges as specified in note below:

If any shortfall of material is noticed at the time of completion of the work, the contractor shall be liable to pay for the shortfall as per book rate or the last purchase rate or the prevailing market rate, whichever is higher, plus 2% on account of incidental charges together with supervision charges at 12.5% of the total cost inclusive of material freight and incidental charges.

9.5 Codes and specifications

The works shall be carried out as per Standard Specifications of Bi-RIDE/Indian Railways/South Western Railway, which can be obtained on payment. Wherever reference is made in the Contract to specific standards and codes to be met by the goods and materials to be furnished and work performed or tested the provisions of the latest current edition or revision of the relevant standards and codes in effect shall apply, unless otherwise expressly stated in the Contract. Where such standards and codes are national or relate to a particular country or region, other authoritative standards which ensure an equal or higher quality than the standards and codes specified will be accepted subject to the Engineer's prior review and written approval. Differences between the standards specified and the proposed alternative standards must be fully described in writing by the Contractor and submitted to the Engineer at least 14 days prior to the date when the Contractor desires the Engineer's approval. In the event the Engineer determines that such proposed deviations do not ensure equal or higher quality, the Contractor shall comply with the standards specified in the documents.

All goods and materials to be incorporated in the goods be new, unused, and of the most recent or current models, and that they incorporate all recent improvements in design and materials unless provided for otherwise in the contract.

(a) The Standard Specifications of RDSO/RITES/Indian Railways/Southwestern Railway /K RIDE/Bi RIDE and the list of codes and manuals given in the annexure thereof shall be prime governing. The work is required to be carried out in accordance with the RE manual for stations falling under 25 KV electrified traction. The execution is required to be carried as per standard specifications of K-RIDE. However, specifications, drawings and other details mentioned in BOQ or in special conditions, wherever applicable will prevail over the standard specifications.

(b) Where there is conflict between provisions in IRS & IS specifications, provisions in IRS specifications shall prevail.

(c) Where there is no provision of specifications in IRS, provisions in IS specifications should be adopted. Where there are no provisions in IRS and IS Specifications, provisions should be followed.

(d) For items not covered in IRS/IS/IRC specifications, BS-5400 Part 1 to 10 may also be considered

(e) The decision of Engineer shall be final and binding in the interpretation of the clause of the codes of practice and specifications of this tender and no claim whatsoever shall be entertained on this account from the Contractor.

9.6 Survey and fixing working benchmarks and alignment markers - DELETED.

9.7 Benchmarks – DELETED

9.8 Alignment - DELETED

9.9 Responsibility for establishing and maintaining working benchmarks and alignment marker - DELETED

9.10 Issue of materials by Employer

9.10.1 The issue of materials from the Employer to contractor shall be governed by the following change.

9.10.2 The rails and other materials to be issued by the Employer to the Contractor will be handed over at any convenient location within Railway Land in the contract section. The contractor should collect the same from these locations and transport them to the work place as found necessary. He shall use only mechanical means for handling of rails during all stages of work to avoid any damage to the rails. Leading will be paid separately as per relevant item of BOQ.

9.11 Interfacing and Integrations of Works

9.11.1 As a part of provision of this tendered work BSTP Corridor-2 & 4 S&T utilities shifting works are to be executed by the successful tenderer. In the proposed project area, many other agencies are also working. The interfacing for the purpose of integration of works between the Civil and Electrical or other agencies or between the Contractor and his sub-contractors, (if permitted) will arise. This has to be kept in view.

9.11.2 Land is available throughout the section for carrying out the works. However, if additional land is required in yards/mid-section, necessary arrangements will be made for acquiring the land without affecting the progress of work.

The contractor shall take full responsibility in terms of organizing, managing, coordinating and administrating the interfacing of all components of works including all issues related to and arising out of such tasks and responsibility. The contractor shall interface with all concerned authorities and other contractors as required to complete the work satisfactorily within the stipulated period.

9.11.3 Under consideration and application of the above clause, the contractor shall and has also the obligation to liaise with the other contractors and Authorities to obtain all necessary technical information, all necessary information concerning organization of works, coordinating the works etc. which are necessary to assess, mitigate, take care of contractual obligations, risks, liabilities and whatsoever arising out of interfacing, engineering issues, organization of the works etc. The employer/engineer shall not be held liable in any way, throughout the preparation of the offer and/or execution of the works and/or maintenance period and/or defects liability period for any omissions, misunderstanding, negligence etc. arising out of interfacing, coordinating, organizing etc. of the works. The employer will not entertain any claim arising out of misunderstanding, miscommunication, omission, withholding of necessary/required information or whatsoever between the concerned contractors/Authorities concerning interfacing, organizing etc. of works. In case of any claim arising from any of the contractors, as aforesaid, referring to interfacing and/or interfacing related issues; the Employer will hold the concerned contractors liable for not taking care of their contractual obligation concerning interfacing, organizing, co-ordination etc. of the related works.

9.11.4 Needless to say, that commissioning of this double line project requires close coordination among various agencies executing the works in this section, Engineer, Employer and the Railway authorities. The contractor shall therefore plan all his works requiring interfacing, like works in mid-section, station yards, with other agencies, meticulously, in consultation and coordination with all concerned parties, in advance, for expeditious execution, without causing any delay either to his works or those of others.

9.11.5 If, in the opinion of Engineer, any delay in execution of any part of the Project requiring interfacing is attributable to the failures of the contractor to take adequate steps for smooth execution of such works, then the Engineer shall have the right to take necessary steps to organize and streamline such works, including excluding the requisite portion of work from the scope of the Contractor and getting the same executed by other agencies, at the risk and cost of the contractor.

10. DAMAGE TO PROPERTY

The contractor shall organize all his activities so as not to cause any damage to the property of Railway or that of other agencies or any third party. In spite of taking all precautions, in the unfortunate event of any damage to the property, then the contractor shall not only indemnify the Employer of the claims made by the affected parties but also settle the matters with the affected parties as per law. If the nature of damage is one of that affecting the train movements or causing a safety hazard to the public, then the situation will be treated as an emergency and the Engineer reserves the right to take all necessary steps as deemed necessary to restore train operations or to remove the hazardous situation or to mitigate the damage, at the risk and cost of the contractor.

All power requirements for execution of works shall be arranged by the Contractor from his own resources. Subject to availability of power, the Employer/Engineer will recommend to the Railway Authorities for providing power connection. The Contractor shall bear the cost of installation and payment of necessary charges for providing such power connections as per the Terms an d Conditions of the Railway.

10.1 Survey Equipment

The contractor should provide the survey equipment and other accessories as per the instructions of Engineer as and when required. He should also provide all necessary help as required by the Engineer for checking the works, whenever required.

10.2 All power requirements for execution of works shall be arranged by the Contractor from his own resources. Subject to availability of power, the Employer/Engineer will recommend to the Railway Authorities for providing power connection. The Contractor shall bear the cost of installation and payment of necessary charges for providing such power connections as per the Terms and Conditions of the Railway.

10.3 Structural elements, shape and form - DELETED.

10.4 Stability of the elements - DELETED.

10.5 S t a b i l i t y of the Structure - DELETED

10.6 Temporary Works

Traffic barricade with reflective tapes and other necessary traffic signages should be provided wherever required so that safety is ensured during day and night continuously. Temporary traffic diversion for smooth flow of traffic during construction including necessary traffic signs, repairs to the diverted route/service lanes, if required, restoration of diverted route to original condition etc. shall be done by contractor at his cost. Contractor shall also provide any temporary support for the utilities (charted or uncharted), wherever required, at no extra cost to Employer. The above listed works are only brief but the actual scope of work shall be as specified in the concerned document and/or as specified or directed by the Engineer.

10.7 Design for Temporary Works

The Design should cover all the items pertaining to all temporary works, traffic diversion scheme, launching scheme for RCC pole / OH conductor stringing/ cable laying or transportation scheme for various structural elements and materials to be transported to and from site during construction period.

The Contractor shall himself formulate a practical and viable scheme for design/ fabrication of shuttering, casting, curing, testing and launching/erection of poles/ stringing of conductor/ cable laying and all other structures. The bidder should, along with the bid, specify the scheme that he proposes to adopt for carrying out all the works including fabrication, transportation, stacking and erection of steel structure and casting, curing, stressing, testing and erection of poles / stringing of conductor.

The contractor shall formulate the erection scheme in accordance with relevant provision of applicable standards and submit the same to the Engineer for approval with third party certificates. These works will be executed only after the approval has been obtained from Engineer.

11. DRAWINGS – DELETED

11.2 GFC Drawings: - DELETED

11.3 Meaning and intent of specifications and Drawings:

If any ambiguity arises as to the meaning and intent of any portion of the specifications and drawing or as to execution or quality of any work or material, or as to the measurement of the works, the decision of the Engineer thereon shall be final subject to the appeal (within 7 days of such decision being intimated to the Contractor) to Engineer/Employer who shall have the power to correct any errors, omissions, or discrepancies in the specifications, drawings, classifications of works or materials and whose decision in the matter in dispute or doubt shall be final and conclusive.

11.4 Responsibility for Specifications.

a) Specifications

RDSO/Railway/ RITES/CPWD, KPWD, KPTCL BESCOM specification / other Specifications / Codes viz. IS etc. shall be procured by the Contractor from the market. One set of these specifications shall always be kept at contractor's site office for reference. Standards guaranteeing a level of quality or performance equivalent or superior to those indicated will also be accepted. Reference to trademarks or other specific designations that is necessary to explain the nature of the products required means that any other product of equal or superior quality or performance is also acceptable, subject to prior approval of the ENGINEER to be obtained in writing for adopting the new standards which are not provided in the contract.

b) Drawings for Permanent Works: - DELETED

c) Design, Drawings and Specifications for Temporary/ Ancillary works. -

All Drawings shall be prepared on CAD using AUTO-CAD Version 2010 or Higher Plan, elevation and side view for proposed track crossing/modification and other HT/LT modification/shifting.

d) Completion Drawings

On completion of the work in all respects the contractor shall submit the following

i. Six sets of "As Erected Drawings" in the standard sizes of A0, A1, A2, A3 or A4 Roll each containing complete set of drawings for every component of work on approved scale indicating the work "As Erected". Each set shall also contain technical literature.

ii. These drawings shall be prepared on CAD using Auto-Cad version (latest/as directed by Engineer) and shall be recorded on writable CDs and one set of these CDs shall also be submitted.

iii. The Contractor shall also submit one set of original "As Erected" drawings on polyester film or as directed by Engineer of quality as approved by Engineer/ Engineer's Representative.

The Certificate of Completion of Works as per the provisions in the General Conditions of Contract shall not be issued by the Engineer in the event of Contractor's failure to furnish aforesaid "As Erected" drawings for the entire works.

e) Plans and Drawings for Layout of Plant and Equipment - DELETED

12. TRAFFIC MANAGEMENT - DELETED

13. LIGHTING AND FIRE PREVENTION - DELETED

14. UTILITIES - DELETED

15. Damage to Utilities

The contractor shall be responsible for any theft, damage and / or protection of all the existing utilities within the site of work during currency of the Contract. In case of any theft/ damage occurring to these utilities while working or otherwise, the contractor shall immediately inform the Engineer's representative as well the utility owning agency and restore the same immediately to the entire satisfaction of the utility owning agency. Any damage due to working / negligence / fault of the Contractor (decision of Engineer in this regard shall be final and binding), the same shall be repaired. / Made good by the Contractor at his own cost. Any damage/ compensation / penalty etc. if charged by the utility owning agency in this regard shall also be payable by the Contractor and no claim in this regard shall be entertained by the Employer. The contractor shall always keep indemnifying the Engineer / Employer against this.

16. BARRICADING OF SITE AND WORK AREAS

The contractor shall provide temporary barricade during construction at sites, work areas (i.e., construction Depot, Store, Site office, Casting yard etc.,)

17. INTERFACE WORKS

In addition, the Contractor shall be required to carry out various interface works as per interfacing requirements. Such as interfacing with various contracts of signaling & Telecommunication, traction power & power supply, track work, rolling stock etc.,

18. RESPONSIBILITIES OF CONTRACTOR

The Contractor shall liaison with Railways/BESCOM/ KPTCL/ PGCL, State/Central Government and local bodies till completion of works in all respect. It is the responsibility of the contractor to ensure proper liaison and co-ordination with State Authorities for availing line clearance, joint inspection, testing & commissioning energization of into the full satisfaction of State Authorities and handing over, and BI-RIDE intervention should not be sought for any of the above.

18.2 Safeguarding the environment

18.3 The contractor shall carry out expeditiously and without delay the following works.

(1) Identify and get approved the sources of various major construction materials.

(2) Material testing and mix designs of concrete as contemplated in the specifications.

(3) Any other pre-requisite items required for final execution.

(4) Any other items specified in other sections of contract.

19. ASSOCIATED WORKS DEEMED INCLUDED IN ITEM RATES OF PERMANENT WORKS: Deleted

20. Contractor's Organization and Plant & equipment Project Organization Plan

(1) The Contractor's Personnel shall be deployed & maintained in consultation with Engineer and as per the requirements. The Contractor's Superintendence shall be also properly deployed and maintained to carry out the construction activities as described in the relevant General Conditions of Contract (GCC) clause.

(2) The Contractor shall submit an updated Project Organization Plan which includes complete project organization chart during the Construction adding functions and personnel necessary to perform the Works during the Construction in accordance with the conditions of the Contract. This plan shall be updated and resubmitted whenever there are changes to the staff and / or the organizational structure.
The plan shall show the management structure and state clearly the duties, responsibilities, and authority of key staff members.

(3) The contractor shall deploy the key personnel of requisite qualification and experiences. In case Engineer instructs (in writing) the Contractor to remove a person of his work force stating the reasons, the Contractor shall ensure that the person leaves the Work Area within seven days and shall have no further connection with the Works in the Contract. The Engineer shall also seek prior consent of the Employer in this regard.

(4) The minimum requirements for manpower are attached as Appendix [Organization charts and key positions] to the Employer's Requirement.

Plant and Equipment

a) The minimum Plant and equipment as shall be maintained in consultation with Engineer and as per the requirements.
b) The minimum requirements for plant & equipment are attached as Appendix 5 [Plant and Equipment] to the Employer's Requirement.

21. PENALTY FOR NON-COMPLIANCE

Notwithstanding the provisions elsewhere in the bid documents, the Contractor shall be penalized as detailed below:

a) Correction of Defects

If the Engineer determines that any item or part of it was constructed with bad workmanship and / or using sub-standard construction materials,

Sl. No.	Nature of Defects	Penalty (Rs.)
1	Not adhering to safety guidelines as mentioned in the tender document	10,000/- each case
2	Usage of non-approved / sub-standard materials	25,000/- each case

The above said penalty is envisaged to act as deterrent against bad workmanship and usage of sub-standard construction materials by the Contractor and shall be imposed for every occurrence. These penalties are non-refundable.

b) **Appendix 01**

PROGRAMME REQUIREMENTS

1.1 General

1.1.1 Construction programme and project monitoring

a) The contractor shall propose and submit his detailed Shifting / Modification plan separately and as per the procedure detailed in the scope of work. Contractor may be asked to schedule and complete the work block wise / area wise in a phased manner fixing priorities to different stretches of the work to give access to other interfacing contracts as mentioned in the Bid documents.

b) The tentative Shifting / Modification plan shall be submitted within the period as specified in the Bid document for approval of the Engineer as 'Baseline Program'.

i. After the work has started, the Contractor shall deliver in the first week of every month to the Engineer an update of the Shifting / Modification plan showing changes, if any, in planning or progress scheduling and reflecting the progress of all the activities of the network and the project status as at the end of previous month.

ii. If the Contractor falls behind the approved Shifting / Modification program plan by more than one month, he shall, within fourteen days of the date of such information, submit for approval, a revision of the Shifting / Modification plan showing the proposed measures, including augmentation of plant, labor, and material resources to complete the works on time.

iii. Whenever the Contractor proposes to change the Shifting / Modification plan, he shall immediately advise the Engineer in writing and, if the Engineer considers the change a major one, the Contractor shall submit a revised program for approval.

iv. DELETED

22. **Appendix-02 DELETED**

23. **Appendix-03**

Quality Assurance Materials

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

b. **Erection – DELETED**

c. **Expenses of Purchaser's Representative- DELETED**

d. The decision of the Purchaser or his representative shall be final in respect of acceptability or otherwise of any material, fittings, components, or equipment's required for the work.

e. **Quality Assurance Programme**

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

1. The organization to manage and implement the Quality Assurance programme.
2. The documentation control system: -
   i) Basic control system.
   ii) Adopted at manufacturer's works.
   iii) Adopted at the Contractor's Depot and work site.
3. Procedure adopted for: -
   i) Source Inspection.
   ii) Incoming raw material inspection.
   iii) Verification of materials purchased.
   iv) Fabrication controls.
   v) Site erection controls.
4. Inspection and Test Procedure for: -
   i) Manufacture and quality control procedure.
   ii) Field activities.
5. System of handling and storage.
6. System of quality audit.
7. System of maintenance of records.
8. For the purpose of obtaining ` On Account Payment ' the Contractor shall submit along with the invoice, the documents indicated in the Prescribed Quality Assurance Standard w h i c h should inter-alia cover the following as may be applicable in each case.
   i) Material test reports on raw materials used.
   ii) Material type and routine test report on components specification.
   iii) Inspection plan with reports of the Inspection plan check points.
   iv) Routine test report.
   v) Factory test results as required under the specification.
   vi) Quality audit report including test check report of Purchaser's representative if any.

24. **Appendix-04**

ORGANISATION CHART AND KEY POSITIONS

The Contractor shall provide the following organization chart for the Works as follows:

Head office Organization Chart

One organization chart shall be provided for the Contractor head office indicating the management and staff structure, with responsible personnel/departments described for all aspects of the work.

Site organization Chart

The Contractor shall provide the proposed site organization indicating the proposed structure, staff partners and positions necessary to adequately manage and control the Works.

The Contractor shall have a competent team of Managers, Engineers, Technical staff etc. so as to complete the work satisfactorily as per various requirements of the contract.

The Key Positions not limited to and corresponding qualification and experience are as under:

S. No.	Position	Minimum No. of Personnel	Qualification	Minimum Experience in Similar Work [years]
1	Sr. Engineer	1	Engineering Graduate in Electronics/Elect.	Min. 3 years' Experience in construction of EI/RRI/PI
2	Supervisors/S&T	1	Diploma in Electronics/Elect.	Minimum 3 years' experience in construction of EI/RRI/PI
3	Wire man	2 Wiremen + 4 Asst. Wiremen per station during Pre NI & NI	ITI in Electronics/Electrical	Minimum Experience of 5 years.

NOTES:

1. The above categories of key positions shall be minimum required for successful completion of the work which shall be deployed at different points of time as per the progress and requirement of work and may not be required to deploy simultaneously and continuously. However, these personnel shall be deployed at site in advance as per requirement and as directed by the Engineer and the decision of Engineer in this regard shall be final and binding.

2. The Contractor shall submit the CVs of the above key positions to the Engineer for his approval within 28 days of issue of letter of Acceptance (LOA).
3. The contractor shall deploy resources as per the above-mentioned minimum requirement and also confirm to deploy manpower over and above the minimum numbers indicated above, if the work requires so.
4. The performance of project personnel deployed will be evaluated periodically by Employer during the contract period. In case the performance of any of the project personnel is not satisfactory, the Contractor shall replace them with better or equivalent personnel immediately as per directions of the Engineer.
5. Tenderer may propose any number of names of Personnel for each Key Position. Any of the proposed personnel as approved by the Employer for each key position have to be mandatorily deployed in case of award of work.

6. Non-deployment of the Key personnel sl.no 1 and 2 leads to imposition of Penalty of Rs 25,000 /- Per Key personnel per month.

7. The proposed Key personnel are not to be changed till the completion of the work. Under emergent circumstances, in case they are required to be changed, the new incumbent should have similar or better experience and qualification than as required above. These changes are permitted only with the approval of the Employer. Change in key personnel for one time without penalty is permitted. However, for subsequent changes there will be Penalty at Rs 25,000 /- Per Key personnel for SL. no 1 & 2.

8. All Key Personnel must be permanently stationed at Bangalore till the completion of the work.

9. The penalties imposed are non-refundable.

25. Appendix-05

PLANT AND EQUIPMENT

(I) **KEY AND CRITICAL EQUIPMENTS:**

Sl. no	Item Description	Unit	Qty.
1	Portable Generators of all capacities as per site requirement	No.	1
2	Drilling machines of all type as per site requirement	No.	3
3	Track Drilling machines of all type (mechanical cycle chain type and electrical type) as per site requirement	No.	2
4	Grinders of all types as per site requirement	No.	2
5	Jacks for cable Laying	No.	2
6	Concrete Shutters for Apparatus case FULL	No.	4
7	Concrete Shutters for Apparatus case Half	No.	1
8	Concrete Shutters for Signal Post	No.	1
9	Concrete Shutters for Shunt Signal	Each	1
10	Tool Kits for fitters – Mechanical Installation gang (Location Box / Apparatus cases, Signals, etc.) (Location Box / Apparatus cases, Signals, etc.)	Set	2
11	Tool kit for fitters – Electro-mechanical gang (Track circuiting, Point machines, Axle counters, Circuits controllers, Level locks & relay Rack equipment.) (Track circuiting, Point machines, Axle counters, Circuits controllers, Level locks & relay Rack equipment.)	Set	2
12	Tool kit for locking fitters cum LC gate interlocking. Key lock point interlocking & ground level frame interlocking. Key lock point interlocking & ground level frame interlocking.	Set	1
13	Wireman's tool kit consisting of Multimeter, Megger, Box spanner, Nose Plier, Holding Plier, buzzer, wooden hammer, Clamp type ampere meter etc.		4
14	Carpenter tool kit	Set	1
15	Earth tester	Set	1
16	Torches	No.	8

17	Material loaders / Mini trucks /Matadors / Bolero's	No.	2
18	VHF – Walkie Talkies Sets	Set	2

NOTES:

1. The above type of plant and equipment (but not limited to) may be required for execution of the work. The contractor shall submit the details of plant & equipment to be deployed in the above table within 28 days of issue of LOA to the Engineer for approval. Plant and Equipment indicated above is minimum to be deployed at appropriate stage of the work. However, depending on the requirement to complete the work in the stipulated completion period, the tenderer should deploy additional machinery as circumstances warrant at no extra cost.
2. Plant and equipment to be mobilized for the work shall be in good serviceable condition.

26. Appendix-06

To facilitate coordination for site activities, testing, inspections, liaison with other concerned agencies etc., the contractor shall provide two vehicles of approved make, model and quality along with drivers till the end of the contract period and one till the end of DLP to the Employer.

27. APPENDIX 7: DELETED

28. ANNEXURE 8

The Contractor shall prepare and submit his detailed Programme of Work so as to achieve key dates of various activities on time. The Contractor shall complete the work in a phased manner by fixing priorities to different stretches of work to give access to the other interfacing contractors as per the requirement of project from time to time and as per the key dates (milestones) indicated section-6, Contract data, Milestone/Stages.

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SECTION 8A-1

GENERALREQUIREMENTS

SECTION 8A-1: GENERAL REQUIREMENT

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GENERAL REQUIREMENTS –CONSTRUCTION

1.0 CARE OF THE WORKS

1.1 Any error in the execution of work leading to redesign work shall be duly compensated by the Contractor as per the decision of Engineer. Any error attributable to the construction including Failure to locate underground utilities shall attract penalties.

1.2 Unless otherwise permitted by the Engineer all works shall be carried out in dry conditions.

1.3 The Works, including materials for using in the Works, shall be protected from damage due to water. Water on the Site and water entering the Site shall be promptly by temporary drainage or pumping system or by other methods capable of keeping the Works free of water. Silt and debris shall be removed by traps before the water is discharged and shall be disposed of at a location or locations to which the Engineer has given his consent.

1.4 The discharge points of the temporary systems shall be as per the consent of the Engineer. The Contractor shall make all arrangements with and obtain the necessary approval from the relevant authorities for discharging water to drains, watercourses etc. The relevant work shall not be commenced until the approved arrangements for disposal of the water have been implemented.

1.5 The methods used for keeping the Works free of water shall be such that settlement of, or damage to, new and existing structure does not occur. Measures shall be taken to prevent flotation of new and existing structures.

2.0 PROTECTION OF THE WORKS FROM WEATHER

2.1 Work shall not be carried out in weather conditions that may adversely affect the Works unless proper protection is provided to the satisfaction of the Engineer.

2.2 Permanent Works, including materials for such Works, shall be protected from exposures of weather conditions that may adversely affect such Permanent Works or materials.

2.3 During construction of the Works storm restraint systems shall be provided where appropriate. These systems shall ensure the security of the partially completed and ongoing stages of construction in all weather conditions. Such storm restraint systems shall be installed as soon as practicable and shall be compatible with the right of way, or other access around or throughout the Site.

2.4 The Contractor shall at all times programme and carry out the work duly ensuring protective arrangements such that the Works can be made safe in the event of storms.

3.0 PROTECTION OF THE FINISHED WORK

3.1 The finished Works shall be protected from any damage that could arise from any activities on the adjacent site / works.

4.0 DAMAGE AND INTERFERENCE

4.1 Work shall be carried out in such a manner that there is no damage to or interference with:

a. Watercourses or drainage systems:

b Utilities:

c Structures (including foundations), roads, including street fixtures, or other properties:

d Public or private vehicular or pedestrian access:

e Monuments, temples, graves or burial grounds other than to the extent that is necessary for them to be removed or diverted to permit the execution of the Works. Heritage structures shall not be damaged or disfigured on any account.

The Contractor shall inform the Engineer as soon as practicable of any items which are not stated in the Contract to be removed or diverted but which the Contractor considers necessary to be removed or diverted to enable the Works to be carried out. Such items shall not be removed or diverted until the consent of the Engineer to such removal or diversion has been obtained.

4.2 Items which are damaged or interfered with as a result of the Works and items which are removed to enable the Works to be carried out shall be reinstated to the satisfaction of the Engineer and to at least the same condition as existed before the Work started. Any claims by Utility Agencies due to damage of utilities by the Contractor shall be borne by the Contractor.

5.0 STRUCTURES, ROADS, AND OTHER PROPERTIES

5.1 The Contractor shall immediately inform the Engineer of any damage to structures, roads, or other properties.

5.2 ALTERNATIVE ACCESS

Alternative access shall be provided to all premises if interference with the existing access, public or private, is necessary to enable the Works to be carried out. The arrangements for alternative access shall be as agreed by the Engineer and the concerned agency and at contractor's cost. Unless agreed otherwise, the permanent access shall be reinstated as soon as practicable after the work is complete and the alternative access shall be removing immediately it is no longer required, and the ground surfaces reinstated to the satisfaction of the Engineer. Proper signage and guidance shall be provided for the traffic / users regarding diversions. All temporary access diversion and roads the contractor has to arrange at his own cost.

7.0 TRANSPLANTED / CUTTING OF TREES

7.1 The felling of trees in the Bangalore City is governed by The Karnataka preservation of Trees Act 1976. The Contractor is not permitted to cut any tree in terms of the provisions of the aforementioned Act. The Employer has assessed the number of trees existing within the right-of-way and has arranged for cutting and removal of trees, which are likely to be affected by the right of way (i.e., within the limits of permanent works) construction works. The trees requiring to be felled will have to be removed from ground level prior to commencement of the works. The Contractor has to cut and remove the trees as directed by the Employer.

7.2 The Contractor shall carefully survey the site and identify the additional trees, if any which are coming within the footprints of the permanent structure / building and within the space required for forming slopes / benching etc., for excavation of the basements and are required to be cut / trimmed. The Contractor must notify the Engineer of such requirements well in advance.

7.3 On receipt of the submission by the Contractor giving such details, the Engineer shall arrange to verify the requirement of tree cutting / removal and identify the trees, which can be transplanted subject to compliance with the aforementioned Act. These requirements and details will be forwarded to Forest Department for getting the permission. Contractor will lease with the Forest Department for getting the permission. The Contractor shall also submit a detailed procedure approved by the Engineer for such transplantation duly assisted by competent horticulturist. The trees have to be transplanted as directed by the Engineer. The Contractor has to obtain permission for tree cutting from the concerned authority and then only trees can be cut / transplanted. The Contractor has to arrange for tree felling / transplantation of the trees at the desired locations as suggested by the authorities.

8.0 REMOVAL OF GRAVES AND OTHER OBSTRUCTIONS

8.1 If any grave and other obstructions are required to be removed in order to execute the Works and such removal has not already been arranged for, the Contractor shall draw the Engineer's attention to them in good time to make necessary arrangement for authorizations for such removal. The Contractor shall not himself remove them unless the Engineer has given consent.

8.2 PROTECTION OF THE ADJACENT STRUCTURES AND WORKS

8.3 The Contractor shall be taking all necessary precautions to protect the structures or works being carried out by others adjacent to and, for the time being, within the Site from the effects of vibrations, undermining and any other earth movements or the diversion of water flow arising from its works.

10.0 SITE ESTABLISHMENT- DELETED

11.0 Submissions of Particulars - DELETED

12.0 Security – DELETED

13.0 Records of Wage Rates:

13.1 The Contractor shall keep monthly records of the average, high and low wage rates for each trade/ tradesman employed on the Site and records shall be made available to the Engineer during inspection. Contractor has to follow all the existing labor laws.

14.0 Provision and Disposal of Earthworks / Materials

14.1 The Contractor shall be responsible for the provision of all classes of earthworks material required for the Works, whether sourced from the excavation within the Contractor obtained from any other source located outside the Site, for which the Engineer has given the concerned. For fill or dumping sites, the Contractor shall prepare a land plan with the details of surface drainage requirement, final formation levels and arrangement for spreading and comparison of the filled during dumping as acceptable to the Engineer, at contractors dumping yard. The contractor shall also provide security for the Site. The dumping site to be used by the Contractor shall be as directed by the Engineer and has to be arranged by the contractor at his own cost.

14.2 All excavated material, including waste material shall be disposed of at the contractor dumping yard only. The useful material shall be placed and compacted in accordance with the Construction specification for Earth Works or as otherwise directed by the Engineer 's Representatives. The disposal of waste material, bentonite fluid and material contaminated with bentonite shall be the full responsibility of the Contractor and these materials shall be disposed of by the Contractor at his dumping yard and in an approved manner.

14.3 Rock / Dismantled Concrete deposited as fill material at contractors dumping yard.

15.0 Restoration of Areas Disturbed by Construction

15.1 Unless otherwise directed by the Engineer, any area disturbed by the construction activity, either inside or outside the Project Right of Way, shall be reinstated as follows:

15.2 All areas affected by the construction work shall be reinstated to their original condition, with new materials, including but not necessarily limited to, sidewalks, parking lots, access roads, adjacent roads, properties, and landscaping. Grass cover shall be provided for any bare earth surface areas, along with proper provisions for surface drainage.

16.0 Contractor's Labour Camps

16.1 The Employer will not provide living accommodation for use of the Contractor or any of his staff or labour employed on the works. Living accommodation shall not be established on any land provided to the Contractor by the Employer for the Works.

16.2 Provision of Labour Camps the Contractor, shall, at his own expense, make adequate arrangements for the housing, supply of drinking water and provision of bathrooms, latrines, and urinals, with adequate water supply, for his staff as well as for workmen employed on the Works directly or through sub-contractors at the location authorized by Engineer. No labour camp shall be allowed at work site or any unauthorized place.

The Contractor at his own cost shall maintain all campsites in a clean and sanitary condition. The Contractor shall obey all health and sanitary rules and regulations, and carry out at his cost all health and sanitary measures that may from time to time be

prescribed by the Local/Medical Authorities and permit inspection of all health and sanitary arrangements at all times by the Employer, the Engineer and the staff of the local municipality or other authorities concerned.

17.0 Safety and Security

17.1 The works included in this contract are to be carried out close to the running tracks and public utilities, therefore, safety of running trains and the public is paramount. Therefore, all activities undertaken by the Contractor/his Sub-contractors shall ensure safety at all times. The contractor shall comply with the instructions issued by the Railway/ Engineer/Employer from time to time to ensure safe running of trains while carrying out works. The rates quoted by the Contractor shall be deemed to include all expenditure incurred in compliance with the same.

17.2 Before starting any excavation work adjacent to existing track, the contractor shall ensure that necessary permissions have been obtained and required precautions have been taken for doing such work in terms Joint Procedure Order (JPO). The penalties mentioned in the following JPO shall be levied on the contractor if such event occur. The JPO is reproduced below:

"JOINT PROCEDURE ORDER FOR UNDERTAKING DIGGING WORK IN THE VICINITY OF UNDERGROUND SIGNALING, ELECTRICAL AND TELECOMMUNICATION CABLES"

A) A number of Engineering works in connection with gauge conversion/doubling/third line are in progress on various railways, which require extensive digging work near the running track, in close vicinity of the working S&T cables carrying vital safety circuits as well as electrical cables feeding the power supply to cabins. ASM room, RRI Cabin, Intermediate Block Huts (IBH) etc. Similarly, S&T organization under open line or construction units under CAO/C, are executing various Signaling and Telecom works requiring digging of earth for laying of cables or casting of foundations for the erection of signal posts etc. RailTel is also executing the work of laying of quad cable and OFC on various Railways as a part of sanctioned works for exclusive use of Railways for carrying voice and data i.e. administrative and control communication, PRS, FOIS etc. or shared by RailTel Corporation of India Ltd. On certain sections digging is also required for laying of electrical cable and casting of foundation for the erection of OHE masts by Electrical Dept. Generally, these works are executed by contractors employed by these organizations.

B) However, while carrying out these works in the vicinity of working signaling, telecommunication and electrical cables, at times, cable cuts take place due to JCB machines working along the track or during the digging work being done by contractors carrying out the Civil Engineering Works. Similarly, such cable cuts are also resulting due to works undertaken by S&T or Electrical departments. Such cable faults results in the failure of vital signaling and telecommunication circuits & electrical installations.

C) Henceforth, the following joint procedure shall be followed by Engineering, Electrical and S&T (and RailTel organization, wherever such works are being done by them) officers of the respective divisions and by the construction organization, while carrying out any digging work near to existing signaling & telecommunication and

electrical cables, so that the instances of cable cut due to execution of works, can be controlled and minimized.

As per Telecom circular number 09/2023 letter vide no. 2021/Tele/5(2)/3-part(1)(3425647) dated 12.06.2023.

Annexure

Guidelines for protection of cables while doing work its vicinity

1. Cable route marking for all types of cable must be made available block section wise on Railnet.
2. Before allowing the contractor to work near the tracks, the work executing agency (like SrDSTE/SrDEN/SrDEE or DyCSTE/DyCEE/DyCE etc.) shall ensure that the permission has been granted by the division to the contractor in accordance with the local instructions / JPO to work in the vicinity of the cables. Zonal railways shall devise suitable mechanism and timelines for the obtaining/granting such permission.
3. In case of works being taken up by the State Government, National Highway Authority etc., zonal railways shall devise mechanism for shifting the cables or for proper protection of cables before granting permission to work.
4. The engineering control shall keep all the information regarding any works being done near the track. S&T and electrical control shall obtain this information from engineering control. These controls shall coordinate among themselves to ensure that no work is done in the vicinity of the track without proper permission.
5. The concerned SE/P.Way/SE/Works/SE/Sig/SE/Tele SE/Electrical (TRD or G) or RailTel supervisors supervising the work of the contractor shall ensure that the existing emergency sockets are not damaged due to their importance in providing communication during accident/emergency.
6. For all new works, cable shifting should be a mandatory part of DPR and estimate. For ongoing works, Zonal Railways may sanction works for cable shifting if necessary through contingency/supplementary/revised estimate where provision does not exist. However, in case zonal railways decide not to shift cables (due to any reason) then protection of cable shall be ensured by the zonal railways during execution of the work.
7. Penalty to be imposed for damages to cable shall be as under:

Cable damaged	Penalty per location
Only Quad cable or Signaling cable	₹ 1.0 Lakh
Only OFC	₹ 1.25 Lakh
Both OFC & Quad	₹ 1.5 Lakh
Electrical Cable	₹ 1.0 Lakh

8. Penalty should be levied on the contractor when they work without permission or resort to careless working without making arrangements for protecting cables and other utilities. Based upon the local conditions and practices, zonal railway shall devise its own conditions for examining and levying penalty. For each cable cut, a joint report at the level of supervisors should be prepared on the same day and it should become the basis for levying penalty and fixing responsibility. Joint note should be forwarded by SrDSTE/SrDEE to the executive in-charge of the work. The executive in-charge of the work shoud act and decide on the cable cut case within 15 days under information to SrDSTE/SrDEE as the case may be. There should be provision of appeal by contractors within one month of notice for levying penalty at ADRM level. Decision of ADRM shall be final and binding upon both parties.
9. Railways will not lodge FIR with RPF in cases of works being executed by authorized contractors of Railways who have been duly permitted to execute the works.
10. Zonal Railways shall issue local instructions/JPO for protection of cables while undertaking works in the vicinity of railway tracks in line with this guideline. Zonal Railways shall also ensure that such instructions become part of their tender document within one month of the issue of the local instructions. Suitable action against erring officials shall also be incorporated in these instructions if the same is not adhered to.

1. S&T Department (and RailTel, where they have laid the cables) and Electrical department shall provide a detailed cable route plan showing exact location of cable at an interval of 200m or wherever there is change in alignment so that the same is located easily by the Engineering official/contractor. In addition, S&T department and Electrical department shall also provide cable markers along the alignment of the cable. These cable route plans shall be made available to the Sr. DEN/DEN or Dy. CE/C, as the case may be, by Sr. DSTE/DSTE or Sr. DEE/DEE of the divisions or Dy. CSTE/C or Dy. CEE/C within 15 days in duplicate. Sr. DEN/DEN or Dy. CE/C will send copies to their field unit i.e. AEN/SE/P. Way & Works.

2. Before taking up any digging activity on a particular work by any agency, Sr. DSTE/DSTE or Sr. DEE/DEE of the section shall be approached in writing by the concerned Engg. or S&T or Electrical officer for permitting to undertake the work. Sr. DSTE/DSTE or Sr. DEE/DEE, after ensuring that the concerned executing agencies including the contractor have fully understood the S&T and Electrical cable route plan shall permit the work in writing within 7 days of the request by concerned department.

3. After getting the permission from S&T or Electrical department as the case may be, the relevant portion of the cable route plan shall be attached to the letter through which permission is issued to the contractor by concerned Engg. official for commencement or work and ensuring that the contractors have fully understood the cable route plan and precautions to be taken to prevent damage to the underground cables. The contractor shall be asked to study the cable plan and follow it meticulously to ensure that the safety of the cable is not endangered. Such a provision, including any penalty for default, should form part of agreement also. It is advisable that a suitable post of SSE/Sig or SSE/Tele or SSE/Electrical (TRD or G) shall be created chargeable to the estimates of doubling/gauge conversion, who can help Engg. agencies in the execution of the work. However basic responsibility will be of the department executing the work and the Contractor. Creation of posts is not mandatory.

4. The SSE/P. Way or SE/Works shall pass on the information to the concerned SSE/Sig, SSE/Tele or SSE/Electrical (TRD or G) about the works being taken up by the contractors in their sections at least 3 days in advance of the day of the work. In addition, Engineering control shall also be informed by SE/P. Way or SE/Works, who in turn shall pass on the information to the test room/network operation centre of RailTel/TPC/Electrical control.

5. On receiving the above information, SSE/Sig or SSE/Tele or SSE/Electrical (TRD or G) shall visit the site on or before the date of taking up the work and issue permission to the contractor to commence the work after checking that adequate precautions have been taken to avoid the damage to the cables. The permission shall be granted within 3 days of submission of such requests.

6. The name of the contractor, his contact telephone number, the nature of the work shall be notified in the Engineering control as soon as the concerned Engineering officials issue the letter authorizing commencement of work to the contractor. Test room shall be given copies. Test room shall collect any further details from the Engineering Control and shall pass it on to S&T/RailTel & Electrical officials regularly. In case the supervisors of concerned departments do not turn up on the day as advised in terms of para 4 and 5 above, the works of contractor should not be stopped on this account.

7. In case of works being taken up by the State Government, National Highway Authority etc., the details of the permission given i.e. the nature the work, kilometer etc. be given to the Engineering control including the contact person's number so that the work can be done in a planned manner. The permission letter shall indicate the contact numbers of Test room/network Operating Centre of RailTel/TPC/Elect. Control.

8. Where the nature of the work taken up by the Engineering department is such that the OFC or other S&T cables or Electrical cables is to be shifted and relocated, notice of minimum one week shall be given so that the Division/RailTel/Construction can plan the works properly for shifting. Such shifting works shall in addition, for security and integrity of the cables, be supervised by S&T supervisors/RailTel supervisors/Electrical Supervisors.

9. The concerned SSE/P. Way/SSE/Works/SSE/Sig/SSE/Tele/SSE/Electrical (TRD or G) or RailTel supervisors supervising the work of the contractor shall ensure that the existing emergency sockets are not damaged in view of their importance in providing communication during accident/emergency.

10. In case of minor nature of works where shifting of cable is not required, in order to prevent damage to the cable, the Engineering contractor shall take out the S&T or optical fibre cable or Electrical cable carefully from the trench and place it properly alongside at a safe location before starting the earthwork under the supervision of SSE/Sig or SSE/Tele or SSE/Electrical(TRD or G). The cable shall be reburied soon after completion of excavation with proper care including placement of the brick over the cable under the supervision of S&T or Electrical supervisors. However, the work will be charged to the concerned engineering works. The responsibility for ensuring availability of SSE (Signal), SSE (Electrical) as per para 4 and 5 above lies with the respective department. The contractor will go ahead with the shifting of cables as per the program decided and he will not be held responsible for any cable cut.
11. In all the sections where major project is to be taken up/going on RailTel/S&T department shall deploy their official to take preventive/corrective action at site of work. As regards Electrical Department, the official may be deputed on need basis.

12. No new OFC or quad cable shall be laid close to existing track. It shall be laid close to the Railway boundary on one side of the Railway track to the extent possible to avoid any interference with the future works (doubling etc.). It shall be ensured in the new works of cable laying that the cable route is properly identified with electronic or concrete markers. Wherever multiple cables are laid in a trench, RFID markers may be provided for easy identification of the cable. Henceforth, wherever cable laying is planned, before undertaking the cable laying work, the cable route plan of the same shall be prepared by the Dy. CSTE/A or Dy. CEE/C and shall be got approved from the concerned Sr. DSTE/DSTE or Sr. DEE/DEE and also from the concerned Dy. CE/C for new lines and from the concerned Sr. DEN for all other projects including GC etc., to avoid possible damages in future. Such approvals shall be granted within 15 days of the submission of the request.
13. The works of excavating the trench and laying of the cable should proceed in quick succession, leaving a minimum time between the two activities.
14. In case damage caused to OFC/Quad cable or Electrical cable during execution of the work, the contractor is liable to pay a penalty for damaging the cable. Penalty shall not be levied in case of the following: -

    i). Detailed cable route plan as per clause C-1 not provided by concerned department or cable is not protected as per laid down procedures.

    ii). The alignment of the cable does not tally with the information provided to the contractor.

    iii). The cable depth is found to be less than 800 mm from normal ground level.

    iv). No representative of S&T department/RailTel was available at site guarding the cables on the fixed pre-determined date and time.

15. Penalty to be imposed for damages to cable shall be as under: -

Cable damaged	**Penalty per location**
Only Quad cable or Signaling cable	Rs.1.0 Lakh
Only OFC	Rs.1.25 Lakh
Both OFC & Quad	Rs.1.5 Lakh
Electrical Cable	Rs.1.0 Lakh

    Necessary debit in this regard shall be raised on the department undertaking the work who shall in turn levy the penalty on the defaulting contractor. S&T department shall raise the debits in case of damage to OFC or Quad or Signaling cable and Electrical department shall raise the debits in case of damage to Electrical cable.

16. Railways will not lodge FIR with RPF in case of works being executed by authorized contractors of Railways who have been duly permitted to execute the works in accordance with this JPO. Joint note by the supervisors of the concerned department shall be prepared and the responsibility of the cable cut should be decided without involving RPF. The joint note deciding the fact whether the contactor should be penalized shall be completed in a day's time from the occurrence of cable cut.
    In all other cases, when the cable is cut by an agency that was not permitted to execute any

work, FIR should be lodged with RPF.

17. While giving permission for taking up the works, concerned departments may note that earthwork by engineering contractors will normally be done by machines except in a few isolated locations where the quantity of earth work is very less.
18. Railways shall make necessary correction in their future contract so that this JPO can also be enforced contractually.

19. In case of damages to OFC, RailTel should be paid 5/6th of the penalty recovered. RailTel shall raise demands on the S&T department in this regard.

20. All types of signaling & OHE bonds i.e. rail bond, cross bond and structure bond shall be restored by the contractor with a view to keep rail voltage low to ensure safety of personnel.

21. Above joint circular shall be applicable for construction as well as open line organization of Engineering, S&T and Electrical.

22. S&T cable and electrical cable route plan should be prepared by the concerned S&T and Electrical officers respectively and got approved as stipulated in para C-12 before undertaking the work. The completion cable route plan should be finalized block section by block section as soon as the work is completed.

23. All cable laying works shall be executed as per laid down technical specifications, such as protection measures/protective cover, compaction of refilled material etc.

17.3 Working near running line

17.3.1 The contractor shall not allow any road vehicle belonging to him or his suppliers etc. to ply in railway land next to the running line. If for execution of certain works viz. earth work for parallel railway line and supply of ballast for new or existing rail line, gauge conversion etc, road vehicles are necessary to be used in railway land next to the railway line, the contractor shall apply to the Engineer for permission giving the type & no. of individual vehicles, names & license particulars of the drivers, location, duration & timings for such work/movement. The Railways/Employer/ Engineer or his authorized representative will personally counsel, examine & certify, the road vehicle drivers, contractor's flag men & supervisor and will give written permission giving names of road vehicle drivers, contractor's flag men and supervisor to be deployed on the work, location, period and timing of the work. This permission will be subject to the following obligatory conditions:

17.3.2 Road vehicles can ply along the track after suitable cordoning of track with minimum distance of 6 meters from the centre of the nearest track. For working of machinery close to the running tracks or plying of road vehicles during night hours, the contractor shall apply to the Engineer in writing for permission, duly indicating the site details in a neat sketch and safety measures proposed to be taken. Subject to the approval of concerned Railway authorities, the Engineer or his authorized representative will communicate permission to the contractor/contractor's representative. The contractor and his men shall strictly adhere to the instructions given along with such permissions.

17.3.3 Nominated vehicles and drivers shall be utilized for work in the presence of at least one flag man and one supervisor certified for such work. In order to monitor the activities

during night hours, additional staff may have to be posted based on the need of the individual site.

17.3.4 The Contractor' machinery, equipment and vehicles shall normally operate 6 m clear of track. Any movement/work at less than 6m and upto a minimum of 3.5m clear of track centre, shall be carried out only in the presence of a person (including any railway employee) authorized by the Engineer. No part of the road vehicle shall be allowed at less than 3.5m from track centre. Cost of such railway employee shall be borne by the Employer.

17.3.5 The Contractor's machinery and equipment like Cranes, Flash Butt Welders, Ballasting machinery, Compactors, Track Laying Systems etc. are required to operate close to the existing line carrying traffic. Contractor is fully responsible for operating these machineries without endangering the safety of the running line and traffic.

17.3.6 Safety Fencing: Deleted

17.4 The contractor's special attention is drawn to Para 826 of Indian Railways Permanent Way Manual introduced under Advance Correction Slip no. 69 dated 23.05.2001, reproduced below which should invariably be complied with.

"826 Safe working of Contractors -- A large number of men and machinery are deployed by the contractors for track renewals, gauge conversions, doublings, bridge rebuilding etc. It is therefore essential that adequate safety measures are taken for safety of the trains as well as the work force. The following measures should invariably be adopted:

(a) The contractor shall not start any work without the presence of Railway supervisor at site.

(b) Wherever the road vehicles and/or machinery are required to work in the close vicinity of railway line, the work shall be so carried out that there is no infringement to the railway's schedule of dimensions. For this purpose the area where road vehicles and/or Machinery are required to ply, shall be demarcated and acknowledged by the contractor. Special care shall be taken for turning/reversal of road vehicles/machinery without infringing the running track. Barricading shall be provided wherever justified and feasible as per site conditions.

(c) The "look out and whistle" caution orders shall be issued to the trains and speed restrictions imposed where considered necessary. Suitable flag men/detonators shall be provided where necessary for protection of trains.

(d) The supervisors / workmen should be counseled about safety measures. A competency certificate to the contractor's supervisor as per proforma annexed shall be issued by AEN which will be valid only for the work for which it has been issued.

(e) The unloaded ballast / rails / sleepers / other P. Way materials after unloading along track should be kept clear off moving dimensions and stacked as per the specified heights and distance from the running track.

(f) Supplementary site-specific instructions, wherever considered necessary, shall be issued by the Engineer.

COMPETENCY CERTIFICATE

Certified that Shri_____ supervisor In-charge of M/S_____ has been examined regarding S&T working on_____ work. His knowledge has been found satisfactory and he is capable of supervising the work safely.

ASSISTANT ENGINEER"

17.5 The work of formation in banks and cuttings throughout the length of doubling is adjacent to track under running traffic. Many of the bridges on the proposed double line are to be constructed either as extensions or just adjacent to the existing bridges under running traffic. The work of Installation of Track throughout the length of doubling is adjacent to track under running traffic. The work of Installation of Track and Signals in the Station yards including alterations to the existing Track and Signals has to be done adjacent to or in replacement of the existing Track and Signals which are under running traffic. The contractor shall ensure that the safety of the running lines and running traffic is not endangered, because of his work

17.6 Any traffic/traction blocks, temporary speed restrictions and caution orders required in this connection shall also be got sanctioned from the Railway authorities well in advance, through the Engineer. The Railways may sanction the same for specific sites within the overall recovery time available in the Railway's time table. The contractor shall have to schedule his programme according to the convenience of the Railways. No claim from the contractor for any delay/inconvenience/loss on this account shall be entertained by the Employer.

17.7 Ancillary and Temporary works

17.7.1 The Contractor's proposals for erection of all ancillary and temporary works shall be in conformity with the proposals submitted along with the tender and modifications thereto as approved by the Engineer.

17.7.2 The Contractor shall submit drawings, supporting design calculations wherein called for by the Engineer and other relevant details of all such works to the Engineer for approval at least one month before he desires to commence such works. Approval by the Engineer of any such proposal shall not relieve the contractor of his responsibility for the sufficiency of such works.

17.7.3 The contractor shall, at his own cost, design and provide any temporary arrangements including relieving/service girders required in connection with the above said works and remove the same, when no longer required. These arrangements shall conform to Railway norms. The contractor shall obtain all necessary approvals and sanctions of the concerned Railway authorities including Commissioner of Railway Safety through the Engineer in advance and well in time.

17.7.4 Notwithstanding the above, the contractor shall not, however, be relieved of his

responsibility and obligation as aforesaid.

17.7.5 The contractor shall bear the cost of complying with all safety requirements. No extra payment will be made for complying with the safety provisions under this chapter and the cost of all such elements to meet the safety requirements shall be deemed to be included in the Bill of Quantities.

17.8 The contractor remains fully responsible for ensuring safety. In case of any accident, the Contractor shall bear cost of all damages to his equipment and men and also damages to Railway and its passengers.

17.9 Suitable barricading to forewarn road vehicle driver shall be provided by the contractor. The luminous tape, strung on bamboo or steel poles can be considered for such barricading. Barricading arrangement should be got approved by the Engineer wherever applicable.

17.10 Indemnity by Contractor:

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

17.11 Damage to Railway Property or life or Private Property:

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

17.12 Safety of Public

17.12.i The Contractor shall be responsible to take all precautions to ensure the safety of the Public whether on Public or Railway property and shall post such look out men as may in the opinion of the Engineer be required to comply with regulations pertaining to the work.

17.12.ii The Contractor shall provide effective barricading using G.I. corrugated sheets around foundation pits, trenches, erection sites, demolition sites etc., to prevent accidents and injuries to the public. He shall erect barricading duly leaving safe passage for the movement of the public as per the directions of Engineer.

17.12.iii No payment will be made for providing such barricading and the rates quoted by the Contractor shall be inclusive of such safety measures.

17.13 Reporting of Accidents:

The Contractor shall report to the Engineer details of any accidents as soon as possible after its occurrence. In the case of any fatality or serious accident, the Contractor shall, in addition, notify the Engineer and the Employer immediately by the quickest available means.

17.14 Life-saving Appliances and First-aid Equipment:

The Contractor shall provide and maintain upon the Works sufficient, proper and efficient life-saving appliances and first-aid equipment to the approval of the Engineer and in accordance with the requirements of ILO Convention No. 62. The appliances and equipment shall be available for use at all time.

17.15 Security Measure:

17.15.i Security arrangements for the work shall be in accordance with general requirements and the contractor shall conform to such requirements and shall be held responsible for the action or inaction on the part of his staff, employees.

17.15.ii Contractor's as well as Sub Contractor's employees and representatives shall wear identification Badges (cards), uniforms, helmets, gum boots and other safety/protection gadgets/accessories provided by the Contractor. Badges shall identify the Contractor and show the employee's name and number and shall be worn at all times while at site.

17.15.iii All vehicles used by the contractor shall be clearly marked with the Contractor's name or identification mark.

17.15.iv The contractor shall be responsible for security of works for the duration of the contract and shall provide and maintain continuously adequate security personnel to fulfill these obligations. The requirements of security measures shall include, but not be limited to, maintenance of Law and Order at site, provision of all lighting, guard, flagmen, and all other measures necessary for protection of works within the colonies, camps and elsewhere at site, all materials delivered to the site and all persons employed in connection with the works continuously throughout working and non-working periods including nights, Sundays and holidays, for the duration of the contract. However, at work sites in close proximity of traffic corridors where public and traffic are likely to come close to the work area, suitable barricading as proposed by contractor and approved by

Engineer shall be provided.

17.15.v No separate payment will be made for providing security measures and will be deemed to be included in the rates quoted by the contractor.

17.16 Contractor will have to comply the instructions circulated for Safety on Worksites Specially Doubling Works being implemented on Indian Railways as per relevant letters and any subsequent instructions on this issue. It is presumed that bidders have gone through the Indian Railway's policies including any subsequent instructions on this issue if any, before quoting the rates.

17.17 Ensuring Safety at work site:

Ensuring safety at work site while carrying out of doubling works is of paramount importance.

Following measures must be ensured:

17.17.i GC should be advised to educate his supervisor for each stretch to ensure Safety who should be well conversant safety instructions and should see that the same are not violated. PMC has to be made accountable for lapses on the safety aspects.

17.17.ii Periodical formal counseling of all contractor's staff and GC officials regarding safety instructions and review violations coming to light and taking appropriate action.

17.17.iii Counseling of drivers and operators of machinery regarding safety aspect during routine inspection of GC official's contractors Engineers.

17.17.iv All the drivers/machine operators should have competency certificate issued by PMC after examining their knowledge about safety. Only authorized drivers can ply within 6.6 m of the existing track will have to be proposed as found necessary.

17.17.v Necessary caution orders to Drivers of trains wherever required in terms of Railway Board's instructions/PCE circulars.

17.17.vi In case work is required to be carried out within 3.5 M of existing running line, K RIDE should be advised well in time and requested to provide look out men and Railway Supervisors for the site. At such locations close supervision must be ensured.

In terms of contract conditions, preventing entry of outsiders at the worksites is the responsibility of contractor and this has to be ensured.

17.18 Additional Conditions to Safety at Work Spot:

To ensure safety at all the work sites all the time, a dedicated Safety officer duly trained as per the provisions of the contract shall be posted by the contractor for each project. Following works will in general be assigned to safety officer.

17.19.i The Safety officer (in charge) shall be from the permanent rolls of the contractor. He will work under the administrative control of the Project Manager of the contractor.

17.19.ii The person from any sub-contractor deputed by the main contractor shall not be designated as Safety officer.

17.19.iii The Safety officer shall be overall in charge of the safety methods being undertaken at various

work sites. He shall not be given any other task related to the project planning and execution.

17.19.iv The Safety officer should be well versed with the safety aspects related to worksites in the vicinity of running railway lines and should impart training to the officials assisting him.

17.19.v The Safety officer shall be given suitable means of transport (depending on the requirement) by the contractor to approach all the work sites frequently and ensure that adequate precautions to ensure safety have been taken. Following items shall be specifically done by the Safety officer.

a. Ensuring the provision of the safety fencing. Any shortfall shall be made good immediately.

b. Availability of suitable lookout men at each working site. The lookout men shall be in possession of hooters, safety helmet and retro-reflective jacket to warn the site engineer/supervisor and operators/drivers of the equipments/vehicles working near the running track.

c. Arranging issuance of competency certificates by Employer/Engineer with the operator/driver of each equipment/vehicle before deputing for work.

d. Take assurance from the contractor officials at regular interval of complying with the safety instructions.

e. Any safety violation to be advised to all concerned and remedial action taken thereof.

17.19.vi The Safety officer will frequently counsel the contractor engineers/supervisors/ operators/drivers/lookout men about safety provisions during his day to day inspections and keep a record of the same. The Safety officer will prepare a monthly report of the safety inspections carried out and remedial action taken thereof and send it to the Project Manager of the contractor and the employer/engineer.

17.19.vii The contractor should open new sites only after discussing the safety measures to be undertaken with his Safety officer and obtaining the permission from Employer/ Engineer.

17.19.viii It shall be the duty of the Project Manager and Safety officer of the contractor that the instructions contained in the agreement related to safety and the same issued by the Railway/Employer/Engineer from time to time are strictly complied with.

Based on the above, it is advised that a thorough review of the safety provisions may be undertaken and it should be ensured that competent safety officers are available at all the work spots.

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