



रेलटेल कॉर्पोरेशन ऑफ इंडिया लिमिटेड

(भारत सरकार का उपक्रम), पूर्वी क्षेत्र
19वीं मंजिल, ऑरोरा वाटरफ्रंट बिल्डिंग, प्लॉट नं. 34/1,
ब्लॉक -जीएन, सेक्टर - V, साल्ट लेक, कोलकाता -700091,
पश्चिम बंगाल।

टेली: 033-44041499

RAILTEL CORPORATION OF INDIA LIMITED

(A Govt. of India Undertaking), Eastern Region,
19th Floor, Aurora Waterfront Building, Plot No. 34/1, Block – GN, Sector V, Salt
Lake, Kolkata-700091

RailTel E-Nivida Portal: <https://railtel.enivida.com>

RailTel website: <https://www.railtel.in>

“भारतीय विमानपत्तन प्राधिकरण (एएआई)” की इन-कैम्पस लास्ट माइल कनेक्टिविटी के लिए ओडिशा, पश्चिम बंगाल, मणिपुर, बिहार, त्रिपुरा, नागालैंड, असम, झारखंड, मेघालय, मिजोरम और अरुणाचल प्रदेश राज्यों में संबद्ध सामग्री की आपूर्ति सहित ओपन ट्रेंचिंग/एचडीडी विधि के माध्यम से लास्ट माइल ऑप्टिकल फाइबर केबल बिछाने और संबंधित कार्य का निष्पादन”

के काम के लिए

निविदा दस्तावेज (दो पैकेट प्रणाली)

TENDER DOCUMENT (Two Packet System)

for the work of

“Execution of in-campus Last Mile Optical Fibre Cable laying through Open Trenching/ HDD method and associated work including supply of allied materials in Odisha, West Bengal, Manipur, Bihar, Tripura, Nagaland, Assam, Jharkhand, Meghalaya, Mizoram and Arunachal Pradesh States for Last Mile connectivity of Airport Authority of India (AAI)”

खुली ई-निविदा संख्या (E-Tender Nos.): RailTel/Tender/OT/ER/HQ/2025-26/1569, Dt. 25.09.2025

खुलने की तिथि (Date of Opening): 17.10.2025

निविदा दस्तावेज की लागत (Cost of Tender Document): Rs. 1,770.00 (Incl. GST)

INDEX**SECTION – I**

CHAPTER	CONTENTS	PAGE No.
	DETAILED TENDER NOTICE	3-5
	CHECK LIST TO ENSURE VALIDITY OF OFFER	6
	OFFER LETTER	7
	E-TENDERING INSTRUCTIONS	8 - 10
1	PREAMBLE	11 - 14
2	SCHEDULE OF REQUIREMENTS (SOR) (SOR, Price Bid)	15 - 22

SECTION – II

3	INSTRUCTION TO TENDERER & CONDITIONS OF TENDERING	23 – 33
4	GENERAL CONDITIONS OF CONTRACT (GCC)	34 – 56
5	SPECIAL CONDITIONS OF CONTRACT (SCC)	57 – 78
6	BID DATA SHEET (BDS)	79 - 81
7	FORMS OF TENDER ETC.	82 - 96

SECTION – III

8	PREPARATION OF AS-BUILT ROUTE PLANS, SPECIFICATION OF MATERIALS	97 - 100
9	ENGINEERING INSTRUCTIONS FOR TRENCHING AND LAYING OF OPTICAL FIBRE CABLE AND TELECOM CABLE:	101 - 118
10	SPECIFICATION FOR JOINTING AND TERMINATION OF OFC CABLE	119 - 125
11	LIST OF ADDRESS FOR SPECIFICATIONS	126- 127
12	DRAWINGS	128 –138



रेलटेल कॉर्पोरेशन ऑफ इंडिया लिमिटेड

(भारत सरकार का उपक्रम) पूर्वी क्षेत्र

RailTel Corporation of India Ltd.

19th Floor, Aurora Waterfront Building, Plot no.34/1,
Block -GN, Sector - V, Salt Lake,
Kolkata -700091, Tele: 033-44041499

निविदा संख्या (Tender Notice No.): RailTel/Tender/OT/ER/HQ/2025-26/1569, Dt. 25.09.2025

RailTel's Website: <https://www.railtel.in>

RailTel E-Nivida Portal: www.railtel.enivida.com

रेलटेल कॉर्पोरेशन ऑफ इंडिया लिमिटेड (रेलटेल), पूर्वी क्षेत्र "भारतीय विमानपत्तन प्राधिकरण (एएआई) की इन-कैम्पस लास्ट माइल कनेक्टिविटी के लिए ओडिशा, पश्चिम बंगाल, मणिपुर, बिहार, त्रिपुरा, नागालैंड, असम, झारखंड, मेघालय, मिजोरम और अरुणाचल प्रदेश राज्यों में संबद्ध सामग्री की आपूर्ति सहित ओपन ट्रेचिंग/एचडीडी विधि के माध्यम से लास्ट माइल ऑप्टिकल फाइबर केबल बिछाने और संबंधित कार्य का निष्पादन" के काम के लिए एकल चरण दो पैकेट प्रणाली में खुली ई-बोलियां आमंत्रित करता है। /

RailTel Corporation of India Ltd. (RailTel), Eastern Region invites Open e-Bids in single stage two packet system for the work of "Execution of in-campus Last Mile Optical Fibre Cable laying through Open Trenching/ HDD method and associated work including supply of allied materials in Odisha, West Bengal, Manipur, Bihar, Tripura, Nagaland, Assam, Jharkhand, Meghalaya, Mizoram and Arunachal Pradesh States for Last Mile connectivity of Airport Authority of India (AAI)".

विवरण इस प्रकार है:

The details are as under:

a)	ई-निविदा दस्तावेज़ डाउनलोड करने की अंतिम तिथि Closing Date for downloading the e-Tender document	17.10.2025 up to 14:00 hrs.
b)	ई-बोलियां जमा करने की अंतिम तिथि Closing date for Submission of e-Bids	17.10.2025 up to 14:00 hrs.
c)	ई-बोलियां खोलने की तिथि Date of opening of e-Bids	17.10.2025 at 14.30 hrs. (Online)
d)	प्रस्तावों की वैधता Validity of offer	60 days from date of opening of bids

e)	कार्य की अनुमानित लागत (जीएसटी सहित)/ Estimated Cost of the work (Incl. GST)	Rs. 84,20,035.00 (Rupees Eighty Four Lakh Twenty Thousand Thirty Five only)
f)	आवश्यक बयाना राशि जमा (ईएमडी)/ Required Earnest Money Deposit (EMD)	Rs. 1,69,000.00 (Rupees One Lakh Sixty Nine Thousand only)
g)	निविदा दस्तावेज़ की लागत (जीएसटी सहित)/ Cost of Tender Document (Incl. GST)	Rs. 1770.00 (Rupees One Thousand Seven Hundred Seventy only)
h)	समापन अवधि/ Completion Period	60 Days from issuance of work order/LOA

नोट: चूंकि यह एक कार्य निविदा है, इसलिए एमएसई/स्टार्टअप फर्मों को निविदा दस्तावेज लागत (टीडीसी) और बयाना राशि जमा (ईएमडी) जमा करने से कोई छूट नहीं दी गई है।

Note: As this is a work tender no exemption has been provided to MSE/Startup firms from submission of Tender Document Cost (TDC) and Earnest Money Deposit (EMD).

निविदा सूचना और निविदा दस्तावेज रेलटेल की वेबसाइट पर उपलब्ध हैं और इसे <https://www.railtel.in> या ई-निविदा पोर्टल <https://railtel.enivida.com/> से डाउनलोड किया जा सकता है। ऑनलाइन बोली जमा करने के लिए निविदाकर्ता को पोर्टल <https://railtel.enivida.com/> से निविदा दस्तावेज की आधिकारिक ऑनलाइन प्रति अनिवार्य रूप से डाउनलोड करनी होगी। इस निविदा के लिए भविष्य की सभी जानकारी अर्थात शुद्धिपत्र / परिशिष्ट / संशोधन आदि केवल इसी ई-निविदा पोर्टल पर पोस्ट किए जाएंगे।

Tender Notice and Tender Document are available on RailTel's website and can be downloaded from <https://www.railtel.in> or from e-tendering portal <https://railtel.enivida.com/>. For online bid submission the tenderer will have to necessarily download an official online copy of the tender document from the portal <https://railtel.enivida.com/>. All future Information viz. corrigendum /addendum/ amendments etc. for this Tender shall be posted on this e-tendering portal only.

बोलीदाता बोली में तैयारी, प्रस्तुतीकरण/भागीदारी से संबंधित सभी लागतों को वहन करेगा। बोली प्रक्रिया के आचरण या परिणाम की परवाह किए बिना इन लागतों के लिए क्रेता किसी भी तरह से जिम्मेदार या उत्तरदायी नहीं होगा।

The bidder shall bear all costs associated with the preparation, submission/participation in the bid. Purchaser in no way will be responsible or liable for these costs regardless of the conduct or outcome of the bidding process.

पात्रता मापदंड/ Eligibility Criteria:

निविदा दस्तावेज के खंड 3.15 खंड-II, अध्याय-3 के अनुसार।

As per clause 3.15 Section-II, Chapter-3 of Tender document.

प्रस्ताव की वैधता:/ Validity of offer:

निविदा प्रस्तावों को निविदा खोलने की तिथि से 60 दिनों की अवधि के लिए स्वीकृति के लिए वैध माना जाता है। अपूर्ण निविदाएं और अपर्याप्त बयाना राशि वाली निविदाएं सरसरी तौर पर खारिज कर दी जाएंगी।।

The tender offers are deemed to be valid for acceptance for a period of 60 days from the date of opening of the tender. Incomplete tenders and tenders with insufficient EMD will be summarily rejected.

इस निविदा के संबंध में बयाना राशि जमा (ईएमडी) और निविदा दस्तावेज लागत (टीडीसी) का भुगतान ई-निविदा पोर्टल के माध्यम से स्वीकार किया जाएगा।।

Payment of Earnest Money Deposit (EMD) and Tender Document Cost (TDC), in respect of this tendering, will be accepted through RailTel eNivida portal.

सहायक महाप्रबंधक/निविदा
रेलटेल कॉर्पोरेशन ऑफ इंडिया लिमिटेड, पूर्वी क्षेत्र/कोलकाता के लिए
Asstt. General Manager/Tender
for RailTel Corporation of India Ltd, Eastern Region/ Kolkata

CHECK LIST (FOR ENSURING VALIDITY OF OFFER):

S.N.	Description	Submitted/Not submitted
1.	Proof of submission of EMD as per NIT/ Preamble (Mandatory)	
2.	Proof of submission of cost of tender document as per NIT/ Preamble (Mandatory)	
3.	Required documents against Technical Eligibility Criteria as per cl.no. 3.15 section II chapter-3 (Mandatory)	
4.	Required documents against Financial Eligibility Criteria as per cl.no. 3.15 section II chapter-3 (Mandatory)	
5	Notarized Affidavit and as per clause no.3.16 (ii) section II Chapter-3. (Annexure-A, Form No.1) (Mandatory)-Offline	
6	Power of Attorney (Mandatory)-Offline	
7.	Clause wise compliance and deviation statement to the tender condition and statement of deviation as per Form- No. 5, Section-II Chapter -7.	
8.	<u>Price Bid submission</u> : This is a percentage bidding system tender wherein the estimated unit prices of each item of the schedule is given including the quantity of each item of the schedule and the total value of the schedule. The bidder is required to quote the percentage above (+) / below (-)/at par of the total estimated value spelt out in the <u>schedule of work in the price bid (Mandatory)</u>	
9.	Copy of PAN card, GSTIN Registration certificate.	
10.	Audited balance sheet for last Three financial years & current year- certificate from CA certifying gross receipts till date of inviting tender.	
11.	Proposed Progress Chart	
12.	Constitution of Firm (Mandatory)	
13.	User Certificate (Form No.2)	
14.	Similar work executed or under execution (Form No.12)	
15.	Any Other Information desired to be submitted by the Tenderer	
16.	List of Personnel/Manpower	
17.	List of Plant & Machinery	

Note:

1. The above Check List is indicative and does not purport to be the entire requirement. Tenderers are advised to go through the entire tender document carefully before submitting their offers.
2. All the scan copies of the documents listed above shall be submitted online.
3. Original documents listed at Srl. No. 5 & 6 is to be submitted offline before due date of tender opening to the tendering authority.

SECTION – I
OFFER LETTER

Ref: Tender No. RailTel/Tender/OT/ER/HQ/2025-25/1569, Dt. 25.09.2025

Principal Executive Director, (Eastern Region),
RailTel Corporation of India Limited.,
19th Floor, Aurora Waterfront Building,
Plot No. 34/1, Block - GN, Sector V,
Salt Lake, Kolkata – 700091

1. I/We _____ have read the various conditions to tender attached here to and hereby agree to ABIDE BY THE SAID CONDITIONS. I/We also agree to keep this tender open for acceptance for a period of 60 days from the date fixed for opening the same and in default thereof, I/We will be liable for forfeiture of my/our Earnest Money. I/We offer to do the work of “Execution of in-campus Last Mile Optical Fibre Cable laying through Open Trenching/ HDD method and associated work including supply of allied materials in Odisha, West Bengal, Manipur, Bihar, Tripura, Nagaland, Assam, Jharkhand, Meghalaya, Mizoram and Arunachal Pradesh States for Last Mile connectivity of Airport Authority of India (AAI)” at the rates quoted in the attached schedules and hereby bind myself/ourselves to complete the within specified period mentioned in the preamble from the date of issue of Letter of Acceptance/PO of the tender.
2. I/We also hereby agree to abide by the Various Conditions of Contract and to carry out the work according to the Specifications for materials and works laid down by the RailTel for the present contract.
3. A sum of Rs. -----/(Rupees ----- only) is herewith submitted as “Earnest Money through RailTel eNivida portal with transaction id/Ref. No. _____
4. The full value of Earnest Money shall stand forfeited without prejudice to any other rights or remedies if,
 - a) I/We do not execute the contract agreement within 30 days after receipt of notice issued by the RailTel that such documents are ready or,
 - b) I/We do not commence the work within 15 days after receipt of orders to that effect.
5. Until a formal agreement is prepared and executed the acceptance of this tender shall constitute a binding contract between us subject to modifications, as may be mutually agreed to between us and indicated in the “Letter of Acceptance” of my/our offer for this work.

SIGNATURE OF CONTRACTOR (S) Date
CONTRACTOR (S) ADDRESS

SIGNATURE OF WITNESS

- 1.
- 2.

ACCEPTANCE OF TENDERS

I accept the tender as above and agree to pay the rate as entered in Schedule of requirements. for and on behalf of RailTel Corporation of India Limited Eastern Region, Kolkata

WITNESS

- 1.
- 2.

Date

SECTION – I

e-Tendering Instructions

1. **This tender is processed as E-Tender**

2. **Submission of Bids only through online process is mandatory for this Tender**

e-Tendering is a new methodology for conducting Public Procurement in a transparent and secured manner. Now, the Government of India has made e-tendering mandatory. Suppliers/ Vendors will be the biggest beneficiaries of this new system of procurement. For conducting electronic tendering, RailTel has decided to use the portal <https://railtel.enivida.com/> Indian Railways E-procurement system (RailTel e-Nivida).

Benefits to Suppliers are outlined on the Home-page of the portal. Bidders are advised to visit the RailTel e-Nivida Portal for details related to E-Tender i.e. Registration, FAQ, Helpdesk, Learning Center etc.

3. **Tender Bidding Methodology:**

Bid System - 'Single Stage - Two Envelope': In this tender, bidder has to submit the Technical as well as financial bid / Price Bid "**ONLINE**".

RailTel e-Nivida Helpdesk

Please visit Helpdesk section on RailTel eNivida Portal.

RailTel's Contact Person & Designation

Shri Pooran Singh
AGM/Tender
Telephone/Mobile: 033-44009951/9007044140
E-Mail Id: pooransingh@railtelindia.com

Shri Upendra Kumar Singh
AGM/Project,
Telephone/Mobile No. 033-44009905/9007044141
Email id: upendrakumarsingh@railtelindia.com

The entire bid-submission would be online on RailTel eNivida Portal.

4. **Broad outline of submissions are as follows:**

- I. Submission of EMD through RailTel eNivida portal
- II. Submission of digitally signed copy of Tender Documents/Addenda
- III. Tender to be submitted in Two packet system
- IV. Online response to Terms & Conditions of Tender.

NOTE: Bidder must ensure that the bid must be successfully submitted online as per instructions of RailTel eNivida Portal.

5. **Offline Submission:**

The bidder is required to submit the following documents offline to RailTel Corporation of India Ltd, Principal Executive Director, RailTel Corporation of India Limited, Eastern Region, 19th Floor, Aurora Waterfront Building, Plot No. 34/1, Block – GN, Sector V, Salt Lake, Kolkata -

700091 before due date & time of submission of bids specified in this tender document, in a Sealed Envelope. The envelope shall bear (the tender name), the tender number and the words 'DO NOT OPEN BEFORE' (due date & time):

- a) **Power of attorney** in favour of the signatory duly authorizing the signatory shall be submitted to the tendering authority before the due date and time of submission of the Tender.
- b) **Notarized Affidavit** in original to be submitted as per clause No. 3.16 (ii) instructions to tenderers section II chapter 3.

NOTE: The Bidder has to upload the Scanned copy of all above original documents as Bid-Annexures during Online Bid-Submission.

Cost of tender document shall be submitted through payment gateway of RailTel e-Nivida portal

- c) Only those documents which are declared explicitly by the tenderer as "documents supporting the claim of qualifying the laid down eligibility criteria", will be considered for evaluating his/their tender.
- d) Supporting documents towards eligibility criteria i.e. technical and financial & others as per cl.no.6 below

6. Submission of Eligibility Criteria related documents:

Eligibility criteria related documents viz. Technical & Financial Credential certificates and other documents as applicable shall also be scanned and submitted ONLINE.

NOTE: In case of internet related problem at a bidder's end, especially during 'critical events' such as - a short period before bid-submission deadline, during online public tender opening event, it is the bidder's responsibility to have backup internet connections. In case there is a problem at the e-procurement/ e-auction service provider's end (in the server, leased line, etc.) due to which all the bidders face a problem during critical events, and this is brought to the notice of RailTel by the bidders in time, then RailTel will promptly re-schedule the affected event(s).

In case there is a problem at the e-procurement/ e-auction service provider's end (in the server, leased line, etc.) due to which all the bidders face a problem during critical events, and this is brought to the notice of RailTel by the bidders in time, then RailTel will promptly re-schedule the affected event(s).

7. Instructions for Tender Document TO THE BIDDERS The RailTel Tenders are published on <https://www.railtel.in> and on RailTel e-Nivida Portal <https://railtel.enivida.com>.
NOTE: For online bid submission the bidder will have to necessarily download an official online copy of the tender documents from RailTel eNivida portal, and this should be done well before the deadline for bid-submission.

8. Submission of Offers and Filling of Tender:

This e-tender should be duly submitted online using the e-Procurement Portal <https://railtel.enivida.com/>. For detailed instructions please refer to RailTel e-Nivida Portal.

9. Fax Quotations & Late Tenders: Fax Tender documents and Late/Delayed tenders would not be considered.

10. Attendance of Representatives for Tender Opening: Representatives of bidders desirous to attend the tender opening can do so, on production of a proper letter of authority from the respective firm, failing which they may not be allowed to attend the tender opening. Authorized representatives of those firms who have submitted the tender documents alone shall be allowed to attend the tender opening.
 11. Addenda / Corrigenda: Addenda / Corrigenda to the tender documents may be issued by RailTel prior to the date of opening of the tenders, to clarify or reflect modifications in the contract terms and conditions or in the design. Such addendum/corrigendum shall be available on RailTel e-Nivida Portal only. Bidders who are unable or unwilling to bring their tenders to conform to the requirements of the RailTel are liable to be rejected.
 12. Ambiguity/ Pre- Bid Clarification Requests:
If there is any ambiguity or doubt as to the meaning of any of the tender clauses/ conditions or if any additional information required, the matter should immediately be referred to the RailTel in writing through emails to RailTel Contacts defined above. All clarification shall be responded through email.
 13. **Bid submission and Opening date:**
 - 13.1 The bid should be submitted online along with Credential/Techno commercial & Price bid document (all documents).
 - 13.2 Power of attorney in favor of the signatory duly authorizing the signatory shall be submitted in a separate envelope to the tendering authority before the due date and time of submission of the e-Tender.
 - 13.3 The bidder's bids will be opened at the time & date of opening of the tender given in the Bid Data Sheet (BDS) online simultaneously in presence of such Bidders/ Representatives who choose to be present online. The Tenders/Representatives can also choose to be physically present in the office of RailTel for the Online Public Tender Opening Event.
 14. Other Instructions
For further instructions, the vendor should visit the homepage of the portal (<https://railtel.enivida.com>) and go to the User-Guidance Center.
 15. **Additional Instructions:** Please note, For E-Tendering bids /information by bidders is to be submitted "Online" on RailTel e-Nivida e-Procurement Portal. Any document / information pertaining to this chapter will have to be submitted by the bidder online. The digital signature of the tenderer on the e-tender form will be considered as confirmation that the tenderer has read, understood and accepted all the documents. All columns should be filled and blank columns if any should be marked as NIL. Please read the Schedule of Requirements, Instructions to the Tenderers, General and Special Conditions including Technical Specifications before filling up the Tender Form carefully.
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SECTION – I
Chapter - 1
Preamble

Ref: Tender No. RailTel/Tender/OT/ER/HQ/2025-26/1569, Dt. 25.09.2025

1. **Name of work:** “Execution of in-campus Last Mile Optical Fibre Cable laying through Open Trenching/ HDD method and associated work including supply of allied materials in Odisha, West Bengal, Manipur, Bihar, Tripura, Nagaland, Assam, Jharkhand, Meghalaya, Mizoram and Arunachal Pradesh States for Last Mile connectivity of Airport Authority of India (AAI)”.

Srl. No.	Tender No.	Name of the Work	Estimated cost (Incl. GST) (Rs.)	EMD (Rs.)
1.	RailTel/Tender/OT/ER/HQ/2025-26/1569, Dt. 25.09.2025	Execution of in-campus Last Mile Optical Fibre Cable laying through Open Trenching/ HDD method and associated work including supply of allied materials in Odisha, West Bengal, Manipur, Bihar, Tripura, Nagaland, Assam, Jharkhand, Meghalaya, Mizoram and Arunachal Pradesh States for Last Mile connectivity of Airport Authority of India (AAI)	84,20,035.00	1,69,000.00

1.2 Scope of work:

- 1.2.1 The Engineering instructions spelt out in this tender document deal with the methods to be adopted for underground Optical Fiber Cable laying in PLB HDPE ducts and termination of OFC cable at end points.
The broad responsibility of the contractor under the scope of this tender shall be as under:
- i. Cable Route survey of the area and preparation of tentative & final cable route plan and submission of route plan.
 - ii. Execution Open Trenching/HDD, laying of HDPE Duct in all type of soils, Bridges/Culverts/Nallah, Road/Rail crossing etc. & protective works as per technical specifications.
 - iii. Transportation of HDPE Duct and 24F OFC cable from nearest RailTel Store/Warehouse , Laying of HDPE duct, Blowing/pulling of Optical Fiber Cable in HDPE duct with proper tools and accessories as per technical specifications: **Not Applicable**
 - iv. Installation of Jointing Chambers / cable loop chamber & Route/ Joint Indicators as per technical specification/ drawing.

- v. Supply Joint closures and Fibre Management System and Splicing of fibers in placing of finished joint in Jointing Chamber, closing of joint chamber.
- vi. Testing & Submission of test results, preparation of final cable route diagrams of route.

1.2.2 Supply:

Supply of materials as per schedule and the Technical Specifications

- 1.3 Tender documents shall be submitted online through RailTel e-Nivida portal Awarding or not awarding is at the sole discretion of the RailTel Corporation of India Ltd.
- 1.4 The tenderers are required to quote % (percentage) below/above/at par for the complete work.
- 1.5 Cost of Tender document: Cost of tender document as indicated in the Tender Notice to be submitted in the through RailTel e-Nivida portal only.
- 1.6 Qualifying Criteria for participating in the tender, the contractor shall be required to meet the eligibility requirements as given in clause 3.15. of Chapter-3 of Section-II (Instructions to Tenderers and Conditions of Tendering) of the tender document.
- 1.7 Last date of Submission: The tender shall be submitted online up to 14:00 hrs. of 17.10.2025.
- 1.8 Date of Opening of Tender: The tender will be opened at 14.30 hrs. on 17.10.2025 at the office of RailTel Corporation of India Ltd. at 19th Floor, Aurora Waterfront Building, Plot No. 34/1, Block – GN, Sector V, Salt Lake, Kolkata - 700091.
- 1.9 **Completion Period of Work:** The work should be completed within 60 days from the date of issue of Letter of Acceptance.
- 1.10 Address to which correspondence and documents relating to the Contract should be sent: General Manager/Project, RailTel Corporation of India Ltd, 19th Floor, Aurora Waterfront Building, Plot No. 34/1, Block – GN, Sector V, Salt Lake, Kolkata - 700091.
- 1.11 Earnest Money: Tenderer shall deposit Earnest Money as detailed in a manner prescribed in clause –3.5, Chapter -3, Section II.
- 1.12 **Security Deposit: Not Applicable.**
- 1.13 PBG: On receipt of Letter of Acceptance of Tender from the RailTel, the successful tenderer shall, within a period of 30 days, deposit in favour of RailTel Corporation of India Limited, Kolkata an amount in terms of clause-5.3 of Special Conditions of Contract (Section II Chapter 5) towards Performance Guarantee for due fulfillment of contract.
- 1.14 Specifications: Reference of specifications of the important equipments and materials required for execution of the contract is given in the SOR, Technical Specification (Section III chapter - 9 Chapter-12 of the tender document). The work shall be executed in compliance with all the technical requirements given therein.

- 1.15 Schedule of Requirement: The various items to be supplied and works/services to be provided by the tenderer are indicated in Schedule of Requirement as enclosed in Section I Chapter -2 The tenderer is advised to quote for all the items. The make and model of all the equipment proposed to be supplied must be indicated by the tenderer/s in the Schedule of Requirement.
- 1.16 As built drawings: shall be submitted after completion of testing and commissioning of section as per specification (section III chapter -9)
- 1.17 Materials to be supplied by RailTel: **No Material shall be supplied by RailTel.**
- Note:** The successful tenderer has to make his own arrangements to supply all material at site. Rate for OFC & Duct shall include transportation charges, loading, unloading, store at site and stacking security of the material at site.
- 1.18 Materials to be supplied by Contractor: Contractor shall be arrange/supply the material required for execution of the work. All materials including OFC cable and HDPE Duct covered under the Schedule of Requirement and those required to achieve the end objective as required are to be supplied by the contractor.
- 1.19 As good tender practice, the tenderer is expected to submit giving all the information in the relevant forms attached as Annexure to this document and suitably numbering each page of the bid documents with a content list indicating availability of various documents with their serial numbers. In the absence of numbering of pages and the content list, there is a likelihood of any important document going unnoticed for which the tenderer shall be solely responsible.
- 1.20 Maintenance Support: The tenderer should submit their strategy for providing maintenance support during maintenance, warranty and post warranty period.

In all matters, decision of Principal Executive Director, Eastern Region RailTel Corporation of India Ltd., Kolkata, will be final.

BIDDER'S ORGANISATION DATA

1.	Name of the Organization:	
2.	Name of the Authorized Person Submitting the Tender Documents (Submit the proof of authorizing the person to sign the tenders by the company on its behalf)	
3.	Main line of Business	
4.	Years of Experience	
5.	Location (indicate address, tel.no., fax and the year from which they are operating in that location)	
6.	Contact person	
7.	Address	
8.	Fax No.	
9.	E-mail ID	

SECTION - I**Chapter - 2****Sl. No.1 :****Tender No.: RailTel/Tender/OT/ER/HQ/2025-26/1569, Dt. 25.09.2025****SCHEDULE OF REQUIREMENT (SOR) & PRICE BID**

Name of the work: Execution of in-campus Last Mile Optical Fibre Cable laying through Open Trenching/ HDD method and associated work including supply of allied materials in Odisha, West Bengal, Manipur, Bihar, Tripura, Nagaland, Assam, Jharkhand, Meghalaya, Mizoram and Arunachal Pradesh States for Last Mile connectivity of Airport Authority of India (AAI).

1.(A) AAI Bhubaneswar					
Srl. No.	Item Description	UOM	Qty.	Unit Rate (Incl. GST)	Amount (Incl. GST)
1	Open Trenching /HDD and Laying & terminating of OFC at repeaters in rack /wall mountable FMS including all protective materials at Bridge/culvert/roads/Rail crossing as per engineering instruction and submission of route diagram in hard as well as soft copy in CD/HDD/Memory stick for complete link. The above work includes laying of duct, cost of all allied materials including 50 mm GI pipe, 90/76 mm DWC, RCC joint chamber & Loop chamber @ 3nos per Km as per specification and drawing, TVSE/ Raychem/ ROXTEC/ 3-M/ Comm Scope/ or similar make joint closure & 24F SC/PC type FMS, pre-cast RCC route indicators at an interval of 100m, concealment of duct through wall as per site requirement and in place of sudden change in direction of cable route and all concreting materials for protection. Transportation of OFC & Duct from nearest or assigned RailTel's store is also included.	KM	1	345671.28	3,45,671.28
2	Supply of 24 F OFC (armored)	Km	1.1	52923.00	58,215.30
3	Supply of Permanently lubricated HDPE Telecom size 40/33 mm Duct and accessories.	KM	1	46382.67	46,382.67
Total (Rs.)					4,50,269.25

1.(B) AAI Bagdogra					
Srl. No.	Item Description	UOM	Qty.	Unit Rate (Incl. GST)	Amount (Incl. GST)
1	Open Trenching /HDD and Laying & terminating of OFC at repeaters in rack /wall mountable FMS including all protective materials at Bridge/culvert/roads/Rail crossing as per engineering instruction and submission of route diagram in hard as well as soft copy in CD/HDD/Memory stick for complete link.	KM	1.2	345671.28	4,14,805.53
	The above work includes laying of duct, cost of all allied materials including 50 mm GI pipe, 90/76 mm DWC, RCC joint chamber & Loop chamber @ 3nos per Km as per specification and drawing, TVSE/ Raychem/ ROXTEC/ 3-M/ Comm Scope/ or similar make joint closure & 24F SC/PC type FMS, pre-cast RCC route indicators at an interval of 100m, concealment of duct through wall as per site requirement and in place of sudden change in direction of cable route and all concreting materials for protection. Transportation of OFC & Duct from nearest or assigned RailTel's store is also included.				
2	Supply of 24 F OFC (armored)	Km	1.32	52923.00	69,858.36
3	Supply of Permanently lubricated HDPE Telecom size 40/33 mm Duct and accessories.	KM	1.2	46382.67	55,659.21
Total (Rs.)					5,40,323.10

1.(C) AAI Imphal					
Srl. No.	Item Description	UOM	Qty.	Unit Rate (Incl. GST)	Amount (Incl. GST)
1	Open Trenching /HDD and Laying & terminating of OFC at repeaters in rack /wall mountable FMS including all protective materials at Bridge/culvert/roads/Rail crossing as per engineering instruction and submission of route diagram in hard as well as soft copy in CD/HDD/Memory stick for complete link.	KM	1	345671.28	3,45,671.28
	The above work includes laying of duct, cost of all allied materials including 50 mm GI pipe, 90/76 mm DWC, RCC joint chamber & Loop chamber @ 3nos per Km as per specification and drawing, TVSE/ Raychem/ ROXTEC/ 3-M/ Comm Scope/ or similar make joint closure & 24F SC/PC type FMS, pre-cast RCC route indicators at an interval of 100m, concealment of duct through wall as per site requirement and in place of sudden change in direction of cable route and all concreting materials for protection. Transportation of OFC & Duct from nearest or assigned RailTel's store is also included.				
2	Supply of 24 F OFC (armored)	Km	1.1	52923.00	58,215.30
3	Supply of Permanently lubricated HDPE Telecom size 40/33 mm Duct and accessories.	KM	1	46382.67	46,382.67
Total (Rs.)					4,50,269.25

1.(D) AAI Patna					
Srl. No.	Item Description	UOM	Qty.	Unit Rate (Incl. GST)	Amount (Incl. GST)
1	Open Trenching /HDD and Laying & terminating of OFC at repeaters in rack /wall mountable FMS including all protective materials at Bridge/culvert/roads/Rail crossing as per engineering instruction and submission of route diagram in hard as well as soft copy in CD/HDD/Memory stick for complete link.	KM	0.5	345671.28	1,72,835.64
	The above work includes laying of duct, cost of all allied materials including 50 mm GI pipe, 90/76 mm DWC, RCC joint chamber & Loop chamber @ 3nos per Km as per specification and drawing, TVSE/ Raychem/ ROXTEC/ 3-M/ Comm Scope/ or similar make joint closure & 24F SC/PC type FMS, pre-cast RCC route indicators at an interval of 100m, concealment of duct through wall as per site requirement and in place of sudden change in direction of cable route and all concreting materials for protection. Transportation of OFC & Duct from nearest or assigned RailTel's store is also included.				
2	Supply of 24 F OFC (armored)	Km	0.55	52923.00	29,107.65
3	Supply of Permanently lubricated HDPE Telecom size 40/33 mm Duct and accessories.	KM	0.5	46382.67	23,191.34
Total (Rs.)					2,25,134.62

1.(E) AAI Agartala					
S. No.	Item Description	UOM	Qty.	Unit Rate (Incl. GST)	Amount (Incl. GST)
1	Open Trenching /HDD and Laying & terminating of OFC at repeaters in rack /wall mountable FMS including all protective materials at Bridge/culvert/roads/Rail crossing as per engineering instruction and submission of route diagram in hard as well as soft copy in CD/HDD/Memory stick for complete link.	KM	1	345671.28	3,45,671.28
	The above work includes laying of duct, cost of all allied materials including 50 mm GI pipe, 90/76 mm DWC, RCC joint chamber & Loop chamber @ 3nos per Km as per specification and drawing, TVSE/ Raychem/ ROXTEC/ 3-M/ Comm Scope/ or similar make joint closure & 24F SC/PC type FMS, pre-cast RCC route indicators at an interval of 100m, concealment of duct through wall as per site requirement and in place of sudden change in direction of cable route and all concreting materials for protection. Transportation of OFC & Duct from nearest or assigned RailTel's store is also included.				
2	Supply of 24 F OFC (armored)	Km	1.1	52923.00	58,215.30
3	Supply of Permanently lubricated HDPE Telecom size 40/33 mm Duct and accessories.	KM	1	46382.67	46,382.67
Total (Rs.)					4,50,269.25

1.(F) AAI Dimapur					
Srl. No.	Item Description	UOM	Qty.	Unit Rate (Incl. GST)	Amount (Incl. GST)
1	Open Trenching /HDD and Laying & terminating of OFC at repeaters in rack /wall mountable FMS including all protective materials at Bridge/culvert/roads/Rail crossing as per engineering instruction and submission of route diagram in hard as well as soft copy in CD/HDD/Memory stick for complete link.	KM	1	345671.28	3,45,671.28
	The above work includes laying of duct, cost of all allied materials including 50 mm GI pipe, 90/76 mm DWC, RCC joint chamber & Loop chamber @ 3nos per Km as per specification and drawing, TVSE/ Raychem/ ROXTEC/ 3-M/ Comm Scope/ or similar make joint closure & 24F SC/PC type FMS, pre-cast RCC route indicators at an interval of 100m, concealment of duct through wall as per site requirement and in place of sudden change in direction of cable route and all concreting materials for protection. Transportation of OFC & Duct from nearest or assigned RailTel's store is also included.				
2	Supply of 24 F OFC (armored)	Km	1.1	52923.00	58,215.30
3	Supply of Permanently lubricated HDPE Telecom size 40/33 mm Duct and accessories.	KM	1	46382.67	46,382.67
Total (Rs.)					4,50,269.25

1.(G) AAI Jharsuguda					
Srl. No.	Item Description	UOM	Qty.	Unit Rate (Incl. GST)	Amount (Incl. GST)
1	Open Trenching /HDD and Laying & terminating of OFC at repeaters in rack /wall mountable FMS including all protective materials at Bridge/culvert/roads/Rail crossing as per engineering instruction and submission of route diagram in hard as well as soft copy in CD/HDD/Memory stick for complete link.	KM	5	345671.28	17,28,356.38
	The above work includes laying of duct, cost of all allied materials including 50 mm GI pipe, 90/76 mm DWC, RCC joint chamber & Loop chamber @ 3nos per Km as per specification and drawing, TVSE/ Raychem/ ROXTEC/ 3-M/ Comm Scope/ or similar make joint closure & 24F SC/PC type FMS, pre-cast RCC route indicators at an interval of 100m, concealment of duct through wall as per site requirement and in place of sudden change in direction of cable route and all concreting materials for protection. Transportation of OFC & Duct from nearest or assigned RailTel's store is also included.				
2	Supply of 24 F OFC (armored)	Km	5.5	52923.00	2,91,076.50
3	Supply of Permanently lubricated HDPE Telecom size 40/33 mm Duct and accessories.	KM	5	46382.67	2,31,913.37
Total (Rs.)					22,51,346.25

1.(H) AAI Dibrugarh					
S. No.	Item Description	UOM	Qty.	Unit Rate (Incl. GST)	Amount (Incl. GST)
1	Open Trenching /HDD and Laying & terminating of OFC at repeaters in rack /wall mountable FMS including all protective materials at Bridge/culvert/roads/Rail crossing as per engineering instruction and submission of route diagram in hard as well as soft copy in CD/HDD/Memory stick for complete link.	KM	1	345671.28	3,45,671.28
	The above work includes laying of duct, cost of all allied materials including 50 mm GI pipe, 90/76 mm DWC, RCC joint chamber & Loop chamber @ 3nos per Km as per specification and drawing, TVSE/ Raychem/ ROXTEC/ 3-M/ Comm Scope/ or similar make joint closure & 24F SC/PC type FMS, pre-cast RCC route indicators at an interval of 100m, concealment of duct through wall as per site requirement and in place of sudden change in direction of cable route and all concreting materials for protection. Transportation of OFC & Duct from nearest or assigned RailTel's store is also included.				
2	Supply of 24 F OFC (armored)	Km	1.1	52923.00	58,215.30
3	Supply of Permanently lubricated HDPE Telecom size 40/33 mm Duct and accessories.	KM	1	46382.67	46,382.67
Total (Rs.)					4,50,269.25

1.(I) AAI Ranchi					
S. No.	Item Description	UOM	Qty.	Unit Rate (Incl. GST)	Amount (Incl. GST)
1	Open Trenching /HDD and Laying & terminating of OFC at repeaters in rack /wall mountable FMS including all protective materials at Bridge/culvert/roads/Rail crossing as per engineering instruction and submission of route diagram in hard as well as soft copy in CD/HDD/Memory stick for complete link.	KM	1	345671.28	3,45,671.28
	The above work includes laying of duct, cost of all allied materials including 50 mm GI pipe, 90/76 mm DWC, RCC joint chamber & Loop chamber @ 3nos per Km as per specification and drawing, TVSE/ Raychem/ ROXTEC/ 3-M/ Comm Scope/ or similar make joint closure & 24F SC/PC type FMS, pre-cast RCC route indicators at an interval of 100m, concealment of duct through wall as per site requirement and in place of sudden change in direction of cable route and all concreting materials for protection. Transportation of OFC & Duct from nearest or assigned RailTel's store is also included.				
2	Supply of 24 F OFC (armored)	Km	1.1	52923.00	58,215.30
3	Supply of Permanently lubricated HDPE Telecom size 40/33 mm Duct and accessories.	KM	1	46382.67	46,382.67
Total (Rs.)					4,50,269.25

1.(J) AAI Silchar					
S. No.	Item Description	UOM	Qty.	Unit Rate (Incl. GST)	Amount (Incl. GST)
1	Open Trenching /HDD and Laying & terminating of OFC at repeaters in rack /wall mountable FMS including all protective materials at Bridge/culvert/roads/Rail crossing as per engineering instruction and submission of route diagram in hard as well as soft copy in CD/HDD/Memory stick for complete link.	KM	1	345671.28	3,45,671.28
	The above work includes laying of duct, cost of all allied materials including 50 mm GI pipe, 90/76 mm DWC, RCC joint chamber & Loop chamber @ 3nos per Km as per specification and drawing, TVSE/ Raychem/ ROXTEC/ 3-M/ Comm Scope/ or similar make joint closure & 24F SC/PC type FMS, pre-cast RCC route indicators at an interval of 100m, concealment of duct through wall as per site requirement and in place of sudden change in direction of cable route and all concreting materials for protection. Transportation of OFC & Duct from nearest or assigned RailTel's store is also included.				
2	Supply of 24 F OFC (armored)	Km	1.1	52923.00	58,215.30
3	Supply of Permanently lubricated HDPE Telecom size 40/33 mm Duct and accessories.	KM	1	46382.67	46,382.67
Total (Rs.)					4,50,269.25

1.(K) AAI Barapani Shillong					
Srl. No.	Item Description	UOM	Qty.	Unit Rate (Incl. GST)	Amount (Incl. GST)
1	Open Trenching /HDD and Laying & terminating of OFC at repeaters in rack /wall mountable FMS including all protective materials at Bridge/culvert/roads/Rail crossing as per engineering instruction and submission of route diagram in hard as well as soft copy in CD/HDD/Memory stick for complete link.	KM	1	345671.28	3,45,671.28
	The above work includes laying of duct, cost of all allied materials including 50 mm GI pipe, 90/76 mm DWC, RCC joint chamber & Loop chamber @ 3nos per Km as per specification and drawing, TVSE/ Raychem/ ROXTEC/ 3-M/ Comm Scope/ or similar make joint closure & 24F SC/PC type FMS, pre-cast RCC route indicators at an interval of 100m, concealment of duct through wall as per site requirement and in place of sudden change in direction of cable route and all concreting materials for protection. Transportation of OFC & Duct from nearest or assigned RailTel's store is also included.				
2	Supply of 24 F OFC (armored)	Km	1.1	52923.00	58,215.30
3	Supply of Permanently lubricated HDPE Telecom size 40/33 mm Duct and accessories.	KM	1	46382.67	46,382.67
Total (Rs.)					4,50,269.25

1.(L) AAI Legpui Aizwal					
Srl. No.	Item Description	UOM	Qty.	Unit Rate (Incl. GST)	Amount (Incl. GST)
1	Open Trenching /HDD and Laying & terminating of OFC at repeaters in rack /wall mountable FMS including all protective materials at Bridge/culvert/roads/Rail crossing as per engineering instruction and submission of route diagram in hard as well as soft copy in CD/HDD/Memory stick for complete link.	KM	1	345671.28	3,45,671.28
	The above work includes laying of duct, cost of all allied materials including 50 mm GI pipe, 90/76 mm DWC, RCC joint chamber & Loop chamber @ 3nos per Km as per specification and drawing, TVSE/ Raychem/ ROXTEC/ 3-M/ Comm Scope/ or similar make joint closure & 24F SC/PC type FMS, pre-cast RCC route indicators at an interval of 100m, concealment of duct through wall as per site requirement and in place of sudden change in direction of cable route and all concreting materials for protection. Transportation of OFC & Duct from nearest or assigned RailTel's store is also included.				
2	Supply of 24 F OFC (armored)	Km	1.1	52923.00	58,215.30
3	Supply of Permanently lubricated HDPE Telecom size 40/33 mm Duct and accessories.	KM	1	46382.67	46,382.67
Total (Rs.)					4,50,269.25

1.(M) AAI Hollongi Arunachal pradesh					
Srl. No.	Item Description	UOM	Qty.	Unit Rate (Incl. GST)	Amount (Incl. GST)
1	Open Trenching /HDD and Laying & terminating of OFC at repeaters in rack /wall mountable FMS including all protective materials at Bridge/culvert/roads/Rail crossing as per engineering instruction and submission of route diagram in hard as well as soft copy in CD/HDD/Memory stick for complete link.	KM	3	345671.28	10,37,013.83
	The above work includes laying of duct, cost of all allied materials including 50 mm GI pipe, 90/76 mm DWC, RCC joint chamber & Loop chamber @ 3nos per Km as per specification and drawing, TVSE/ Raychem/ ROXTEC/ 3-M/ Comm Scope/ or similar make joint closure & 24F SC/PC type FMS, pre-cast RCC route indicators at an interval of 100m, concealment of duct through wall as per site requirement and in place of sudden change in direction of cable route and all concreting materials for protection. Transportation of OFC & Duct from nearest or assigned RailTel's store is also included.				
2	Supply of 24 F OFC (armored)	Km	3.3	52923.00	1,74,645.90
3	Supply of Permanently lubricated HDPE Telecom size 40/33 mm Duct and accessories.	KM	3	46382.67	1,39,148.02
Total (Rs.)					13,50,807.75

PRICE BID FORMAT

Total Amount round off (Rs.)	84,20,035.00
<i>(Rupees Eighty Four Lakh Twenty Thousand Thirty Five Only) (incl. GST)</i>	
Percentage quoted <u>on total amount of SOR</u> (At par/ Below/ Above)	Shall be filled online in RAILTEL E-NIVIDA portal only

Note:

1. Cable route survey shall be done by vendor and arrange the ROW permission from the concerned authority if required any.
2. The contractor shall submit the required documents along with route diagram to concern authority and liaison for ROW permission from concerned authority shall be the responsibility of the contractor. ROW charge will be paid/reimbursed by RailTel.
3. The tenderer has to carryout detailed survey of the section to familiarize with the condition of the soil and requirement of protective arrangement etc. The tenderer has to quote for all items of schedule and partial quotes are not acceptable.
4. Replacement of Defective OFC: No defects like high loss events and fiber breaks are permitted and the contractor shall at his own cost rectify the defects. The contractor also at his own cost pull/ blow the cable again duct including splicing/Termination of the cable. In case of any deviation, specific approval from Competent Authority of RailTel should be obtained.
5. Break-up of taxes to be specified in a separate sheet showing Basic Price, GST and other charges if any applicable.
6. The connectivity points and length of cable laying is tentative.
7. If any link / links is /are being surrendered / added in the vicinity of the scope of the work by the customer/ RailTel, the cost will be reduced/ increased accordingly. RailTel reserves the right to add or surrender any link at any stage during the tenure of the contract. The selected bidder shall be bound to accept such modifications without raising any objection or claim for compensation.

SECTION - II

CHAPTER – 3

INSTRUCTIONS TO TENDERERS AND CONDITIONS OF TENDERING INDEX

- 3.1 General Instructions
- 3.2 Interpretations
- 3.3 Local Conditions
- 3.4 Compliance to Tender Conditions, Specifications and Drawings
- 3.5 Earnest Money/Bid Guarantee
- 3.6 Submission of Offers
- 3.7 Constitution of Firm and Power of Attorney
- 3.8 Unit Prices
- 3.9 Validity of Offer
- 3.10 Rates During Negotiations
- 3.11 Period of Completion and Time Progress Graph
- 3.12 Non-transferability and Non-refundability
- 3.13 Errors, Omissions and Discrepancies
- 3.14 Wrong Information by Tenderer
- 3.15 Qualifying Criteria
- 3.16 System of Verification of Tenderer's Credentials
- 3.17 System Performance Guarantee
- 3.18 Authority for Acceptance
- 3.19 Agreement
- 3.20 Tenderer' Address
- 3.21 Evaluation of offer
- 3.22 Amendment of Tender Document

SECTION – II

CHAPTER - 3

INSTRUCTIONS TO TENDERERS AND CONDITIONS OF TENDERING

3.1 GENERAL INSTRUCTIONS

Tenders are invited on behalf of M/s. RailTel Corporation of India Limited, Kolkata – 700 091 from established and reliable contractors for the work of “Execution of in-campus Last Mile Optical Fibre Cable laying through Open Trenching/ HDD method and associated work including supply of allied materials in Odisha, West Bengal, Manipur, Bihar, Tripura, Nagaland, Assam, Jharkhand, Meghalaya, Mizoram and Arunachal Pradesh States for Last Mile connectivity of Airport Authority of India (AAI)”.

The Special Conditions of Contract, Instructions to Tenderers and Conditions of Tendering, Technical Specifications & Supplement, Preamble including Schedule of Requirements and all Annexure & Forms etc. shall, hereafter, be collectively referred to as the "Tender Papers".

- 3.1.1 **Tender offer:** The tenderer(s) are required to quote Percentage rate as indicated in the schedule.

3.2 INTERPRETATIONS

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

"CONTRACT" Means the Contract resulting from the acceptance by the Purchaser of this Tender whether in whole or in part.

"CONTRACTOR" Means the successful Tenderer, i.e., the Tenderer whose Tender has been accepted either in whole or in part.

"CONTRACTOR'S REPRESENTATIVE" Shall mean a person in supervisory capacity who shall be so declared by the Contractor and who shall be authorized under a duly executed power of attorney to receive materials issued by the Purchaser to the Contractor for the works. He shall be responsible for proper execution of works at each or all places and shall take orders from Purchaser's Engineers and carry out the same.

"ENGINEER / ENGINEER-IN-CHARGE" Shall mean an executive of RailTel In-charge of works and shall include the superior executives of RailTel. He is responsible for ensuring that all field works covered by the contract are carried out in accordance with approved designs, drawings & specifications and conditions of contract as agreed to.

"ENGINEER'S REPRESENTATIVE" Shall mean the supervisor of RailTel in direct charge of the works.

"EQUIPMENT" Means all or any equipment considered necessary by the Purchaser's Engineers for satisfactory operation, as a whole, of the installations.

"MONTH" Means any consecutive period of thirty days.

"MATERIALS" Means all equipments, components, fittings and other materials including raw materials required to complete the work.

"PURCHASER" Means M/s RailTel Corporation of India Limited, 19th Floor, Aurora

Waterfront Building, Plot No. 34/1, Block – GN, Sector V, Salt Lake, Kolkata – 700 091.

"PURCHASER'S ENGINEER" Means the Principal Executive Director/Eastern Region of RailTel or successor who will decide all matters relating to design, manufacture, installation and commissioning of the plant and equipment at site.

"SUB-CONTRACTOR" Means an individual or a firm of Contractor or a Company registered under Indian Company Act or an approved supplier of materials to whom the Contractor sublets portions of the contract.

"CONSIGNEE" Means the person specified in the Acceptance of Tender to whom Stores are to be delivered at the destination.

"INSPECTING OFFICER" Means the person, or organization specified in the contract for the purpose of inspection of stores of work under the contract and includes his/their-authorized representative.

"RailTel" Means RailTel Corporation of India Limited, 19th Floor, Aurora Waterfront Building, Plot No. 34/1, Block – GN, Sector V, Salt Lake, Kolkata – 700 091.

"SITE" Means the areas to be taken up by the permanent works, together with any other area or areas as shall be determined by the Purchaser's Engineer, which may be placed at the disposal of the Contractor for the purpose of the contract and also such area or areas used for store yards, works yards or workshop in proximity of the works as the Purchaser's Engineer may have authorized as an extension of the site, irrespective of the terms and conditions under which they are occupied by the Contractor.

"BLOCK SECTION" Means the distance along the railway track between two consecutive Railway Block stations.

"TENDERER" Means and includes any firm of engineers or Contractors or any company or body, corporate or otherwise, who submit the Tender which has been invited.

"WORK OR WORKS" Means all or any of the items of the work for which the Tenderer /Contractor has Tendered/contracted according to the specifications, drawings and Annexure hereto annexed or to be implied there from, or incidental thereto or to be hereafter specified or required in such explanatory instructions and drawings, being in conformity with the original specifications, drawings, Annexure and schedules and also such instructions and drawings additional to the aforementioned as may from time to time be issued by the Purchaser's Engineer during the progress of the contracted work.

"WRITING" Includes all matters written, typewritten or printed either in whole or in part.

3.3. LOCAL CONDITIONS

3.3.1 It will be imperative on each tenderer to fully acquaint himself with all the local conditions and factors, which would have any effect on the performance of the contract and cost of the stores. The purchaser shall not entertain any request for clarifications from the tenderer regarding such local conditions. No request for the change of price or time schedule of delivery of stores shall be entertained after the offer is accepted by the purchase on account of any local condition or factor.

3.3.2 The intending tenderer is advised to study the tender papers carefully. Any submission of a bid by the tenderer shall be deemed to have been done after a careful study and examination of these documents with full understanding of the implication thereof. These conditions and specifications shall be deemed to have been accepted unless otherwise, specifically

commented upon by the Tenderer in his quotation. Failure to adhere to anyone or all these instructions may render his offer liable to be ignored without any reference.

- 3.3.3 Should a tenderer find discrepancies in, or omission from, the drawings or any of the Tender papers or he has any doubt to their meaning, he should at once notify the RailTel who may send a written clarification to all tenderers.

3.4 COMPLIANCE TO TENDER CONDITIONS, SPECIFICATIONS & DRAWINGS

3.4.1 The tenderer shall indicate paragraph by paragraph for each section of the tender document that either his tender complies in every respect with the requirements of each clause and sub clause or if not, precisely how they differ from the requirements of the tender. In later case, the tenderer shall enclose a separate statement as per proforma given, indicating only the deviations for any clause or sub clause of Special Conditions of Contract, Instructions to Tenderers and Conditions of Tendering, Technical Specifications, Preamble etc. which he proposes with justifications for deviations proposed. The purchaser reserves the right to accept or reject these deviations and his decision thereon shall be final (see Form 5).

3.4.2 The equipment offered shall be in accordance with the drawings and specifications. Details of variation from the drawings and specifications, if any, should be clearly indicated separately for each annexure with justification for deviations proposed. The Purchaser reserves the right to accept or reject these deviations and his decision thereon shall be final.

3.4.3 Firms should give details of similar works carried out giving details of the name of the project, date of award, length of the section, value of the contract, the original execution period and the actual execution time taken.

3.5 EARNEST MONEY/ BID GUARANTEE

3.5.1 The tenderer shall submit an amount mentioned as below as earnest money in favour of RailTel Corporation of India Limited, Kolkata, through RailTel E-NIVIDA portal

Tender No.	Name of the work	Tender Estimated Cost (Incl. GST) (Rs.) (R. Off)	EMD (Rs.)
RailTel/Tender/OT/ER/HQ/2025-26/1569, Dt. 25.09.2025	Execution of in-campus Last Mile Optical Fibre Cable laying through Open Trenching/ HDD method and associated work including supply of allied materials in Odisha, West Bengal, Manipur, Bihar, Tripura, Nagaland, Assam, Jharkhand, Meghalaya, Mizoram and Arunachal Pradesh States for Last Mile connectivity of Airport Authority of India (AAI)	84,20,035.00	1,69,000.00

3.5.2 The tenderers shall hold the offer open till such date as specified in Para 3.9 of this chapter. It is being understood that the tender documents have been downloaded by the tenderer and the tenderer has been permitted to tender in consideration of the stipulation on his part that after submitting his tender he will not resile from his offer or modify the terms and conditions thereof in a manner not acceptable to RailTel. If the tenderer fails to observe or comply with the foregoing stipulation, the aforesaid amount deposited as Earnest Money shall be liable to be forfeited by the RailTel.

- (i) If a tenderer withdraws its tender during the period of tender's validity specified in Clause 7.9 of Instructions to Tenderers and Conditions of Tendering.

- (ii) In the case of successful tenderer, if the tenderer fails to:
 - (a) Sign the contract in accordance with clause 5.2 of Special Conditions of Contract.
 - (b) To furnish performance guarantee in accordance with clause 5.3 of Special Conditions of Contract.
- 3.5.3 The earnest money of unsuccessful tenderer will be returned within reasonable time to the unsuccessful tenderer but the RailTel shall not be responsible for any loss or depreciation that may happen to the security for the due performance of the above stipulation to keep offer open for the period specified in the tender documents or to the Earnest Money while in their possession nor be liable to pay interest thereon.
- 3.5.4 If the tender is accepted, the amount of Earnest Money submitted by the successful tenderer will be returned after receipt of Performance Guarantee (PG).
- 3.5.5 If the tenderer deliberately gives wrong information in his/her tender or creates such circumstances for the acceptance of his/her tender, then RailTel reserves the right to reject such tender at any stage. In case credential certificate(s) submitted by the contractor are found to be incorrect, action will be initiated as specified at below clause no. 3.16.
- 3.5.6 If a Tenderer expires after the submission of his tender or after the acceptance of his tender, the RailTel shall deem such tender as cancelled. If a partner of a firm expires after the submission of their tender or after the acceptance of their tender, the RailTel shall deem such tender as cancelled, unless the firm retains its character.
- 3.6 **SUBMISSION OF OFFERS**
- 3.6.1 All offers in the prescribed forms should be submitted before the time and date fixed for the receipt of the offers. Offers received after the stipulated time and date will be summarily rejected.
- 3.6.2 In case the date of opening happens to be a holiday, the tender will be opened at the same time on the next working day.
- 3.6.3 All offers shall be either type written or written neatly in indelible ink in English. Each page of the offer must be numbered consecutively. A reference to total number of pages comprising the offer must be made at the top right hand corner of the top page. The supporting documents should be submitted duly signed/ digitally signed by the authorized signatory of the tenderer. The original documents shall be produced for verification when called for.
- 3.6.4 All copies of the tender papers shall be signed /digitally signed by the tenderer, on each page including closing page in token of his having studied the tender papers carefully.
- 3.6.5 **RATES IN FIGURES & WORDS:-**
- 3.6.5.1 Not used
- 3.6.5.2 Not used
- 3.6.5.3 In case the schedule of requirement quoted by tenderer is incomplete with reference to tender document, the offer is liable to be rejected.
- 3.6.6 **ATTESTATION OF ALTERATION:** No scribbling is permissible in the tender documents. Tender containing erasures and alterations in the tender documents are liable to be rejected. Any correction made by the tenderer/tenderers in his/their entries must be signed (not initialed) by him/them.

3.6.7 The Technical Bid shall consist of the following:

- i) Offer letter complete
- ii) Earnest Money- to be submitted online through RailTel E-NIVIDA portal
- iii) Constitution of Firm & Power of Attorney (refer below clause no 3.7),
- iv) Clause wise compliance to tender conditions & statement of deviations (Para 3.4). Form No.5
- v) Tenderers credential as per Qualifying Criteria
- v) Similar works executed or under execution. Form No. 12
- vi) User's Certificate Form No. 2
- vii) Any other information desired to be submitted by the tenderer.
- viii) Complete tender document digitally signed in all pages including above
- ix) Power of attorney in favour of the signatory duly authorizing the signatory shall be enclosed in the bid (original to be submitted offline mode)
- x) Notarised affidavit as per clause No. 3.16(ii) (original to be submitted offline mode)
- xi) Price bid with rate duly filled digitally signed by the tenderer in e-Nivida Portal.

3.7 **CONSTITUTION OF FIRM AND POWER OF ATTORNEY**

3.7.1 Any individual(s) signing the tender or other documents connected therewith should specify whether he is signing: -

- (a) As sole proprietor of the concern or as attorney of the sole proprietor;
- (b) As a partner or partners of the firm;
- (c) As a Director, Manager or Secretary in the case of Limited Company duly authorized by a resolution passed by the Board of Directors or in pursuance of the authority conferred by Memorandum of Association.

3.7.2 In the case of a firm not registered under the Indian Partnership Act, all the partners or the attorney duly authorized by all of them should sign the tender and all other connected documents. The original Power of Attorney or other documents empowering the individual or individuals to sign should be furnished to the Purchaser for verification, if required.

3.7.3 The RailTel will not be bound by Power of Attorney granted by the tenderer or by the changes in the composition of the firm made subsequent to the execution of the contract agreement.

3.7.4 In case where the Power of Attorney partnership deed has not been executed in English, the true and authenticated copies of the translation of the same by Advocate, authorized translators of Courts and Licensed Petition Writers should be supplied by the Contractor(s) while tendering for the work.

3.7.5 The duly notarized Power of Attorney, Partnership Deed, original to be submitted offline as per clause 5 of e-Tendering Instructions, Section-I.

3.8 **UNIT PRICES:** The percentage rates should be quoted by the Contractor after taking all the relevant factors into consideration and these should be Firm and all-inclusive, without any variation clauses. The prices shall be quoted in percentage.

Reference may be made Special Conditions of Contract (Chapter 5, Section II). The prices shall be inclusive of all taxes and statutory payments including GST.

3.9 **VALIDITY OF OFFER PER TENDER:** The tenderer shall keep the offer open for a minimum period of 60 (Sixty) days, from the date of opening of tender. Within that period the tenderer cannot withdraw his offer subject to the period being extended further, if required, by mutual agreement from time to time. Any contravention of the above condition will make the

tenderer liable for forfeiture of his Earnest Money.

- 3.10 **RATES DURING NEGOTIATION:** The tenderer/s shall not increase his/their quoted rates in case the RailTel Administration negotiates for reduction of rates. Such negotiations shall not amount to cancellation or withdrawal of the original offer and the rates originally quoted will be binding on the tenderer/s.
- 3.11 **PERIOD OF COMPLETION AND TIME PROGRESS GRAPH:** The works/work are/is to be completed within a period as mentioned in preamble at para 1.9.
- 3.12 **NON-TRANSFERABILITY AND NON-REFUNDABILITY:** The tender documents are not transferable. The cost of tender document is not refundable.
- 3.13 **ERRORS, OMISSIONS & DISCREPANCIES:** The Contractor(s) shall not take any advantage of any misinterpretation of the conditions due to typing or any other error and if in doubt shall bring it to the notice of the Engineer without delay. In case of any contradiction only the printed rules, and books should be followed and no claim for the misinterpretation shall be entertained.
- 3.14 **WRONG INFORMATION BY TENDERER:** If the tenderer/s deliberately gives/give wrong information in his/their tender which creates/create circumstances for the acceptance of his/their tender the RailTel reserves the right to reject such tender at any stage.
- 3.15 **QUALIFYING CRITERIA OF TENDER:**
- 3.15.1 **General:** all the supporting documents shall be self-attested by Tender for their consideration.
- 3.15.1.1 Qualifying criteria under this para lays down minimum acceptable qualifications in various are as to ensure that qualified bidder has necessary experience and financial and human resources to successfully complete the project.
- 3.15.1.2 If the tenderer proposes to buy any equipment from other suppliers/ sources, documents indicating the willingness to supply the equipment and provide technical support to the tenderer that may be required during installation, commissioning and warranty period and later on directly to the RailTel, shall be included in the tender.
- 3.15.1.3 The tenderer should submit the details of experience of similar works or services in the projects executed / under execution which should clearly bring out expertise in the equipment manufacture or installation etc. as per form no. 12.
- 3.15.1.4 For supply of critical materials, the contractor, if he is not a manufacturer, shall submit a certificate from the manufacturer, whose material he intends to supply, to the effect that the manufacturer is willing and capable to supply the material in time so as to enable the contractor to complete the work within the time frame mentioned in the contract.
- 3.15.1.5 The tenderer/s must submit along with his/their tender, certificates from the original user for whom the project was undertaken certifying the date of award of contract, date of completion, date of commissioning and the present working state of the system so established. The tenderer shall submit these certificates for all the projects that he has executed which only satisfy the minimum requirements in each case. The certificates are to be submitted in original or their true copies duly signed by the tenderer to contain the information as per Form no. 2.
- 3.15.2.1 **Technical Eligibility Criteria:**

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

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

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

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

Total value of similar work completed during the qualifying period and not the payment received shall be considered.

- b. (i) In case of tenders for composite Contracts tenderer must have successfully completed any of the following during last 07 (seven) years, ending last day of month previous to the one in which tender is invited:

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

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

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

(Note: Separate completed works of minimum required values for each component shall also be considered for fulfilment of technical eligibility criteria).

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

(iii) To evaluate the technical eligibility of tenderer, only components of work as stipulated in tender documents for evaluation of technical eligibility, shall be considered. The scope of work covered in other remaining components shall be executed by tenderer himself.

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

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

3.15.2.2 Financial Eligibility Criteria:

The bidder should have minimum cumulative turnover from operation in the previous three financial years (i.e., FY : 2022-23, 2023-24, 2024-25) and the current financial

year, at least 150% of the advertised value of the tender. The tenderers shall submit Certificates to this effect which may be an attested Certificate from the concerned department / client or Audited Balance Sheet duly certified by the Chartered Accountant/Certificate from Chartered Accountant duly supported by Audited Balance Sheet. *The contact details of CA/Statutory Auditor along with UDIN No. shall be mandatorily mentioned on copy of certified Balance Sheet/Certificate.*

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

For Startups* (recognized by Department of Industrial policy and promotion, Ministry of Commerce and Industry) only 1/3 of minimum cumulative contract amount as mentioned above is required.

3.15.3 **MEANING OF SIMILAR WORKS:**

Works similar to the scope of work as contained in this tender shall mean underground Optical Fibre cable laying work including jointing/splicing, termination testing or OFC rectification work executed for Govt./PSU/ Private organisation dealing with OFC networks, Telecom utilities.

Plant & machinery: The tenderer should furnish the details of the machinery and plant to be deployed; in case the tenderer plans to use mechanized trenching.

3.16 **System of Verification of Tenderer's Credentials:**

- i. The tenderer shall submit along with the tender document, documents in support of his/their claim to fulfil the eligibility criteria as mentioned in the tender document. Each page of the copy of documents/certificates in support of credentials, submitted by the tenderer, shall be self-attested/digitally signed by the tenderer or authorized representative of the tendering firm. Self-attestation shall include signature, stamp and date (on each page). Only those documents which are declared explicitly by the tenderer as "documents supporting the claim of qualifying the laid down eligibility criteria", will be considered for evaluating his/their tender.
- ii. The tenderers shall submit a notarized affidavit in original on a non-judicial stamp paper stating that they are not liable to be disqualified and all their statements/documents submitted along with bid are true and factual. Standard format of the affidavit to be submitted by the bidder is enclosed as Annexure-A/Form No.1. **Non submission of an affidavit by the bidder shall result in summary rejection of his/their bid** and It shall be mandatorily incumbent upon the tenderer to identify, state and submit the supporting documents duly self-attested by which they/he is qualifying the Qualifying Criteria mentioned in the Tender Document. It will not be obligatory on the part of the RailTel to scrutinize beyond the submitted document of tenderer as far as his qualification for the tender is concerned.
- a) The RailTel reserves the right to verify all statements, information and documents submitted by the bidder in his tender offer, and the bidder shall, when so required by the RailTel, make available all such information, evidence and documents as may be necessary for such verification. Any such verification or lack of such verification, by the RailTel shall not relieve the bidder of its obligations or liabilities here under nor will it affect any rights of the RailTel there under.

The tenderer shall submit along with the tender document, documents in support of his/their claim to fulfil the eligibility criteria as mentioned in the tender document. Each page of the

copy of documents/certificates in support of credentials, submitted by the tenderer, shall be self-attested/digitally signed by the tenderer or authorized representative of the tendering firm. Self-attestation shall include signature, stamp and date (on each page). Only those documents which are declared explicitly by the tenderer as “documents supporting the claim of qualifying the laid down eligibility criteria”, will be considered for evaluating his/their tender.

- b) The RailTel reserves the right to verify all statements, information and documents submitted by the bidder in his tender offer, and the bidder shall, when so required by the RailTel, make available all such information, evidence and documents as may be necessary for such verification. Any such verification or lack of such verification, by the RailTel shall not relieve the bidder of its obligations or liabilities here under nor will it affect any rights of the RailTel there under.
 - c) In case of any wrong information submitted by the tenderer, the contract shall be terminated, Earnest Money Deposit (EMD) and Performance Guarantee (PG) of contract forfeited and agency barred for doing business on entire RailTel for 5 (five) years.
- 3.17 **SYSTEM PERFORMANCE GUARANTEE:** The tenderer shall give unqualified and unconditional guarantee that when the equipment / material supplied by him is installed and commissioned at site, it shall achieve the desired objective and that in the event of performance of the system when installed not complying with the end objective or with the specifications, he shall provide further inputs to enable the RailTel to realize the end objectives with full compliance of the specifications contained in these documents. No additional payment will be made to the contractor for supply of any additional goods and service required in this regard.
- 3.18 **AUTHORITY OF ACCEPTANCE:** The authority for the acceptance of the tender rests with the Purchaser. The tenders received will be evaluated by the Purchaser to ascertain the best acceptable tender in the interest of the Purchaser. However, the purchaser shall not be bound to accept the lowest or any tender or to assign any reason for non-acceptance or rejection of a tender. The purchaser reserves the right to accept any tender in respect of the whole or any portion of the work specified in the tender paper or to sub-divide the work among different Tenderers or to reduce the work or to accept any tender for less than the tendered quantities without assigning any reason whatsoever.
- 3.19 **AGREEMENT:** The successful tenderer/s shall be required to execute an agreement with the representative of RailTel for carrying out the work according to the tender documents as indicated in para 5.2 of Special Conditions of Contract (Section II, Chapter 5).
- 3.20 **TENDERER’S ADDRESS:** Tenderer shall state in the tender his postal address fully and clearly. Any communication sent to the tenderers by post at his said address shall be deemed to have reached the tenderer duly & timely, notwithstanding the fact that the communication could not reach the tenderer a tall or in time for whatever reason. Important documents shall be sent by Speed Post/Registered Post.
- 3.21 **EVALUATION OF OFFER**
The authority for the acceptance of the tender rests with the Purchaser. The tenders received will be evaluated by the Purchaser to ascertain the best acceptable tender in the interest of the Purchaser. However, the purchaser shall not be bound to accept the lowest or any tender or to assign any reason for non-acceptance or rejection of a tender. The purchaser reserves the right to accept any tender in respect of the whole or any portion of the work specified in the tender paper or to sub-divide the work among different tenderers or to reduce the work or to accept any tender for less than the tendered quantities without assigning any reason whatsoever.
- 3.22 **AMENDMENT OF TENDER DOCUMENT**

- 3.22.1 RailTel may modify the Tender Document by issuing ADDENDA/CORRIGENDA.
- 3.22.2 Tenderers are advised to submit the tender well in advance before the stipulated time. It is the responsibility of the Tenderer to check any correction or any modifications (addenda/corrigenda) published subsequently sent through e-mail and speed post and the same shall be taken into account while submitting the tender.
- 3.22.3 To give prospective bidders a reasonable time to take ADDENDUM/CORRIGENDUM into account in preparing their bids, the RailTel may at their discretion extend as necessary, the deadline for submission of Tender.
- 3.22.4 If RailTel issued any material for the work, the materials that shall be handed over to the Contractor at any time for execution of work shall depend upon the particular item of work in the schedules to be done at a particular time and also the progress of work. The contractor shall furnish Indemnity Bond for a sum equal to the cost of materials proposed to be taken by him. The quantity of materials that shall be given by the RailTel at any time shall not exceed the value of Indemnity Bond that is furnished by the Contractor.
- 3.22.5 Materials issued to the contractor shall be used solely and economically for the purpose of work covered by this contract only. The materials shall be used in such quantities and proportions as are indicated in Schedule or in the relevant specifications or drawings or as approved by the Engineer whose decision thereon shall be final. Wastage or damage to such materials in any manner shall be avoided.
- 3.22.6 The contractor shall be liable to render fully accountable for all the materials issued by the RailTel. If any quantity of RailTel materials is consumed in excess or wasted or damaged or lost or otherwise not satisfactorily accounted for, recovery shall be made from the contractor at the issued rate prevailing at the time of last issue of the materials consumed in excess or wasted or damaged or lost or not satisfactorily accounted for.
- 3.22.7 If at any time any materials which the contractor would normally have to arrange for himself is supplied by the RailTel either at the contractor's request or suo-moto in order to prevent possible delay in the execution of the work due to contractor's inability to make adequate arrangements for the supply therefore or otherwise, such materials will be made available to the contractor in the RailTel's as required for the work. All handling, subsequent thereof will be at the contractor's responsibility. Recovery of the cost of such supply will be made from the contractor's bills, as per extant rules of the RailTel. Any demurrage or other charges due on account be recovered from the Contractor.
- 3.22.8 If the materials mentioned in schedules, however not available in RailTel and /or decide not to supply the same, whatever be the reason, the RailTel shall not be bound to arrange for the supply nor will this fact be accepted as an excuse for delay in the execution of the work by the contractor.
- 3.22.9 The quantities indicated in the schedules are approximate and will only support to convey to the contractor an idea of the magnitude of the work. The rates mentioned in Schedules are deemed to hold good for any increase in quantities up to 25%. The description of items is given as a guide and approximately only and is subject to variation according to the needs of the RailTel. The RailTel accepts no responsibility for their accuracy. Further, the RailTel does not guarantee work under each item of the Schedule.
- 3.22.10 If RailTel issue any Materials to the contractor it will be done at specific depot of the stores on Production of identity card with photograph or authorization letter issued by this office. Also indemnity bond on non-judicial stamp paper of Rs 100/- as per Performa given in Form No-6 of Chapter-7 will be executed and submitted to the Section Engineer in charge.

SECTION –II

CHAPTER – 4

**GENERAL CONDITIONS OF CONTRACT FOR USE IN CONNECTION
WITH RAILTEL’S WORKS**

<u>Para</u>	<u>Subject</u>
4.1	Definitions
4.2	General Obligations
4.3	Law governing the Contract
4.4	Communications to be in writing
4.5	Service of Notice on Contractors
4.6	Occupation and use of land
4.7	Assignment or subletting of contract
4.8	Assistance by the RailTel for the stores to be obtained by the Contractor.
4.9	Not used
4.10	Carriage of materials
4.11	Force Majeure Clause
4.12	Representation of works
4.13	Relics and Treasures
4.14	Excavated material
4.15	Indemnity by Contractors
4.16	Security Deposit
4.17	Completion Period
4.18	Illegal Gratification
4.19	Execution of Works
4.20	Compliance to Engineer’s Instructions
4.21	Instructions of Engineer’s Representative
4.22	Adherence to specifications and drawings
4.23	Working during night
4.24	Damage to Railway/RailTel property or private life and property.
4.25	Sheds, Store houses and Yards
4.26	Provision of efficient and competent staff
4.27	Workmanship and Testing
4.28	Facilities for Inspection
4.29	Examination of work before covering up
4.30	Temporary Works
4.31	Contractor to supply water for works
4.32	Property in material and Plants
4.33	Tools, Plant and Materials supplied by RailTel
4.34	Precaution during progress of work
4.35	Use of Explosives
4.36	Suspension of Works
4.37	Rates for items of works
4.38	Demurrage and wharf age dues
4.39	Rates for extra items of works
4.40	Handing over of works

- 4.41 Variations in extent of contract
- 4.42 Powers of modification to contract
- 4.43 Claims
- 4.44 Measurements, certificates and payments
- 4.45 Measurement of Works
- 4.46 "On-Account" Payments
- 4.47 Maintenance of Works
- 4.48 Certificate of Completion of works
- 4.49 Approval only by Maintenance Certificate
- 4.50 Maintenance Certificate
- 4.51 Final Payment
- 4.52 Withholding and lien in respect of sums claimed
- 4.53 Signature on receipts for amounts
- 4.54 Labour
- 4.55 Provisions of Payment of Wages Act
- 4.56 Reporting of Accidents to Labour
- 4.57 Provisions of Workmen's Compensation Act
- 4.58 RailTel not to provide quarters for Contractor
- 4.59 Labour Camps
- 4.60 Non-employment of Labourers below the age of 15
- 4.61 Determination of Contract
- 4.62 Termination of Contract owing to default of Contractor
- 4.63 Right of RailTel after termination of contract owing to the default of contractor
- 4.64 Matters finally determined by RailTel
- 4.65 Settlement of dispute and arbitration

SECTION – II

Chapter - 4

GENERAL CONDITIONS OF CONTRACT FOR USE IN CONNECTION WITH RAILTEL'S WORKS

DEFINITIONS AND INTERPRETATION

4.1 Definitions:

4.1.1 The meaning of terms/interpretations shall be taken as defined in Chapter-3 (**INSTRUCTIONS TO TENDERERS AND CONDITIONS OF TENDERING**).

(a) **“Constructional Plant”** shall mean all appliances or things of whatsoever nature required for the execution, completion or maintenance of the works or the temporary works (as hereinafter defined) but do not include materials or other things intended to form or forming part of the permanent work.

(b) **“Temporary Works”** shall mean all temporary works of every kind required for the execution, completion and/or maintenance of the works.

(c) **“Period of maintenance”** shall mean the specified period of the maintenance from the date of completion of the work as certified by the Engineer.

4.1.2 **Singular and Plural:** Works importing the singular number shall also include the plural and vice versa where the context requires.

4.1.3 **Headings & marginal headings:** The headings and marginal headings in these general conditions are solely for the purpose of facilitating reference and shall not be deemed to be part thereof or be taken into consideration in the interpretation or construction thereof or the contract

4.2 GENERAL OBLIGATIONS

4.2.1 **Execution Co-relation and intent of contract documents:** The contract documents shall be signed in triplicate by the RailTel and the Contractor. The contract documents are complementary, and what is called for by any one shall be as binding as if called for by all; the intention of the documents is to include all labour and materials, equipments and transportation necessary for the proper execution of work. Materials or work not covered by or properly inferable from any heading or class of the specifications shall not be supplied by the RailTel to the contractors unless distinctly specified in the contract documents. Materials or works described in words, which so applied, have a well-known technical or trade meaning shall be held to refer to such recognized standards.

4.2.2 If a work is transferred from the jurisdiction of one region of RailTel to another region or to a Project authority or vice versa while the contract is in subsistence, the contract shall be binding on the Contractor and the other region in the same manner & take effect in all respects as if the Contractor and the other region were parties thereto from the inception and the corresponding officer or the competent authority in the other region will exercise the same powers and enjoy the same authority as conferred to the Predecessor RailTel /Project under the original contract/agreement entered into.

4.2.3 If for administrative or other reasons the contract is transferred to the other region of RailTel the contract shall notwithstanding anything contained herein contrary thereto, be binding on the

Contractor and the other region in the same manner and take effect in all respects as if the contractor and the other region had been parties thereto from the date of this contract.

4.3 **Law governing the contract**

4.3.1 The Contract shall be governed by the law for the time being in force in the Republic of India.

4.3.1 **Compliance to regulations and bye-laws** – The Contractor shall conform to the provision of any statute relating to the works and regulations and bye-laws of any local authority and of any water and lighting companies or undertakings, with whose system the work is proposed to be connected and shall before making any variation from the drawings or the specifications that may be necessitated by so confirming give to the Engineer notice specifying the variation proposed to be made and the reason for making the variation and shall not carry out such variation until he has received instructions from the Engineer in respect thereof. The Contractor shall be bound to give all notices required by statute, regulations or bye -laws as aforesaid and to pay all fees and taxes payable to any authority in respect thereof.

4.4 **Communications to be in writing** – All notices, communications, references and complaints made by the RailTel or the Engineer or the Engineer's representative or the Contractor interest concerning the works shall be in writing and no notice, communication, references or complaint not in writing shall be recognized.

4.5 **Service of Notices on Contractors** – The Contractor shall furnish to the PED/RailTel the name, designation and address of his authorized agent and all complaints, notices, communications and references shall be deemed to have been duly given to the contract if delivered to the Contractor or his authorized agent or left at or posted to the address so given and shall be deemed to have been so given in the case of posting on day on which they would have reached such address in the ordinary course of post or on the day on which they were so delivered or left. In the case of contract by partners, any change in the constitution of the firm shall be forthwith notified by contractor to the Principal Executive Director/Principal Executive Director/ Eastern Region.

4.6 **Occupation and use of land** – Not used

4.7 **Assignment or subletting of contract:** - The Contractor shall not assign or sublet the contract or any part thereof or allow any person to become interested therein in any manner whatsoever without the special permission in writing of the RailTel. Any breach of this condition shall entitle the RailTel to rescind the contract under clause 4.62 of these conditions and also render the contractor liable for payment to the RailTel in respect of any loss or damage arising or ensuring from such cancellation. Provided always that execution of the details of the work by petty contractor under the direct and personal supervision of the contractor or his agent shall not be deemed to be sub-letting under this clause. The permitted subletting of work by the contractor shall not establish any contractual relationship between the sub-contractor and the RailTel and shall not relieve the Contractor of any responsibility under the Contract.

4.8. **Assistance by the RailTel for the stores to be obtained by the Contractor:** Not used.

4.9 Not used

4.10 **Carriage of materials** – Not used

4.11 **Force Majeure Clause**

If at any time, during the continuance of this Contract, the performance, in whole or part, by either party, of any obligation under this contract shall be prevented or delayed by

- reason of any war, hostility, act of the public enemy, Civil Commotion, Sabotage, Fires, Floods, Earth quakes, explosions, strikes, epidemics, quarantine restrictions, lockouts, any statute, statutory rules/ regulations, order of requisitions issued by any Government Department or Competent Authority of acts of God (here-in-after referred to as event) then provided notice of the happening of any such event is given by either party to the other within twenty one days from the date of occurrence thereof, neither party shall, by reason of such event, be entitled to terminate this Contract nor shall either party have any claim for damage against the other in respect of such non- performance or delay in performance, and the obligations under the Contract shall be resumed as soon as practicable after such event has come to an end or ceased to exist, PROVIDED FURTHER that if the performance in whole or part of any obligation under this Contract is prevented or delayed by reason of any such event beyond a period as mutually agreed to by the RailTel and the Contractor after any event or 60 days in the absence of such an agreement whichever is more, either party may at its option terminate the Contract provided also that if the contract is so terminated under this clause the RailTel may at the time of such termination take over from the Contractor at prices as provided for in the contract, all works executed or works under execution.
- 4.12 **Representation on Works** – The Contractor shall, when he is not personally present on the site of the works place, keep a responsible agent at the works during working hours who shall, on receiving reasonable notice, present himself to the Principal Executive Director/Eastern Region and orders given by the Engineer or the Engineer's Representative to the agent shall be deemed to have the same force as if they had been given to the Contractor. Before absenting himself, the Contractor shall furnish the name and address of his agent for the purpose of this clause and failure on the part of the Contractor to comply with this provision at any time will entitle the RailTel to rescind the contract under Clause 62 of these conditions.
- 4.13 **Relics and Treasures** – Not used
- 4.14 **Excavated material** – The Contractor shall not sell or otherwise dispose of or remove except for the purpose of this contract, the sand, stone, clay ballast, earth, rock or other substances or materials which may be obtained from any excavation made for the purpose of the works or any building or produced upon the site at the time of delivery of the possession thereof but all the substances, materials, buildings, and produce shall be the property of the RailTel provided that the Contractor may, with the permission of the Principal Executive Director/ Eastern Region, use the same for the purpose of the works either free of cost or pay the cost of the same at such rates as may be determined by the Engineer.
- 4.15 **Indemnity by Contractors** – The Contract shall indemnify and save harmless the RailTel from and against all actions, suit proceedings, losses, costs, damages, charges, claims, and demands of every nature and description brought or recovered against the RailTel by reason of any act or omission of the Contractor, his agents or employees, in the execution of the works or in his guarding of the same. All sums payable by way of compensation under any of these conditions shall be considered as reasonable compensation to be applied to the actual loss or damage sustained, and whether or not any damage shall have been sustained.
- 4.16 **Security Deposit: Not Applicable.**
- 4.17. **Completion Period**
- 4.17.1 Subject to any requirement in the contract as to completion of any portion or portions of the works before completion of the whole, the contractor shall fully and finally complete the whole of the works comprised in the contract (with such modifications as may be directed under conditions of this contract) by the date entered in the contract or extended date in terms of the following clauses:

- 4.17.1.1 If any modifications have been ordered which in the opinion of the Engineer have materially increased the magnitude of the work, then such extension of the contracted date of completion may be granted as shall appear to the Engineer to be reasonable in the circumstances, provided moreover that the Contractor shall be responsible for requesting such extension of the date as may be considered necessary as soon as the clause thereof shall arise and in any case not less than one month before the expiry of the date fixed for completion of the works.
- 4.17.1.2 If in the opinion of the Engineer the progress of work has any time been delayed by any act or neglect of RailTel's employees or by other contractor employed by the RailTel under sub-clause (4) of clause 20 of these conditions or in executing the work not forming part of the contract but on which contractor's performance necessarily depends or by reason of proceeding taken or threat-tended by or dispute with adjoining or neighboring owners or public authority arising otherwise through the Contractor's own default etc. or by the delay authorized by the Engineer pending arbitration` or in consequences of the contractor not having received in due time necessary instructions from the RailTel for which he shall have specially applied in writing to the Engineer or his authorized representative then, upon happening of any such event causing delay, the contractor shall immediately give notice thereof in writing to the Engineer within 15 days of such happening but shall nevertheless make constantly his best endeavors to bring down or make good the delay and shall do all that may be reasonably required of him to the satisfaction of the Engineer to proceed with the works. The contractor may also indicate the period for which the work is likely to be delayed and shall be bound to ask for necessary extension of time. The engineer on receipt of such request from the contractor shall consider the same and shall grant such extension of time as in his opinion is reasonable having regard to the nature and period of delay and the type and quantum of work affected thereby. No other compensation shall be payable for works so carried forwarded to the extended period of time, the same rates, terms and conditions of contract being applicable as if such extended period of time was originally in the original contract itself.
- 4.17.1.3 In the event of any failure or delay by the RailTel to hand over the Contractor possession of the lands necessary for the execution of the works or to give the necessary notice to commence the works or to provide the necessary drawings or instructions or any other delay caused by the RailTel due to any other cause whatsoever, then such failure or delay shall in no way affect or vitiate the contract or alter the character thereof or entitle the contractor to damages or compensation therefore but in any such case, the RailTel may grant such extension or extensions of the completion date as may be considered reasonable.
- 4.17.2 **Extension of time for delay due to contractor** – The time for the execution of the work or part of the works specified in the contract documents shall be deemed to be the essence of the contract. If the contractor fails to complete the works within the time as specified in the contract for the reasons other than the reasons specified in clause 4.11 and 4.17.1 above, the RailTel may, if satisfied that the works can be completed by the contractor within reasonable short time thereafter, allow the contractor further extension of time as the Engineer may decide. On such extension the RailTel will be entitled without prejudice to any other right and remedy available on that behalf, to recover from the contractor as agreed damages and not by way of penalty a sum equivalent to 1/2% of the contract value of the works for each week or part of the week subject to a maximum of 10% of the contract value, the clause of LD will be applicable.
- 4.17.2.1 For the purpose of this clause, the contract value of the works shall be taken as value of work as per contract agreement including any supplementary work order/contract agreement issued. Provided also, that the total amount of liquidated damages under this condition shall not exceed 10% of the total value of the contract. Provided further, that if the RailTel is not satisfied that the works can be completed by the Contractor and in the event of failure on the part of the contractor to complete the work within further extension of time allowed as

aforsaid, the RailTel shall be entitled, without prejudice to any other right or remedy available in that behalf, to appropriate the contractor's Performance Guarantee and rescind the contract under clause 8.62 of these conditions, whether or not actual damage is caused by such default.

4.18 Illegal Gratification

4.18.1 Any bribe, commission, gift or advantage given, promised or offered by or on behalf to the Contractor or his partner, agent or servant or anyone on his behalf, to any officer or employees of the RailTel, or to any person on his behalf in relation to obtaining or the execution of this or any other contract with the RailTel shall, in addition to any criminal liability which he may incur, subject the contractor to the rescission of the contract and all other contracts with the RailTel and to the payment of any loss or damage resulting from such decision and the RailTel shall be entitled to deduct the amounts so payable from any moneys due to the Contractor (s) under this contract or any other contracts with the RailTel.

4.18.2 The Contractor shall not lend or borrow from or have or enter into any monetary dealings or transactions either directly or indirectly with any employee of the RailTel and if he shall do so, the RailTel shall be entitled forthwith to rescind the contract and all other contracts with the RailTel. Any question or dispute as to the commission or any offence or compensation payable to the RailTel under this clause shall be settled by the Executive Director, in such a manner as shall consider fit and sufficient and his decision shall be final and conclusive. In the event of rescission of the contract under this clause, the Contractor will not be paid any compensation whatsoever except payments for the work done up-to-date of rescission.

4.19 EXECUTION OF WORKS

4.19.1 **Contractor's understanding** – It is understood and agreed that the Contractor has, by careful examination, satisfied himself as to the nature and location of the work, the conformation of the ground, the character, quality and quantity of the materials to be encountered, the character of equipment and facilities needed preliminary to and during the progress of the works, the general and local conditions, the labour conditions prevailing therein and all other matters which can in any way affect the works under the contract.

4.19.2 **Commencement of works** – The Contractor shall commence the works within 15 days after the receipt by him of an order in writing to this effect from the RailTel and shall proceed with the same with due expedition and without delay. The work should be started with due intimation to RailTel.

4.19.3 **Accepted programme of work** – The Contractor who has been awarded the work shall as soon as possible but not later than 7 days from the date of receipt of the acceptance letter in respect of contracts with initial completion period of one year or less or not later than 15 days for other contracts have to submit the detailed programme of work indicating the time schedule of various items of works in the form of Bar Chart/PERT/CPM. He shall also submit the details of organization (in terms of labour and supervisors) plant and machinery that he intends to utilize (from time to time) for execution of the work within stipulated date of completion. The programme of work amended as necessary by discussions with the Engineer, shall be treated as the agreed programme of the work for the purpose of this contract and the contractor shall endeavor to fulfill this programme of work. The progress of work will be watched accordingly and the liquidated damages will be with reference to the overall completion date. Nothing stated herein shall preclude the contractor in achieving earlier completion of item or whole of the works than indicated in the programme.

4.19.4 **Setting out of works** – The Contractor shall be responsible for the correct setting out of all works in relation to original reference at his cost. The Contractor shall execute the work true to specifications, drawings, plans and dimensions as mentioned in the contract document and

as directed by the Engineer's representative and shall check these at frequent intervals. The Contractor shall provide all facilities like labour and instruments and shall cooperate with the Engineer's representative at all time, during the progress of the works. Any error shall appear or arise in any part of the work, the Contractor, on being required so to do by the Engineer's representative shall, at his own rectify such errors, to the satisfaction of the Engineer's representative. Such checking shall not absolve the Contractor of his own responsibility of maintaining accuracy in the work.

4.20. **Compliance to Engineer's Instructions**

4.20.1 The Engineer shall direct the order in which the several parts of the works shall be executed and the Contractor shall execute without delay all orders given by the Engineer from time to time but the Contractor shall not be relieved thereby from responsibility for the due performance of the works in all respects.

4.20.2 **Alterations to be authorized** – No alterations in or additions to or omissions or abandonment of any part of the works shall be deemed authorized, except under instructions from the Engineer, and the Contractor shall be responsible to obtain such instructions in each and every case in writing from the Engineer.

4.20.3 **Extra Works** – Should works over and above those included in the contract require to be executed at the site, the contractor shall have no right to be entrusted with the execution of such works, which may be carried out by another contractor or contractors or by other means at the sole discretion of the RailTel.

4.20.4 **Separate Contracts in connection with works** – The RailTel shall reserve the right to let other contracts in connection with the works. The Contractor shall afford other contractors reasonable opportunity for the storage of their materials and the execution of their works and shall properly connect and coordinate his work with theirs. If any part of the Contractor's work depends for proper execution or result upon the work of another contractor(s), the Contractor shall inspect and promptly report to the Engineer any defects in such works that render it unsuitable for such proper execution and results. The Contractor's failure so to inspect and report shall constitute as acceptance of the other contractor's work as fit and proper for the reception of his work, except as to defects which may develop in the other contractor's work after the execution of his work.

4.21. **Instructions of Engineer's Representative** – Any instructions or approval given by the Engineer's representative to Contractor in connection with the works shall bind the Contractor as though it had been given by the Engineer provided always as follows: -

4.21.1 Failure of the Engineer's representative to disapprove any work or materials shall not prejudice the power of the Engineer thereafter to disapprove such work or material and to order the removal or breaking up thereof.

4.21.2 If the Contractor shall be dissatisfied by reason of any decision of the Engineer's representative he shall be entitled to refer the matter to the Engineer who shall there upon confirm or vary such decision.

4.22 **Adherence to specifications and drawings**

4.22.1 The whole of the works shall be executed in perfect conformity with the specifications and drawings of the contract. If the Contractor performs any works in a manner contrary to the specifications or drawings or any of them and without such reference to the Engineer, he shall bear all the costs arising or ensuring there-from and shall be responsible for all loss to the RailTel.

4.22.2 **Drawings and specifications on the works:**

4.22.2.1 The contractor shall keep one copy of Drawings and specifications at the site, in good order, and such contract documents as may be necessary, available to the Engineer or the Engineer's Representative.

4.22.2.2 The supply of equipment and materials shall include supply of one set of printed documents from original equipment manufacturers with each equipment as given in technical supplement.

4.22.3 **Ownership of Drawings and Specifications** – All drawings and Specifications and copies thereof furnished by the RailTel to the Contractor are deemed to be the property of the RailTel. They shall not be used in another works and with the exception of the signed contract set, shall be returned by the Contractor to the RailTel on completion of the work or termination of the Contract.

4.22.4 **Compliance with Contractor's request for details** – The Engineer shall furnish with reasonable promptness, after receipt by him of the Contractor's request for the same, additional instructions by means of drawings of otherwise, necessary for the proper execution of the works or any part thereof. All such drawings and instructions shall be consistent with the Contract Documents and reasonably inferable there from.

4.22.5 **Meaning and Intent of specification and drawings** – If any ambiguity arises as to the meaning and intent of any portion of the Specifications and Drawings or as to execution or quality of any work or material, or as to the measurements of the works, the decision of the Engineer thereon shall be final subject to the appeal (within 7 days of such decision being intimated to the Contractor) to the competent authority in RailTel who shall have the power correct any errors, omissions, or discrepancies in aforementioned items and whose decision in the matter in dispute or doubt shall be final and conclusive.

4.23 **Working during night** – The Contractor shall not carry out any work between sunset and sunrise without the previous permission of the Engineer. Hence, no "night duty" shall be payable to the contractor for the portion/part of the works to be undertaken during the night.

4.24 **Damage to Railways/RailTel/ Public property or private life and property**– The Contractor shall be responsible for all risk to the works and for trespass and shall make good at his own expense all loss or damage whether to the works themselves or any other property of the Railways/RailTel or the lives, persons or property of others from whatsoever cause in connection with the works until they are taken over by the RailTel and this although all reasonable and proper precautions may have been taken by the Contractor, and in case the RailTel shall be called upon to make good any costs, loss or damages, or to pay any compensation, including that payable under the provisions of the Workmen's Compensation Act or any statutory amendments thereof to any person or persons sustaining damages as aforesaid by reason of any act, or any negligence or omissions on the part of the Contractor the amount of any costs or charges including costs and charges in connection with legal proceedings, which the RailTel may incur in reference thereto, shall be charged to the Contractor. The RailTel 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, defense or compromise, and the incurring of any such expenses shall not be called in question by the Contractor.

4.25 **Sheds, Stores houses and Yards** Not used

4.26 **Provision of efficient and competent staff** – The Contractor shall place and keep on the works at all times efficient and competent staff to give the necessary directions to his workmen and to see that they execute their work in sound and proper manner and shall employ only such supervisors, workmen and Labourers in or about the execution of any of these works as are careful and skilled in various trades and callings. The Contractor shall at once remove from the works any agents, permitted sub -contractor, supervisor, workman or Labourer who shall be objected to by the Engineer and if and whenever required by the Engineer, he shall submit a correct return showing the names of all staff and workmen employed by him. In the event of the Engineer being of the opinion that the Contractor is not employing on the works a sufficient number of staff and workmen as is necessary for the proper completion of the works within the time prescribed, the Contractor shall forthwith on receiving intimation to this effect take on the additional number of staff and labour specified by the Engineer within seven days of being so required and failure on the part of the Contractor to comply with such instructions will entitle the RailTel to rescind the contract under Clause 4.62 of these conditions.

4.27. **Workmanship and Testing**

4.27.1 The whole of the works and/or supply of materials specified and provided in the contract or that may be necessary to be done in order to form and complete any part thereof shall be executed in the best and most substantial workman like manner with materials of the best and most approved quality of their respective kinds, agreeable to the particulars contained in or implied by the specifications and as referred to in and represented by the drawings or in such other additional particulars. Instructions and drawings may be found requisite to be given during the carrying on of the works and to the entire satisfaction of the Engineer according to the instructions and directions, which the Contractors may from time to time receive from the Engineer. The materials may be subjected to tests by Mean of such machines, instruments and appliances as the Engineer may direct and wholly at the expense of the Contractor.

4.27.2 **Removal of Improper work and materials**– The Engineer or the Engineer’s representative shall be entitled to order from time to time:

4.27.2.1 The removal from the site within the time specified in the order of any materials, which in his opinion are not in accordance with the specifications or drawings.

4.27.2.2 The substitution of proper and suitable materials, and

4.27.2.3 The removal and proper re-execution, notwithstanding any previous tests thereof or “on account” payments therefore, of any work which in respect of materials or workmanship is not in his opinion in accordance with the specifications and in case of default on the part of the Contractor in carrying out such order the RailTel shall be entitled to rescind the contract under Clause 8.62 of these conditions.

4.28 **Facilities for Inspection:** - The Contractor shall afford the Engineer and the Engineer’s Representative every facility for entering in and upon every portion of the work at all hours for the purpose of inspection or otherwise and shall provide all labour, materials, instruments, appliances and things of every kinds required for the purpose and the Engineer and the Engineer’s representative shall at all time have free access to every part of the works and to all places at which materials for the work are stored or being prepared.

4.29 **Examination of work before covering up:** - The Contractor shall give two days’ notice to the Engineer or the Engineer’s Representative whenever any work or materials are intended to be covered up in the earth, in bodies or walls or otherwise to be placed beyond the Reach of Measurements in order that the work may be inspected or that correct dimension may be taken before being so covered, placed beyond the reach of measurement in default whereof,

the same shall at the option of the Engineer or the Engineer's Representative be uncovered and measured at the contractor's expense or no allowance shall be made for such work or materials.

- 4.30 **Temporary works:** - All Temporary works necessary for the proper execution of the works shall be provided and maintained by the Contractor and subject to the consent of the Engineer, shall be removed by him at his expenses when they are no longer required and in such manner as the Engineer shall direct. In the event of failure on the part of the Contractor to remove the temporary works, the Engineer will cause them to be removed and cost as increased by supervision and other incidental charge shall be recovered from the Contractor.
- 4.31 **Contractor to supply water for works Not used**
- 4.32 **Property in material and Plants:** Deleted
- 4.33. **Tools, Plant and Materials Supplied by the RailTel:** Not used
- 4.34 **Precaution during progress of work**
- 4.34.1 During the execution of works, unless otherwise specified the Contractor shall at his own cost provide the materials for and execute all shoring, timbering and strutting works as is necessary for the stability and safety of all structures, excavations and works and shall ensure that no damage, injury, loss is caused or likely to be caused to any person or property.
- 4.34.2 **Roads and water courses:** Existing roads or water courses shall not be blocked, cut through, altered, diverted or obstructed in any way by the Contractor, except with the permission of the Engineer. All compensations claimed for any authorized closure, or his agent or his staff shall be recoverable from the Contractor by deduction from any sums which may become due to him in terms of contract or otherwise according to law.
- 4.34.3 **Provision of access to premises:** During progress of work in any street or thoroughfare, the Contractor shall make adequate provision of the passage of traffic, for securing safe access to all premises approached from such street or thoroughfare and for any drainage, water supply or meant for lightning which may be interrupted by reason of the execution of the works and shall react and maintain at his own cost barriers, lights and other safeguards as prescribed by the Engineer, for the regulation of the traffic, and provide watchmen necessary to prevent accidents. The works shall in such cases be executed night and day if so ordered by the Engineer and with such vigor so that the traffic way be impeded for as short a time as possible.
- 4.34.4 **Safety of Public:** The Contractor shall be responsible to take all precautions to ensure the safety of the public or Railway/RailTel's 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.
- 4.35 **Use of Explosives:** Explosive shall not be used on the works or on the site by the Contractor without the permission of the Engineer and then only in the manner and to the extent to which such permission is given. Where explosives are required for the works, the same shall be stored in a special magazine to be provided by and at the cost of the Contractor in accordance with the Explosive Rules. The Contractor shall obtain the necessary license for the storage and the use of explosives and all operations in which or for which explosives are employed shall be at the sole risk and responsibility of the Contractor and the Contractor shall indemnify the Railway/RailTel in respect thereof.
- 4.36 **Suspension of works**
Not used

- 4.37 **Rates for items of works** – The rates entered in the accepted Schedule of Rates of the Contract are intended to provide for works duly and properly completed in accordance with the general and special conditions of the contract and the specifications and drawings together with such enlargements, extensions, diminutions, reductions, alterations or additions as may be ordered in terms of Clause 4.42 of these conditions and without prejudice to the generality thereof and shall be deemed to include and cover superintendence and labour, supply including full freight of materials, stores, tools and all apparatus and plant required on the works, except such tools, plant or materials as may be specified in the contract to be supplied to the Contractor by the RailTel, the erection, maintenance and removal of all temporary works and buildings, all arrangements for the safety of the public or of employees during the execution of works, all sanitary and medical arrangements for labour camps as may be prescribed by the RailTel, the setting of all work and of the construction, repair and upkeep of all center lines, bench marks and level pegs thereon, site clearance, all fees, duties, royalties, rent and compensation to owners for surface damage or taxes and impositions payable to local authorities in respect of land, structures and all material supplied for the work or other duties or expenses for which the Contractor may become liable or may be put to under any provision of law for the purpose of or in connection with the execution of the contract, and all such other incidental charges or contingencies as may have been specially provided for in the specifications.
- 4.38 **Demurrage and wharf age dues**
- 4.38.1 Demurrage charges calculated in accordance with the scale inforce for the time being on the RailTel and incurred by the Contractor failing to load or unload any goods of materials within the time allowed by RailTel for loadings as also wharf age charges, of materials not removed in time as also charges due on consignments booked by or to him shall be paid by the Contractor, failing which such charges shall be debited to the Contractor's account in the hands of the RailTel and shall be deducted from any sums which may become due to him in terms of the contracts.
- 4.39 **Rates for extra items of works**
- 4.39.1 Any item of work carried out by the Contractor on the instructions of the Engineer which is not included in the accepted schedule of rates shall be executed at the rates set forth in the "Schedule of Rates" modified by the tender percentage and such items are not contained in the latter, at the rate agreed upon between the Engineer and the Contractor before the execution of such items of work and the contractors shall be bound to notify the Engineer at least seven days before the necessity arises for the execution of such items of works that the accepted schedule of rates does not include rate or rates for the extra work involved. The rates payable for such items shall be decided at the meeting to be held between the Engineer and Contractor, in as short a period as possible after the need for the special item has come to the notice. In case the Contractor fails to attend the meeting after being notified to do so or in the event of no settlement being arrived at, the RailTel shall be entitled to execute the extra works by other means and the contractor shall have no claim for loss or damage that may result from such procedure.
- 4.39.2 Provided that if the Contractor commences work or incurs any expenditure in regard thereto before the rates as determined and agreed upon as lastly hereunto fore mentioned, then and in such a case the Contractor shall only be entitled to be paid in respect of the work carried out or expenditure incurred by him prior to the date of determination of the rates as aforesaid according to the rates as shall be fixed by the Engineer. However, if the contractor is not satisfied with the decision of the Engineer in this respect he may appeal to the competent authority of RailTel within 30 days of getting the decision of the Engineer, supported by analysis of the rates claimed. The competent authority of RailTel's decision after hearing both the parties in the matter would be final and binding on the Contractor.
- 4.40 **Handing over of works**

4.40.1 The Contractor shall be bound to hand over the works executed under the contract to the RailTel complete in all respect to the satisfaction of the Engineer. The Engineer shall determine the date on which the work is considered to have been completed, in support of which his certificate shall be regarded as sufficient evidence for all purposes. The engineer shall determine from time to time, the date on which any particular section of the work shall have been completed, and the contractor and the contractor shall be bound to observe any such determination of the Engineer.

4.40.2 **Clearance of Site on Completion:** On completion of the works the contractor shall clear away and remove from the site all constructional plant, surplus material, rubbish and temporary works of every kind and leave whole of the site and works clean and in a workman like condition to the satisfaction of the Engineer. No final payment in settlement of the accounts for the work shall be paid, held to be due or shall be made to the contractor till, in addition to any other condition necessary for such final payment, site clearance shall have been affected by him, and such clearance may be made by the Engineer at the expense of the Contractor in the event of his failure to comply with this provision within 7 days after receiving notice to that effect. Should it become necessary for the Engineer to have the site cleared at the expense of the Contractor, the RailTel shall not be held liable for any loss or damage to such of the Contractor's property as may be on the site and due to such removal there from which removal may be affected by means of public sales of such materials and property or in such a way as deemed for and convenient to the Engineer.

4.41 **VARIATIONS IN EXTENT OF CONTRACT**

4.41.1 **Modification to Contract to be in writing** – In the event of any of the provisions of the Contract requiring to be modified after the contract documents have been signed, the modifications shall be made in writing and signed by the RailTel and the Contractor, and no work shall proceed under such modifications until this has been done. Any verbal or written arrangement abandoning, modifying, extending, reducing or supplementing the Contract or any of the terms thereof shall be deemed conditional and shall not be binding on the RailTel unless and until the same is incorporated in a formal instrument and signed by the RailTel and the Contractor and till then the RailTel shall have the right to repudiate such arrangement.

4.42 **Powers of Modification to Contract**

4.42.1 The Engineer on behalf of the RailTel shall be entitled by order in writing to enlarge or extend, diminish or reduce the works or make any alterations in their design, character, position, site quantities, dimensions or in the method of their execution or in the combination and use of materials for the execution thereof or to order any additional work to be done or any works not to be done and the Contractor will not be entitled to any compensation for any increase / reduction in the quantities of work but will be paid only for the actual amount of work done and for approved materials supplied against a specific order.

4.42.2 Unless otherwise specified in the special conditions of the contract, the accepted variation in quantity for each individual item of the contract would be up to $\pm 25\%$ of the quantity originally contracted.

4.42.3 **Valuation of Variations** – The enlargements, extensions, diminution, reduction, alterations or additions referred to in sub-clause (2) of this clause shall in no degree affect the validity of the contract but shall be performed by the Contractor as provided therein and be subject to the same conditions, stipulations and obligations as if they had been originally and expressly included and provided for in the specifications and drawings and the amounts to be paid therefore shall be calculated in accordance with the accepted schedule of rates. Any extra items/quantities of work falling outside the purview of the provisions of sub-clause (2) above shall be paid for at the rates determined under clause 39 of these conditions.

4.43. **CLAIMS**

4.43.1 **Monthly Statement of Claims** - Not used.

4.43.2 **Signing of “No Claim” Certificate** – The Contractor shall not be entitled to make any claim whatsoever against the RailTel under or by virtue of or arising out of this contract, nor shall the RailTel entertain or consider any such claim, if made by the Contractor, after he shall have signed a ‘No Claim’ certificate in favour of the RailTel, in such form as shall be required by the RailTel, after the works are finally measured up. The Contractor shall be debarred from disputing the correctness of the items covered by “No Claim Certificate” or demanding a preference to arbitration in respect thereof.

4.44 **MEASUREMENTS, CERTIFICATES AND PAYMENTS**

Qualities in schedule annexed to Contract- The quantities set out in the accepted schedule of rates with items of works quantified are the estimated quantities of the works and they shall not be taken as the actual and correct quantities of the works to be executed by the Contractor in fulfillments of his obligations under the contract.

4.45 **Measurements of Works:** The Contractor shall be paid for the works at the rates in the accepted schedule of rates and for extra works at rates determined under Clause 39 of these conditions on the measurements taken by the Engineer or the Engineer’s representative in accordance with the rules prescribed for the purpose by the RailTel. The quantities for items the unit of which in the accepted schedule of rates is 100 or 1000 shall be calculated to the nearest whole number, any fraction below half being dropped and half and above being taken as one; for item the unit of which in the accepted schedule of rates is single, the quantities shall be calculated to places of decimals. Such measurements will be taken of the work in progress from time to time and at such intervals as in the opinion of the Engineer shall be proper having regard to the progress of works.

The date and time on which “on account” or final measurements are to be made shall be communicated to the Contractor who shall represent at the site and shall sign the results of the measurements (which shall also be signed by the Engineer or the Engineer’s representative) recorded in the official measurements book as an acknowledgement of his acceptance of the accuracy of the measurements. Failing the Contractor’s attendance the work may be measured up in his absence and such measurements shall, notwithstanding such absence, be binding upon the Contractor whether or not he shall have signed the measurement book provided always that any objection made by him to measurement shall be duly investigated and considered in the manner set out below:

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

4.46 **“On-Account” Payments**

4.46.1 The Contractor shall be entitled to be paid from time to time by way of “On Account” payment only for such works as in the opinion of the Engineer he has executed in terms of the contract. All payment due on the Engineer’s or the Engineer’s Representatives certificate of

measurements shall be subject to any deduction which may be made under these presents and shall further be subject to, unless otherwise required by Clause 16 of these conditions after retentions of 5% by way of Performance Guarantee, until the full amount of Performance Guarantee by way of submission by the bidder and such retentions shall amount to 5 % of the total value of the contract provided always that the Engineer may by any certificate make any correction or modification in any previous certificate which shall have been issued by him and that the Engineer may withhold any certificate if the works or any part thereof are not being carried out to his satisfaction. In case the contractor happens to be unregistered with GSTIN, then the required GST amount will be deducted from the on account bill as well.

- 4.46.2 **Rounding off amounts:** The total amount due on is certificate shall be rounded off to the nearest rupee i.e. sums less than 50 paise shall be omitted and sums of 50 paise and more upto Rs. 1/- will be reckoned as Rs. 1/-.
- 4.46.3 **On-Account Payments not prejudicial to final settlements:** "On Account" payments made to the Contractor shall be without prejudice to the final making up of the accounts (except where measurement are specifically noted in the Measurement Book as "Final Measurements" and as such have been signed by the Contractor) and shall in no respect be considered or used as evidence of any facts stated in or to be inferred from such account not of any particular quantity of work having been executed not of the manner of its execution being satisfactory.
- 4.46.4 **Manner of payment:** Unless otherwise specified payments to the Contractor will be made by the way of RTGS/NEFT.
- 4.47 **Maintenance of works:**
Deleted.
- 4.48 **Certificate of Completion of works**
- 4.48.1 As soon as in the opinion of the Engineer the works shall have been substantially completed and shall satisfactorily passed any final test or tests that may be prescribed, the Engineer shall issue a Certificate of the completion (Provisional Acceptance Certificate) in respect of the works and period of maintenance of the works shall commence from the date of such certificate provided that the Engineer may issue such a certificate with respect to any part of the works before the completion of the whole of the works or with respect to any substantial part of the works which has been both completed to the satisfaction of the Engineer and occupied or used by the RailTel and when any such certificate is given in respect of part of the works such part shall be considered as completed and the period of the maintenance of such part shall commence from the date of such certificate.
- 4.48.2 **Contractor not absolved by Provisional completion Certificate (PAC):** The Certificate of completion in respect of the works referred to in sub-clause 48.1 of this clause shall not absolve the Contractor from his liability to make good any defect, imperfection, shrinkages or faults which may appear during the period of maintenance specified in the tender arising in the opinion of the Engineer from materials or workmanship not in accordance with the drawing or specifications or instructions of the Engineer, which defect, imperfections, shrinkages or faults shall upon the direction in writing of the Engineer, be amended and made good by the Contractor at his own cost; and in case of default on the part of Contractor the Engineer may employ, labour and material or appoint another Contractor to amend and make good such defect, imperfections, shrinkages and faults and all expenses consequent thereon and incidental thereto shall be borne by the Contractor and shall be recoverable from any moneys due to him under the contract.
- 4.49 **Approval only by Maintenance Certificate :** No certificate other than maintenance certificate referred to in Clause 4.50 of the conditions shall be deemed to constitute approval of any work or other matter in respect of which it is issued or shall be taken as an admission of the

due performance of the contract or any part thereof or of the accuracy of any demand made by the Contractor or of additional varied work having been ordered by the Engineer nor shall any other certificate conclude or prejudice any of the powers of the Engineers.

4.50. **Maintenance certificate:**

4.50.1 Deleted

4.50.2 **Cessation of RailTel's Liability:** The RailTel shall not be liable to the Contractor for any matter arising of or in connection with the contract of the execution of the works unless the Contractor shall have made a claim in writing in respect thereof before the issue of the Maintenance Certificate (FAC) under this clause.

4.50.3 **Unfulfilled obligations:** Notwithstanding the issue of the Maintenance Certificate the Contractor and (subject to clause 4.50.2) the RailTel shall remain liable for the fulfillment of any obligation incurred under the provision of the contract prior to the issue of the maintenance Certificate which remains unperformed at the time such certificate is issued and for the purposes of determining the nature and extent of any such obligations the contract shall be deemed to remain in force between the parties thereto.

4.51 **Final payment**

4.51.1 On the Engineer's certificate of completion in respect of the works an adjustment shall be made and the balance of account based on the Engineer or the Engineer's representative's on the accepted schedule or rates and for extra works on rates determined under Clause 4.39 of these conditions shall be paid to the Contractor subject always to any deduction which may be made under these presents and further subject to the Contractor having delivered to the Engineer either a full account in detail of all claims he may have on the RailTel in respect of the works or having delivered "No Claim" Certificate and the Engineer having after the receipt of such account given a certificate in writing that such claim are correct, that the whole of the works to be done under the provisions of the Contracts have been completed, that they have been inspected by him since their completion and found to be in good and substantial order, that all properties, works and things removed, disturbed or injured in consequence of the works have been properly replaced and made good and all expenses and demands incurred by or made upon the RailTel for or in the respect of damage or good and all expenses and demands incurred by or made upon the RailTel for or in the respect of damage or good and all expenses and demands incurred by or made upon the RailTel for or in the respect of damage or loss by from kin consequence of the works, have been satisfied agreeably and in conformity with the contract.

4.51.2 **Post payment Audit** – It is an agreed term of contract that the RailTel reserves to itself the right to carry out a post-payment audit and or technical examination of the works and the final bill including all supporting vouchers, abstracts, etc., and to make a claim on the contractor for the refund any excess amount paid to him if as a result of such examination any over-payment to him is discovered to have been made in respect of any work done or alleged to have been done by him under the contract.

4.51.3 **Refund of Performance Guarantee** – The Performance Guarantee shall become due and shall be paid to the Contractor after the expiration of the warranty period and issue of the certificate of final acceptance of entire system, specified in the tender, provided that all the stipulations of the clause have been fulfilled by the Contractor and all claim and demands made against the RailTel for and in respect of damage or loss by, from or in consequence of the works have been finally satisfied, provided further that in the event of different maintenance periods having become applicable to different parts of the works pursuant to sub clause (i) of clause 48 of these condition, the expression "expiration of the period of warranty" shall for the purpose of this clause, be deemed to mean the expiry of the latest of such periods.

4.51.4 Production of vouchers etc. by the Contractor

- (i) For a contract of more than one Crore of rupees, the contractor shall, whenever required, produce for examination by the Engineer any quotation, invoice, cost or other account, book of accounts, voucher, receipt letter, memorandum, paper of writing or any copy of or extract from any such document and also furnish information and returns verified in such manner as may be required in any way relating to the execution of this contract or relevant for verifying or ascertaining cost of execution of this contract (the decision of the Engineer on the question of relevancy of any documents, information or return being final and binding on the parties.) The contractor shall similarly produce vouchers, etc., if required to prove to the Engineer, that materials supplied by him, are in accordance with the specifications laid down in the contract.
- (ii) If any portion of the work in a contract of value more than one crore of rupees be carried out by the a sub -contractor or any subsidiary or allied firm or company (as per Clause 7 of the General Conditions of Contract), the Engineer shall have power to secure the book of such sub-contract or any subsidiary or allied firm or company, through the contractor, and such book shall be open to his inspection.
- (iii) The obligations imposed by sub clause (i) and (ii) above is without prejudice to the obligations of the contractor under any statute rules or orders binding on the contractor.

4.52 Withholding and lien in respect of sums claimed – Whenever any claim or claims for payment of a sum of money arises out of or under the contract against the contractor, the RailTel shall be entitled to withhold and also have a lien to retain such sum or sums in whole or in part from the security, if any, deposited by the contractor and for the purpose aforesaid, the RailTel shall be entitled to withhold the said Performance Guarantee or the security if any, furnished as the case may be and also have a lien over the same pending finalization or adjudication of any such claim. In the event of the security being insufficient to cover the claimed amount or amounts or if no security has been taken from the contractor, the RailTel shall be entitled to withhold and have a lien to the extent of the such claimed amount or amounts referred to supra from any sum or sums found payable or which at any time thereafter may become payable to the contractor under the same contract or any other contract with this or any other RailTel or any Department of the Central Government pending finalization or adjudication of any such claim.

It is an agreed term of the contract that the sum of money or moneys so withheld or retained under the lien referred to above, by the RailTel will be kept withheld or retained as such by the RailTel till the claim arising out of or under the contract is determined by the arbitrator (if the Contract is covered by the arbitration clause) or by the competent court as the case may be and that the contractor will have no claim for interest or damages whatsoever on any account in respect of such withholding or retention under the lien referred to supra and duly notified as such to the contractor. For the purpose of this clause, where the contractor is a partnership firm or a limited company, the RailTel shall be entitled to withhold and also have a lien to retain towards such claimed amount or amounts in whole or in part from any sum found payable to any partner/limited company, as the case may be whether in his individual capacity or otherwise.

4.52.1 Lien in respect of claims in Other Contracts – Any sum of money due and payable to the contractor (Including the Performance Guarantee returnable to him) under the contract may be withheld or retained by way of lien by the RailTel, against any claim of this or any other RailTel or any other Department of the Central Government in respect of payment of a sum of money arising out of or under any other contract made by the contractor with this or any other Department of Central Government.

It is an agreed term of the contract that the sum of money so withheld or retained under this clause by the RailTel will be kept withheld or retained as such by the RailTel till the Claim arising out of or under any other contract is either mutually settled or determined by arbitration, if the other contract is governed by arbitration clause or by the competent court as the case may be and contractor shall have no claim for interest of money withheld or retained under this clause and duly notified as such to the contractor.

4.53 **Signature on Receipts for Amounts** – Every receipt which may become payable or for any security which may become transferable to the Contractors under these presents, shall, if signed in the partnership name by any one of the partners of a Contractors firm be a good and sufficient discharge to the RailTel in respect of the moneys or security purported to be acknowledged thereby and in the event of death of any of the Contractor partners during the pendency of the contract it is hereby expressly agreed that every receipt by any one of the surviving Contractor partners shall if so signed as aforesaid be good and sufficient discharge as aforesaid provided that nothing in this clause contained shall be deemed to prejudice or effect any claim which the RailTel may hereafter have against the legal representative of any contractor partner so dying, for or in respect of any breach of any of the conditions of the contract, provided also, that nothing in this clause contained shall be deemed to prejudice or effect the respective rights or obligations of the Contractor partners and of the legal representative of any deceased Contractor partners interest.

4.54 **LABOUR**

Wages to Labour – The Contractor shall be responsible to ensure compliance with the provisions of the Minimum Wages Act, 1948 (hereinafter referred to as the “said Act”) and the Rules made there-under in respect of any employees directly or through petty contractors or sub-contractors employed by him on road construction or in building operations or in stone breaking or stone crushing for the purpose of carrying out this contract.

If in compliance with the terms of the contract, the contractor supplied any labour to be used wholly or partly under the direct orders and control of the RailTel whether in connection with any work being executed by the contractor or otherwise for the purpose of the RailTel such labour shall, for the purpose of this clause, still be deemed to be persons employed by the Contractor.

If any moneys shall as a result of any claim or any claim or application made under the said Act be directed to be paid by the RailTel, such moneys shall be deemed to be moneys payable to the RailTel by the Contractor and on failure by the Contractor to repay any moneys paid by it as aforesaid within seven days after the same shall have been demanded, the RailTel shall be entitled to recover the same form any moneys due or accruing to the contractor under this or any other Contractor with the RailTel.

4.54.1 **Apprentices Act** – Not used.

4.55. **Provisions of Payments of Wages Act** – The Contractor shall comply with the provisions of the Payment of Wages Act, 1936 and the rules made there under in respect of all employees directly or through petty contractors or sub-contractors employed by him in the works. If in compliance with the terms of the contract, the contractor directly or through petty contractors or sub -contractors shall supply any labour to be used wholly or partly under the direct orders and control of the Engineer whether in connection with the works to be executed hereunder or otherwise for the purpose of the Engineer such labour shall nevertheless be deemed to comprise persons employed by the contractor, and any moneys which may be ordered to be paid by the Engineer shall be deemed to be moneys payable by the Engineer on moneys due to the contractor in terms of the contract. RailTel shall be entitled to deduct from any moneys due to the contractor (Whether under this contract or any other contract all moneys paid or

payable by the RailTel by way of compensation of aforesaid or for costs of expenses in connection with any claim thereto and the decision of the Engineer upon any question arising out of the effect or force of this clause shall be final and binding upon the contractor.

4.55.1 Provision of Contract Labour (Regulation and Abolition) Act 1970

(1) The Contractor shall comply with the provision of the Contract Labour (Regulation and Abolition) Act 1970 and the Contract Labour (Regulation and Abolition) Act, Central Rules 1971 as modified from time to time, whenever applicable and shall also indemnify the RailTel from and against any claims under the aforesaid Act and the Rules

(2) The Contractor shall obtain a valid license under the aforesaid Act as modified from time to time before the commencement of the work and continue to have a valid license until the completion of the work. Any failure to fulfill this requirement shall attract the penal provision of the Contract arising out of the resultant non-execution of the work.

(3) The Contractor shall pay to the labour employed by him directly or through sub-contractors the wages as per provisions of the aforesaid Act and the Rules wherever applicable. The Contractor shall notwithstanding the provisions of the contract to the contrary, cause to be paid the wages to labour indirectly engaged on the work including any engaged by his sub-contractors in connection with the said work, as if the labour had been immediately employed by him.

(4) In respect of all labour directly or indirectly employed in the work for performance of the contractor's part of the contract the contractor shall comply with or cause to be complied with the provisions of the aforesaid Act and the Rules wherever applicable.

(5) In every case in which, by virtue of the provisions of the aforesaid Act or the Rules, the RailTel is obliged to pay any amount of wages to a workmen employed by the contractor or his sub-contractor in execution of the work or to incur any expenditure in providing welfare and health amenities required to be provided under the aforesaid Act and the Rules or to incur any expenditure in providing welfare and health amenities required to be provided under the aforesaid Act the Rules or to incur any expenditure on account of the contingent liability of the RailTel due to contractor's failure to fulfill his statutory obligations under the aforesaid Act or the Rules the RailTel will recover from the contractor, the amount of wages so paid or the amount of expenditure so incurred, and without prejudice to the rights of the RailTel under section 20, sub-section (2) and section 2 sub -section (4) of the aforesaid Act, the RailTel shall be at liberty to recover such amount or part thereof by deducting it from the Performance Guarantee and/or from any sum due by the RailTel to the contractor whether under the contract or otherwise. The RailTel shall not be bound to contest any claim made against it under sub-section (1) of section 20 and sub-section (4) of section 21 of the aforesaid Act except on the written request of the contractor and upon his giving to the RailTel full security for all costs for which the RailTel might become liable in contesting such claim. The decision of the RailTel regarding the amount actually recoverable from the contractor as stated above, shall be final and binding on the contractor.

4.56 Reporting of Accidents to Labour – The Contractor shall be responsible for the safety of all employees directly or through petty contractors or sub-contractors employed by him on the works and shall report serious accidents to any of them however and wherever occurring on the works to the Engineer or the Engineer's Representative and shall make every arrangement to render all possible assistance.

4.57 Provisions of Workmen's Compensation Act– In every case in which by virtue of the provision of Section 12 sub-section (1) of the Workmen's Compensation Act, 1923, RailTel is obliged to pay compensation to a workman directly or through the petty Contractor employed by the Contractor or sub-contractor in executing the work, RailTel will recover from the

contractor the amount of the compensation so paid, and, without prejudice to the right of RailTel under Section 12 sub-section (2) of the said Act. RailTel shall be at liberty to recover such amount or any part thereof by deducting it from the Performance Guarantee or from any sum due by RailTel to the Contractor whether under these conditions or otherwise, RailTel shall not be bound to contest any claim made against it under Section 12, sub-section (1) of the said Act except on the written request of the Contractor and upon his giving to RailTel full security for all costs for which RailTel might become liable in consequence of contesting such claim.

4.57.1 **Provision of Mines Act** – Deleted

4.58 **RailTel not to provide quarters for Contractor** – Not used

4.59 **Labour camps:** Not used

4.60 **Non-Employment of Labourers below the age of 15**

(1) The Contractor shall not employ children below the age of 15 as labourers directly or through petty contractors or sub-contractors for the execution of work.

4.61 **DETERMINATION OF CONTRACT**

4.61.1 **Right of RailTel to determine the contract:** The RailTel shall be entitled to determine and terminate the contract at any time, should in the RailTel's opinion, the cessation of work becomes necessary owing to paucity of funds or from any other cause whatever, in which case the value of approved materials at site and of work done to date by the Contractor will be paid for in full at the rate specified in the contract. Notice in writing from the RailTel of such determination and the reasons therefore shall be conclusive evidence thereof.

4.61.2 **Payment on determination of contract:** Should the contract be determined under sub-clause (1) of this clause and the Contractor claims payment for expenditure incurred by him in the expectation of completing the whole of the work, the RailTel shall admit and consider such claims as are deemed reasonable and are supported by vouchers to the satisfaction of the Engineer. The RailTel's decision on the necessity and propriety of such expenditure shall be final and conclusive.

4.61.3 The contractor shall have no claim to any payment of compensation or otherwise, howsoever on account of any profit or advantage which he might have derived from the execution of the work in full but which he did not derive in consequence of determination of contract.

4.62 **TERMINATION OF CONTRACT OWING TO DEFAULT OF CONTRACTOR:**

4.62.1 If the Contractor should:

- (i) become bankrupt or insolvent, or
- (ii) make an arrangement with or assignment in favour of his creditors, or
- (iii) being a Company or Corporation, go into liquidation (other than voluntary), liquidation for the purpose of amalgamation or reconstruction, or
- (iv) have an execution levied on his goods or property on the works, or assign the contract or any part thereof otherwise than as provided in clause-5.15 of SCC, or
- (v) persistently disregard the instructions of the RailTel's Engineer with regard to work quality or progress during execution of work or contravene any provision of the contract, or

- (vi) fail to adhere to the agreed programme of work by a margin of 10% of the Stipulated period, or fail to remove materials from the site or to pull down and replace the work after receiving from the Engineer's notice to the effect that the said materials or works have been condemned or rejected, or
 - (vii) fail to take steps to employ competent or additional staff and labour as required under clause 5.7 of SCC (Chapter-5 Section-II), or
 - (viii) fail to afford the Engineer or Engineer's representative proper facilities for inspecting the works or any part thereof as required under clause 4.28, or
 - (xi) promise offer or give any bribe, commission, gift or advantage either himself or through his partner, agent or servant to any officer or employee of RailTel or any person on his or on their behalf in relation to the execution of this or any other contract with the RailTel,
 - (x) At any time after the tender relating to the contract has been signed and submitted by the contractor, being a partnership firm admit as one of its partners or employ under it or being an incorporated company elect or nominate or allow to act as one of its directors or employ under it in any capacity whatsoever any retired engineer of the gazetted rank or any other retired gazetted officer working before his retirement, whether in the executive or administrative capacity, or whether holding any pensionable post or not, in the Engineering Department of the Railways for the time being owned and administered by the President of India before the expiry of two years from the date of retirement from the said service of such Engineer or Officer unless such Engineer or Officer has obtained permission from the President of India or any officer duly authorized by him in this behalf to become a partner or a director or to take employment under the contract as the case may be, or
 - (xi) If the tenderer fails to deliver any or all of the goods within the time period(s) specified in the contract.
- (B) Fail to give at time of submitting the said tender:
- (a) The correct information as to the date of retirement of such retired engineer or retired officer from the said service, or as to whether any such retired engineer or retired officer was under the employment of the contractor at the time of submitting the said tender, or
 - (b) the correct information as to such engineers or officers obtaining permission to take employment under the contractor, or
 - (c) being a partnership firm the correct information as to, whether any of its partners was such a retired engineer or retired officer, or
 - (d) being an incorporated company, the correct information as to, whether any of its directors was such a retired engineer or retired officer, or
 - (e) being such a retired engineer or retired officer suppress and not disclose at the time of submitting the said tender the fact of his being such a retired engineer or a retired officer or make at the time of submitting the said tender a wrong statement in relation to his obtaining permission to take the contract or if the contractor be a partnership firm or an incorporated company to be a partner or director of such firm or company as the case may be or to seek employment under the contractor. Then and in any of these said clauses, the Engineer on behalf of the RailTel may serve the Contractor with a notice in writing to that effect and if the Contractor does not, within 7 days after the delivery to him of such notice, proceed to make good his default in so far as the same is capable of being made good and carry on the work or comply with such directions as aforesaid to the entire satisfaction of the Engineer, the RailTel shall be entitled after giving 48 hours' notice in writing under the hand of the Engineer to rescind the contract as a whole or in part or parts (as may be specified in such notice) and adopt either or both the following courses: A final termination notice will be issued by RailTel after expiry of 48 hrs notice.
- (C) **Failure and Termination:** - If the Contractor fails to deliver the stores or any instalment thereof within the period fixed for such delivery in the contract or as extended or at any

time repudiates the contract before the expiry of such period the Purchaser may without prejudice to his other rights:

- (a) Recover from the Contractor as agreed liquidated damages and not by way of penalty a sum equivalent to Half per cent of the price of any stores (including elements of taxes, duties, freight, etc.) which the Contractor has failed to deliver within the period fixed for delivery in the contract or as extended for each week or part of a week during which the delivery of such stores may be in arrears where delivery thereof is accepted after expiry of the aforesaid period The upper limit for recovery of liquidated damages will be 10% (Ten Percent) of Total contract value provided in the contract or
- (b) Cancel the contract or a portion thereof and forfeit the security deposit or encash performance bank guarantee.
- (c) Cancel the contract or a portion thereof and if so desired purchase or authorize the purchase of the stores/ execute the work not so delivered or others of a similar description (where stores exactly complying with particulars are not, in the opinion of the Purchaser, which shall be final, readily procurable) at the risk and cost of the contractor.

Then and in any of these said clauses, the Engineer on behalf of the RailTel may serve the Contractor with a notice in writing to that effect and if the Contractor does not, within 7 days after the delivery to him of such notice, proceed to make good his default in so far as the same is capable of being made good and carry on the work or comply with such directions as aforesaid to the entire satisfaction of the Engineer, the RailTel shall be entitled after giving 48 hours' notice in writing under the hand of the Engineer to rescind the contract as a whole or in part or parts (as may be specified in such notice) and adopt either or both the following courses: A final termination notice will be issued by RailTel after expiry of 48 hrs notice.

It shall, however, be in the discretion of the Purchaser to collect or not the security deposit from the firm/firms on whom the contract is placed at the risk and expense of the defaulted firm.

4.63 RIGHT OF RAILTEL AFTER TERMINATION OF CONTRACT OWING TO DEFAULT OF CONTRACTOR:

In the event of any or several of the courses, referred in clause 62.1 above, being adopted:

- (a) The Contractor shall have no claim to compensation for any loss sustained by him by reason of his having purchased or procured any materials or entered into any commitments or made any advances on account of or with a view to the execution of the works or the performance of the contract and Contractor shall not be entitled to recover or be paid any sum for any works thereto not actually performed under the contract, unless or until the Engineer shall have certified the performance of such work and the value payable in respect thereof and the Contractor shall only be entitled to be paid the value so certified.
- (b) The Engineer or Engineer's Representative shall be entitled to take possession of any materials, tools, implements, machinery or buildings on the works or on the property on which these are being or ought to have been executed, and to retain the employ the same in the further execution of the works or any part thereof until the completion of the works without the Contractor being entitled to any compensation for the use and employment thereof or for wear and tear or destruction thereof.
- (c) The Engineer shall, as soon as may be practicable after removal of the Contractor fix and determine expert or by or after reference to the parties or after such investigation or enquiries as he may consider fit to make or institute and shall certify what amount (if any) has at the time of termination of the contract been reasonably earned by or would reasonably accrue to the Contractor in respect of the work then actually done by him under the contract what was the value of any unused or partially used materials, any constructional plants and any temporary works upon the site. The legitimate amount due to the contractor

after making necessary deductions and certified by the Engineer should be released expeditiously.

4.64 **Matters finally determined by the RailTel:**

All disputes and differences of any kind whatsoever arising out of or in connection with the contract, whether during the progress of the work or after its completion and whether before or after the determination of the contract shall be referred by the contractor to the RailTel and the RailTel shall within 120 days receipt of the Contractor's representation make and notify decisions on all matters referred to by the contractor in writing provided that matters for which provision has been made in clause 8, 18, 22.5, 29, 43.2, 45(a), 55, 55.1(5), 57, 61.1, 61.2 and 62.1 of General Condition of Contract or in any clause of the Special Conditions of the Contract shall be deemed as 'excepted matters' and decisions of the RailTel's authority, thereon shall be final and binding on the contractor provided further that 'excepted matters' shall stand specifically excluded from the purview of the arbitration clause and not be referred to arbitration.

4.65 **SETTLEMENT OF DISPUTE AND ARBITRATION**

4.65.1 Any dispute or difference whatsoever arising between the parties out of or relating to the construction, meaning, scope, operation or effect of this contract or the validity or the breach thereof shall be settled by a sole arbitrator in accordance with provisions contained in Arbitration and Conciliation Act, 1996 as amended and the award made in pursuance thereof shall be binding on the parties. The venue of such arbitration or proceedings thereof shall be New Delhi.

4.65.2 All arbitration proceedings shall be conducted in English. Resources against any Arbitral award so rendered may be entered into court having jurisdiction or application may be made to such court for the order of enforcement as the case may be.

4.65.3 The Arbitral Tribunal shall consist of the sole Arbitrator if the value of claim is up to Rs. 10 Lakhs. The arbitrator will be appointed by the CMD/MD/Chairman /RailTel. If the value of claim or amount under dispute is more than Rs. 10 Lakhs, the matter shall be referred to the adjudication of arbitral council. Chairman /RailTel shall furnish a panel of three names to the contractor, out of which the contractor will recommend one name to be his nominee and then Chairman /RailTel shall appoint out of the panel, one name RailTel's nominee and these two arbitrators with mutual consent appoint a third arbitrator who shall act as deciding. The award of the sole arbitrator or the Arbitral council, as the case may be, shall be final and binding on both the parties, i.e. Contractor and RailTel Corporation of India Ltd.

4.65.4 Each of the parties agree that notwithstanding that the matter may be referred to Arbitrator as provided therein, the parties shall nevertheless pending the resolution of the controversy or disagreement continue to fulfill their obligation under this Agreement so far as they are reasonably able to do so.

SECTION- II

CHAPTER – 5

Special Conditions of Contract

I N D E X

<u>Para</u>	<u>Subject</u>
5.1	Tender Document
5.2	Agreement
5.3	Contract performance Guarantee
5.4	Contractor's Office & Stores depot
5.5	Use of Railway Land
5.6	Program of work.
5.7	Competent Supervisors
5.8	Test & Measuring Instruments, Special tools & Installation Material
5.9	Stores to be supplied by contractor
5.10	Supply of Technical Literatures, Documentation Drawings & Completion Plan etc.
5.11	Quality assurance
5.12	Inspection of materials
5.13	Inspection of works
5.14	Quantum of work and variation in Quantities
5.15	Subletting and assignment
5.16	Execution of works
5.17	Maintenance of works
5.18	Clearance of site
5.19	Provisional Acceptance
5.20	Placing in Service & Maintenance Supervision
5.21	Final Acceptance
5.22	Warranty
5.23	Infringement of Patents
5.24	License as per Govt. of India Contract Labour Act
5.25	Defaults and Delays
5.26	Loss Sustained Due to Default and Delay
5.27	Penalty for Delay in Completion
5.28	Adherence to time schedule
5.29	Contractors liabilities for Costs and Damages
5.30	Unit prices
5.31	Measurement of works
5.32	Meaning and Interpretation
5.33	Terms of Payments
5.34	Payment for execution of work
5.35	Final Payments
5.36	Final Settlement
5.37	Certificate for MODVAT BENEFITS on bills
5.38	Deductions from On Account Payment Bills
5.39	Taxes
5.40	Insurance
5.41	Rights of RailTel
5.42	Responsibilities of Contractor in respect of local Taxing etc.
5.43	Responsibility of contractor in respect of safety of man, equipment etc.

- 5.44 Consequences in cancellation
- 5.45 Strikes and lockouts
- 5.46 Guarantee
- 5.47 Rates of Extra items.
- 5.48 Rule 144(xi) in General Financial Rules 2017
- 5.49 Public Procurement (Preference to Make in India)

SECTION- II

CHAPTER - 5

SPECIAL CONDITIONS OF CONTRACT

5.1 TENDER DOCUMENT

5.1.1 The goods and services required, bidding procedure and contract terms are prescribed in the tender documents. The set of tender documents issued for the purpose of bidding includes following together with any addendum and corrigendum thereto.

- Section – I : Preamble, Schedule of requirement, Annexures etc.
- Section – II : I) Instructions to tenderers and conditions for tendering
II) General Conditions of Contract
III) Special conditions of Contract
IV) Forms of tenders and Annexure etc.
- Section – III : Technical specifications and drawings etc.

5.1.2 If the Tender submitted by a Tenderer is accepted and the contract awarded to the Tenderer the various works coming under the purview of the contract shall be governed by tender documents mentioned above.

5.1.3 Any special conditions stated by the Tenderer in the covering letter submitted along with the tender shall be deemed to be a part of the Contract to such extent only as have been explicitly accepted by the RailTel.

5.2 AGREEMENT

The successful Tenderer shall within 30 days after having been called upon by notice to do so be bound to execute an agreement based on accepted rates and conditions, in such form as the RailTel may prescribe, and lodge the same with the RailTel together with the conditions of contract, specifications and Schedule of prices referred to therein duly completed. The form for agreement is included in Section II, Chapter 7 (Form No.3).

5.3 CONTRACT PERFORMANCE GUARANTEE

5.3.1 The successful tenderer shall submit 5% of total value of work including GST* detailed in the Letter of Acceptance towards Performance Guarantee in the form of online transfer or FDR or irrevocable Bank Guarantee from any scheduled commercial bank (either private or PSU) but not from any cooperative bank or NBFC within 30 days of issue of the Letter of Acceptance, failing which a penal interest of 15% per annum shall be charged for the delay period i.e. beyond 30 (Thirty) days from the date of issue of LOA till submission of PG, for due fulfillment of contract.

* Round off to nearest higher Rs. 1000/- (one thousand).

If Performance Guarantee is not submitted by the successful bidder within 60 days from the date issue of Work Order/Purchase Order, RailTel may terminate the contract.

Note:

- 1) The PG shall be initially valid up to stipulated completion of all contractual obligations including warranty obligations (if applicable) plus 90 days along with a claim period of 12 months (time period between expiry date and claim date) on top of guarantee period (if applicable) under the contract

In case of PBG: A separate advice of the BG will invariably be sent by the BG issuing bank to the RailTel's Bank through SFMS and only after this the BG will become acceptable to RailTel. It is therefore in own interest of bidder to obtain RailTel's bank IFSC code, its branch and address and advise these particulars to the BG issuing bank and request them to send advice of BG through SFMS to the RailTel's Bank.

Detail for online SFMS confirmation using the platform is as below:

BG advising message – IFN 760COV/ IFN 767COV via SFMS

To mandatorily send the Cover message at the time of BG issuance.

IFSC Code of ICICI Bank to be used (ICIC0000007).

Mention the unique reference (RAILTEL6103) in field 7037

- 2) Any performance Guarantee up to a value of Rs. 5 Lakhs is to be submitted through online transfer only and other form of performance Guarantee (e.g. FDR/ DD/ PBG etc.) is not acceptable.

RailTel Bank Account Details for online submission of PG Amount are given below:

Bank: Union Bank of India,

A/C No.: 401601010519491

IFSC Code: UBIN0540161

Branch: Camac Street Branch

Address: 1/1, Camac Street, Ground Floor,

Kolkata-700016, West Bengal

- 3) In case of submission of Performance Guarantee in form of FDR (More than 5 Lakhs), then lien should be created in favor of "RailTel Corporation of India Ltd.".
- 4) No Interest on Earnest Money and Performance Guarantee:
No interest shall be paid on the amount of earnest money and Performance Guarantee held by RailTel, at any stage. The performance Guarantee shall be encashable at Kolkata branch of bank issued PBG.
- 5) The Performance Guarantee shall be submitted by the successful bidder after the Letter of Acceptance (LOA) has been issued, but before signing of the contract agreement. The PBG shall be initially valid up to stipulated date of completion of all contractual obligations including warranty obligations plus 90 days along with a claim period of 12 months (time period between expiry date and claim date) on top of guarantee period. In case, the time for completion of work gets extended, the contractor shall get the validity of PBG extended to cover such time for completion of work plus three months.
- 6) The value of PG. to be submitted by the contractor will not change for variation up to + 25% (either increase or decrease). In case during the course of execution, value of the contract increases by more than + 25% of the original contract value, an additional Performance Guarantee amounting to 5% (five percent) for the excess value over the original contract value shall be deposited by the contractor.
- 7) The Performance Guarantee (PG) shall be released on completion of successful completion of Contract including warranty period obligations under the contract, duly adjusting any dues recoverable from the successful tenderer.
- 8) Wherever the contracts are rescinded, the Performance Guarantee shall be encashed and

the balance work should be got done separately.

5.3.2 The Performance Guarantee (PG) shall be released only after the expiry of the maintenance period and after passing the final bill based on 'No Claim Certificate'.

5.3.3 Wherever the contractor is rescinded, the Performance Guarantee shall be encashed and the balance work shall be got done independently without risk and cost of the failed contractor. The failed contractor shall be debarred from participating in the tender for executing the balance work. If the failed contractor is a partnership firm, then every member/partner of such firm shall be debarred from participating in the tender for balance work either in his/her individual capacity or as a partner of any other partnership firm.

5.3.4 The Engineer shall not make a claim under the Performance Guarantee, except for amount to which the RailTel is entitled under the contract (not withstanding and/or without prejudice to any other provisions in the contract agreement) in the event of:

- i) Failure by the contractor to extend the validity of the Performance Guarantee as described herein above, in which event the Engineer may claim the full amount of the Performance Guarantee.
- ii) Failure by the contractor to RailTel any amount due, either as agreed by the contractor or determined under any of the Clauses/Conditions of the agreement, within 30 days of the service of notice to this effect by Engineer.
- iii) The contract being determined or rescinded under provision of the GCC the Performance Guarantee shall be forfeited in full and shall be absolutely at the disposal of RailTel.

5.4 **CONTRACTOR'S OFFICE & STORES DEPOT**

The Contractor shall within ten days of issue of letter of acceptance of tender establish an office and store depot at a convenient place for receiving and storing equipments and materials and progressing field work expeditiously in consultation and with the approval of the purchaser's Engineer. He shall intimate the purchaser's Engineer address thereof to which all correspondence should be sent. Any communication sent to the contractor by post at his said address shall be deemed to have reached the contractor duly and in time. Important documents shall be sent by Registered post.

5.5 **USE OF RAILWAY LAND:** Deleted

5.6 **PROGRAMME OF WORK**

5.6.1 The Contractor shall have necessary resources to execute the work so that the entire work is completed within a period as mentioned in the preamble from the date of issue of Letter of Acceptance of the tender. He shall also have necessary resources to take up the work simultaneously at more than one independent place in order to expedite the completion of work.

5.6.2 The Contractor who has been awarded the work shall as soon as possible but not later than 7 days from the date of receipt of the acceptance letter in respect of contracts with initial completion period of one year or less or not later than 15 days for other contracts have to submit the detailed programme of work indicating the time schedule of various items of works in the form of Bar Chart/PERT/CPM. He shall also submit the details of organization (in terms of labour and supervisors) plant and machinery that he intends to utilize (from time to time) for execution of the work within stipulated date of completion. The programme of work amended as necessary by discussions with the Engineer, shall be treated as the agreed programme of the work for the purpose of this contract and the contractor shall and endeavor to fulfill this

programme of work. The progress of work will be watched accordingly in the liquidated damages will be with reference to the overall completion date. Nothing stated herein shall preclude the contractor in achieving earlier completion of item or whole of the works than indicated in the programme.

5.6.3 The Contractor shall be held responsible for the execution of the work according to the Program given above in full compliance of the various clauses of the Technical specifications, instructions/ drawings etc. Failure to comply with any of these will be dealt with as per provision laid down in Conditions of Tendering.

5.6.4 Approach roads, wherever available can be used for carting materials. While RailTel may facilitate the contractor for getting approval from the Railways, if required, for carting the material to the site, the responsibility for ensuring that the material reaches the site in time, lies entirely with the contractor. The contractor has to bear the necessary expenses for carting the material to the site.

5.6.5 The contractor will program his work in such a manner so as not to interfere in the working and movement of trains / road vehicle.

5.7 **COMPETENT SUPERVISORS**

5.7.1 The Contractor shall place and keep competent representatives/Supervisors/ Engineers as his representative on the works who will be authorized to receive and acknowledge materials issued by the RailTel and take all orders issued by the RailTel. The said representatives shall be present at site during working hours and any written orders or instructions which the purchaser's Engineer may give to the said representatives of the contractor shall be deemed to have been duly given or communicated to the contractor.

5.8. **TEST & MEASURING INSTRUMENTS AND SPECIAL TOOLS ETC.**

5.8.1 Special tools & instruments as required for installation and commissioning of the work as detailed in preamble and to achieve and to objective shall be arranged by contractor at his own cost.

5.8.2 All tests and measuring instruments and other arrangements required for carrying out all the acceptance tests etc. shall be provided by the contractor at his own cost.

5.9 **STORES TO BE SUPPLIED BY CONTRACTOR**

5.9.1 All materials required for the execution of the contract shall be arranged and supplied by the Contractor as detailed in the scope (Preamble) so as to realize the end objective. The supply of equipments and materials shall also include required installation and other materials and documents etc. which may not be specifically mentioned herein but which are necessary for completing the work in all respects.

5.10 **SUPPLY OF TECHNICAL LITERATURES, DOCUMENTATION, DRAWINGS, INSTRUCTION BOOK & COMPLETION PLANS ETC.**

The supply of equipment and materials shall include supply of two sets of printed documents from original equipment manufacturers with each equipment.

5.11 **QUALITY ASSURANCE**

In the event of RailTel waving off the inspection, the quality assurance department of the manufacturer shall carry out all the tests as per the specification and issue a certificate indicating clearly the test results and the adherence to the technical specifications. This is

without prejudice to the purchaser's right to accept or reject the supplies if not found in conformity to its requirement.

5.12 INSPECTION OF MATERIALS

- 5.12.1 All equipments materials fittings and components will be subject to inspection by the purchaser or his representative at the manufacturer's factory/tenderer works before dispatch and no materials shall be dispatched until these are inspected and/or approved. The materials may also be inspected by the purchaser or his representative again at the contractor's depot.
- 5.12.2 All materials shall be procured from the manufacturers of repute/their authorized dealers. Such materials are to be accepted by the Engineer. The Contractor may be required to produce test certificate from the manufacturer wherever called for by the Engineer. In case of material to be supplied as per RDSO/TEC specification, should be procured from RDSO/TEC approved source only.
- 5.12.3 The cost of equipment and materials, all tests and/or analysis performed for inspection shall be borne by the Contractor.
- 5.12.5 The inspection charges, if any, payable to the purchaser's representative for carrying out the inspection shall be borne by the purchaser.

5.13 INSPECTION OF WORKS

The Engineer or his representative may inspect and test the various portions of the work at all stages and shall have full power to reject all or any portion of the work that he may consider to be defective or inferior in quality of materials, workmanship or design in comparison to what is called for in the specification. In the event of rejection of any work already executed and not in accordance with specification as in this tender and/or as determined by the Engineer or which the Contractor has been apprised, the Contractor shall carry out alterations/replacements to such works to the satisfaction of the Engineer at his own cost and which no additional expenses will be borne by the RailTel.

5.14 QUANTUM OF WORK AND VARIATION IN QUANTITIES

- 5.14.1 The quantities quoted in the Schedule are not firm and may be varied at the time of awarding and during the currency of the contract.
- 5.14.2 The quantity indicated in the Schedule of Requirements is the estimated quantities in respect of the work and may change depending on the detailed survey/system design. On this and other developments, the purchaser may exercise the option of increase / decrease of the quantity of items of Schedule of Requirements by plus 25% (Twenty five percent) or minus 25% (twenty five percent) of the value of the contract respectively either within the scope of the work.
- 5.14.3 The Contract value may vary within +25% / -25% of the grand total of Schedule of Requirements as included in the Letter of Acceptance to tenderer, In case of variation in quantities the contractor shall be bound to carry out the work at the rates agreed in the schedule up to the limit of +25% / -25% variation in the value of contract and shall not be entitled to any claim or any compensation whatsoever. Quantity exceeding 125% but below 140% for which rate to reduced by 2% of SOR rate. For quantity exceeding 140% but below 150% rate to be reduced by 4% of SOR rate and for quantity exceeding 150%, rate will be on negotiated rate.

5.15 SUBLETTING AND ASSIGNMENT

The contractor may enter into contract with suppliers for supply of materials under this contract.

The contractor may subcontract the execution of part(s) of the project with the prior approval of RailTel under following conditions:-

- (i) The permitted subletting of work by the contractor shall not establish any contractual relationship between the sub-contractor and the RailTel and shall not relieve the contractor of any responsibility under the contract.
- (ii) The contractor shall arrange for effective supervision of sub contractor's work and remain solely responsible for materials supplied and for works carried out on his behalf by the sub-contractor.

5.16. EXECUTION OF WORK

All the works shall be executed in strict conformity to the provisions of the contract document and with such explanatory detailed drawings, specifications and instructions as may be approved from time to time based on detailed design and engineering carried out by contractor in line with requirements as per contract document. The contractor shall be responsible for ensuring that the work throughout are executed in the most substantial, best workmanship using best quality of material and in strict accordance with the specifications and as per sound industrial practices, to the entire satisfaction of the RailTel.

5.17. MAINTENANCE OF WORKS

Deleted

5.18. CLEARANCE OF SITE

At the end of the work at each location the Contractor shall as a part of his contractual obligation leave the area completely neat and clean.

5.19. PROVISIONAL ACCEPTANCE

5.19.1 Immediately after the completion of the work of the entire section in all respects, the contractor shall certify and advise the purchaser in writing that the installation is (i) complete (ii) ready for satisfactory commercial service and (iii) ready to be handed over (iv) submit 3 sets of final cable route plan in hard bound copies on white bond paper of A4 size maximum and 03 sets of CD.

5.19.2 The test or tests specified in Technical specifications will be conducted jointly by purchaser and contractor as soon as possible after receipt of advice of completion of one section by purchaser from the contractor. The test schedule shall be finalized by mutual discussion between the contractor and M/s. RailTel Corporation of India Ltd., Kolkata 700091. Any breakages in the laid fibers, improper protective arrangement in bridges and culverts or any discrepancy or deviation from the tendered specifications, during the commissioning test shall be replaced/repaired free of cost by tenderer.

5.19.3 Purchaser's Engineer shall issue a Provisional Acceptance certificate for successful commissioning of the section covering all materials and services included in the Schedule of works after the final acceptance test as per the approved test procedures have been completed and the performance has been found to meet the specifications. RailTel's decision in this respect shall be final. The Provisional Acceptance Certificate shall be signed by both the parties. The period of maintenance/warranty of works shall commence from the date of issue of the Provisional Acceptance Certificate.

5.20. PLACING IN SERVICE & MAINTENANCE SUPERVISION

- 5.20.1 After the work has been completed & placed in service and Provisional Acceptance certificate issued by Purchaser's Engineer, the contractor shall be responsible for proper warranty of the work for a period of twelve months from the date of commissioning.
During the period of warranty, the contractor shall be responsible for making good, at his own cost, any work found defective. For this purpose, he shall have to depute his personnel to the site and replace/repair the defective work to the satisfaction of the purchaser's engineer.
- 5.20.2 The Contractor shall inspect all trenches after first monsoon and shrinkage etc. shall be refilled and rammed & trench surface brought to the original. No extra charge shall be payable for the same.
- 5.20.3 During this period of warranty supervision if any lacuna is noticed in the work done by the contractor under the contract, the contractor will rectify the same free of cost. During such rectification if any faulty material need replacement or repair, they shall be provided by the contractor.

5.21 **FINAL ACCEPTANCE (FAC)**

- 5.21.1 The final acceptance of the works completed shall take effect from the date of expiry of the period of warranty support as defined in clause 20 or the expiry of the last of the respective period of warranty of section for which Provisional Acceptance Certificates are issued or brought into commercial operation, provided in any case that the contractor has complied fully with his obligations in respect of each item under the contract.
- 5.21.2 Notwithstanding the issue of Final Acceptance Certificate the contractor and the purchaser (subject to Sub Clause as above) shall remain liable for fulfillment of any obligation incurred under the provision of the contract prior to the issue of Final Acceptance Certificate which remains unperformed at the time such certificate is issued and for determining the nature and extent of such obligation the contract shall be deemed to remain in force between the parties hereto.

5.22 **WARRANTY**

- 5.22.1 All materials supplied/work done by the Contractor shall be guaranteed against the defects for a period as prescribed in BDS from the date of issue of Provisional Acceptance Certificate. The contractor shall provide comprehensive warranty maintenance for all the items executed by him against this tender.
- 5.22.2 During the period of warranty, the contractor shall remain responsible to arrange replacement and for setting right at his own cost any equipment installed by him which is of defective manufacture or design or becomes unworkable due to any cause whatsoever. The decision of the RailTel's representative in this regard to direct the contractor to attend to any damage or defect in work shall be final and binding on the Contractor.
- 5.22.3 During the period of warranty, the contractor shall be responsible to the extent expressed in this clause for any defects that may develop under the conditions provided for by the contract and under proper use, arising from faulty materials, design or workmanship in the plant, or from faulty execution of the plant by the contractor but not otherwise and shall remedy such defects at his own cost when called upon to do so by the Purchaser who shall state in writing in what respect the portion is faulty.
- 5.22.4 If it becomes necessary for the contractor to replace or renew any defective portions of the system under this clause the provisions of this clause shall apply to the portions of the plant to be replaced or renewed until the expiration of three months from the date of such replacement or renewal or until the end of the warranty period whichever may be later. If any

defect is not remedied within reasonable time, the purchaser may proceed to do the work at contractor's risk and expense, but without prejudice to any other rights which the purchaser may have against the contractor in respect of such defects. The tenderer has to recoup the faulty unit/equipment from the set of his own spares kept by him within a period of 24 hours. The locations where such spares are to be handed over to the Tenderer shall be indicated in the bid by the tenderer.

- 5.22.5 Until the Final Acceptance Certificate shall have been issued, the contractor shall have the right of entry, at his own risk and expense, by himself or his duly authorized representatives, whose names shall have previously been communicated in writing to the purchaser at all reasonable working hours upon all necessary parts of the works for the purpose of inspecting the working and the records of the system and taking notes there from and, if he desires at his own risk and expense, making any tests subject to the approval of the purchaser which shall not be unreasonably withheld.
- 5.22.6 In subject of this warranty, the contractor shall make his Performance Guarantee as required under Clause 3 of Special Conditions of Contract, valid to cover the period of warranty.

5.23 INFRINGEMENT OF PATENTS:

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

5.24 LICENSE AS PER GOVT. OF INDIA CONTRACT LABOUR ACT

The Contractors are required to produce license as enjoined in the Government of India Contract Labour (Regulation and Abolition) Act (1978) with latest amendments, if any. They shall not be allowed to undertake or execute any work through contract Labour except under and in accordance with a license issued under the said Act in that behalf by the authorized licensing Officer.

- 5.24.1 Labour Cess: The tenderers, for carrying out any construction work, must get themselves registered with the Registrar Officer under section-7 of the Building and other Construction workers Act 1996 and rules made thereto by the concerned State Govt. and submit certificate of Registration issued from the Registering officer of the concerned State Govt. (Labour Deptt.). As per this act, the tenderer shall be levied a cess@1% of cost of construction work, would be deducted from each bill. Cost of material when supplied under a separate schedule item, shall be outside the purview of cess.

5.25 DEFAULTS AND DELAYS

The Contractor shall execute the work with due diligence and expedition, keeping to the approved time schedule. Should he refuse or neglect to comply with any reasonable orders given to him in writing by the Purchaser's Engineers in connection with the work or contravene the provision of the Contract or the progress of work lags persistently behind the time schedule due to his neglect, the Purchaser shall be at liberty to give seven days notice in writing to the Contractor requiring him to make good the neglect or contravention complained of and should the Contractor fail to comply with the requisitions made in the notice within seven days from the receipt thereof, it shall be lawful for the purchaser to take the work wholly or in part out of the Contractor's hands without any further reference and get the work or any part thereof, as the case may be, completed by other agencies at the expense of the Contractor without prejudice to any other right or remedy of the Purchaser. The contract shall be treated as terminated on the date a notice is issued by the purchaser to take the work wholly or in part out of the Contractor's hands. The purchaser shall be at liberty to encash the performance guarantee after the contract is terminated to reimburse the loss to purchaser.

5.26 LOSS SUSTAINED DUE TO DEFAULTS AND DELAYS

In the event of any loss to the purchaser on account of execution and/or completion of the work or any part thereof by agencies other than the contractor, in terms of clause 25 the contractor shall be liable to reimburse the loss to purchaser without prejudice to the other rights and remedies of the purchaser and the reimbursement in full or in part, as the case may be, shall be met at the option of the purchaser from out of all or any of the following sources viz :

- (a) (i) Any amount due and payable to the contractor by the purchaser on any account whatsoever.
- (ii) The Contractor's Performance Guarantee in the hands of the purchaser as far as available, and.
- (iii) Any other assets whatsoever of the contractor.
- (b) In the event of re-imburement from out of sources (i) and/or (ii) above mentioned, the purchaser shall have the right of appropriation Suo-moto.

5.27 LIQUIDATED DAMAGES FOR DELAY IN COMPLETION (LD)

5.27.1 If the contractor fails to execute and complete the work within the time specified in the Agreement or within the period of extension granted under para 5.28, the contractor shall accept reduction in the total amount payable to him by the purchaser at the rate of 0.5% per week or part thereof (rounded off to the nearest whole number) of the total value of the contract for the actual delay occasioned beyond the appointed time by which the work shall have GST value of reduction on account of above shall be limited to maximum of 10% (Ten percent) of the total contract value including GST.

5.27.3 Such reduction shall be accepted by the purchaser in full satisfaction of the contractor's liability arising from delay only. This reduction of value for delay in completion will be applicable separately for each stage of completion of work. When two or more stage of completion are specified in the contract, the purchaser's engineer shall at his sole discretion specify a time limit within which the unfinished portion of the work shall be completed after serving on the contractor a notice of Purchaser's intention to recover the said penalty. In the event of failure of the contractor, the purchaser shall be at liberty to take action in accordance with provisions in Para 5.25 and 5.27.

NOTE: For purpose of this Para the value of work shall be calculated on the basis of unit prices included in schedule of requirements/work with the increase/decrease of the overall %age accepted for the contract.

5.27.4 Proper care shall be taken any underground utilities while execution of underground cable laying work. During the execution of work any underground utility (cable/pipe etc.) is damaged, the contractor shall repair the damaged portion or if the utility provider repaired it and penalty imposed on RailTel in this account, RailTel will deduct any penalty charged by the utility provider.

5.28 **ADHERENCE OF TIME SCHEDULE**

5.28.1 Timely completion of the work is the essence of the contract. While delay in execution will attract penalty. Project review meetings shall be conducted on a fortnightly basis to assess progress, address challenges, and align deliverables with agreed timelines. The bidder is required to submit a detailed status report every fortnight, covering key milestones, pending actions, risk items, and resource utilization.

5.28.2 If any delay as aforesaid in clause 5.27 shall have arisen from any cause which the Purchaser may agree as being a reasonable ground for extension of time the purchaser's engineer or his representative may allow such additional time as he may in his absolute discretion consider to be reasonably justified by the circumstances of the case. Such extensions shall be granted, on request from contractor, without liquidated damages in the Form No.11.

5.29. **CONTRACTOR'S LIABILITIES FOR COSTS AND DAMAGES** (Please refer clause 4.24 of General Conditions of Contract (Section –II, Chapter – 4)

5.30 **UNIT/PERCENTAGE PRICES**

This tender consists of a percentage bidding system. The estimated prices of each and every item of the schedule are indicated in the Schedule of Requirements. The tenderer is expected to quote the %age above (+) or below (-) or at par of the total estimated price indicated in the schedule. For the purpose of calculating the unit price for releasing payment item-wise, the total %age above/below/at par finalized for the entire schedule will form the basis for calculation of the unit prices where the estimated prices of the individual items of the schedule will be marked above/below/at par of the final overall %age accepted.

The percentage above/below/at par finalized for the entire schedule shall be firm and on including GST basis but inclusive of freight, handling, incidental charges and hence the contractor is advised to quote after taking all the relevant factors into consideration. Subsequent requests for variation of prices will not be entertained. The prices indicated in the schedule are in Indian Rupees for the units under metric system.

5.30.1 The rate shall include the prices of materials including all incidental charges for transport, loading/ unloading and handling of materials, collection of banker's charges for Bank guarantee, Indemnity Bonds inclusive of cost of Stamp etc.

5.30.2 The prices quoted by the Tenderer shall include GST but there should be breakup prices and all type of applicable taxes such as CGST/IGST/SGST/UTST etc. including tax under reverse charges payable by the recipient under GST act.

5.30.3 The prices quoted by the tenderer shall include all costs of Administration of Contract, Insurance Premium, Banker's charges for guarantees, cost of storage, loading-unloading, any kind of license fees and handling of materials and for any road transport which the

contractor may use for carriage of materials to his depot and the site of work. The prices shall also include the cost of works and adjustments necessary to be done by the contractor during or after tests carried out by the purchaser.

5.30.4 All taxes (including GST), duties and levies arising out of the transaction between the contractor and his sub-contractor/supplier for this work will be included in the rates quoted by the contractor in the relevant Schedule of requirement.

5.30.5 No import license shall be arranged by the RailTel for this work.

5.31 MEASUREMENT OF WORKS

5.31.1 Measurements for the works shall be made in accordance with approved designs & drawings and measured in relevant units except where provided otherwise. The measurements will be made generally in accordance with standard engineering practices.

5.31.2 All measurement, method of measurement, meaning intent of specifications and interpretation of Special Conditions of Contract, given and made by the Purchaser or by the Purchaser's Engineer shall be final and binding.

5.31.3 All payment due to the contractor will be made through E-payment.

5.31.4 Payments for the works shall be made in accordance with approved design & drawings and measured in relevant units except where provided or otherwise. The measurements will be made generally in accordance with standard engineering practices. The abstract of quantities arrived shall be entered in the measurement book and signed by the contractor and the authorized representative of RailTel.

5.32 MEANING AND INTERPRETATION BY RAILTEL TO BE FINAL:

All measurement, method of measurement, meaning intent of specifications and interpretation of Special Conditions of Contract, given and made by the Purchaser or by the Purchaser's Engineer shall be final and binding.

5.33 TERMS OF PAYMENT:

5.33.1 All bills/Tax Invoices shall be submitted to the RailTel Corporation of India Ltd., Eastern Region, Kolkata under whose jurisdiction the work has been executed. While submitting the bills, the break-up of taxes may be furnished so that any INPUT credit may be availed by RailTel.

5.33.2 Subject to any deductions or recovery which the RailTel may be entitled to make under contract, the contractor will be entitled to be paid from time to time by way of "on account payment" for supply of goods and 'progress payment' for works as given in payment conditions below.

5.34 PAYMENT SUPPLY OF MATERIAL & EXECUTION OF WORKS:

5.34.1 Payment shall not be claimed for the work more than twice in a calendar month. Progress payment can be made section wise after completion of all works required to be done after submission of Tax Invoices in the prescribed format includes:

- 1) Tax Invoice (Original)
- 2) Measurement certificates
- 3) Commercial Invoices
- 4) Measurement Book
- 5) OTDR report.

- 6) E-Way Bill (for supply of material)
- 7) Consignee receipt (for supply of material)
- 8) Inspection certificate for supply of material
- 9) Copy of PBG
- 10) Copy of signed Contract Agreement
- 11) Copy of LoA/PO

5.34.2 90% (Ninety percent) of the payment for each item of Schedule of works shall be paid after completion of OFC laying work in section and after joint measurement and testing i.e. depth checking & fiber testing of all fibers to the satisfaction of Engineer/ supervisor in-charge of the work and proper entry in the measurement

5.34.3 5% (Five percent) payment shall be made after the issue of Provisional Acceptance Certificate by RailTel engineer and submitting the required Documentation i.e. ABD i.e. As Built Drawing duly mapped with GPS co-ordinates etc. (acceptance of final as build drawings by RailTel engineer-in-charge)

5.34.4 HDPE Duct and 24F OFC cable unused if any after completion of work shall be transported from site to the nearest RailTel store /Ware house and handed over to the RailTel work in charge by the contractor: **Not Applicable.**

5.35 **FINAL PAYMENT**

5.35.1 Final payment of 5% of the contract value shall be made after satisfactory completion of the warranty period and issue of Final Acceptance Certificate (FAC).

5.35.2 Final Acceptance Certificate shall be issued by the Purchaser's Engineer after completion of one year's period of warranty as covered in the contract. The Final Acceptance Certificate shall be issued by the Purchaser's Engineer only when he has accepted the work wholly after conducting the acceptance tests as per the details given in the technical specification and supplement.

On the basis of Final Acceptance Certificate from the Purchaser's Engineer for all the works at all the locations covered in this contract and reconciliation of materials issued if any, the final bill for the balance payment for each item of work shall be submitted by the Contractor along with a clear 'No Claim Certificate'.

5.36 **FINAL SETTLEMENT**

On expiry of the warranty period and issue of the certificate of final acceptance of the entire installations, the Performance Guarantee will be released to the Contractor after adjustment of any dues payable by the contractor.

5.37 **CERTIFICATE FOR MODVAT BENEFITS ON BILLS**

Not used

5.38 **DEDUCTION FROM ON ACCOUNT PAYMENT BILLS – PROGRESS PAYMENT**

- (i) All costs, damages or expenses, which RailTel may have been paid or incurred which under the provisions of contract are Contractor's obligations will be deducted by RailTel from progress payment Bills/Invoice of Contractor, as and when it is understood that such an expense has been incurred or paid for.
- (ii) All such claims of RailTel shall, however, be duly supported by appropriate and certified vouchers, receipts or explanations as are available to enable the Contractor to identify such claims.

5.39 **TAXES**

- 5.39.1 The Contractor and all personnel employed by him shall pay such taxes like Income Tax as are payable under statutory laws of India and the Purchaser **WILL NOT ACCEPT** any liability for the same.
- 5.39.2 Deduction of Income Tax at source as per provisions of Finance Act and Income Tax in force shall be made from the Contractor/Sub-Contractor and the amount so deducted may be credited to the Central Government. Beside this all other statutory deductions of tax will also be affected from on account bills.
- 5.39.3 Wherever the law makes it statutory for the Purchaser to deduct any amount towards GST or any other tax in force by the law of land, the same will be deducted and remitted to the concerned authority.

5.40 **INSURANCE:**

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

5.40.2 **INSURANCE OF MATERIALS & INSTALLATIONS:**

Not used

5.41 **Rights of RailTel:**

RailTel reserves to itself the following rights in respect of this contract without entitling the Contractor to any compensation.

- 5.41.1 To get the work done through another agency at the risk and cost of the Contractor, in the event of poor progress or the Contractor's inability to progress the work for Completion as stipulated in the contract, poor quality of work, persistent disregard of instructions of Architect / RailTel, assignment, transfer, subletting of the contracted work without written permission of RailTel, non-fulfillment of any contractual obligations etc. and to claim / recover compensation for such losses from the Contractor including RailTel's supervision charges and overheads from Performance Guarantee / other dues.
- 5.41.2 To withdraw any portion of work and / or to restrict / alter quantum of work as indicated in the contract during the progress of work and get it done through the contractor of the adjacent section and / or by the departmental labour to suit RailTel's requirements or in case RailTel's decides to advance the compensation due to other emergent reasons.
- 5.41.3 To terminate the contract after due notice and encash the Performance Guarantee and recover the loss sustained in getting the balance work done through other agencies in addition to liquidated damages in the event of:
- Contractor's continued poor progress.
 - Withdrawal from or abandonment of the work before completion of the work.
 - Corrupt act of the Contractor
 - Insolvency of the Contractor.
 - Persistent disregard of the instructions of RailTel.
Assignment, transfer, subletting of the contract work without written permission.
 - Non-fulfillment of any contractual obligations.

- 5.41.4 To recover any moneys due from the Contractor from out of any moneys due to the Contractor under this or any other Contract or from the Performance Guarantee (PG).
- 5.41.5 To determine the Contract or to restrict the quantum of work and pay for the portion of work done as per the satisfaction of RailTel.
- 5.41.6 To effect recoveries from any amounts due to the Contractor under this or any other contract or in any other form the moneys which RailTel is forced to pay to anybody due to Contractor's failure to fulfill any of his obligations.
- 5.41.7 To restrict or increase the quantity and nature of work to suit site requirements, since the tender specifications are based on preliminary documents and quantities furnished therein are indicative and approximate and the rates quoted shall not be subject to revision in any manner whatsoever.
- 5.41.8 To deploy RailTel's or adjacent-section-contractor's skilled and semiskilled workmen in case of emergency / poor progress / deficiency in skill on the part of the employees of the Contractor and to recover the expenditure on account of the same from the moneys due to the Contractor.
- 5.41.9 While every endeavor will be made by RailTel to this end, RailTel cannot guarantee uninterrupted work due to conditions beyond its control. The Contractor will not be entitled to any compensation / extra payment on this account.

In the event of any dispute of technical nature, the decision of RailTel shall be final and binding to the Contractor.

5.42 **Responsibilities of Contractor in respect of local taxing rules, local laws, employment for workers etc.:**

The following are the responsibilities of the Contractor in respect of observance of local laws, employment of personnel, payment of taxes etc.

- 5.42.1 The tenderer must be registered in relevant states
- 5.42.2 As far as possible, unskilled workers shall be engaged from the local areas in which the work is being executed.
- 5.42.3 The Contractor at all times during the continuance of this contract, shall in all his dealings with the local labour for the time being employed on or in connection with the work, have due regard to all local festivals, religious and other customs.
- 5.42.4 The Contractor shall comply with all State and Central Laws, Statutory Rules, Regulations etc., such as The Payment of Wages Act, The Minimum Wages Act, The Workmen's Compensation Act, The Employer's Liability Act, The Industrial Disputes Act, The Employee's Provident Fund Act, Employee's State Insurance Scheme, The Contract Labour (Regulations and Abolitions Act, 1970) and other Acts, Rules and Regulations for labour as may be enacted by the Government during the tenure of the Contract and having force or jurisdiction at site. The Contractor shall give to the local Governing Body, Police and other concerned authorities all such notice as may be required under law.
- 5.42.5 The Contractor will obtain independent license under the Contract Labour (Regulations and Abolition Act, 1970) from the concerned authorities based on the certificate (Form -V) issued by the principal employer / customer, if such license is required under the law.
- 5.42.6 The Contractor shall pay all taxes, fees, license charges, deposits, duties, tolls, royalty,

commissions or other charges which may be leviable on account of any of his operations connected with this contract. In case, RailTel's forced to make any such payment, RailTel shall recover the same from the Contractor either from moneys due to him or otherwise as deemed fit.

- 5.42.7 The Contractor shall be responsible for the provision of health and sanitary arrangements more particularly described in the Contract Labour (Regulations and Abolition Act, 1970) and safety precautions as may be required for safe and satisfactory execution of the contract.
- 5.42.8 The Contractor shall be responsible for proper accommodation including adequate medical facilities for the personnel employed by him.
- 5.42.9 The Contractor shall be responsible for the proper behavior and observance of all regulations by the staff employed by him.
- 5.42.10 The Contractor shall ensure that no damage is caused to any person / property of other parties working at site. If any such damage is caused, it shall be the responsibility of the Contractor to make good the losses and compensate them.
- 5.42.11 All the properties/equipment/components of RailTel loaned with or without deposit, to the Contractor shall remain the properties of RailTel. The Contractor shall use such properties for the purpose of execution of this contract. All such properties/ equipment / component shall be taken to be in good condition unless notified to the contrary by the Contractor within 48 hours. The Contractor shall return them in good condition as and when required by RailTel. In case of non-return, loss, damage, repairs etc., the cost thereof, as may be fixed by the Engineer, will be recovered from the Contractor.
- 5.42.12 It shall not be obligatory on the part of RailTel to supply any tools and tackles or materials other than those specifically agreed to be given by RailTel.
- 5.42.13 The Contractor shall fully indemnify and keep indemnified RailTel against all claims of whatever nature arising during the course of execution of this contract.
- 5.42.14 In case the Contractor is required to undertake any work outside the scope of this contract, the amount payable shall be as may be mutually agreed upon.
- 5.42.15 Any delay in completion of works or non-achievement of periodical targets, due to reasons attributable to the Contractor, will have to be compensated by the Contractor either by increased manpower and resources or by working extra hours or more than one shift at no extra cost to RailTel.
- 5.42.16 The Contractor will be directly responsible for payment of wages to his workmen. A pay-roll sheet giving details of all payments made to the workmen duly signed by the Contractor's representative should be furnished to RailTel, if called for.
- 5.42.17 In case of any class of work for which there is no specification laid down in the contract, such work shall be carried out in accordance with the instructions and requirements of the Engineer.
- 5.42.18 No levy, payment or charges made or imposed shall be impeached by reason of any clerical error or by reason of any mistake in the amount levied, demanded or charged.
- 5.42.19 No idle labour charges will be admissible in the event of any stoppage of work resulting in the Contractor's workmen being rendered idle due to any reason at any time.
- 5.42.20 The Contractor shall take all reasonable care to protect the materials and the work till such

time it has been taken over by RailTel.

- 5.42.21 Contractor shall not stop work or abandon the site for whatsoever reason or dispute, excepting for force majeure conditions. All problems / disputes shall be separately discussed and settled without affecting the progress of work. Stoppage or abandonment of work other than under force majeure conditions shall be treated as breach of work of contract and dealt with accordingly.
- 5.42.22 The Contractor shall keep the area of work clean and shall remove the debris etc. outside of RailTel's premises, while executing day-to-day work. Upon completion of work, the Contractor shall remove from the vicinity of work, all scrap, packing materials, rubbish, unused and other materials and deposit them in places specified by the Engineer. The Contractor will also demolish all the hutments, sheds, offices, etc., constructed and used by him and shall clean the debris. In the event of his failure to do so, the same will be arranged to be done by the RailTel and the expenses recovered from the Contractor.
- 5.42.23 The Contractor shall execute the work in the most substantial and workmen like manner in the stipulated time. Accuracy of work and timely execution shall be the essence of this contract. The Contractor shall be responsible to ensure that the quality, assembly and workmanship conform to the dimensions and clearance given in the drawings and/or as per the instructions of the Engineer.
- 5.42.24 The Contractor shall furnish fortnightly labour deployment report indicating the classification and number of workmen engaged, date wise and category wise. Besides, the Contractor shall also furnish progress reports on work at regular intervals as required by the Engineer.
- 5.42.25 **Updation of Labour data:**
- A.** Contractor is to abide by the provisions of Payment of Wages act & minimum Wages act in terms of clause 54 and 55 of Indian Railways General Condition of Contract. In order to ensure the same and application has been developed and hosted on website www.shramikkalyan.indianrailways.gov.in. Contractor shall register his firm/ company etc. and upload requisite details of labour and their payment in this portal. These details shall be available in public domain. The Registration/ updation of Portal shall be done as under:
- a) Contractor shall apply for onetime registration of his company/firm etc. in the Shramikkalyan portal with requisite details subsequent to issue of Letter of Acceptance. Engineer shall approve the contractor's registration on the portal within 7 days of receipt of such request.
- b) Contractor once approved by any Engineer, can create password with login ID (PAN No.) for subsequent use of portal for all LOAs issued in his favour.
- c) The contractor once registered on the portal, shall provide details of his Letter of Acceptance (LoA) / Contract Agreements on Shramikkalyan portal within 15 days of issue of any LOA for approval of concerned engineer. Engineer shall update (if required) and approve the details of LoA filled by contractor within 7 days of receipt of such request.
- d) After approval of LoA by Engineer, contractor shall fill the salient details of contract labours engaged in the contract and ensure updating of each wage payment to them on Shramikkalyan portal on monthly basis.
- e) It shall be mandatory upon the contractor to ensure correct and prompt uploading of all salient details of engaged contractual labour & payments made thereof after each wage period.
- B.** "While processing payment of any "On Account Bill" or "Final Bill" or release of "Advances" or "Performance Guarantee", contractor shall submit a certificate to the Engineer or Engineer's

representatives that “I have uploaded the correct details of contract labours engaged in connection with this contract and payments made to them during the wage period in Railway’s Shramikkalyan portal at “www.shramikkalyan.indianrailways.gov.in” till _____ Month_____ Year.”

5.43 Responsibility of contractor in respect of safety of men, equipment, material and environment:

All safety rules and codes applied by RailTel at site shall be observed by the Contractor and his workmen without exception. The Contractor shall be responsible for the safety of the equipment / material and work to be performed by him.

5.43.1 Contractor shall also take such additional precautions as may be indicated from time to time by the Engineer, with a view to prevent pilferage, accidents, fire hazards etc. Suitable number of Clerical Staff, watch and ward, Storekeepers to take care of equipment, material, construction tools and tackles shall be posted at site by the Contractor till the completion of work under this contract. The Contractor shall arrange for such safety devices as are necessary for this type of work and carry out the requisite site tests of handling equipment, lifting tools, tackles etc. as per usual standards and practices.

5.43.2 The Contractor shall provide to its work force and ensure the use of the following personal protective equipment as found necessary and as found necessary:

- Safety Helmets conforming to IS - 2925.
- Safety Belts conforming to IS - 3521.
- Safety Shoes conforming to IS - 1989.
- Eye & Face Protection devices conforming to IS-8520 & IS-8940.
- Hand & Body Protection devices conforming to IS-2573, IS-6994, IS-8807 & IS-8519.

5.43.3 All tools, tackles, lifting appliances, material handling equipment, scaffolds, cradles, safety nets, ladders, equipment etc. used by the Contractor shall be of safe design and construction. These shall be tested and certificate of fitness obtained before putting them to use and from time to time as instructed by authorized RailTel official who shall have the right to ban the use of any item.

5.43.4 All electrical equipment, connections and wiring for construction power, its distribution and use shall conform to the requirements of Indian Electricity Act and Rules. Only electricians licensed by the appropriate statutory authority shall be employed by the Contractor to carry out all types of electrical works. All electrical appliances including portable electric tools used by Contractor shall have safe plugging system to source of Power and be appropriately earthed. Where it becomes necessary to provide and / or store petroleum products, explosives, chemicals and liquid or gaseous fuel or any other substance that may cause fire or explosion, the Contractor shall be responsible for carrying out such provision and / or storage in accordance with the rules and regulations laid down in the relevant Government Acts, such as Petroleum Act, Explosive Act, Petroleum and Carbide of Calcium Manual of the Chief Controller of Explosives, Government of India etc. Prior approval of the authorized RailTel official at the site shall also be taken by the Contractor in all such matters.

5.43.5 The Contractor shall arrange at his cost (wherever not specified) appropriate illumination at all work spots for safe working, when natural daylight may not be adequate for clear visibility.

5.43.6 In case of a fatal or disabling injury/accident to any person at construction sites due to lapses by the Contractor, the victim and/or his/her dependents shall be compensated by the Contractor as per statutory requirements. However, if considered necessary, RailTel shall have the right to impose appropriate financial penalty on the Contractor and recover the same from payments due to the Contractor for suitably compensating the victim and/or

his/her dependents. Before imposing any such penalty, appropriate enquiry shall be held by RailTel giving opportunity to the Contractor to present his case.

- 5.43.7 In case of any damage to property due to lapses by the Contractor, RailTel shall have the right to recover the cost of such damages from the payments due to the Contractor after holding an appropriate enquiry.
- 5.43.8 In case of any delay in the completion of jobs due to mishaps attributable to lapses by the Contractor, RailTel shall have the right to recover cost of such delay from the payments due to the Contractor, after notifying the Contractor suitably and giving him opportunity to present his case.
- 5.43.9 If the Contractor fails to improve the standards of safety in its operation to the satisfaction of RailTel, after being given reasonable opportunity to do so and / or if the Contractor fails to take appropriate safety precautions or to provide necessary safety devices and equipment or to carry out instructions regarding safety issued by the authorized RailTel official, RailTel shall have the right to take the corrective steps at the risk and cost of the Contractor after giving a notice of not less than seven days indicating the steps that would be taken by RailTel.
- 5.43.10 The Contractor shall submit report of all accidents, fires, property damage and dangerous occurrences to the authorized RailTel official immediately after such occurrence, but in any case not later than 12 hours of the occurrence. Such reports shall be furnished in the manner prescribed by RailTel. In addition, periodic reports on safety shall also be submitted by Contractor to the authorized RailTel official from time to time as prescribed.
- 5.43.11 During the course of construction, alteration or repair scrap lumbers with protruding nails, sharp edges etc., and all other debris including combustible scrap shall be kept cleared from working areas, passage ways and stair in and around site.

Cylinders shall be moved by tilting and rolling them on their bottom edges. They shall not be intentionally dropped, struck or permitted to strike each other violently. When cylinders are transported by powered vehicles, they shall be secured in a vertical position.

- 5.43.12 Contractor shall provide enough fire protecting equipment of the types and numbers at his office, stores, erection site, other temporary structures, labour colony area etc. Access to such fire protection equipment shall be easy and kept open at all times. Compliance of the above requirement under fire protection shall in no way relieve the Contractor of any of his responsibility and liabilities to fire accident occurring. In the event fire safety measures are not to RailTel's satisfaction, RailTel shall have option to provide the same and recover the cost plus incidentals from Contractor's bills and / or impose penalty as deemed fit by the authorized representative of RailTel.
- 5.44 **Consequences of cancellation:**

Whenever RailTel exercises its authority to terminate the contract/withdraw a portion of work, the work may be got completed by any other means at the Contractor's risk and cost provided that in the event of the cost of completion (as certified by the Authorised representative of RailTel which shall be final and binding on the Contractor) being less than the contract value, the advantage shall accrue to RailTel. If the cost of completion exceeds the moneys due to the Contractor under the contract, the Contractor shall either pay the excess amount demanded by RailTel or the same shall be recovered from the Contractor. This will be in addition to the encash of Performance Guarantee and recovery of liquidated damages as per relevant clauses.
- 5.44.1 In case RailTel completes the work under the provisions of this clause, the cost of such completion to be taken into account for determining the excess cost to be charged to the

Contractor shall consist of cost of materials purchased and/or labour provided by RailTel with an addition of such percentage to cover supervision and establishment charges as may be decided by RailTel.

5.45 Strikes and Lockouts:

The Contractor will be solely responsible for all disputes and other issues connected with his workmen. In the event of Contractor's workmen resorting to strike or the Contractor resorting to lockout and if the strike or lockout so declared is not settled within a period of one month, RailTel shall have the right to get the work executed by employing its own men or through other agencies or both. The cost incurred by RailTel in this regard shall be recovered from the Contractor.

For any purpose whatsoever, the employees of the Contractor shall not be deemed to be in the employment of RailTel.

5.46 Guarantee:

Even though the work will be carried out under the supervision of the authorized representative of RailTel, the Contractor will be responsible for the quality of the workmanship and shall guarantee the work done for a period of **one year from the date of completion of work** as certified by the authorized representative of RailTel and shall rectify free of cost to RailTel all defects arising out of faulty erection during the guarantee period starting from the date of completion of rectification. In the event of the Contractor failing to repair the defective works within the time specified by the authorized representative of RailTel, RailTel may proceed to undertake the repairs of such defective works at the Contractor's risk and cost, without prejudice to any other rights and recover the same from out of any moneys payable to the Contractor or by other legal means.

5.46.1 The Tenderers has to enter in the register all the material / tools and plants brought to the site for working in the premises available with the Security Staff / Site In-charge / Site Register.

5.46.2 The Tenderers should get all the materials inspected and approved from the authorized representative of RailTel before use. In case of non-approval, if authorized representative of RailTel wish to check the material, cost of breakages and re-doing the same Work will be the sole responsibility of the Contractor own.

5.46.3 The Bill of Quantities enclosed are very indicative and can vary as per the Site conditions, requirements of RailTel or Design of authorized representative of RailTel and the rates quoted shall not be subject to revision. The rates should be quoted in the same units as mentioned in the tender schedule.

5.46.4 The rates quoted in the tender shall include all charges of material, labour, lifts, scaffoldings, any tools & plants, freight, labour conditions, fluctuations in the rates, shift working, Octroi & other taxes and shall be firm for the duration of the contract and any extended period of the contract. No escalation in the rates shall be allowed under any circumstances even in case of extension of time period.

5.46.5 The successful Tenderer is bound to carry out all the items of work necessary for the completion of the job even though the same may not have been included in the schedule of quantities. Rates for such items shall be settled in consultation with authorized representative of RailTel.

5.47 Rates of extra items/quantity:

The rates of the extra items will be derived from the tender wherever possible.

5.47.1 In case the rates do not exist in the tender, the rate will be derived as per the market rates. The Tenderer shall submit analysis of rates, with assumption of any one item.

5.47.2 If the quantity of any item under execution is varying (as per the Schedule of Requirement), the contractor shall have to execute the same item at applicable vide 5.14.3.

- 5.47.3 RailTel reserves the rights to vary the quantity by 25% above or below the BOQ without assigning any reason to the contractor.
- 5.47.4 All the work executed should be got approved by the authorized representative of RailTel and in case of any bad workmanship pointed out shall be either rectified or be taken away from the site if it is not rectifiable and shall be replaced without any extra cost by the Tenderer.
- 5.47.5 The Tenderer should indicate the breakup of the items of %age of the unit cost for material, wastage, labour, taxes, profits & overheads, etc. separately. This %age shall be the basis for evaluation of the rates of the extra items.
Measurements of the items shall be as per the IS1200 / CPWD manual / BOQ units.
- 5.47.6 All Government taxes, levies etc. shall be deducted from all the running bills of the Contractors.
- 5.47.7 All the works executed or under execution finished or semi-finished including all materials lying at site shall become the property of RailTel immediately on receipt of bills of the Contractors for the same.
- 5.47.8 The procurement of material as required for completion of work shall be the responsibility of the Contractor.
- 5.47.9 All Fittings / Fixtures, Materials shall confirm to the relevant ISI specifications and shall be approved by the authorized representative of RailTel.

5.48 **Rule 144(xi) in General Financial Rules 2017:**

Restrictions on procurement from a bidder of a country which shares a land border with India, any bidder from a country which shares a land border with India will be eligible to bid in this tender only if the bidder is registered with the Competent Authority.

While participating in bid, Bidder has to undertake compliance of this and any false declaration and non-compliance of this would be a ground for immediate termination of the contract and further legal action in accordance with the laws.

5.49 **Public Procurement (Preference to Make in India)**

The provisions of Public Procurement (Preference to Make in India), Order-2017 dt. 15.06.2017 and its revision Dt. 04.06.2020 is applicable to this tender.

SECTION – II**CHAPTER – 6****BID DATA SHEET (BDS)**

The section consists of provisions that are specific to various clauses of Preamble, Instruction to Tenderers and conditions of tendering (ITT), General Condition of Contract (GCC) and Special Condition of Contract (SCC) of the tender document.

Reference Clause	Description
Preamble Section – I	Name of work : Execution of in-campus Last Mile Optical Fibre Cable laying through Open Trenching/ HDD method and associated work including supply of allied materials in Odisha, West Bengal, Manipur, Bihar, Tripura, Nagaland, Assam, Jharkhand, Meghalaya, Mizoram and Arunachal Pradesh States for Last Mile connectivity of Airport Authority of India (AAI)".
Minimum Qualifying Criteria (ITT clause 3.15)	Pls. refer clause 3.15, Chapter-3.
Meaning of Similar nature of work (ITT clause 3.15.3)	Works similar to the scope of work as contained in this tender shall mean underground Optical Fibre cable laying work including jointing/splicing, termination testing or OFC rectification work executed for Govt./PSU/ reputed Private organisation dealing with OFC networks, Telecom utilities.
Date, Time and Venue of Bid Opening of Tender (Preamble Clause 1.8 & 1.10)	Venue: RailTel Corporation of India Ltd., 19 th Floor, Aurora Waterfront building, Plot No. 34/1, Block – GN, Sector V, Salt Lake, Kolkata – 700 091. Date 17.10.2025 Time: 14:30 hrs.
Completion period of work: Preamble Clause 1.9)	60 (Sixty) day from date of issue of Purchase Order/ Letter of Acceptance
Authority and Address: (Preamble Clause 1.10)	Sr. Dy. General Manager/Project RailTel Corporation of India Ltd., Eastern Region, 19 th Floor, Aurora Waterfront building, Plot No. 34/1, Block – GN, Sector V, Salt Lake, Kolkata – 700 091.
Earnest Money Deposit (ITT Clause 3.5)	EMD shall be submitted online through RailTel E-NIVIDA portal as mentioned in the tender notice.
Validity of offer ITT Clause 3.9 Section – II Chapter –3	60 (Sixty) days from the date of opening of tender

<p>Security Deposit: (GCC Clause 4.16, Chapter – 4, Section-II)</p>	<p>Not Applicable.</p>
<p>Warranty Period : SCC- Clause 5.22, Chapter –5, Section-II)</p>	<p>12 months from the date of issue of Provisional Acceptance Certificate.</p>
<p>Contract Performance Guarantee: (SCC-Clause 5.3, Chapter –5, Section-II)</p>	<p>Contract Performance Guarantee should be 5% of Contract value including GST</p>
<p>Materials to be supplied by RailTel): (Preamble Clause 1.17)</p>	<p>No material shall be provided by RailTel.</p>
<p>Work to be done by RailTel (if any)</p>	<p>Nil</p>

Table to be submitted duly filed: (Annexure-I)

Eligibility Clause No 3.15	Actual Available	Whether Requirement Fulfilled (Yes/No)	Documentary evidence enclosed at
Technical Eligibility. (Pls. refer clause No.3.15)			
Financial Eligibility: (Pls. refer clause No.3.15)			
1.Office Address, 2.Telephone No., 3.Fax No., 4.E-mail ID			
Man Power 1.Engineer, 2.Supervisor, 3.Splicer(Skilled & Experienced), 4.Wireman/Cable Jointer 5. Skilled & Unskilled Manpower			
Equipment/ Machinery 1. HDD Machine 1.OTDR 2.OFC blowing machine 3.Splicing Machine 4.Cable Route Locator 5.Optical Power Meter 6.Laser Source			

Signature of the Contractor

CHAPTER - 7

FORMS OF TENDER

Form No. 1	:	Annexure-A/Form No.1 Format for Affidavit
Form No. 2	:	Qualifying Criteria / User's Certificate:
Form No. 3	:	Agreement
Form No. 4	:	Contract Performance Guarantee Bond
Form No. 5	:	Statement of Deviations
Form No. 6	:	Standing Indemnity Bond
Form No. 7	:	System Performance Guarantee Not used
Form No. 8	:	Bank Guarantee for Mobilization Advance - Not used
Form No. 9	:	Works in hand
Form No. 10	:	Acknowledgement of material receiving from RailTel: Not Applicable
Form No. 11	:	Extension of period of completion of work
Form No. 12	:	Qualification Experience
Form No. 13	:	Vendor data sheet

Form No.1
Annexure-A

FORMAT FOR AFFIDAVIT TO SUBMITTED BY TENDERER ALONG WITH THE
TENDER DOCUMENTS

(To be executed in presence of Public notary on non-judicial stamp paper of the value of Rs. 100/-. The paper has to be in the name of tenderer) **

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

M/s (hereinafter called the tenderer) for the purpose of the Tender documents for the work of as per the tender No..... of (RailTel Corporation of India Limited/ Eastern Region), do hereby solemnly affirm state on the behalf of the tenderer including its constituents as under:

1. I/We the tenderer (s) am/are signing this document after carefully reading the contents.
2. I/we the tenderer (s) also accept all the conditions of the tender and have signed all the pages in confirmation thereof.
3. I/we hereby declare that I/we have downloaded Tender document from RailTel eNivida Portal <https://railtel.enivida.com>. I/We have verified the content of the document from the website and there is no addition, no deletion or no alternation to the content of the tender document. In case of any discrepancy noticed at any stage i.e. evaluation of Tenders, execution of work or final payment of the contract, the master copy available with the RailTel administration shall be final and binding upon me/us.
4. I/we declare and clarify that I/we have not made any misleading or false representation in the forms, statements and attachments in proof of the qualification requirements.
5. **I/we also understand that my/our offer will be evaluated based on the documents/credentials submitted along with the offer and same shall be binding upon me/us.**
6. **I/we declare that information and documents submitted along with the tender by me/us are correct and I/we are fully responsible for the correctness of the information and documents, submitted by us.**

7. I/we undersigned that if the certificates regarding eligibility criteria submitted by us are found to be forged/false or incorrect at any time during the process for evaluation of tenders, it shall lead to forfeiture the EMD besides banning of business for five years

on entire RailTel. Further, I/we (Insert name of the tenderer)**_____and all my/our constituents understand that my/our constituents understand that my/our offer shall be summarily rejected.

- 8. I/we also understand that if the certificates submitted by us are found to be false/forged or incorrect at any time after the award of the contract, It will lead to termination of the contract, along with forfeiture of EMD and performance guaranty besides any other action provided in the contract including banning of business for five years on entire RailTel.

DEPONENT

SEAL AND SIGNATURE OF THE TENDERER

VERIFICATION

I/we above named tenderer do hereby solemnly affirm and verify that the contents of my/our above affidavit are true and correct. Nothing has been concealed and no part of it is false.

DEPONENT

SEAL AND SIGNATURE OF THE TENDERER

Place:
Dated:

** The details as appropriate are to be filled in suitably by tenderer. Attestation before Magistrate/Notary Public.

Form No. 2

QUALIFYING CRITERIA

USER's CERTIFICATE:

Name of the Firm					
Contract No. & date					
Scope of Work					
Contract Amount (in Indian Rupees)					
Completion Period as per original contract					
Completion Period with extension					
Data of Commencement					
Actual date of Successful Completion					

Name :
 Dated :
 Designation :

(Not below the rank of Executive Engineer)

Signature of the Contractor with
 Company Seal

Note: The relevant User's certificate to be attached.

Form No. 3

AGREEMENT

(CA No. _____ for the work of “Execution of in-campus Last Mile Optical Fibre Cable laying through Open Trenching/ HDD method and associated work including supply of allied materials in Odisha, West Bengal, Manipur, Bihar, Tripura, Nagaland, Assam, Jharkhand, Meghalaya, Mizoram and Arunachal Pradesh States for Last Mile connectivity of Airport Authority of India (AAI)”.

This AGREEMENT is made at Kolkata on this _____ day of _____ two thousand and Twenty Three, by and between RailTel Corporation of India Limited (A Govt. of India Undertaking) having its Corporate office at Plate-A, 6th Floor, Office Tower-2, NBCC Building, East Kidwai Nagar, New Delhi-110023 and Regional Office at 19th Floor, Aurora Waterfront Building, Plot No. 34/1, Block – GN, Sector V, Salt Lake, Kolkata - 700091 acting in the premises through _____/Eastern Region (hereinafter referred to as ‘RailTel’, which expression should unless repugnant to the context or meaning thereof include its successors and permitted assigns) of the one part;

And _____ having its registered office at _____ acting in the premises through _____ (hereafter referred to as “Contractor”, which expression should unless repugnant to the context or meaning thereof include its successor and permitted assigns) of the other part.

Whereas in response to a call for Tender by RailTel for the work of “Execution of in-campus Last Mile Optical Fibre Cable laying through Open Trenching/ HDD method and associated work including supply of allied materials in Odisha, West Bengal, Manipur, Bihar, Tripura, Nagaland, Assam, Jharkhand, Meghalaya, Mizoram and Arunachal Pradesh States for Last Mile connectivity of Airport Authority of India (AAI)” as per tender papers at Annexure ‘A’ read with Corrigendum..... Issued by RailTel hereto, the Contractor has submitted a Tender as per Annexure ‘B’ hereto

AND WHEREAS the said Tender of the Contractor has been accepted for the work of “Execution of in-campus Last Mile Optical Fibre Cable laying through Open Trenching/ HDD method and associated work including supply of allied materials in Odisha, West Bengal, Manipur, Bihar, Tripura, Nagaland, Assam, Jharkhand, Meghalaya, Mizoram and Arunachal Pradesh States for Last Mile connectivity of Airport Authority of India (AAI)” as per copy of Letter of Acceptance of Tender No. _____ Dated _____ complete with enclosures at the accepted rates and agreed deviations from tender papers as per Annexure-C hereto at contract value of Rs. _____ (Rupees _____ Only) duly accepted by the contractor.

Now this agreement witnesses that in consideration of the premises and the payment to be made by the Purchaser (RailTel) to the Contractor provided for herein, the Contractor shall supply all equipment and materials and execute and perform all works for which the said Tender of the Contractor has been accepted strictly according to the various provisions in Annexure ‘B’ and ‘C’ hereto and upon such supply, execute and performance to the satisfaction of the purchaser (RailTel) and the purchaser (RailTel) shall pay to the Contractor at the rates accepted as per the said Annexure ‘C’ and in terms of the provisions therein.

IN WITNESS whereof both the parties have hereunto set and subscribed their respective hands and/or seals on the day and year respectively mentioned against their respective signatures.

Signed and delivered by Shri _____ for and on behalf of RailTel Corporation of India Ltd.

The contract within named in the presence of :

1. Signature :

- Date :
Name in Block Capitals :
Address :
2. Signature :
Date :
Name in Block Capitals :
Address :

Signed and delivered by Shri. _____ for and on behalf of _____, the contractor within named in the presence of :

1. Signature :
Date :
Name in Block Capitals :
Address :
2. Signature :
Date :
Name in Block Capitals :
Address :

- Annexure – A : Tender Paper No. _____ with corrigendum, if any.
Annexure – B : Firm's offer.
Annexure – C : Letter of Acceptance No. _____ with all enclosures.
Annexure – D : Copy of Contract Performance Guarantee.

Form No. 4

Proforma for Performance Bank Guarantee

(to be stamped in accordance with the stamp act)

(to be used for performance Guarantee value beyond Rs. 5 Lacs from approved Scheduled commercial Bank and not from any cooperative Bank or NBFC)

1. In consideration of the RailTel Corporation of India Limited, 19th Floor, Aurora Waterfront Building, Plot No. 34/1, Block – GN, Sector V, Salt Lake, Kolkata - 700091 (Herein after called RailTel) having agreed to exempt (Hereinafter called “the said Contractor(s)”) from the demand, under the terms and conditions of an Agreement No. dated made between and for (hereinafter called “the said Agreement”) of Performance Guarantee for the due fulfillment by the said Contractor (s) of the terms and conditions contained in the said Agreement, or production of a Bank Guarantee for Rs. (Rs. only). We,(indicate the name of the Bank) hereinafter referred to as “the Bank”) at the request of Contractor(s) do hereby undertake to pay the RailTel an amount not exceeding Rs. Against any loss or damage caused to or suffered or would be caused to or suffered by the RailTel by reason of any breach by the said Contractor(s) of any of the terms or conditions contained in the said Agreement.
2. We,(name of the Bank) do hereby undertake to pay the amounts due and payable under this Guarantee without any demur, merely on demand from the RailTel stating that the amount is claimed is due by way of loss or damage caused to or would be caused to or suffered by the RailTel by reason of breach by the said Contractor(s)/Tenderer(s) of any of terms or conditions contained in the said Agreement or by reason of the Contractor(s) failure to perform the said Agreement. Any such demand made on the Bank shall be conclusive as regards the amount due and payable by the Bank under this guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding Rs.only.
3. We, bank undertake to pay to the RailTel any money so demanded notwithstanding any dispute or disputes raised by the Contractor(s) / Supplier(s) in any suit or proceedings pending before any court or Tribunal relating thereto our liability under this present being, absolute and unequivocal. The payment so made by us under this Bond shall be a valid discharge of our liability for payment there under and the Contractor(s) / Supplier(s) shall have no claim against us for making such payment.
4. We, (name of the Bank) further agree that the Guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of the said Agreement and that it shall continue to be enforceable till all the dues of the RailTel under or by virtue of the said Agreement have been fully paid and its claims satisfied or discharged or till RailTel certifies that the terms and conditions of the said Agreement have been fully and properly carried out by the said Contractor(s) and accordingly discharges this Guarantee. Unless a demand or claim under the Guarantee is made on us in writing on or before the) We shall be discharged from all liability under this Guarantee thereafter.
5. We, (indicate the name of Bank) Further agree with the RailTel that the RailTel shall have the fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the Agreement or to extend time of to postpone for any time or from time to time any of the powers exercisable by the RailTel against the said contractor(s) and to forbear or enforce any of the terms and conditions relating to the said Agreement and we shall not be relieved from our liability by reason of any such variation,

or extension to the said Contractor(s) or for any forbearance, act or omission on the part of RailTel or any indulgence by the RailTel to the said Contractor(s) or by any such matter or thing whatsoever which under the law relating to sureties would, but for this provision, have affect of so relieving us.

6. This Guarantee will not be discharged due to the change in the Constitution of the Bank or the Contractor(s) Supplier(s).

1. We,Bank further agree that this guarantee shall be invocable at our place of business at/Kolkata (indicate detailed address of the local Kolkata Branch) with Code No.). The branch at Kolkata being advised accordingly.

2. We, (name of the Bank) lastly undertake not to revoke this guarantee during its currency except with the previous consent of the RailTel in writing.

NOT WITH STANDING ANYTHING CONTAINED HEREIN ABOVE

(i) The liability of the surety under his Bank Guarantee shall not exceed Rs.(Rupeesonly

(ii) This Bank guarantee shall be valid up to

(iii) We are liable to pay the guaranteed amount or any part thereof under this Bank Guarantee only and only if you serve upon the bank, written claim or demand on or before

Dated the day of 2025

for
(Indicate the name of the Bank)

Witness

1. Signature :
Name :

2. Signature :
Name :

Form No. 5

STATEMENT OF DEVIATIONS
PROFORMA FOR STATEMENT OF DEVIATIONS

- The following are the particulars of deviations from Preamble, requirement of the Instructions to Tenderers and Conditions of Tendering and Special conditions of Contract (Section -II).

Preamble (Chapter I)

<u>Clause</u>	<u>Deviation</u>	<u>Remarks (including justification)</u>
---------------	------------------	--

Instructions to Tenderers and Conditions of Tendering (Chapter - 3)

<u>Clause</u>	<u>Deviation</u>	<u>Remarks (including justification)</u>
---------------	------------------	--

Special Conditions of Contract (Chapter - 5)

<u>Clause</u>	<u>Deviation</u>	<u>Remarks (including justification)</u>
---------------	------------------	--

- The following are the particulars of deviations from requirement of the **Technical specifications (Section-III)**

<u>Clause</u>	<u>Deviation</u>	<u>Remarks (including justification)</u>
---------------	------------------	--

Note: Where there is no deviation, the statement should be returned duly signed with an endorsement indicating “no deviations”.

SIGNATURE AND SEAL OF THE
MANUFACTURER / TENDERER

Form No. 6

STANDING INDEMNITY BOND

(For 'on Account' Payments and Stores supplied by RailTel Corporation of India Ltd.)

(On Stamp paper of Requisite Value)

We, _____ hereby undertake that we hold at our Stores Depot/s at _____ for and on behalf of RailTel Corporation of India Ltd. in the premises through Principal Executive Director/Eastern Region or his successor hereinafter referred to as "the Purchaser" all materials for which 'On Account' payments have been made to us against the Contract for _____ vide letter of Acceptance of Tender No. _____ and the materials handed over to us by the Purchaser for all purpose of execution of the said Contract, until such time the materials are duly erected or otherwise handed over to him.

We shall be entirely responsible for the safe custody and protection of said materials against all risk till they are duly delivered as erected equipment to the purchaser or as he may direct otherwise and shall indemnify the Purchaser against any loss, damage or deterioration whatsoever in respect of the said materials while in our possession and against disposal of surplus materials. The said materials shall at all times be open to inspection by any engineer authorized by the Principal Executive Director/Eastern Region, whose address will be intimated in due course.

Should any loss, damage or deterioration of materials occur or surplus materials disposed off and refund becomes due, the purchaser shall be entitled to recover from us the full cost as per prices included in the Contract (as applicable) and also compensation for such loss or damage, if any, along with the amount to be refunded without prejudice to any other remedies available to his by deduction from any sum due or any sum which at any time hereafter becomes due to us under the said or any other Contract.

Dated this ____ day of _____, 2025

for and on behalf of

(Contractor)

Signature of witness :

Name and witness in Block letters :

Address :

Form No. 9

WORKS IN HAND

Sl. No.	Name of the Project	Party's name & address for whom the work is being done	Total Contract Value	Schedule period of execution (in months)	%age progress in terms of work already done	Likely date of completion	No. of extensions granted	Payments received till date	Remarks

Form No. 10

ACKNOWLEDGMENT FOR RECEIVING OF MATERIALS FROM RAILTEL

Not Applicable

Form No. 11

EXTENSION OF PERIOD OF COMPLETION OF WORK

Ref No. : RCIL/.....

Date : _____

To,

Sub: (i) **Name of Work**
(ii) **Acceptance Letter No.**
(iii) **Agreement No.**

Ref: (Quote specific application of the Contractor for extension to date, if received).

Dear Sir,

The stipulated date for completion of the work mentioned above is _____. From the progress made so far and the present rate of progress, it is unlikely that the work will be completed by the above date (or However, the work was not completed on this date)

Expecting that you may be able to complete the work if some time is given the Principal Executive Director RailTel Corporation of India Ltd., Kolkata although not bound to do so, hereby extends the time for completion from _____ to _____.

* In consideration of the circumstances explained in your letter of request RailTel Corporation of India Ltd. has extended the completion period by Days without any liquidated damages. Please ensure the completion and commissioning of the project well within the extended period.

* Please note that an amount equal to 0.5 % of the total value of the contract per week or part thereof (rounded off to the nearest whole number) subject to a maximum of 10% of the total contract value of the works as a recovery for delay in the completion of the work after the expiry of (1) will be recovered from as mentioned in clause 5.27 Chapter-5 of the special conditions of contract for the extended period notwithstanding the grant of this extension. You may proceed with the work accordingly.

The above extension of the completion date will also be subject to the further condition that no increase in rates on any account will be payable to you.

Please intimate within a week of the receipt of this letter your acceptance of the extension on the conditions stated above.

Please note that in the event of declining to accept the extension on the above said conditions or, in the event of your failure after accepting or acting up to this extension to complete the work by (2) _____ (here mention the extended date), further action will be taken in terms of relevant clause of special conditions of contract.

Yours faithfully,

for & on behalf of RailTel Corporation of India Limited

Note:

Give here the stipulated date for completion without any penalty fixed earlier.

Here mention the extended date.

Strike out one of the * clauses as applicable.

Form No. 12

QUALIFICATION & EXPERIENCE

Details of works executed and under execution by Tenderer during the last 5 years should be furnished in the following format.

Sl. No.	Name of Project & Description of work	Party's name & address for whom the work was done	Total Value of the Contract (in Rs.)	Date of award of work and schedule period of execution (in months)	Date of completion and actual period of execution (in months)	Remarks

Note : A certificate from the organization for whom the work was executed should be submitted to indicate that the contract was satisfactorily executed.

(Signature and Seal of the Manufacturer / Contractor)

Form-13

**Jt. General Manager (Finance)
 RailTel Corporation of India Ltd. (Eastern Regional Office)
 19th Floor, Aurora Waterfront Building,
 Plot No. 34/1, Block – GN, Sector V,
 Salt Lake, Kolkata – 700 091**

Sub. : Option for Payment through RTGS/NEFT

Sir,

You are requested to remit the payment due to us through RTGS/NEFT into our Current Account. The detail required duly verified by our bank for Online payment is provided here under for needful please.

DETAIL REQUIRED FOR PAYMENT THROUGH RTGS/NEFT

1	Beneficiary Name	: M/s
2	Beneficiary Address :	:
3	PAN No.	:
4	GSTIN (list)	:
5	Bank Name.	:
6	Bank A/c No.	:
7	Bank Branch Address	:
8.	Branch Id Code :	:
9.	Current Account No.	:
10.	RTGS / IFSC Code	:
11.	NEFT/ IFSC Code	:
12.	MICR no.	:

I do hereby declare that the particulars given above are correct and complete. If the transaction is delayed or not effected at all for reasons of incomplete or incorrect information, RailTel will not be held responsible. Further, I undertake that till we request a change, paying authority may kindly continue to make the payments in our account as per above detail.

For Verified above Bank Particulars for Online payments

Authorized Signatory

Bank's Authorized Signatory

SECTION – III

Chapter 8	PREPARATION OF AS BUILT ROUTE PLAN, SPECIFICATION OF MATERIALS
Chapter 9	ENGINEERING INSTRUCTIONS FOR TRENCHING AND LAYING OF OPTICAL FIBRE CABLE
Chapter 10	JOINTING AND TERMINATION OF FIBER OPTIC CABLE
Chapter 11	LIST OF ADDRESSES FOR SPECIFICATION
Chapter 12	DRAWINGS

SECTION III

CHAPTER - 8

**PREPARATION OF AS-BUILT ROUTE PLANS,
SPECIFICATION OF MATERIALS**

8.0 SCOPE:

The scope of this is to prepare a final set of As-Built drawings of route plans, based on the actual cable route (which in turn shall be based on a preliminary & approved drawings of route plans, already supplied to the contractor).

8.1 Points to be taken care of for laying the OFC cable:

8.1.1 Avoid underground structures, signaling cable, power cables and pipe lines etc.

8.1.2 Avoid rodent/termite infested or infected side of the alignment.

8.1.3 Offset of the cable trench from the central line of the track such as having burrows.

8.1.4. Avoid proximity to chemical, paper and such other industries which discharge chemically active affluent.

8.1.5 Avoiding areas prone to water logging.

8.1.6 Avoiding large rock cutting/thick jungles and areas difficult to approach etc. The orientation of the route (left or right side of the track in the sections) to be decided on following:-

That side of main line, which is away from coastal side, other cables such as signaling and power.

That side which is likely to involve least track crossings and likely to be more convenient for crossing the track, bridges culverts etc.

Avoid built up areas including those area where buildings etc. are likely to come up in future.

8.2 As-Built Cable Route plan.

Based on above actual route, the as-built cable route plan should be prepared:

8.2.1 The name of the location should be put in the 'LOC' column and the change in the 'CH' column. At every 10 cm. the Km. post number should be written and its exact equivalent change entered in the 'CH' column.

8.2.2 Based on the route, the serial number and the length of culverts, bridges and level crossings should be marked on the 'Track Line' of the cable route plan.

8.2.3 The actual measurement of the separation distance from the central line of the track (the adjacent main line) is to be shown. This is to be compiled on the 1 Km charts.

The termination plan & locations of joint enclosures of OFC to be shown.

8.3 Preparation of Drawings'

All the plans and drawings shall be neatly prepared using Computer Aided Design System & plotter etc. The drawings shall be in A3 size & suitably filed for ease of handling. Further, a soft copy of Auto-CAD drawings in CD shall be submitted.

8.4 Information in Cable route plan:-

Location of track crossing and the number of tracks being crossed.

Location of road crossing and the no. of RCC/DWC/GI/PPRC pipes provided.

Locations and length for protection of cable in rocky area and concrete cutting etc.

Locations of Pull Chambers/Joint Pits.

8.5 Length of Optical Fibre cables: -

The approximate cable length is worked out on following basis to arrive at the location of the straight joints: -

Extra length for track crossing including 2.5 meter loop on each side. Extra length on Approach/crossing of the bridges and culverts as per measurement in the detailed survey.

10 meter of cable to be kept on either side of major steel bridges and 5 meters on minor bridges.

At every Joint Pit a loop of 10 meters on either side of the joint and a loop of 15 meters in the Pull Chambers without joint, should be kept. In cable hut a loop of 10 meters should be kept in the cable pit.

8.6 Specifications of Materials to be used:

8.6.1 OFC Joint Enclosure:-

(i) Optical Fiber splice [Joint Enclosure (24 F)] for loose tube complete with all accessories of CommScope (FOSC 400) / 3M (2179-CS-24F) / R&M/ Roxtek make or similar superior quality with the following additional features:

- a) Joint Closure shall be dome/round shaped. Cable entry shall be sealable with heat shrink sleeve and hot melt adhesive system.
- b) Fiber organizer trays in the closures must be hinged at one end.
- c) Fiber organizer trays shall have a capacity to stand 12 splices.
- d) The no. of trays shall be minimum 3.

8.6.2 Fiber Management System:

24/48 Fiber (suitable for armoured type fiber) input and 24 fiber output 19" wall/ rack mount FDMS of dimension 4U (Height) X 600 mm (Width) X 300 mm (depth) with patch panel for 24 SCPC type connectors of CommScope/R&M/Huber & Schuner/Diamond or similar make should be of corning fiber of length 5 mtrs. & 900 microns with all installation

material. The adapters have to be fixed on separate removable patch plates for easy maintenance of adapters and pigtails in the FDMS during O&M operation. The top cover of the FDMS should be removable type with latch lock. Moreover the FDMS should be equipped with telescopic sliders. The FDMS should be supplied with all accessories like splice protection sleeves, tissue papers, Isopropyl Alcohol, cable ties, hose clip, fiber route chart, rodent protection. The shelf of the FDMS has to be made of 1.2 mm CRCA material and 600 microns or better powder coating

Material for Providing Additional Protection

- 8.6.3 **G.I. Pipes**
GI pipe as per IS 1239/1990/92 (latest) Grade 'B' with associated coupler etc.

- 8.6.4 **Concreting:**
The strength of RCC/CC is dependent on proper curing, therefore, it is imperative that water content of CC/RCC mix does not drain out into the surrounding soil. In order to ensure this, the RCC/CC work should be carried out by covering all the sides by yellow PVC sheets of weight not less than 1 kg per 8 sqm. to avoid seepage of water into the soil.

- 8.6.5 **Rubber Bush**
To prevent entry of rodents into PLB HDPE DUCTS, the ends of PLB HDPE DUCTS are sealed at every chamber and joint using rodent resistant hard rubber bush (cap) after optical fiber cable is pulled. The rubber bush should be manufactured from hard rubber with groove and holes to fit into 40mm PLB HDPE DUCTS pipe, so that it should be able to prevent the entry of insects, rodents, mud, and rainwater into the PLB HDPE DUCTS pipe. It should conform to TEC GR with latest amendments.

- 8.6.6 **Route/Joint Marker**
The cable Route/Joint markers are co-located with each joint/loop chamber and at every 100 mtr. Interval on cable route. In addition Route markers are also to be placed where route changes direction like road crossings etc. Either RCC/Pre-cast Stone based route marker can be used. The detailed specification and design of the same shall be as per construction specification as per Drawing No. RCIL/ER/DRG-01/06.

SECTION – III

CHAPTER – 9

ENGINEERING INSTRUCTIONS FOR TRENCHING AND LAYING OF OPTICAL FIBRE CABLE

MICRO-TUNNELLING FOR LAYING OF OPTICAL FIBER CABLE

- 9.0 Scope. This Engineering Instruction deals with the methods to be adopted in laying of PLB HDPE pipes for Optical Fiber Cable using micro-tunneling or Horizontal Directional Drilling (HDD) - also called as the trench less technology.
- 9.1. General
- 9.1.1 Micro-Tunneling boring, commonly known as horizontal directional drilling or HDD, is a steerable trenchless method for installing underground pipes and cables in a shallow arc along a prescribed bore path by using a surface launched drilling rig, with minimum impact on the surrounding area. Directional boring is used when trenching or excavating is not practical. Directional boring minimizes environmental disruption. It is suitable for a variety of soil conditions and jobs including road, landscape and river crossings. Directional boring is used for installing PLB-HDPE pipe for laying of Optical Fiber Cable. It is used for crossing waterways, roadways, congested areas, environmentally sensitive areas, and areas where other methods are costlier. It is used instead of other techniques to provide less traffic disruption, lower cost, deeper and longer installation, no access pit, shorter completion times, and environmental safety. The technique has extensive use in urban areas for developing utility services as it helps to avoid huge disruption and hazards created during open cut trenches. The use however necessitates that the operator must have the complete information about the existing utility services so that he can plan his whole alignment to avoid damaging those utility services. Since uncontrolled drilling can lead to such damages, different agencies/government authorities owning the urban utility services have formed their rules for safe work execution. To standardize the techniques, different trenchless technology promoting organizations have developed guidelines for this technique.
- 9.1.2 The Micro tunnel duct may also be used at the water canal crossings, highway crossings and railway crossings. HDPE pipe coil of 1Km. length shall be economical resulting less wastage in micro-tunneling process.
- 9.2 **Detailed Survey:**
- 9.2.1 The route survey should include the planning of manholes / new buildings for OF cable terminations on main route terminations in the existing buildings on the routes.
- 9.2.2 On the basis of surveys, general permission from road and rail/OFB, local authorities for laying the Optical Fiber Cable along the suitable roads and at particular rail/road crossings will have to be obtained. The OF Cable preferably be laid straight as far as possible along the road. When the OF Cable is laid along the National Highways, Cable should run along the road land boundary or at a distance of 15 to 30 meters from the centre line of the road where the road land is wider.
- 9.3 Soil Categorisation. Soil is categorized only under two broad categories i.e. “Rocky” and “non Rocky”, for purpose of deciding the depth at which the cable is to be laid. The soil is categorized as rocky if the cable trench cannot be dug without blasting or chiseling. All

other types of soils shall be categorized as “Non rocky” including soil mixed with stone or soft rock. Micro-tunneling usually deployed in the soft soils only, but in some exceptional cases this technology may be used in other soils.

9.4 Laying Details

- 9.4.1 Horizontal directional drilling is an excellent alternative to conventional installation methods. Unlike manual labor, trenching or excavation, the HDD process is highly suitable in urban areas or places where aboveground obstructions exist that are expensive, inconvenient or impossible to disturb. Deployment of HDD machines overcome the obstacles such as roads, rivers, buildings and highways — with little or no impact to the aboveground surface.
- 9.4.2 The Micro-Tunneling machine should be capable of drilling for minimum 150 meters to 250 meters at a time without fail in the soft. In general, the machines with 10 Tones or more thrust capacity are having the capability for this purpose. Normally depth of the drilled portion should be more than 1 meter. This depth may be achieved at a distance of 10 meters from the leading edge of the Joint/ Pull chamber. Joint/ Pull chamber to be opened for the entry pit and the exit pit with minimum measurement of given in the drawing. Both entry and exit pits are opened before drilling is commenced. The depth at the entry pit should be 1.0 metre and for achieving this depth in the Joint/ Pull chamber a pilot entry pit shall be opened with minimum 1 meter depth for enabling the drill pilot to enter. The pilot entry pit shall be at least 4 meters away from the Cable Joint/Pull Chamber.
- 9.4.3 Whenever curves or deviations are encountered it should be a very smooth curve, the deviations should not be more than 100 cm from the mean line joining the centre of entry pit and the centre of the exit pit. A nylon wire shall be fixed between these two pits before the drilling operation commences, for identifying the deviations.
- 9.4.4 After the drilling operation commences, the depth and offset of the pilot is to be recorded at every 3 meters using the properly calibrated machine tracker. The offset of the drill shall be recorded with reference to the edge of the road and also the deviation with reference to the mean line represented by the Nylon rope on the ground. The depth, deviations and offset readings may be provided by the machine automatically, apart from the manual records, the two ends of the pipe should be properly sealed to protect HDPE PLB pipe from sharp edge of GI pipe.
- 9.4.5 It is quite possible that the pipe may get elongated and its bore may get reduced in the process of pulling up the pipe which may ultimately result into difficulty in pulling cables. To overcome this Duct Integrity Test (DIT) should be conducted after the pipes are laid for verifying the continuity of the pipe. The DIT involves two tests. In one test one side of the PLB pipe laid is sealed using the end plug and on the other side air compressor or blower is used to hold the 5 Kg/cm-cm pressure in side the pipe under test. The pressure should be held for 1 hour without any leakage. In the second test a wooden bullet having 80% of the diameter of inner diameter of PLB pipe and having a length of 5 cm. may be blown from one side of the PLB pipe. The other side of the pipe shall be left open. The bullet should fly out without any blockage then the PLB pipe laying is successful. Care should be taken by covering the end of the PLB pipe with a nylon wire so that the flying bullet shall not hit anyone.
- 9.4.6 When the cables are laid in ducts, no particular depth is prescribed. End of the ducts should be properly sealed and necessary protection by G.I. pipe / RCC pipe should be provided at the entry and exit of the duct till the cable is buried to a depth of 1.2m.

9.4.7 On Culvert & bridge over nullah HDPE pipe is to be laid at 1.0 M depth and protection provided by using GI pipe. The GI pipe shall extend 2 M minimum beyond the end Nullah on either side.

9.4.8 On rail bridges / crossings the HDPE pipe drawn through GI pipe as prescribed by the Railway authorities.

9.5. Micro-Tunnelling Process

9.5.1 The method comprises a three stage process. In the first stage, the machine drills a pilot hole on the designed path and the second stage enlarges the hole by passing a larger cutting tool known as the back reamer. The third stage places the casing pipe (GI pipe) in the enlarged hole. The directional control capabilities assist the rig operator in making necessary changes in the directions of the drilling head.

9.5.2 Horizontal directional drilling is done with the help of a viscous fluid known as drilling fluid. It is a mixture of water and, usually, bentonite or polymer continuously pumped to the cutting head or drill bit to facilitate the removal of cuttings, stabilize the bore hole, cool the cutting head, and lubricate the passage of the product pipe.

9.5.3 Location and guidance of the drilling is a very important part of the drilling operation, as the drilling head is under the ground while drilling and, in most cases, not visible from the ground surface. Uncontrolled or unguided drilling can lead to substantial destruction, which can be eliminated by properly locating and guiding the drill head. There are two types of locating equipment for locating the bore head, the 'walk-over' locating system or a 'wire-line' locating system. In both of the systems a device comprising of a transmitter behind the bore head registers angle, rotation, direction and temperature data. This information is encoded into an electro-magnetic signal and transmitted through the ground to the surface in a walk-over system. At the surface a receiver (handheld 'locator') decoded the signal and steering directions are relayed to the bore machine operator. In a wireline system, this information is transmitted through the cable fitted within the drill string. Both systems have their own merits and depending upon the site requirements a particular system is chosen. Directional drilling machines will bore under or around obstacles. Once the drill path is planned, an underground pilot bore is performed utilizing a series of drill rods connected to a drill head. After the pilot bore is completed, the back reamer enlarges the drill path to accommodate the product that will subsequently be pulled into place.

9.5.4 Steering refers to control of the direction of a drill path. The shape of a drill bit on the drill head allows an operator to change the drill path direction during a bore. When an operator points the drill bit downward to the 6 o'clock position and pushes the drill head forward, the drill head goes deeper. When the drill faces the 12 o'clock position, the drill head will rise. Pushed to the 9 o'clock position, the head goes left. Pushed to the 3 o'clock position, the head goes right. If no change in drill path is needed, the drill head and rod are rotated while thrusting.

9.5.5 After completion of pilot bore, the drill head exits the drill path and the back reamer is attached. Utilizing drilling fluid and the drill string the back reamer is pulled back through the path to enlarge it to accommodate the product that will be pulled into place. Sometimes pretreating is performed to incrementally enlarge the drill-path wall. The installation product is then attached to the drill string and pulled into place.

9.5.6 Many back reamer styles and sizes are available for different ground conditions and product sizes.

9.5.7 Mud flow is an important component of the HDD process. Mud flow is created by pumping a combination of water and specialized drilling fluid additives (Bentonite / Polymer) through

the drill rod and head (back reamer). The drilling fluid then mixes with soil in the drill path and creates flowing slurry back out of the path as the product pipe is pulled into place. Mud flow cools the transmitter housing in the drill head, suspends cuttings to help prevent product pipe from getting stuck during the bore and seals the bore to help prevent fluid loss and bore wall collapse.

9.6. Concerned Points

- 9.6.1 The horizontal directional drilling process has several distinct advantages over other methods of utility product installation. The HDD process offers precise installation, minimizes traffic interruption and excavation, and eliminates the need to dig up roads and disturb commercial interests. Prior to starting an HDD project, certain steps should be taken to ensure efficient boring.
- 9.6.2 A clear conception regarding all safety and operating procedures is necessary to operate a HDD machine successfully. Each Machine should be equipped with an operator's manual and it is essential to study this manual before using the HDD unit.
- 9.6.3 Locating underground utility services and obstacles before beginning a project will help to ensure the final success of a bore. Ground-penetrating radar systems (GPR) can be used in conjunction with traditional locating techniques to help provide more accurate production of underground information.
- 9.6.4 Proper placement of the machine before starting the project, increases the efficiency of the bore. The HDD unit must be placed at the job site with care to ensure that the maximum depth of the bore can be obtained without overstressing the drill rods or the product being installed.
- 9.6.5 The tooling of HDD is an essential component of the process. As tooling is subject to wear, selection of high-quality tooling for the HDD unit will help to keep more productive in the long run.
- 9.6.6 Drill rod is designed for pushing drill heads and pulling back reamers and new product through the drill path. They are made with a hollow center to allow drilling fluid to flow through the rod, into the drill head or backreamer and out into the bore path. Drill rod has an allowable bend radius which determines how much it can be steered to produce the desired drill path. The bend radius is specific to each rod length and diameter.
- 9.6.7 A drill head connects to the end of the drill rod and houses the locating transmitter. Drill heads also transfer drilling fluid from the drill rod to the drill bit. Drill heads can be connected to the drill rod using a connection system. A variety of drill heads is available for use in different ground conditions and applications.
- 9.6.8 There is a large variety of Backreamers available for various soil conditions. The primary function of all Backreamers is to prepare the bore path by cutting, shearing and mixing soil and drilling fluid into a flowing substance called slurry. When pulling product into place, the size of the backreamer used is larger than the outside diameter of the product, creating flowing slurry between the bore path wall and product.
- 9.6.9 The type of locator most commonly used in HDD is a walkover system. The walkover system consists of a transmitter and a receiver. This type of system allows the user to walk over the top of the drill head with a receiver that interprets signals from the transmitter in the drill head. Information from these transmissions allows the user to determine the position of the drill head and displays several important pieces of information including pitch, roll, depth and location. This information is then relayed to a remote screen at the machine for the operator to see.

- 9.6.10 To determine location of the drill head, the receiver uses signal strength from the transmitter in the drill head to indicate its depth and position. The depth and position information is displayed on the locator screen.
- 9.6.11 Roll is the rotary position of the drill head. It is indicated by a clock-face reading. Roll is very important when making a steering correction. When the operator of the drill rack faces the direction that the drill is advancing, 12 o'clock means the drill head will steer upward, 6 o'clock indicates a downward thrust, 9 o'clock is left and 3 o'clock is right. A bit can be positioned to move two directions at the same time by choosing a clock position in between any of the main clock positions. Example: 2 o'clock would cause the drill head to move mainly to the right, but a little upward as well.
- 9.6.12 HDD Fluids is a mixture of water and specialized additives used in the drilling process. Drilling fluid cools the drill head and transmitter, lubricates the drill string and product being pulled back and suspends drill path cuttings into slurry which flows out of the drill path as the product pipe is pulled into the bore path. A key requirement of drilling fluid is the ability to stay in the drill path without dissipating into the surrounding soil. The type of drilling fluid used depends upon the type of soil at the HDD project site.
- 9.6.13 **Soil Types.** Soils can be placed into two general categories — coarse and fine. Coarse soils consist of sands and gravels. Fine soils are comprised of clay. Coarse soils are non-compactable and allow water to flow freely into the formation. Fine soils will usually prevent water from flowing into the formation but have a strong tendency to become sticky and swell when mixed with water. It is possible to have a soil type that is a mixture of these two general types.
- 9.6.14 Fluid Additives. Depending upon work-site soil conditions, certain additives are mixed with the drilling fluid. Bentonite is added to drilling fluid that will be used in coarse soil types. Bentonite forms a filter cake around the bore wall to prevent drilling fluid from dissipating into the surrounding soil. Polymers are used for fine soil types. Polymers reduce swelling of the soil and lubricate the drill path to reduce friction on the drill stem and product.
- 9.7 **Depth A/T.** Two types of depth A/T are followed normally. Traditional depth A/T is done after completion of PLB pipes laying. While deploying HDD, it may be required to carry out the depth A/T simultaneously i.e. concurrent A/T. In case the machine deployed is capable of providing the automatic depth, deviation and offset details, depth A/T can be conducted at a later date also. The A/T Authority of the respective area shall decide on the method of A/T to be followed.
- 9.7.1 Traditional Depth A/T. Before the cable is actually pulled through the pipe. The best way should be to offer it in stretches of 10 kms soon after the HDPE pipe is buried. The route diagram should be prepared and made over to the A/T unit in advance. The HDD machine recording of the depth deviations authenticated by the RailTel Engineer-in-charge is to be provided to the A/T unit. The A/T unit will specify the test pit roughly two per km for checking of depth. Wherever depths are prescribed, the tolerance up to minus 5 cm is permissible. If the pipe is found to be at a depth less than specified value O.F cable should not be drawn through HDPE pipe and pipe should be lowered to the proper depth at the locations where necessary relaxation of competent authority is not available.
- 9.7.2 **Concurrent Depth A/T.** At present there is no specification available for conducting depth A/T for HDD. However, acceptance testing is offered by considering the Depth graph given by the site In-charge at entry / exit points of bore. When the Bore line is passing through concreted and congested areas, test pits may be taken where ever feasible and earthen surface is available. During the execution, on intimation, the AT-In-charge may inspect the site and measure the depths of the duct at four places which are

at least 20 meters away from each other. This shall be in addition to the depth of the drill at the entry pit or the depth of the duct at the exit pit.

- 9.8. Conclusion. Micro-Tunneling boring or horizontal directional drilling (HDD) is a trenchless method for installing underground pipes and cables in developed locations along a prescribed bore path by using a surface launched drilling rig, with minimum impact on the surrounding area. Directional boring is used when trenching or excavating is not practical. Directional boring minimizes environmental disruption. It is suitable for a variety of soil conditions and jobs including road, landscape and river crossings.

9.9 **SCOPE:**

The Engineering Instructions spelt out in this document deal with the methods to be adopted for underground Optical Fiber Cable laying in PLB HDPE ducts as per the requirement

- 9.9.1 Laying of PLB HDPE Ducts/coils coupled by sockets in excavated trenches, on bridges and culverts, as per construction specification and sealing of PLB HDPE Ducts pipe ends at every joint/loop chamber by end-plugs of appropriate size.

- 9.9.2 Providing additional protection by GI/DWC pipes and/or concreting/ chambering, wherever required according to construction specification. Normally, DWC & GI pipes shall be used. In case it is felt that use of RCC pipe is unavoidable under certain circumstances this should be done with prior approval of engineer in charge. This shall be recorded properly.

- 9.9.3 Fixing of GI pipes/troughs with clamps on culverts/bridges and / or chambering or concreting of G.I. Pipes/troughs, wherever necessary. This should be done with the prior approval of competent authority. This shall be recorded appropriately.

- 9.10 **Laying Protection Pipes on Bridges and Culverts.** In case HDD and pipe laying is not possible on the culverts, the pipes shall be laid on the surface of the culverts/bridges after due permission from the Engineer-in-charge **as per construction specification.**

- 9.10.1 Back filling and Dressing of the Trench according to construction specifications.

9.11 **SUPPLY OF ROUTE PLAN:**

Approved Cable Route plan and jointing schedule for mid-section splicing of cable will be prepared and supplied by the RailTel This shall give a preliminary idea of the number & locations and the quantities and type of various equipment to be fixed, wired and Commissioned.

9.12 **INSTRUCTIONS FOR EXCAVATION TRENCHES & BACK FILLING OF TRENCHES**

9.12.1 **Trenching**

9.12.2 **Location and Alignment of the Trench**

The cable should be laid as per the approved route planned. Generally this cable is laid near to the road/ railway boundary (typically 1-2 mtr. inside the railway boundary). The alignment of the trench will be decided by EIC.

Once the alignment is marked, no deviation from the alignment is permissible except with the approval of Engineer-in-charge. While marking the alignment only the centre line will be marked and the Contractor shall set out all other work to ensure that, the excavated trench is as straight as possible. The Contractor shall provide all necessary assistance and labour, at his own cost for marking the alignment. Contractor shall remove all bushes, under growth,

stumps, rocks and other obstacles to facilitate marking the centre line without any extra charges. It is to be ensured that minimum amount of bushes and shrubs shall be removed to clear the way and the contractor shall give all, consideration to the preservation of the trees.

The line up of the trench must be such that PLB HDPE pipe(s) shall be laid in a straight line, both laterally as well as vertically except at locations where it has to necessarily take a bend because of change in the alignment or gradient of the trench, subject to the restrictions mentioned elsewhere.

9.12.3 **Line-Up**

The line-up of the trench must be such that PLB HDPE Ducts shall be laid in a straight line except at locations where it has to necessarily take a bend because of change in the alignment or gradient of the trench, subject to the restrictions mentioned elsewhere. Trenching at bend should be such that maximum bend should not be more than 45degree.

9.12.4 **Method of Excavation**

In built up areas/station yards, the contractor shall resort to use of manual labour / HDD only to ensure no damage is caused to any underground or surface installations belonging to Railways/other public utility services and/or private parties. However, along the block section and cross country there shall be no objection to the Contractor resorting to mechanical means of excavation, provided that no underground installations exist in the path of excavation, if any, are damaged.

In Rocky strata excavation shall be carried out by use of electromechanical means like breakers/ jack hammers or by blasting wherever permissible with express permission from the competent authority. If blasting operations are prohibited or not practicable, excavation in hard rock shall be done by chiseling/ jack hammers.

Trenching shall as far as possible be kept ahead of the laying of pipes. Contractor shall exerciseduecarethatthesoilfromtrenchingintendedtobelooseforbackfillingisnotmixed with loose debris. While trenching, the Contractor should not cause damage to any underground installations belonging to other agencies and any damage caused should be made good at his own cost and expense.

Necessary barricades, night lamps, warning board and required watchman shall be provided by the contractor to prevent any accident. While carrying out the blasting operations, the contractor shall ensure adequate safety by cautioning the vehicular and other traffic. The contractor shall employ sufficient man-power for this with caution boards, flags, sign writings etc.

The contractor should provide sufficient width at the trench at all such places, where it is likely to cave in due to soil conditions without any extra payment. A minimum free clearance of 15 cms. should be maintained above or below any existing underground installation. No extra payment will be made towards this. In order to prevent damage to PLB HDPE ducts over a period of time, due to the growth of trees, roots, bushes, etc., the contractor shall cut them when encountered in the path of alignment of trench without any additional charges.

In large burrow pits, excavation may be required to be carried out for more than 120 cms in depth to keep gradient of bed less than 15 degrees with horizontal. If not possible as stated above, alignment of trench shall be changed to avoid burrow pit completely.

Wherever the EIC consider it necessary to adopt shoring, the contractor will be required to adopt shoring for which the contractor shall have the sufficient quantities of shoring materials on the hand.

9.12.5 Depth and Cable Laying

Generally trench for OFC cable laid shall be dug up to a nominal depth of 1200 mm. at the bottom in all type of soil (Soft soil/ Sandy soil/ Hard soil) except in bridges, culverts, level crossing, track crossing, loop/ joint. Under exceptional conditions/ genuine circumstances due to site constraints/ soil conditions, relaxation can be granted by the competent authority for cable laying to a depth lesser than 120 cm In places where underground pipes, electric main etc. come in the way, trenches deeper than 1.2 meter shall be dug accessory and RCC/GI/DWC pipes shall be placed to protect the HDPE duct.

When trenches are excavated in slopes, uneven ground, inclined portion, the lower edge shall be treated, as top surface of land. In certain locations, such as uneven ground, hilly areas and all other places, due to any reason whatsoever it can be ordered to excavate beyond standard depth of 120 cms to keep the bed of the trench as smooth as possible. Near the culverts, both ends of the culverts shall be excavated more than 120 cms. to keep the gradient less than 15 degree with horizontal. For additional depth in excess of 120 cms.,no additional payment shall be applicable.

If excavation is not possible to the minimum depth of 120 cms., as detailed above, full facts shall be brought to the notice of the Engineer-in-charge in writing giving details of location and reason for not being able to excavate that particular portion to the minimum depth. Approval shall be granted by the competent authority in writing under genuine circumstances. The decision of the competent authority shall be final and binding on the contractor.

Laying of PLB HDPE Ducts/coils coupled by sockets in excavated trenches, on bridges and culverts, as per construction specification and sealing of PLB HDPE Ducts pipe ends at every joint/loop chamber by end-plugs of appropriate size.

In road crossing/track crossing HDPE duct shall be protected by GI pipe of 50mm. dia. The cut portion of the road/ platform surface shall be restored to near original condition with concrete as per SOR and curing the concrete to the required number of days etc.

a) **For depth less than 1.2mtrs. in non rocky area:** Under exceptional conditions/ genuine circumstances due to site constraints/ soil conditions, relaxation can be granted by the competent authority for laying of cable to a depth lesser than 120 cm and prorata payment will be provide for the trenching and back filling as per clause. Protection measures like drawing HDPE duct through GI pipe and concreting as per site condition shall be done as advised by the Engineer-in-charge.

9.13 ROCKY AREA:

a) **In rocky terrain,** less depth shall be allowed only in exceptional circumstances with additional protection where it is not possible to achieve the normal depth due to harsh terrain/adverse site conditions encountered. This shall be done only consent of the Engineer in charge with the approval of the competent authority. This shall be properly documented. In all cases, the slope of the trench shall not be less than 15 degrees with the horizontal surface.

NOTE-2: The strength of CC is dependent on proper curing therefore; it is imperative that water content of CC mix does not drain out into the surrounding soil. Portions where cement concreting has been carried out shall be cured with sufficient amount of water for reasonable time to harden the surface. After curing, refilling of the balance depth of the trench has to be carried out with excavated soil.

For carrying out concreting work in trenches, yellow PVC sheets of width not less than 1.0

M and of weight not less than 1 kg Per 8 sq. meters shall be spread and nailed on sides of the trench to form trapezoidal section for concreting in the cleaned trench, to avoid seepage of water into the soil.

- 9.14 The backfilling of trenches shall be done by tamping and consolidating the excavated soil in layers of 15-20 cm at a time. All the soil that is excavated shall be put back to the trench and care shall be taken in consolidation to ensure that the back filling does not suffer any sinkage in monsoon.

Wherever the Engineer's representative considers it necessary to adopt shoring, the Contractor will be required to adopt shoring for which the Contractor shall have sufficient quantities of shoring material on hand as per RDSO Drawing No. TC 35003. The shoring shall invariably be carried out in case of loose soil or banks made of cinders and ashes.

Where the direction of the trench has to change, it should be done in a gentle curve of not less than one meter radius and not at sharp angles.

While crossing tracks and laying over bridges & culverts, the engineers representative shall be present. The date and time of such works shall be communicated to concerned telecom supervisor of the Railways and adequate precautions, as advised by them, have to be taken.

The tenderer shall be responsible for compliance to applicable laws of the land and registration/approval from statutory authority, if required.

9.15 CABLE OVER STEEL GIRDER BRIDGES& SLAB BRIDGES:

The contractor has to Supply and fix 50 mm dia. **GI pipe**, IS 1239 medium grade, with holes drilled at suitable intervals for anti-theft measure, (i) **On girder bridges**, fixing coupled GI pipe line at both ends of the bridge, with concrete (PCC 1:2:4 mix) of size length 600, width 450, depth not less than 150 into the ground and 100mm above the GI pipe. vide drawing no RCIL/ER/DRG-08A/06 (ii) **On Concrete slab bridges** fixing coupled GI pipe line are to be fixed at ends of pipe line as in case (i) and also supported with concrete pillars at the intervals of 2000 mm of size 300 mm x 300 mm height not less than 300mm. to maintain the GI pipe line in level. (iii) On **drainage crossing** GI pipe line is to be supported on concrete (PCC 1:2:4) mix 300 mm x 300 mm height not less than 300 mm with suitable foundation on either side of drainage and also as per site conditions to keep the GI pipe line in stable position. Concrete pillar finished to a smooth surface, to drain out water without stagnation, curing the required number of days etc. Complete to the finished item of work as directed by the Engineer-in-Charge.

9.16 LAYING OF CABLE OVER CULVERTS AND ARCH BRIDGES :

Wherever possible the cable shall be laid under the bed of the culvert through DWC/G.I./RCC pipes as per sketch and detailed below:

- 9.16.1 The contractor has to Supply and fix the GI pipe 50mm. dia. as protection to HDPE Duct where cable route passes across the culvert / bridge where water is not flowing in the bed of the culvert / bridge. Excavation of trench in the bed to a depth of 1200 mm, width 300 mm duly deepening to a depth another 400 mm below DWC pipe at interval of 2000 mm, concreting with PCC 1:2:4 mix at the ends of the pipe line and at 2000 mm intervals (preferable at all couplers), of size length 600 mm, width 300 mm, depth 300 mm. below GI pipe support, curing the required no. of days, refilling with excavated soil after laying GI pipe, ramming and consolidation of soil etc., Complete to the finished item of work as per drawing No. RCIL/ER/DRG-06A/06 and as directed by the RailTel Engineer-in-Charge.

Similar arrangement as detailed above shall be provided for taking the cable in water logged areas and drains.

- 9.16.2 The protection of cable on approach to culverts shall be as per drawing no. RCIL/ER/DRG-005/06.

9.17 **LAYING CABLE IN SOLID AND ROCKY SOIL**

- a Chase cutting in hard rock terrain in accordance with the drawing No. DRG. No. RCIL/ER/DRG-07/06 and backfilling after cable/duct laying as per standard specifications. This includes the cost of required materials to complete the job.
- b Excavation of trenches including clearing of roots of trees etc., up to a depth of 0.5 Mtr. to 0.8 Mtr. and width of 0.3 Mtr. at the bottom in any soil including morum / hard/rocky soil near the vicinity of Guard of wall or Hill water drainage system, Back filling and ramming of the soil in trenches after cable laying/ placing HDPE pipe, RCC / DWC pipe(if required, as per site condition or instruction by Engineer-in-charge) and concreting throughout the length as per Instruction of Engineer-in-charge. Cost of DWC Pipe/RCC pipe, cement, brick etc. will be born by Contractor.

In cases where excavation is possible up to 1200 mm. no chase cutting shall be done. However the cable/HDPE duct shall be protected by providing GI pipe/ second class bricks width wise concreting as per site condition as advised by Engineer-in-charge.

9.18 **LEADING OF CABLE IN MASONRY BUILDINGS**

The cable will have to be led inside any masonry building such as Cable hut/equipment room, at a depth of 0.75 meters by cutting the masonry structure of the wall as per Drg.No. RDSO/TCDO/COP-5. After the cable has been led inside the masonry wall, the floor inside shall be duly repaired and plastered.

9.19 **LAYING OF CABLE IN SPECIAL CASES:**

9.19.1 **Near Power Cable**

When the proposed cable route comes across any other cable already laid, the contractor shall first report the fact to the Engineer. Should the cable be identified by the Engineer as a power cable (LT or HT), the trench shall be dug as far away from the route of the power cable as practicable.

9.19.2 **Crossing of Optical Fibre Cable with another cable**

Crossing of the Optical Fibre cable with another cable shall be avoided wherever possible. Where, however, this is not possible, the Optical Fibre cable shall be laid in cement or asbestos cement pipes. The length of the pipe to be provided on either side of the crossing shall be at least one meter.

9.19.3 **Laying of cable through RCC/GI/DWC/PPRC pipes**

The cable shall be laid through RCC/GI/DWC pipes at the locations marked on the route plan and as advised by the Engineer or his representative. For laying the cable through pipes galvanized steel wires of a cross section not less than 10 SWG shall be used as a lead wire. Two such lengths of wires shall be laid through the pipes, so that after the cable is threaded through the pipe, one lead wire is permanently left in the pipe with a suitable overlay at two ends, to enable the cable to be pulled out at a later stage if required to do so.

On arch bridges and culvert bridges the cables will be threaded through DWC/PPRC pipes etc. While threading the cable through these pipes the Contractor shall do the trenching to the required depth wherever necessary for which no extra charge will be paid.

9.19.4 Laying cable near feeding post:

In the vicinity of feeding posts, as far as possible the cable shall be laid on the side of the track opposite to the feeding post. Further the Optical fibre cable shall be at least one metre away from any metallic part of the O.H.E. and other equipment at the sub station which is fixed on the ground and at least one metre away from the sub - station earthing. In addition, the cable shall be laid in DWC/PPRC pipes for a length of 300 metres on either side of the feeding point.

9.19.5 Running of cables at foundations others than OHE Masts and from pipe outlets.

Damages to cable is likely to occur if care is not taken in laying cable where the bed changes from solid support such as a foundation pipe or bridge to soft support such as soft soil. The cable must not press against the edge of the solid support. The soft soil near the edge must be tamped and the cable raised slightly.

9.19.6 Laying near oily surface

If during the excavation of trenches for laying cables, the Contractor or his representative notices the presence of oil or oily substance or any other chemical which is likely to cause the deterioration of the cable protective material he shall bring the matter to the notice of the Engineer or his representative and on the latter's decision he shall choose an alternative cable route or he shall protect the cable in such places in such manner as advised in writing by the Engineer or his representative. No additional charges are payable.

9.19.7 Special soil condition

Cable should not be run through abnormally high acidic or alkaline soil or through sewage. If this is unavoidable, special measures should be taken against corrosion as advised by the Engineer in Charge.

9.19.8 Blowing of OFC: The contractor has to blow the OFC through HDPE Duct as detailed below: Blowing of armored Optic Fiber cable (24 Fiber as per RDSO specification TC 55-2006 Rev.1 with amendment 1.1) in the already laid HDPE duct by using blowing machine, providing the sufficient loops in loop / joint chambers and other associated works (No Material Shall be supplied by RailTel) complete to the finished item of work and as directed by the RailTel Engineer-in-charge.

9.20 HANDLING OF CABLE DRUMS & PAYING OF CABLES:

9.20.1 Before commencement of the laying, inspection of the trench and inspection of protection works should be carried out so as to ensure their conformity with the specification. The trench bottom should be clean, smooth and free of small stone. When the soil contains stone or pieces of rock, sieved earth about 10 cm. thick should be used both for the bedding on which the HDPE duct is laid and for covering the cables

9.20.2 While collecting OFC/HDPE from RailTel depot the contractor must ensure that the materials should be received in good condition. The drums shall be unloaded by the side of the Railway Track by either a crane or any other suitable means very carefully so as not to cause any damage to the cable. The drums at site shall be protected until they are laid. The cable must be tested before and after laying: **Not Applicable.**

- 9.20.3 On each drum there are two ends, A & B. The 'B' end of one cable length shall meet 'A' end of the next cable at a joint. The 'A' end shall be normally on the top unless indicated otherwise on a drum.
- 9.20.4 The drums shall always be kept upright, i.e. axle in parallel position to the base. The drums shall not be set by jerks but shall be handled slowly and with care. The walls of the drums should not be damaged while moving the drums if required for unrolling.
- 9.20.5 The drums shall normally be unrolled at the same place and the cable carried by workmen near the trench. The drums shall not be dragged in any case. But where drums of cable have to be moved, would always be rolled in the direction of the arrow, otherwise the coils tend to unwind and the cable may get battered. In case no direction arrow is marked on the drum, remove several battens and determine the direction in which the cable is coiled. The arrow should then be painted on the drum pointing in the opposite direction in which the upper cable end is coiled so that future handling of the cable drum is facilitated and then replace the battens carefully.
- 9.20.6 The drum should be properly mounted on jacks (or on a cable wheel) making sure that the spindle is large enough to carry the weight without bending and that it is laying horizontally in the bearings so as to prevent the drum creeping to one side or the other while it is rotating. Before attempting to pull off the cable, remove the end protection box attached to the flange of the drum and cut the security ropes so as to leave the cable free to move.
- 9.20.7 If a portion of the cable only is taken out from the cable drum, the battens should be immediately replaced to prevent damage to the balance of the cable. This is important.
- 9.20.8 The use of steel bars between the bolt heads to 'jump' or turn the drum around is dangerous to staff and likely to damage the drums. A better method is to use two steel plates with grease between them. By standing the drum on these greased plates, it can be easily elevated round to the desired position.
- 9.20.9 All care should be taken in handling cable drums with a view to ensure safety not only of the cables but also of the working party handling them. The man should not be allowed to brake the cable drum by standing in front but only from side.
- 9.21 **Rewinding and Re-drumming of cables.**
- (a) If for any reason it is found necessary to rewind a cable on a drum, cable drum with a proper barrel diameter not less than of the original drum should be chosen.
 - (b) The drums should be mounted on cable jacks during rewinding operations using proper size of spindles passed through the flange holes, which will not buckle under the load. The cable should not be bent opposite to the set it is having already.
 - (c) In the re-drumming operations, drums should be so turned that the cable passes from the bottom of the original set with as little gap as possible.
 - (d) Replace all the lagging on the cable drum.
- 9.22 **PROCEDURE FOR CABLE LAYING/BLOWING:**
- 9.22.1 **MINIMUM BENDING RADIUS:**
Cables should always be bent (or straightened) slowly, they should never be bent to small radius while handling. The minimum safe bending radius for optical fibre cables should be 50 times the diameter of the cable but wherever possible larger radius should be used.

- 9.22.2 Wherever cable has to be coiled/looped, the diameter of the coil/loop shall be greater than 50 times the diameter of the cable.
- 9.22.3 The RCC Joint Pit / Pull Chamber to be constructed should be as per the specification given in Drawing No. RCIL/ER/DRG-10/07.
- 9.22.4 The cable drum should be brought as close to the cable trench as possible. It should be lifted with the aid of cable jacks firmly mounted on a support of stone or wood. The spindle should be minimum of 55 mm diameter and have a clearance from ground by 5 to 10 cm.
- 9.22.5 The wooden battens on the drums should be carefully removed shortly prior to laying and before the drum is mounted on the jack. The nails on the lagging should be carefully removed.
- 9.22.6 While rolling a cable drum for laying, the drum shall be supported on an axle running through its centre, the height of the axle being such that the end frames are free to rotate and do not touch the ground at any point. The cable shall be carefully uncoiled by gently pulling the cable assisted as necessary by carefully turning the drums. The quick pulling of the cable or turning the drums shall be avoided at all costs. Each cable drum shall be braked while laying is in progress to prevent sharp bending or buckling, particularly when the cable coils are sticking together.
- 9.22.7 The method of mounting the brakes is shown in the enclosed drawing.
- 9.22.8 When drums are turned for change of direction, wooden blocks shall be carefully put under the drum bolts which stand out from the drum discs.
- On no account should a cable be allowed to twist or kink as this is likely to spring the Armour and fracture the outer serving of the cable.
- 9.22.9 The cable shall be blown using Cable jet blowing method.
- 9.22.10 Contractor may have to blow the cable in the Ducts as instructed by engineer – in – charge. Duct cleaning; cable blowing arrangement has to be made by contractor at no extra cost to RailTel before blowing of the cables.
- 9.22.11 Cable manufacturer's specification will be provided to the contractor prior to blowing.
- 9.22.12 Unless otherwise specified, the contractor must leave minimum 25 meters of slack on both sides of fiber Optic splices at each splice chamber (every 3 KMs) and pull through chambers.
- 9.22.13 The proposed cable is an armoured type and delivered in reels of up to 3 KMs. Splice points are located and planned considering the coils kept in splice/pull through chambers.
- 9.22.14 OFC is normally installed bi-directional that is cable reel is placed midway and installation is taken up on each side one after the other. The first installation is when the cable directly uncoiled from the reel and next is after uncoiling all the cable from the reel are placed on the ground in a figure of 8 to facilitate installation.
- 9.22.15 Anti twist tool may be used to avoid twisting of cable while blowing.
- 9.22.16 Cable should always be kept away from vehicular and pedestrian movement over it.
- 9.22.17 Sometimes there is considerable lapse of time between the pipe laying and cable laying. This intervening period could have heavy rains too. Therefore, there is possibility of entering

dissolved muddy water into the HDPE pipes. This dissolved muddy water may transform into at thick paste or solid mud. Cleaning of the pipes before the cable blowing is absolutely necessary to remove any such obstructions. Replacing mandrill with nylon brush and rugs.

9.22.18 Before blowing OTDR test has to be conducted for all 24 fibers of the OFC in 1310nm and 1550nm windows and readings to be recorded in soft as well as hard copy and drums with any defects for even one single fiber shall not be blown/Pulled. Such defects shall be immediately brought to the notice of the engineer – in –charge and a joint statement has to be signed for record.

9.22.19 The OFC shall be handled with utmost care and industry standard tools are to be used for transporting, loading, unloading and blowing of OFC.

9.23 **PROVISION OF CHAMBERS:**

9.23.1 Splice/pull through chamber of size 950 mm (L) X 950 mm (W) X 1250 mm (H) with 100 mm thick inner walls, 100mm thick as The RCC slab as per dimension is used as cover of chamber with 2 number of handle /slots for lifting of cover and word ‘ “OFB RCIL CHAMBER” engraved per drawing No. RCIL/ER/DRG/10/07. After, fixing the pre cast RCC joint chamber, the joint chamber is filled with clean sand upto 30 cms. before closing. Back filling of joint chamber pit with excavated soil shall be carried out in the end.

9.23.2 Route Marker: The cable markers shall normally be provided at the distance of every 100 and also at places or corners wherever the route of the cable changes. The joint markers shall be provided at all types of cable joints/loop chambers and painted with green colour and rest of marker shall be painted with yellow colour. The cable Marker and joint markers provided shall be of standard stone RCC type with letters “OFB RCIL OFC” engraved and suitably painted with standard trend as per site conditions. In rocky area concreting shall be done. As per the drawings mention at as per DRG No. RCIL/ER/DRG-01/06.

The chambers to be installed in the following locations:

1. LC Gates: One chamber will be provided at all the LC Gates at least 10 mtrs. away from the centre point of the road, a coil of 15 mtrs of OFC will be kept as spare in this chamber.
2. Bridges: For all bridges of length less than 25 mtrs, one chamber will be provided at a distance of 10 mtrs. from the edge of the bridge and two chambers will be provided for all bridges of length of more than 25 mtrs. A coil of 15 mtrs of OFC will be kept as spare in each chamber.
3. At every on KM: One loop chamber will be provided with coil of 25 mtrs.
4. Track Crossing: One loop chamber with 15 mtrs coil to be provided at every track crossing.
5. At every OFC Joint, one joint chamber will be provided by providing a coil of 25 mtrs for each side of the cable.
6. As far as possible, it should be ensured that there will be at least one KM distance between loop chambers. If there is an LC gate or a bridge or a track crossing or prefab and then the next loop chamber will be at one KM distance.

Concreting with CC of 1:3:6

The contractor has to do the protective works of concreting as per requirement. The OFC has to be protected with Concreting 0.3 m. x 0.3 m. to the approaches of bridges and culverts in the ratio (PCC 1:3:6 mix) wherever necessary as per the technical specification

and as directed by RailTel Engineer-in-Charge at site. PLB HDPE duct can be protected by embedding concrete of size 250mm. x 250 mm. reinforced with MS weld mesh. M S weld mesh used shall be of 50 mm. x 100 mm. 12 SWG. This protection work shall be done at locations where trench depth less than 0.3 Mtr.

9.24 **TOOLS REQUIRED FOR TRENCHING, CABLE LAYING AND FILLING.**

TOOL'S NAME

- Cable Jack
- Cable Grip
- Reopening Deice
- Free Hood Hook
- Shackle free head hook
- Grounding Hook
- Pulling Bolt
- Tension Meter
- Pulley Anti Twist Device (swivel)
- Roller Flexible Cable
- Pulling Rope
- Brush
- Mandrel
- Chain
- Measuring cord for strain gauge
- Slip Winch
- Wire rope
- Portable VHF set
- Measuring tape
- Phowrah
- Iron plate
- Loader Backhoe for Drilling
- Warning Tape

- Caterpillar tractor
- Fork Lifter
- Vehicle Van type
- Tacho- meter
- Road measurer

9.25 SAFETYPRECAUTIONS

9.25.1 Safety Precautions when excavating or working in excavations close to electric cables

The Engineer- in-charge of the work should get full information from Electricity undertaking regarding any electric cables, which are known or suspected to exist near the proposed excavation and unless this is done, excavation should not be carried out in the section concerned. The electricity undertaking should be asked to send a representative and work should be preceded with close consultation with them. Only wooden handled hand tools should be used until the electric cables have been completely exposed. Power Cables, not laid in conduits, are usually protected from above by a cover slab of concrete, brick or stone. They may or may not be protected on the sides. It is safer, therefore, always to drive the point of the pickaxe downwards then uncovering a cable, so that there is less chance of missing such warning slabs. No workman should be permitted to work alone where there are electric cables involved. At least one more man should be working nearby so that help can be given quickly in case of an accident. If disconnection of power could be arranged in that section it will be better. No electric cables shall be moved or altered without the consent of the Electric Authority and they should be contacted to do the needful. If an electric cable is damaged even slightly, it should be reported to the Electric Authority and any warning bricks disturbed during excavation should be replaced while back filling the trench. Before driving a spike into the ground, the presence of other underground properties should be checked. Information on plans regarding the location of power cables need not to be assumed as wholly accurate. Full precautions should be taken in the vicinity until the power cable is uncovered. All electric cables should be regarded as being live and consequently dangerous. Any power is generally dangerous, even low voltage proving fatal in several cases.

9.25.2 Electric shock-Action and treatment:

Free the victim from the contact as quickly as possible. He should be jerked away from the live conductors by dry timber, dry rope or dry clothing. Care should be taken not to touch with bare hands as his body may be energized while in contact. Artificial respiration should begin immediately to restore breathing even if life appears to be extinct. Every moment of delay is serious, so, in the meanwhile, a doctor should be called for.

9.25.3 Safety Precautions while working in public street and along railway lines:

Where a road or footpath is to be opened up in the course of work, special care should be taken to see that proper protection is provided to prevent any accidents from occurring. Excavation work should be done in such a manner that it will not unduly cause inconvenience to pedestrians or occupants of buildings or obstruct road traffic. Suitable bridges over open trenches should be so planned that these are required for the minimum possible time. Where bridges are constructed to accommodate vehicular traffic and is done near or on railway property, it should be with the full consent and knowledge of the competent railway authorities.

9.25.4 Danger from falling material

Care should be taken to see that apparatus, tools or other excavating implements or excavated materials are not left in a dangerous or insecure position so as to fall or be knocked into the trench thereby injuring any workman who may be working inside the trench.

9.25.5 Care when working in Excavations

Jumping into a trench is dangerous. If it is deep, workmen should be encouraged to lower themselves. Workers should work at safe distance so as to avoid striking each other accidentally with tools. If the walls of the trench contain glass bits, corroded wire or sharp objects they should be removed carefully. If an obstruction is encountered, it should be carefully uncovered and protected if necessary. If an obstruction is encountered, it should be carefully uncovered and protected if necessary. Care must be taken to see that excavated material is not left in such a position that it is likely to cause any accident or obstruction to a roadway or waterway. If possible the excavated material should be put between the workmen and the traffic without encroaching too much on the road.

9.25.6 Danger of cave in

When working in deep trenches in loose soil, timbering up/shoring the sides will prevent soil subsidence. The excavated material should be kept at sufficient distance from the edge of the trench or pit. Vehicles or heavy equipment must not be permitted to approach too close to the excavation.

When making tunneled opening, it should be ensured that the soil is compact enough to prevent cave in even under adverse conditions of traffic. Extra care should be taken while excavating near the foundations of buildings or retaining walls. In such cases, excavation should be done gradually and as far as possible in the presence of the owners of the property.

9.25.7 Protection of Excavations:

Excavations in populated areas, which are not likely to be filled up on the same day should be protected by barriers or other effective means of preventing accidents and the location of all such openings must in any event be indicated by red flags or other suitable warning signs. During the hours from dusk to dawn, adequate number of red warning lamps should be displayed. Supervisory officers should ensure that all excavations are adequately protected in this manner as serious risk and responsibility is involved. Notwithstanding adoption of the above mentioned precautions, works involving excavations should be so arranged as to keep the extent of opened ground and the time to open it to a minimum.

9.25.8 Precautions while working on roads

The period between half an hour after sun-set and half an hour before sunrise, and any period of fog or abnormal darkness may also be considered as night for the purpose of these instructions, for the purpose of providing the warning signs. Excavation liable to cause danger to vehicles or the public must at all times be protected with fencing of rope tied to strong uprights or bamboo poles at a suitable height or by some other effective means. Any such temporary erection which is likely to cause obstructions and which is not readily visible should be marked by posts carrying red flags or boards with a red background by day and by continuously lighted lamps at night.

The flags and the lamps should be placed in conspicuous positions so as to indicate the pedestrians and drivers of vehicles the full expanse i.e. both width and length of the obstruction. The distance between lamps or between flags should not generally exceed 1.25 m along the width and 6m along length of the obstruction in non congested areas, but 4 meters along the length in congested areas.

If the excavation is extensive, sufficient notice to give adequate warning of the danger, should be displayed conspicuously not less than 1.25 m above the ground and close to the excavation. Where any excavation is not clearly visible for a distance of 25m to traffic approaching from any direction or any part of the carriage way of the road in which the excavation exists, a

warning notice should be placed on the kerb or edge of all such roads from which the excavation or as near the distance as is practicable but not less than 10 m from the junction of an entering or intersecting road in which the excavation exists. All warnings, in these should have a red background and should be clearly visible and legible. All warning lamps should exhibit a red light, but white lights may be used in addition to facilitate working at night. Wherever required a passage for pedestrians with foot bridge should be provided. At excavations, cable drums, tools and all materials likely to offer obstructions should be properly folded round and protected. This applies to jointer's tents as well. Leads, hoses etc. stretched and across the carriageway should be guarded adequately for their own protection and also that of the public.

9.25.9 Traffic Control

Deleted.

9.25.10 Work along Railway Lines

It is to be borne in mind that use of white, red or green flags by the Departmental staff is positively forbidden to be used when working along a railway line as this practice may cause an accident through engine drivers mistaking them for railway signals. When working along a double line of railway, the men should be warned to keep a sharp look on both the "UP" and "DOWN" lines to avoid the possibility of any accident when trains pass or happen to cross one another near the work spot.

9.25.11 Precautions for use of explosives during blasting for trenching :

If blasting of rock is unavoidable during execution of trenching work, the required permissions shall be taken before related activities. Contractor shall obtain necessary license, relevant rules shall be followed using explosives its storage etc. Precautions shall taken for storage usage of explosives

9.26 ALLIED ACTIVITIES

9.26.1 The contractor shall be responsible for transporting the materials, to be supplied by the RailTel or otherwise to execute the work under the contract to site at his/ their own cost..

9.26.2 Disposal of Empty Cable Drums :

The contractor shall be responsible to dispose of the empty cable drums after laying of the cables.

9.26.3 It shall be obligatory on part of the contractor to dispose of the empty cable drums at his/their level.

9.26.4 The contractor shall not be allowed to dump the empty cable drums in Govt./Public place which may cause inconvenience to the RailTel /public.

9.26.5 **Supply of Materials:** There are some materials required to be supplied by the contractor for execution of work under this contract like Bricks, Cement, Wire Mesh and Steel for protection, etc., besides using other consumables which do/don't become the part of the asset. The contractor shall ensure that the materials supplied are of best quality and workmanship and shall be strictly in accordance with the specifications.

CHAPTER – 10

JOINTING AND TERMINATION OF FIBER OPTIC CABLE

10.1 TECHNIQUE FOR JOINTING OF OPTICAL FIBER CABLE

Fusion splicing shall be used for splicing fibers. This is accomplished by applying localized heating (i.e. by electric arc or flame) at the interface between two butted, pre-aligned fiber ends, causing them to soften and fuse together.

10.2 STRAIGHT JOINT FOR FIBER OPTIC CABLE

10.2.1 There are various types of joint enclosures available in the market. The procedure for assembly of joint closure is described in the installation manual supplied with straight joint closure. This includes the following:

Material inside joint closure kit Installation tools required Detailed procedure for cable jointing Procedure for re-opening the closure.

10.2.2 The Optic Fiber straight through joint closure shall be as per specn. TEC TO 910 G92 (latest) or a proven design approved by RailTel. The joint shall be protected in RCC Joint Pit as per drawing given in Drawing No. RCIL/ER/DRG/10/07. (The Optic Fiber straight through joint closure shall be of TVSE, R&M, Raychem, 3M, CommScope/ make and shall be approved in advance by RailTel. The joint shall be protected in concrete chamber as approved by engineer- in-charge.)

10.2.3 Generally, the following steps are involved for jointing of the cable:

- Preparation of cable for jointing
- Stripping/cutting the cable
- Preparation of Cable and joint closure for splicing
- Stripping and Cleaving of Fibers
- Fiber splicing
- Organizing fibers and finishing joints
- Sealing of joint closure and
- Placing joint in the Jointing Chamber/Pit.

10.3 PREPARATION OF CABLE FOR JOINTING

During the installation, a minimum of 10 meter of cable of each end is coiled in the jointing pit to provide for jointing to be carried out at convenient location as well as spare length to be available for future use in case of failures.

The pit size must be chosen carefully to ensure that length of the wall on which joint is mounted is greater than closure length plus twice the minimum bending radius of the cable. A RCC Joint Pit / Pull Chamber of 1 mete outer dia. as given in Drawing No. RCIL/ER/DRG-10/07 is sufficient for most of the cable and joint closures.

The cable is then coiled and carefully placed in the pit/chamber in the same position as required after the joint is complete. The marking is done on all the loops so that it will be easier to install it later.

The distance from the last centre to the end of the cable must be at least 1.8 meter. This is being the minimum to be stripped for preparation of joint. Sufficient cable at each end up to the jointing vehicle/enclosure is then uncoiled from the pit for jointing.

10.4 STRIPPING/CUTTING OF THE CABLE

The cables are stripped of their outer and inner sheath with each sheath staggered approximately 10mm from the one above it. Proper care must be taken when removing the inner sheath to ensure the fibers are not scratched or cut with the stripping knife or tool. To prevent this, it is best to only score the inner sheath twice on opposite sides of the cable, rather than cut completely through it. The two scores marking on either side of the cable are then stripped of the inner sheath by hand quite easily. The fibers are then removed from cable one by one and each fiber is cleaned individually using Kerosene to remove the jelly.

10.5 PREPARATION OF CABLE JOINT CLOSURE FOR SPLICING

The type of preparation work performed on the cable prior to splicing differs on the type of joint closure and fiber organizer used. However, the following steps are usually common:-

The strength members of each cable are joined to each other and/or to the central frame of the joint closure. The joint closure is assembled around the cable. The sealing compound or heat shrink sleeve is applied to the cables and closure, or prepared for application after splicing is complete.

The fibers are protected (usually with plastic tubing) in their run from the cable core to the fiber organizer trays (particularly if cable construction is slotted core type). Tags which identify the fiber nos. are attached at suitable location on the fibers. Splice protectors are slipped over each fiber in readiness for placing over the bare fiber after splicing.

10.6 STRIPPING AND CLEAVING OF FIBER

Prior to splicing each Fiber must have approximately 50mm of its primary protective U.V. cured coating removed, using Fiber stripper which are manufactured to fine tolerances and only score the coating without contacting the glass Fiber. The bare Fiber is then wiped with a lint free tissue doused with ethyl alcohol. Cleaving of the Fiber is then performed to obtain as close as possible to a perfect 90 degree face on the Fiber.

10.7 SPLICING OF THE FIBERS

The fusion splicing shall be used for fiber splicing. Some of the basic steps for fusion splicing are as given in 4.8 below.

10.8 FUSION SPLICING OF FIBER

Some of the general steps with full automatic micro -processor control splicing machine are as under:

Wash hands thoroughly prior to commencing this procedure.

Dip the clean bare Fiber in the beaker of ethyl alcohol of the ultrasonic cleaver. Switch on ultrasonic cleaver for 5-10 seconds (Some of the manufacturers do not prescribe the above cleaning).

Place the bare fiber inside 'V' groove of the splicing machine by opening clamp handle such that the end of fiber is app. 1 mm. over the end of the "V" groove towards the electrodes.

Repeat the same procedure for other fiber, however, first insert heat shrink splice protector.

Press the start button on the splice controller.

The machine will pre fuse, set align both in 'X' and 'Y' direction and than finally fuse the fiber.

Inspect the splice on monitor if provided on the fusion splicing machine and assure no nicking, bulging is there and cores appear to be adequately aligned. If the splice does not visually look good repeat the above procedure.

Slide the heat shrink protector over the splice and place in tube heater. Heat is complete when soft inner layer is seen to be 'oozing' out of the ends of the outer layer of the protector. Repeat for other fibers.

10.9 FUSION SPLICER AND OTDR

The fusion splicer and Optical Time Domain Reflector meter (OTDR), to be used for splicing and measurements of parameters respectively, shall be of approved design and quality. The contractor shall submit.

10.10 Specification of fusion splicer and OTDR

Certificate from the users, who have used the splicer and OTDR of the make, the contractor intends to use, regarding their satisfactory performance. The RailTel reserves the right to direct the contractor to use the same or any other proven design of fusion splicer and OTDR if in the opinion of RailTel the specification of Fusion splicer and OTDR are not suitable

10.11 ORGANISING FIBER AND FINISHING JOINTS

After each Fiber is spliced, the heat shrink protection sleeve must be slipped over the bare Fiber before any handling of Fiber takes place, as uncoated Fibers are very brittle and cannot withstand small radius bends without breaking. The Fiber is then organized into its tray by coiling the Fibers on each side of the protection sleeve using the full tray side to ensure the maximum radius possible for fiber coils. The trays are placed in the position. OTDR reading taken for all splices in this organized state and recorded on the test sheet to confirm that all fibers attenuation are within specification. This OTDR test confirms fibers were not subjected to excessive stress during the organizing process.

After this the joint can be closed with necessary sealing etc. and ready for placement in the pit.

- 10.11.1 **Jointing Pit/ Pull Chamber:** The Jointing Pit / Pull Chamber is as per drawing No. RCIL/ER/DRG-10/07. The pits shall be located at every 1Km of the OFC route and spare cable of 15 meters to be looped and placed in the pit. The pit shall be refilled with dry sand after completion of the work and then closed. Stone/RCC route markers shall be provided for identification of each Jointing Pit / Pull Chamber location with/without a joint and this should be incorporated in the as-built-cable route plan.

10.12 PLACING OF COMPLETED JOINT IN PIT

Joint is to be placed on the tarpaulin provided near the pit. The cable is laid on the ground, loop the cable such that pen mark previously place on the cable line up. Tape these loops together at the top of the coil. The joint can now be permanently closed and sealed by heating heat shrinkable sleeve etc. However, before closing, silica gel to be kept inside for moisture protection. Now the joint closure is placed in the jointing pit /chamber and the pit is closed after filling it with dry sand.

10.13 RE-OPENING OF THE JOINT

If required for attending to faults etc., manufacturers supply special kits for opening of the joint and the steps to be followed. However, the general steps are as under: -

Using suitable knife cut heat shrink sleeve longitudinally along its entire length. Do not

damage the smaller heat shrunk sleeve on the ends of the joint. Apply heat to the cut sleeve until it begins to separate. Gently remove the cut sleeve from the joint. Now the joint can be opened. Protective sleeve/cover can be removed for attending to faults etc.

10.14 **TERMINATION JOINT FOR FIBER OPTIC CABLE.**

10.14.1 This joint is provided in the cable hut for terminating the outdoor fiber optic cable of both the sides, splicing through fibers, connecting fibers to pigtails for connection to OFC equipment. The OFC cables shall be dressed up on teak wood plank/Aluminum ladder inside cable hut. The armour of the OFC Cable shall be cut before taking the cable in the equipment rack. The cables shall be terminated on FDMS The installation manual supplied gives the step-by-step procedure for installation. However, the general steps are as under:-

- Marking the cable
- Stripping/cutting the cable
- Gripping cable in sheath/clamp
- Treatment of tension member
- Fiber splicing
- Enclosing Fiber
- Fixing strength member
- Closing the cover
- Fixing termination box
- Fixing the cable.

10.14.2 **MARKING THE CABLE**

Determine the cable length up to the proposed location of termination box. It is also to be ensured that at least 10 meters of cable is coiled in the cable pit. Determine the cutting point and mark the cable Determine the sheath peeling point and mark the cable

10.14.3 **CUTTING / STRIPPING THE CABLE**

Cut the cable as per the marking Remove the sheath from cable ends. During sheath stripping care should be taken not to damage the Fibers. The length and the steps for various sheath cutting shall be as per the instruction given in

10.14.4 **GRIPPING THE CABLE**

Wind PVC tape around the cable core just beside edge of the sheath. Insert the bushing inside sheath by cutting the cable sheath for about 25mm. Place the sheath grip (lower half and upper half) and tighten it with the help of torque wrench.

10.14.5 **FIXING OF TENSION MEMBER**

- (a) Mark the tension member for the specified length and cut it.
- (b) Clean the tension member thoroughly by Alcohol and cotton cloth.
- (c) Fix tension member holder with the help of instant adhesive at the end of tension member.

10.14.6 **FIBER SPLICING**

The procedure for splicing is same as described for straight joint closure in Clause 4.7 above.

10.14.7 **ENCLOSING FIBERS**

- a) Set the Fiber cassette on the base
- b) Arrange excess length of Fiber to make double figure of eight.
- c) Enclose the spliced Fiber and its excess length carefully.
- d) Repeat the procedure for other Fibers.
- e) After this, the box can be closed. However, a packet of silica gel may be placed inside for protection from entry of moisture.

10.14.8 MOUNTING OF TERMINATION BOX.

Termination box can be fixed either on wall or on equipment rack. At wayside stations it shall be mounted inside the equipment rack in order to prevent pigtailed from rodent attacks.

- a) Mark the fixing holes on the walls/bracket/frame
- b) Place the termination box and tightened the nuts inside the base box.
- c) Put the covers.

10.14.9 FIXING THE CABLE

Secure the cable on wall/frame at two places within one meter from termination box keeping in view straight entry of cable in termination box.

10.14.10 ISOLATION OF ARMOUR OF OFC CABLE

The maximum continuous length of armour of OFC Cable should not exceed 1.6 Kms. In order to keep the induced voltage within permissible limits. Where the continuous length of cable exceeds 1.6 Kms. a 50 mm cut shall be made in the armour after every 1.6 Kms. The Exposed cable at the cut shall be covered by shrinking suitable heat shrink sleeve as per TEC specifications.

10.15 ACCEPTANCE TEST FOR FIBER OPTIC CABLE

The Procedure for Testing of Fiber Optic Cable shall be jointly finalized by Contractor with Engineer of the RailTel. The parameters in the concerned specification shall be taken as reference. The Test shall be conducted from cable hut to cable hut, after the Splicing & termination Joints are completed. The length of cable (as per marking in cable & as measured by OTDR), loss in cable, average loss per Km., No. of Splices, Splice loss, etc. shall be recorded and jointly signed as per pro-forma given in para below.

10.16 TEST PROTOCOL FOR OPTICAL FIBER CABLE

SYSTEM TEST PROTOCOL OPTICAL FIBER CABLE FIELD TEST

 Route: ----- Date : -----
 Station: ----- No. of mid-section splices: -----
 Section: ----- Measured by : -----
 Length Length as per meter
 (by OTDR): ----- marking on cable sheath : -----

1) Optical measurements (On Line):

Measurement	Fiber – number	Accepted Value
1.1 Total attenuation at 1300/1550 nm with OTDR		
1.2 Total attenuation per Km at 1300/1550 nm:		<0.40 dB/Km at 1300 nm &<0.25 at 1550 nm:
1.3 Splice Loss in dB with OTDR Location		Average splice Loss
OHE Mast No./ Overhead alignment post no. A. B. C. D. E.		
Average Splice Loss		0.15 db, no splice should have loss >0.2 db

NOTE : ALSO ATTACH OTDR RESULTS |----|

2) Visual Inspection (On Line):

2.1 No. of Cable drum used in the section: -----

2.2 S.No. of cable and length of each drum:

S.No.	LENGTH
1. -----	-----M
2. -----	-----M
3. -----	-----M
4. -----	-----M
5. -----	-----M

2.3 Location of Isolation Sleeves: 1. 2. 3.

Contractor's Representative

RailTel's Representative

10.17 **TOOLS AND EQUIPMENTS REQUIRED FOR JOINTING AND TERMINATION OF FIBER OPTIC CABLE.**

S.No.	TOOL's Name
1.	Branch Joint Closure
2.	FDMS
3.	Rubber end Block
4.	Sheath Clamp
5.	Bushing
6.	Strength Member holder
7.	Heat Shrinkage tube
8.	Arc fusion splicer machine.
9.	Power cord AC/DC
10.	Walkie-Talkie 12V DC source
11.	Tube heater
12.	Precision cleaver
13.	Cable sheath stripper
14.	Fiber stripper
15.	Knife for HDPE cutting
16.	Hexa for strength membrane
17.	Isopropyl alcohol or methanol of high specific gravity
18.	Johnson Buds
19.	Tweezers
20.	Gun heater Blower type
21.	Sleeve for splice protection
22.	O.T.D.R.
23.	Stickers for numbering of splicers.
24.	Portable k. oil generator
25.	Umbrella's 2 Nos.
26.	Dust protection for splicing machine

Note: - Wherever cable has to be coiled/looped, the diameter of the coil/loop shall be greater than 30 times the diameter of the cable.

SECTION – III

CHAPTER – 11

List of Address for Specification

List of specifications of major equipments and materials

The materials shall be in conformity with these along with latest amendments issued.

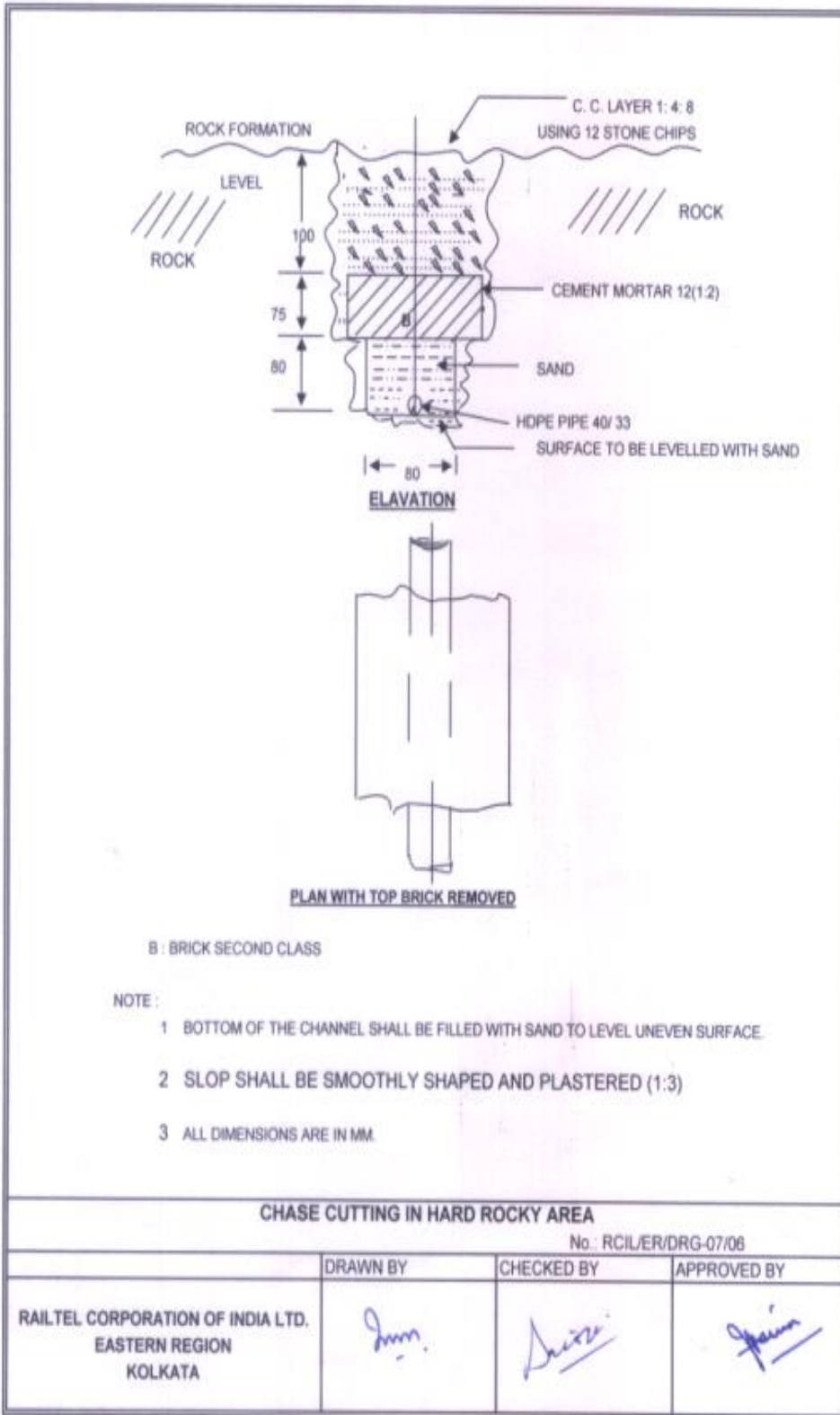
1. Cable optic fibre armoured (24 fibre) to Specn. No. IRS TC-55-2006 Rev.1 including latest amendments.
2. Permanently Lubricated HDPE Telecom duct to use as underground optical fibre cable conduits size 40/33 mm and accessories as per RDSO Specs No. RDSO/SPN/TC/45/2013 Rev. 2.0 with latest amendment
3. Optic Fibre joint closure as per TEC Specn. No. TEC/GR/TX/OJC-002/03 April 2010 with latest amendments with the following additional features:
 - e) Joint Closure shall be dome/round shaped. Cable entry shall be sealable with heat shrink sleeve and hot melt adhesive system.
 - f) Fiber organizer trays in the closures must be hinged at one end.
 - g) Fiber organizer trays shall have a capacity to stand 12 splices.
 - h) The no. of trays shall be minimum 3.
4. Cable U/G Jelly Filled 6 quad for special purposes in RE areas to Specn.No.IRS:TC-30-/2005 (ver-1) amendment -1 - 4 including latest amendments.
5. Thermo Shrink jointing kit for jointing underground Quad cable as per specification no. IRS: TC 77-2010 (Rev. 3) amendment -1 including latest amendments.
6. Thermo Shrink jointing kit for jointing underground PIJF cables as per specification no. RDSO/SPN/TC/57/2006 (Rev.0) amendment -1 including latest amendments.
7. Cable polythene insulated polythene sheathed jelly filled telephone cable with poly-Al moisture barrier to Specn. No. IRS:TC-41-97 with amendment.
8. Wire PVC Twin Core Flexible 16/0.2 mm dia. to Specn. No. IS-694:1990 with latest amendments.
9. Switch Board Cable to ITD spec. no. S/WS-113B with Latest amendments.
10. Jumper Wire PVC. Spec No. G/WIR-10/03 Sept '06 including Latest amendments.
11. Cable Termination Boxes 24 pair CT box, Wago type with disconnection and reconnection facilities
12. Emergency socket box as per RDSO's Drg. No.TCA-20060 (Adv.) with latest amendments.
13. Six Pin Emergency Plug and socket to Specn. No. IRS-TC 42/87 with latest amendment.

14. 2T / 3T V.F. Transformer assembly for Quad cable to Specn. No. IRS:TC 76-2000 with latest amendments.
15. V.F. Isolation Transformers used for Derivation & termination of U/G Telecommunication cable circuits to Specn. No. IRS: TC 22-76 with latest amendments.
16. G.I.Pipe to Specn. No. IS-1239(Part-I) :1990 including latest amendments.
17. R.C.C. pipe / split R.C.C. pipes to Specn. No. IS:458:1998 with latest amendments.
18. Double walled Corrugated pipe as per specification no. IS:14930 Part 2:2013 / IS16205 Part 24:2018.
19. PPRC Pipe PN 10 as per IS 15801 (2008) with fittings.

CHAPTER – 12

DRAWINGS

Sl. No.	Description of Drawing	Drawing number	Page No.
1.	Chase cutting in hard rocky area	RCIL/ER/DRG-07/06	129
2.	OFC Cable Route Marker	RCIL/ER/DRG-01/06	130
3.	Arrangement of OFC cable in DWC pipe Trunking under Metalled Road	RCIL/ER/DRG-03/06	131
4.	RCC OFC Joint Chamber	RCIL/ER/DRG/10/07	132
5.	Arrangement of OFC cable on Girder Bridges	RCIL/ER/DRG-08A/06 RCIL/ER/DRG-08B/06	133-134
6.	GI pipe on culverts	RCIL/ER/DRG-05/06	135
8.	Method of shorting excavating trench for cable	RDSO/TC/35003	136
9.	Leading Arrangement for Optic Fibre Cable in Cabin & rooms		137
10.	Method of mounting the brake		138

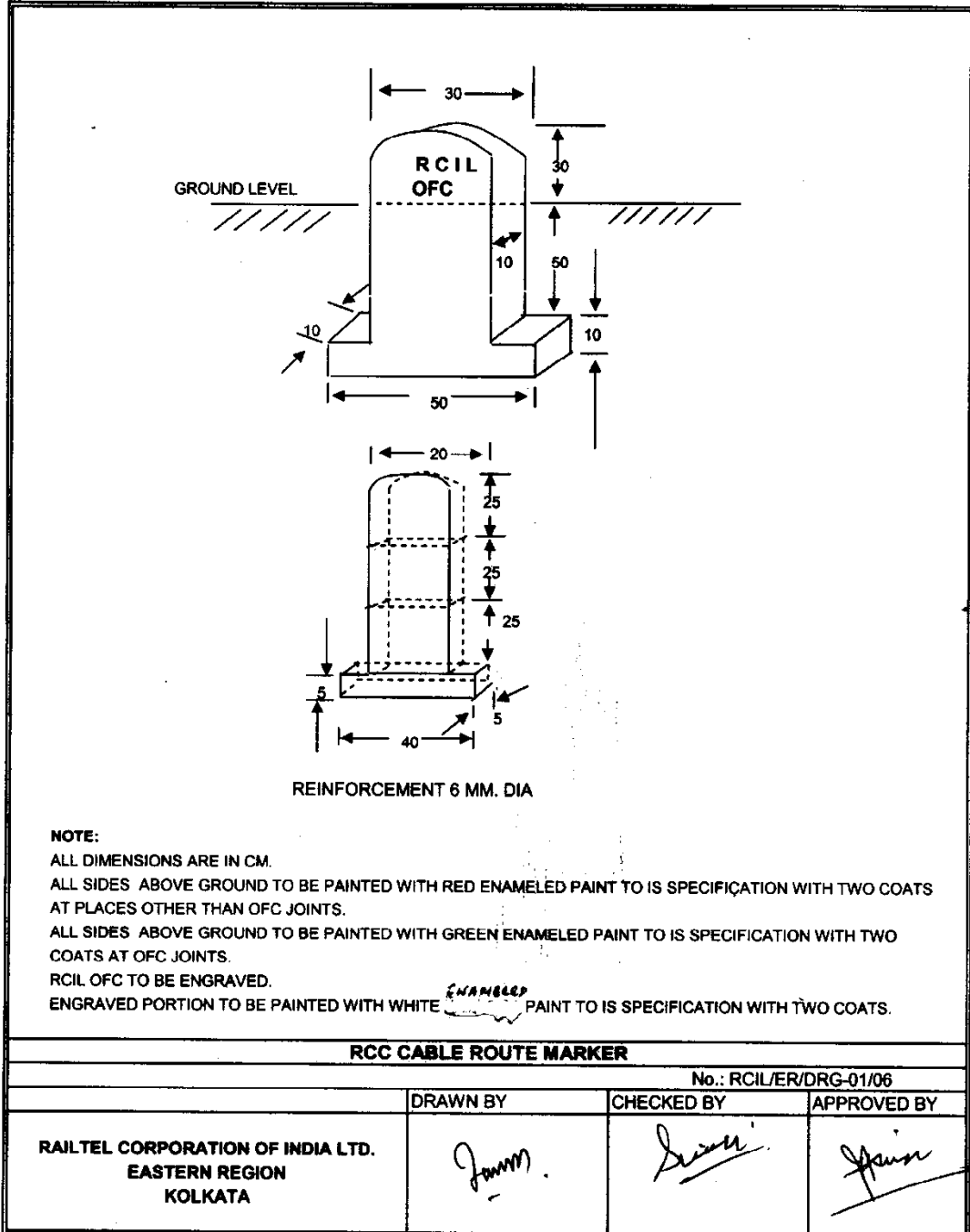


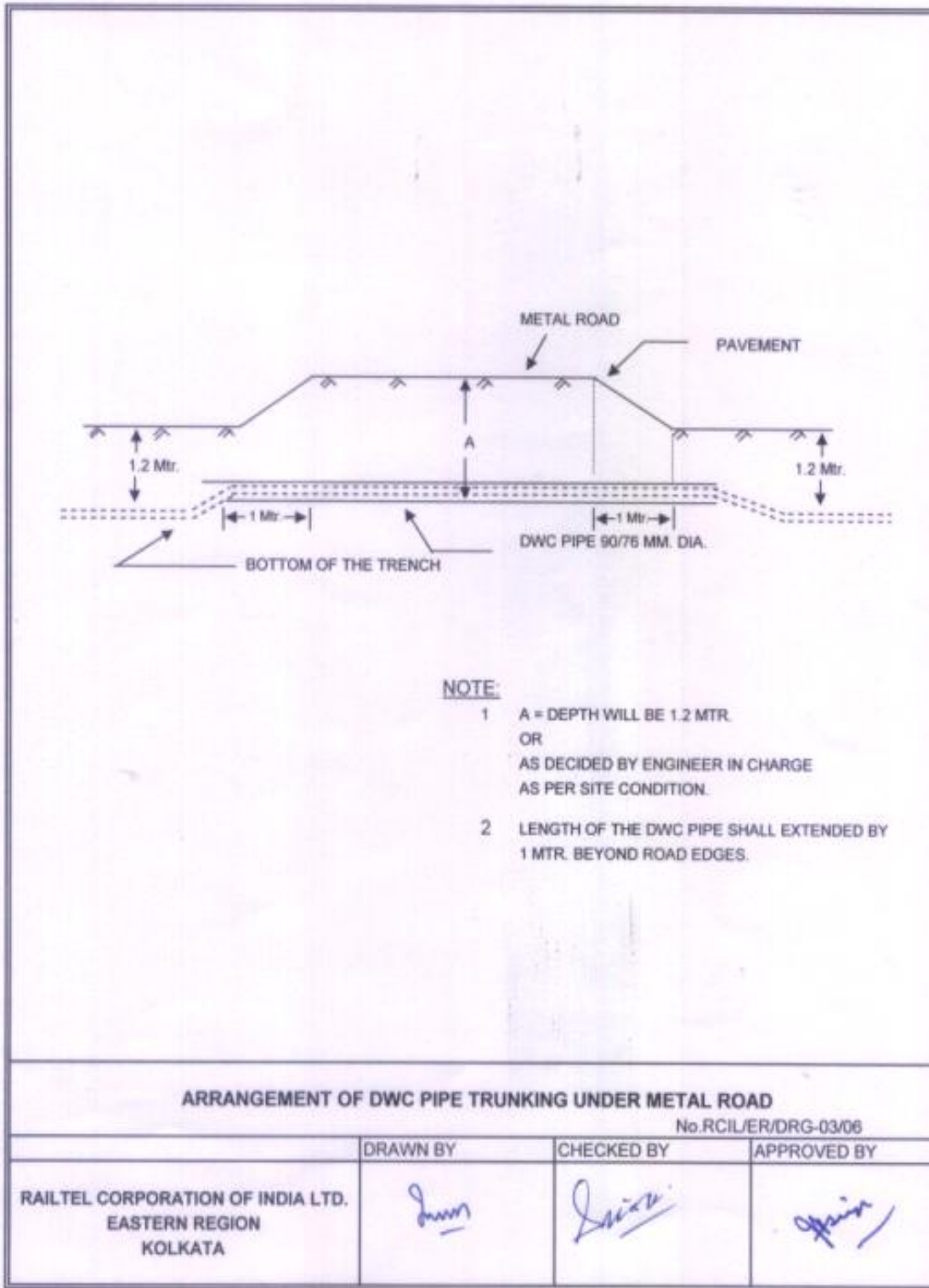
B : BRICK SECOND CLASS

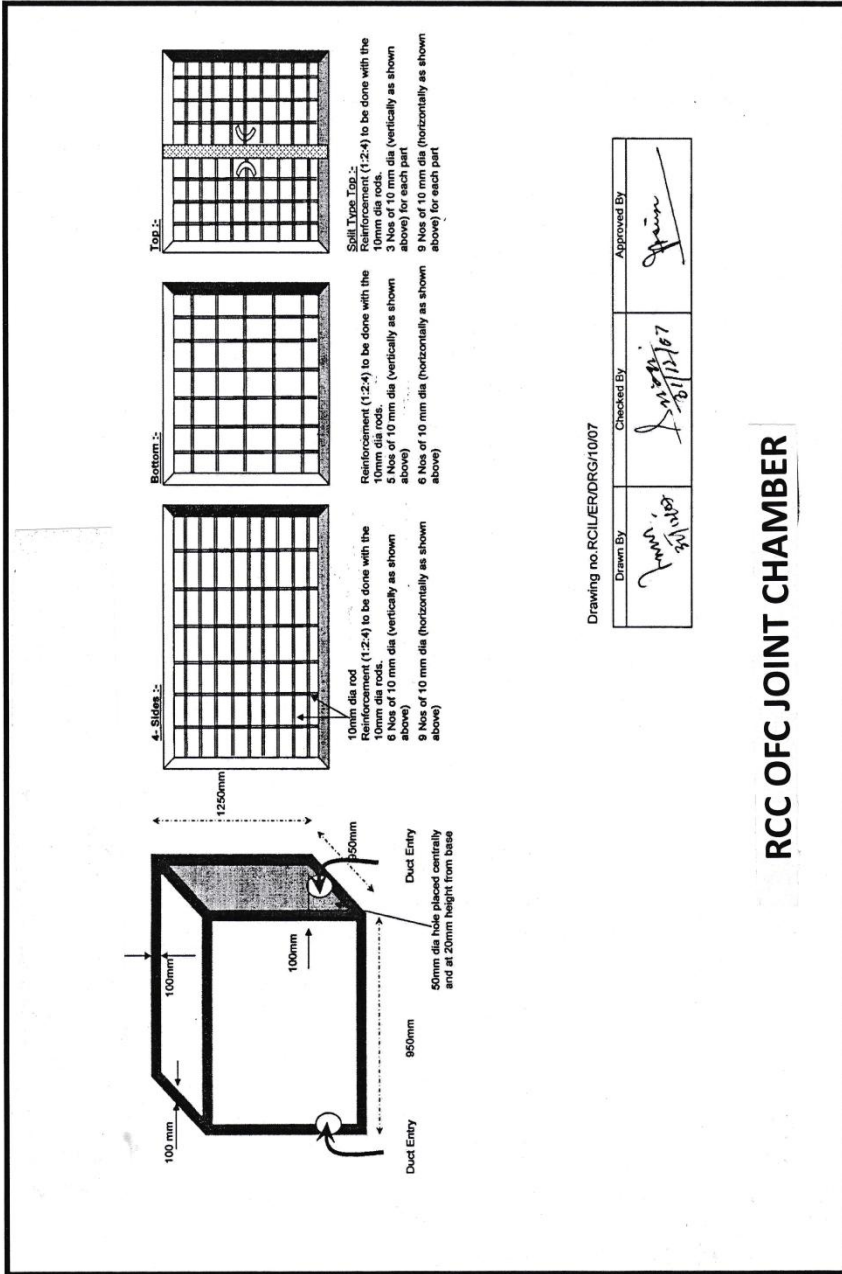
NOTE :

- 1 BOTTOM OF THE CHANNEL SHALL BE FILLED WITH SAND TO LEVEL UNEVEN SURFACE.
- 2 SLOP SHALL BE SMOOTHLY SHAPED AND PLASTERED (1:3)
- 3 ALL DIMENSIONS ARE IN MM.

ANNEXURE 3.1



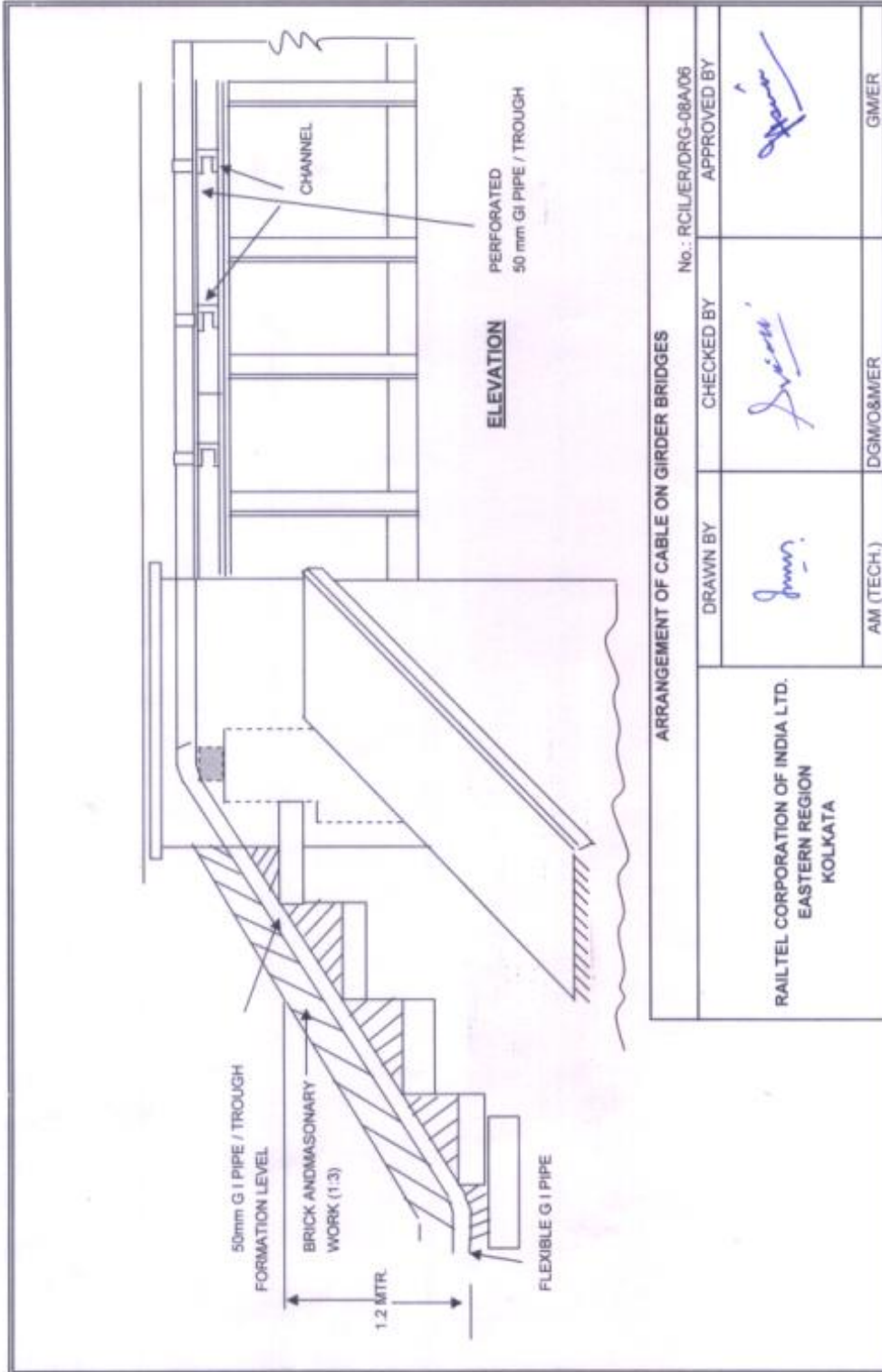




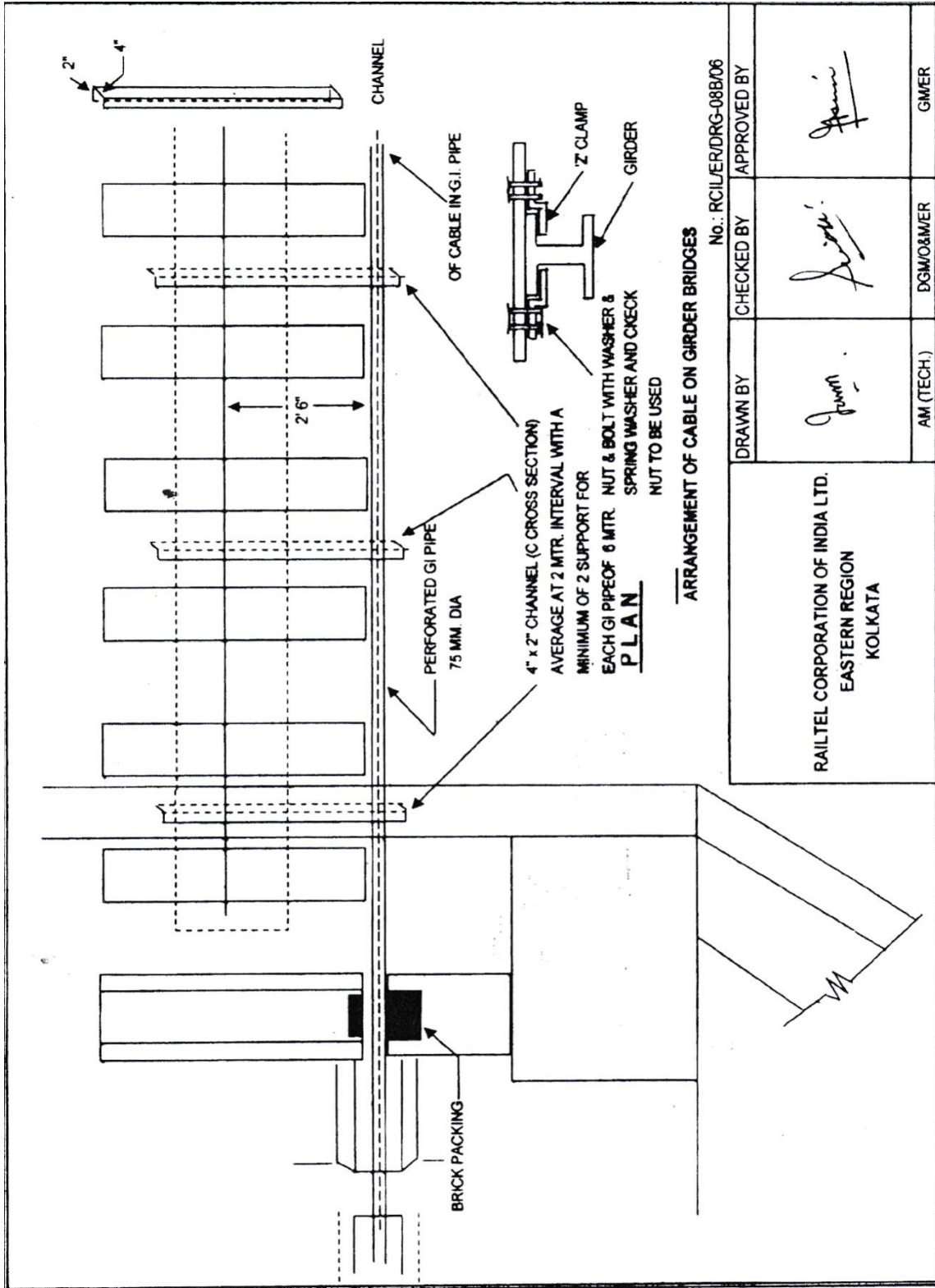
Drawing no.RCILER/DRG/1007

Drawn By <i>[Signature]</i> 25/11/25	Checked By <i>[Signature]</i> 28/11/25	Approved By <i>[Signature]</i>
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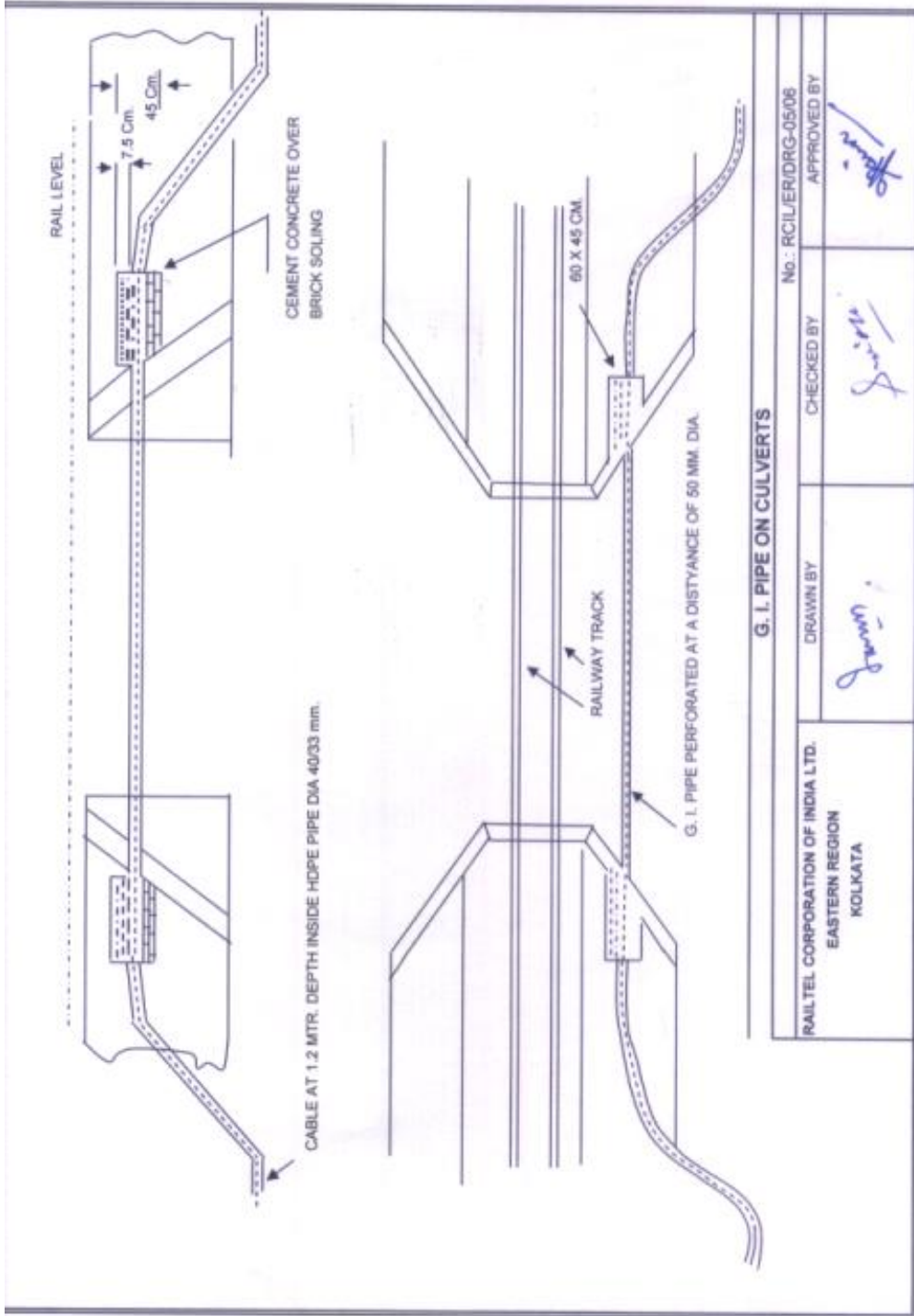
RCC OFC JOINT CHAMBER



ARRANGEMENT OF CABLE ON GIRDER BRIDGES			
RAILTEL CORPORATION OF INDIA LTD. EASTERN REGION KOLKATA	DRAWN BY	CHECKED BY	APPROVED BY
	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>
	AM (TECH.)	DGM/O&MER	GM/ER
		No.: RCIL/ER/DRG-08A/08	

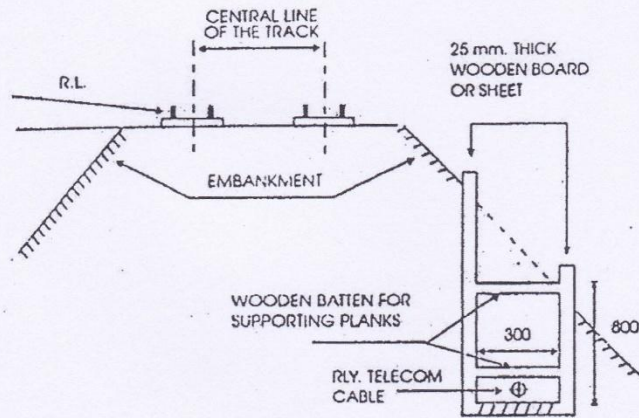


135



G. I. PIPE ON CULVERTS			
RAILTEL CORPORATION OF INDIA LTD. EASTERN REGION KOLKATA	DRAWN BY <i>Jain</i>	CHECKED BY <i>[Signature]</i>	APPROVED BY <i>[Signature]</i>
	No.: RCIL/ER/DRG-05/08		

ANNEXURE - 3.3



TRUE COPY
P. K. D.
 SSTE/P/D/CORE/ALD

NOTE :-
 1. DIMENSIONS ARE IN MILLIMETER

	CSTE	DRN	METHOD OF SHORTING EXCAVATING TRENCH FOR CABLE	R.D.S.O./TC/35003
	DY CSTE	COM		PG
	SSTE/T	CTI	R.D.S.O.	DT.
	ASTE/T	K. B. D. I COMP		NOT TO SCALE

