



RailTel Corporation of India Ltd.

3rd and 16th Floor, Chatterjee International Centre,
33A, Jawaharlal Nehru Road, Kolkata 700071,

Tel. No.: 033-44009999, 44041499

FAX: 033-44041490.

रेलटेल कॉर्पोरेशन ऑफ इंडिया लिमिटेड

(भारत सरकार का एक उपक्रम)

RAILTEL CORPORATION OF INDIA LIMITED

(A Govt. of India Undertaking)

Website: IREPS portal: www.ireps.gov.in

RailTel website : www.railtelindia.com

ELECTRONIC TENDER DOCUMENT

FOR

“Excavation of open trench/HDD, Laying of HDPE Duct and 6Quad/ PIJF cable, Backfilling, blowing/pulling, splicing, termination and testing of OFC cable and termination of Quad / PIJF cable with other associated work in Sakri - Biraul section of East Central Railway”.

खुली-e-निविदासंख्या: RCIL_ER_2019-20_1129 Dt. 29.11.2019

OPEN e- TENDER No.: RCIL_ER_2019-20_1129 Dt. 29.11.2019

खुलनेकी तिथि: **30.12.2019**

Date of opening: 30.12.2019

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Tel. No.: 033-44009999,44041499 FAX: 033-44041490.

e-Tender Notice No. RCIL_ER_2019-20_1129 dt. 29.11.2019

Website : IRPES portal : <https://www.ireps.gov.in>
RailTel's Website : www.railtelindia.com

RailTel Corporation of India Ltd. (RailTel), Eastern Region on behalf of East Central Railway invites Open e- Bids in single packet single stage system from established contractors with proven experience for the work of "Excavation of open trench/HDD, Laying of HDPE Duct and Quad/ PIJF cable Backfilling, blowing/pulling, splicing, termination and testing of OFC cable and termination of Quad / PIJF cable with other associated work in Sakri -Biraal section of East Central Railway".

The details are as under:

a)	Start Date for downloading the Tender	30 .11.2019 at 12:00 hrs.
b)	Closing Date for downloading the Tender	30.12.2019 at 12:00 hrs.
b)	Closing date for Submission of e-Bids	30.12.2019 at 14:00hrs.
c)	Date of opening of e-Bids	30.12.2019 at 14.30 hrs. (Online)
d)	Validity of offer	30 days from date of opening of tender
e)	Completion period of the work	60 days from the date of issue of Letter of Acceptance.
f)	Estimated cost Excluding GST	Rs. 96,38,581.14
g)	Earnest Money Deposit(Incl. GST) (Rs.)	Rs. 2,06,900.00
h)	Tender Document cost (Incl. GST)(Rs.)	Rs.5,900.00
i)	Approx. route length	35.5 Km.

The rates should be Excluding GST, however, breakup of all the taxes charged by the bidder shall be indicated separately. The tenderer has to submit the breakup of all taxes at the time of submission of their "Tax invoices" also. In addition to it, the contractor should submit copy of GSTIN registration certificate. PF Account & ESI registration number should also be available with the contractor. All the statutory provisions have to be made by the contractor. Vendor should file GST return and transfer credit of GST in RailTel account as per GST procedure.

Note: Tender Notice and Tender Document are available on RailTel's website and can be downloaded from www.railtelindia.com or from the e-Tendering portal <https://www.ireps.gov.in>. For online bid submission the tenderer will have to necessarily download an official online copy of the tender documents from IREPS e-Tendering portal. All future Information viz. corrigendum /addendum/ amendments etc. for this Tender shall be posted on the e-Tendering Portal only. Printed copy of Tender document will not be sold from RailTel office. Bid submitted/sent by any other mode will not be accepted.

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.

The “e-bidder” means a Company or Firm or Agency who participates in this tender and submit e-bid (hereafter “e-bidder” and “e-bid” shall be referred as “bidder & bid” respectively

Eligibility Criteria:

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

Validity of offer:

The tender offers are deemed to be valid for acceptance for a period of 30 days from the date of opening of the tender. Late/delayed/ incomplete tenders and tenders with insufficient EMD will be summarily rejected.

Address for submission of offline documents:

Executive Director, RailTel Corporation of India Limited, Eastern Region, 3rd Floor, Chatterjee International Centre, 33A Jawaharlal Nehru Road, Kolkata – 700 071

Payment of Earnest Money Deposit (EMD) and Tender Document Cost (TDC), in respect of e-tendering, will be accepted through net banking or payment gate way only. Fixed Deposit Receipt (FDR) / EMD in any other form will not be accepted as EMD for tender invited on IREPS (e-tender portal).

RailTel's Bank account details for Tender Document Cost & Earnest money Deposit are as below: -

Name of the Bank	State Bank of India
Branch Name	Chowrighee Branch
Name of Account Holder	RailTel Corporation of India Limited
Current Account No.	38541405681
IFSC Code	SBIN0001054
Branch Code	1054 (Chowrighee Branch)

**Asstt. General Manager/Contracts
for RailTel Corporation of India Ltd.
Eastern Region/ Kolkata**

Copy to: Notice board at RO office at Kolkata and TM office at Patna.

CHECK LIST (FOR ENSURING VALIDITY OF OFFER):

S.N.	Description	Submitted/Not submitted
1.	EMD as per NIT/ Preamble submission through IREPS portal	
2.	Cost of tender document as per NIT/ Preamble Submission through IREPS portal	
3.	Submission of required documents against Technical Eligibility Criteria cl.no. 3.15.2 section II chapter-3	
4.	Submission of required documents against Financial eligibility criteria as per cl.no. 3.15.2 section II chapter-3 for turnover of 150% of tender advertised value	
5.	Offline submission of Notarized Affidavit Original and as per clause no.3.16.1 (ii) section II Chapter- 3.(Annexure-A, Form No.1)	
6.	Offline submission of Power of attorney in non-judicial stamp paper worth of Rs. 100/-enclosed with Tender is in proper format Section-I , e-tendering Instructions clause-5.	
7.	Submission of 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 schedule of work in the price bid online in IREPS Portal only	
9.	Copy of PAN card, GSTIN Registration certificate.	
10.	Audited balance sheet duly attested by Notary public for last Three financial years & current year	
11.	Proposed Progress Chart	
12.	Constitution of Firm	
13.	Similar Works executed or under execution (Form No. – 12)	
14.	User Certificate (Form No. – 2)	
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 scan copies of documents listed above shall be submitted online.
3. Original documents listed at srl.no.5 & 6 is to be submitted offline before due date & time of tender opening to the tendering authority.

SECTION – I**OFFER LETTER**

Ref: Tender No.: RCIL_ER_2019-20_1129 dt. 29.11.2019

To
Executive Director (Eastern Region),
RailTel Corporation of India Limited.,
3rd and 16th Floor, Chatterjee International Centre,
33A Jawaharlal Nehru Road,
Kolkata – 700 071.

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 30 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 “Excavation of open trench/HDD, Laying of HDPE Duct and Quad/ PIJF cable, Backfilling, blowing/pulling, splicing, termination and testing of OFC cable and termination of Quad / PIJF cable with other associated work in Sakri - Biraul section of East Central Railway” 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.

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.

2. A sum of Rs.-----/(Rupees ----- only) is herewith submitted as “Earnest Money” through IREPS portal with the following transaction details: ..-----

3. 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.

3. 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://www.ireps.gov.in>, Indian Railways E-procurement system (IREPS).

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

3. **Tender Bidding Methodology:**
Sealed Bid System - 'Single Stage - Single Envelope': In this, bidder has to submit the Technical as well as financial bid / Price Bid in single envelope **"ONLINE"**.

IREPS Helpdesk

Please visit Helpdesk section on IREPS Portal.

RailTel's Contact Person & Designation

Shri Jogesh Prasad,

Sr. Manager/HQ/Tender

Mobile: 9007044149 E-Mail Id: jogesh@railtelindia.com

Shri P D James

Asstt.GM/Contracts,

Mobile No. 9007044114 pdjames@railtelindia.com

The entire bid-submission would be online on IREPS Portal.

4. **Broad outline of submissions are as follows:**
 - I. Submission of Bid Security/ Earnest Money Deposit(EMD)
 - II. Submission of digitally signed copy of Tender Documents/Addenda
 - III. Tenderer has to submit both Technical and Financial bid as Single Packet
 - IV. Online response to Terms & Conditions of Tender.

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

5. **Offline Submission:**
The bidder is required to submit the following documents offline to RailTel Corporation of India Ltd, Executive Director, RailTel Corporation of India Limited, Eastern Region, 3rd Floor, Chatterjee International Centre, 33A Jawaharlal Nehru Road, Kolkata – 700 071 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 in an envelope 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. 3.16.1 (ii) instructions to tenderers section II chapter I

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

EMD-Bid Security and cost of tender document shall be submitted through payment gateway of IREPS 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 www.railtelindia.com and on IREPS Port <https://www.ireps.gov.in>.
NOTE: For online bid submission the bidder will have to necessarily download an official online copy of the tender documents from IREPS 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://www.ireps.gov.in/>. For detailed instructions please refer to IREPS 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 IREPS 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 simultaneous 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 home-page of the portal (<https://www.ireps.gov.in>) 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 IREPS's 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.
16. Bids received after due date and time shall be summarily rejected and shall not be opened

SECTION – I**Chapter -1****Preamble**

Tender No: RCIL_ER_2019-20_1129 dt. 29.11.2019

- 1.1 Name of work: “Excavation of open trench/HDD, Laying of HDPE Duct and Quad/ PIJF cable, Backfilling, blowing/pulling, splicing, termination and testing of OFC cable and termination of Quad / PIJF cable with other associated work in Sakri -Biraul section of East Central Railway”

Srl. No.	Tender No.	Section where work is to be executed	Appx. Route length	Estimated cost (Excluding GST) (Rs.)	EMD (Including GST) (Rs.)
1	RCIL_ER_2019-20_1129	Sakri –Biraul , EC Railway	35.5 Km.	96,38,581.14	2,06,900/-

1.2 **Scope of work:**

- 1.2.1 To provide underground OFC connectivity between Railway stations of Sakri –Biraul section of EC Railway with OFC cable termination at each station in the section.

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 both ends.

The broad responsibility of the contractor under the scope of work for this tender shall be as under:

- Open Trenching/HDD and laying of HDPE Duct in all type of soils, Bridges/Culverts/Nallah, Road/Rail crossing etc. & protective works as per technical specifications, laying of OFC cable by open trenching/HDD method.
- Back filling and dressing of the excavated trenches according to technical specifications.
- Blowing/pulling of Optical Fiber Cable with proper tools and accessories as per Technical specifications.
- Installation of Jointing Chambers & Route/ Joint Indicators as per technical specification.
- Splicing of fibers in Joint closures and FDMS making joints with installation of joint enclosures
- End to end Testing & Submission of test results, preparation of route diagrams of route.
- Laying of PIJF Cable/ Quad cable, termination of cable in the section as advised by Engineer-in-charge

1.2.2 **Supply:**

Supply of items confirming to industry standards as per schedule and the Technical Specifications

1.2.3 **Services/Works:**

Trenching/HDD laying of HDPE pipe and refilling, OFC blowing, Splicing and Termination in JC&FDMS and Testing of Optical Fiber Cables between RailTel Pop as indicated in above sections. Laying of PIJF/Quad cable and its termination

- 1.3 Tender offline documents shall be submitted in sealed covers super scribed with Tender No and addressed to Executive Director office, Eastern Region), RailTel Corporation of India Ltd, 3rd Floor, Chatterjee International Centre, 33A Jawaharlal Nehru Road, Kolkata – 700071 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 Book: Rs. 5,900/- (inclusive of GST) towards cost of tender document to be submitted online in IREPS 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 3.15.2 of Chapter-3 of Section-II (Instructions to Tenderers and Conditions of Tendering) of the tender document.
- 1.7 Last date of Submission: The e-tender shall be submitted in online up to 14:00 hrs of 30.12.2019 online using the e-Procurement Portal <https://www.ireps.gov.in>.
- 1.8 Date of Opening of Tender: The e-tender will be opened at 14.30 hrs. online on 30.12.2019 at the same address as mentioned above.
- 1.9 Completion Period of Work: The work should be completed within 60 days from the date of issue of Letter of Acceptance/PO.
- 1.10 Address to which correspondence and documents relating to the Contract should be sent: Asstt. General Manager/Contracts, RailTel Corporation of India Ltd, 3rd Floor, Chatterjee International Centre, Kolkata-700 071.
- 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: @5% of contract value will be deducted from contractor's on account bills towards Security Deposit for due fulfillment of contract.
- 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 Bank 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 Technical Specification (Section III chapter 9 of 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: OF Cable, HDPE duct
Note: The material shall be supplied at nearest RailTel/Railway site: The successful tenderer has to make his own arrangements to transport the material to site.
- 1.18 Materials to be supplied by Contractor: Tenderer 's special attention is invited to the fact that no material except items mentioned in clause 1.17 above shall be arranged/supplied by RailTel for commissioning the work. All materials including the materials 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 a 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.
- 1.22 In all matters, decision of 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	

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RAILTEL

SECTION I

Chapter 2

SCHEDULE OF REQUIREMENT (SOR)

Name of the work: Excavation of open trench/HDD, Laying of HDPE Duct and 6Quad/ PIJF cable/, Backfilling, blowing/pulling, splicing, termination and testing of OFC cable and termination of Quad / PIJF cable with other associated work in Sakri -Biraul section of East Central Railway.

Tender No.: RCIL_ER_2019-20_1129 **Dt.** 29.11.2019

Section: Sakri - Biraul (4 stations) section of EC Rly.

SOR Item No.	Description of work	Unit	Quantity	Estimated Unit Rate (Excluding GST) (Rs.)	Amount (Rs.)
1.	Location survey of cable route & Equipment room and preparation of tentative and final cable route plan including supply of final route plan, in 6 Nos. hard bound copies on white bond paper of A3 size maximum and provision of cable route marker at 100 Mtr. Interval.	Km	40	4028.73	161149.20
2.	<p>Excavation of Open Trench/HDD in all types of soil, road crossing (Kachha / Pucca) / track crossing through GI/DWC pipe, Bridge / Culvert / Drains crossing by clamping / concreting of PPRC/DWC pipe, transportation (from stores) and laying of HDPE duct with or without mechanical protection, pulling / blowing of 24F Optic Fiber Cable within HDPE ducts, laying of Copper Cable, backfilling and reinstatement of excavated trenches. This rate is including cost of provision of mechanical protection</p> <p>Note: Depth of trench should be 1.20 Mtr. for lower depth , payment shall be made on proportionate basis. Laying of duct at depth lesser than 01 Mtr. according to site condition should be recorded with reasons and approval. DWC pipe has to be provided at depth lesser than 0.60 Mtr. Cement concrete with wire mesh on top of PLB pipe has to be provided at depth lesser than 0.30 Mtr. GI pipe of 50 mm medium grade, PPRC pipe of nominal dia.75 mm PN 16 and DWC pipe of 90 mm/76 mm(OD/ID) sizes will be used as mechanical protection materials. This includes cost of all allied materials except HDPE duct and OFC cable.</p> <p>Note: The work will be carried out as per technical specification given in Chapters 9,10 &11 of the tender document.</p>	Km	40	223367.69	8934707.60

SOR Item No.	Description of work	Unit	Quantity	Estimated Unit Rate (Excluding GST) (Rs.)	Amount (Rs.)
3.	Excavation of jointing pit and provision of jointing chamber with cover and bottom cover with holes for drainage this includes placing finished joint in chamber, filling with sand, closing of jointing chamber, back filling and ramming of soil over the pit and supply of Optical Fiber Joint enclosure and splicing of optical fiber cable (24 fiber) and testing. The joint closure shall be of Commscope/3M/R&M or similar make as per advised by the Engineer in Charge of RailTel. This includes cost of all allied materials.	No.	20	12128.39	242567.80
4.	Provisioning of 24 Fiber Optical Fiber management systems suitable for rack/wall mounting (as per site conditions) including splicing of Optical Fiber Cable as per splicing plan. The FMS shall be of Commscope/3M/R&M or similar make as per requirement of RailTel. This includes supply of pigtail with connector of OFC Jumper cable with SC-PC conforming to TEC specification accessories etc. for fiber termination. This includes supply & execution of leading in arrangements at Cable Huts. Rate includes cost of all allied materials.	No.	6	18401.69	110410.14
5.	Provisioning of 20 pair C. T Box, Krone type with disconnection and reconnection facility and termination of cable as per details of jointing schedule approved by the Engineer. (Krone modules should be suitable for termination of 0.9/0.63 mm. dia. Copper cable). This includes cost of all allied materials.	No.	80	1003.73	80298.40
6.	Supply of material and execution of maintenance free earth as per RDSO specification no. RDSO/SPN/197 /2014 or latest consisting of (a) Copper bonded steel electrode of 3.0 mtr. Long, 17.2mm Dia with copper bonding thickness of min. 250 micron-01 no. (b) Earth enhancement compound supplied in 10 kg sealed bags 03 nos. c) Copper bus bar of 300X 25 X6 mm MEBB (min-01 No.(d) Supply of 35 Sq.mm multi strand single core PVC insulated copper cable as per IS:694 for connecting earth electrode to MEBB -15 Mtrs using copper lugs with stainless steel nut and bolts.	No.	4	27362	109448.00
Total Amount round off (Rs.)				96,38,581.14	
(Rupees Ninety Six Lacs Thirty Eight Thousand Five Hundred Eighty One and Fourteen paise only)					
Percentage quoted on total amount of SOR(At par/ Below/ Above)				Shall be filled online in IREPS portal only	

Note:

1. The tenderer has to carryout detailed survey of the section to familiarize with the local condition of the soil and requirement of protective arrangement etc.

2. The tenderer has to carefully go through the specifications of material and work given in Chapters 9,10 &11 and understand the specifications of work and execution method.
3. HDPE Duct, OFC required for the work shall be supplied by RailTel at concerned RailTel/Railway store.
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 others if any etc. which is mandatory. As the rate to be quoted is over total cost, percentage rate quoted by the tenderer shall be applicable each SOR Items uniformly.



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
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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 – 700 071 from established and reliable contractors for the work of Excavation of open trench/HDD, Laying of HDPE Duct and Quad/ PIJF cable, Backfilling, blowing/pulling, splicing, termination and testing of OFC cable and termination of Quad / PIJF cable with other associated work in Sakri -Biraul section of East Central Railway.

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, 3rd & 16th Floor, Chatterjee International Centre, 33A Jawaharlal Nehru Road, Kolkata – 700 071.

"PURCHASER'S ENGINEER" Means the Executive Director 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 3rd & 16th Floor, Chatterjee International Centre, 33A Jawaharlal Nehru Road, Kolkata – 700 071.

"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, payable at Kolkata through IREPS portal online only:.

Tender No.	Section	Tender Estimated Cost (Rs.) (Excl. GST)	EMD (Incl. GST) (Rs)
RCIL_ER_2019-20_1129	Sakri - Biraul section, East Central Railway	96,38,581.14	2,06,900/-

- 3.5.2 The tenderers shall hold the offer open till such date as specified in Para 3.9 of this chapter. It 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.
- 3.5.3.1 If a tenderer withdraws its tender during the period of tenders validity specified in Clause 3.9 of Instructions to Tenderers and Conditions of Tendering.
- 3.5.3.2 In the case of successful tenderer, if the tenderer fails to Sign the contract in accordance with clause 5.2 of Special Conditions of Contract.
- 3.5.3.3 To furnish performance guarantee in accordance with clause 5.3 of Special Conditions of Contract.
- 3.5.4 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.

3.5.5 If the tender is accepted, the amount of Earnest Money submitted by the successful tenderer will be held as part of security deposit for due and faithful fulfillment of contract.

3.5.6 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. 3.16.1.

3.5.7 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 uploaded 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 bid shall consist of the following:

- i) Offer letter complete
- ii) Schedule of works (i.e., Schedule of Requirements) with rate duly filled digitally signed by the tenderer.
- iii) Earnest Money to be submitted online in IREPS portal only

- iv) Constitution of Firm (refer below clause no 3.7,
- v) Clause wise compliance to tender conditions & statement of deviations (Para 4). Form No.5
- vi) Similar works executed or under execution. Form No. 12
- vii) User's Certificate Form No. 2
- viii) Any other information desired to be submitted by the tenderer.
- ix) Complete tender document duly signed in all pages including above
- x) Power of attorney in favour of the signatory duly authorizing the signatory shall be enclosed in the bid(original to be submitted offline mode)

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.

3.8 **UNIT /PERCENTAGE PRICES:** The unit/percentage prices 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 percentage.

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

3.9 **VALIDITY OF OFFER PER TENDER:** The tenderer shall keep the offer open for a minimum period of 30 (Thirty) 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 Tenderer for their consideration.
- 3.15.1.1 Qualifying criteria under this para lays down minimum acceptable qualifications in various areas to ensure that qualified bidder has necessary experience, technical expertise, equipments 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 **Technical Capability:** Tenderer must have completed works of similar nature, as indicated in para 3.15.2.1 below, successfully and satisfactorily of values as indicated below:
- 3.15.2.1 Tenderer must have completed successfully and satisfactorily at least:
- (a) one single similar work costing not less than 35 % of the advertised tender value of work,
 - OR**
 - (b) Two similar work costing not less than 20 % of the advertised tender value of work,
 - OR**
 - (c) Three similar work costing not less than 15 % of the advertised tender value of work,
- during the preceding three years (i.e. current financial year and three previous financial years). Offers not accompanied by user certificates as per Form no 2, will not be

considered.

Similar nature of work physically completed within the qualifying period, i.e. the last 3 financial year and current financial year (even though the work might have commenced before the qualifying period) shall only be considered in evaluating the eligibility criteria.

3.15.2.2 **Financial:**

The total contract amount received by the tenderer during the last three financial years including current financial year as per Audited balance sheet should be a minimum of 150% of advertised Tender Value of work. Offers not accompanied by Audited balance sheet will not be considered. (Audited Balance sheets along with P&L A/c signed by Chartered accountant for the financial year 2016-17, 2017-18 and 2018-19 and current year 2019-20)

3.16 **MEANING OF SIMILAR WORKS:** Works similar to the scope of work as contained in this tender shall mean that "HDD and Open Trenching, Blowing of OFC through HDPE Duct, splicing and testing of OFC executed for Govt. / public Sector/ reputed private sector telecom companies.

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.

3.16.1 **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.
 - b) In case of any wrong information submitted by the tenderer, the contract shall be terminated, Earnest Money Deposit (EMD), Performance Guarantee (PG) and Security Deposit (SD) 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 at all or in time for whatever reason. Important documents shall be sent by 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 Web site and the same shall be taken into account while submitting the tender.
No addenda/corrigenda will be issued within 15 days of the date of tender opening.
- 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 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 contractors 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 of detention of wagons in loading or unloading will also 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 Materials shall be issued to the contractor or his representative 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>
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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
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4.9	Railway Passes
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- 4.38 Demurrage and wharf age dues
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- 4.41 Variations in extent of contract
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- 4.45 Measurement of Works
- 4.46 "On-Account" Payments
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- 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
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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-1 **(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 of try 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.

4.3.2 **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 ED/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 Executive Director/Eastern Region.

4.6. **Occupation and use of land** – No land belonging to or in the possession of the Railway/RailTel shall be occupied by the contractor without the permission of the RailTel. The Contractor shall not use, or allow to be used, the site for any purposes other than that of executing the works.

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:** Owing to difficulty in obtaining certain materials (including Tools & Plants) in the market, the RailTel may have agreed without any liability therefore, to endeavor to obtain or assist the Contractor in obtaining the required quantities of such materials as may be specified in the Tender. In the event of delay or failure in obtaining the required quantities of the aforesaid materials, the Contractor shall not be deemed absolved of his own responsibility and shall keep in touch with the day-to-day position regarding their availability and accordingly adjust progress of works including employment of labour and the RailTel shall not in any way be liable for the supply of materials or for the non supply thereof for any reasons whatsoever not for any loss or damage arising in consequence of such delay or non supply.

- 4.9 **Railway Passes** – No free Railway passes shall be issued by the RailTel to the Contractor or any of his employee/worker.
- 4.10 **Carriage of materials** – No forwarding orders shall be issued by the RailTel for the conveyance of Contractor's materials, tools and plant by Rail which may be required for use in the works and the contractor shall pay full freight at public tariff rates therefore.
- 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 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** – All gold, silver, oil and other minerals of any description and all precious stones, coins, treasures, relics, antiquities and other similar things which shall be found in or upon the site shall be property of the RailTel and the Contractor shall duly preserve the same to the satisfaction of the RailTel and shall from time to time deliver the same to such person or persons as the RailTel may appoint to receive the same.
- 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 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**

4.16.1 Security Deposit should be recovered by percentage deduction from the Contractor's "on account" bills. Provided also that in case of defaulting Contractor the RailTel may retain any amount due for payment to the Contractor on the pending "on account bills" so that the amounts so retained may not exceed 10% of the total value of the contract.

4.16.2 Unless otherwise specified in the special conditions, if any, the rates for Deposit / rate of recovery / mode of recovery shall be as under:

- (a) Security Deposit for each work should be 5% of the contract value.
- (b) The rate of recovery should be at the rate of 10% of the bill amount till the full security deposit is recovered.
- (c) Security Deposits will be recovered from the running bills of the contract and no other mode of collecting SD such as SD in the form of instruments like FD etc. shall be accepted towards Security Deposit. FD must be in the name of RailTel Corporation of India Ltd., Kolkata.

Security Deposit shall be returned to the contractor after passing of final bill and complete physical completion of the works as certified by the competent authority after issue of PAC. The competent authority shall normally be the authority who is competent to sign the contract.

4.16.3 No interest will be payable upon the Earnest Money and Security Deposit or amounts payable to the Contractor under the Contract.

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 forward to the extended period of time, the same rates, terms and conditions of contract being applicable as if such extended period of time was originally 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 herefore 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 aforesaid, the RailTel shall be entitled, without prejudice to any other right or remedy available in that behalf, to appropriate the contractor's security deposit and rescind the contract under clause 4.62 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 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 take 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** – The Contractor shall at his own expense provide himself with sheds, storehouses and yards in such situations and in such numbers as in the opinion of the Engineer is requisite for carrying on the works and the Contractor shall keep at each such sheds, store houses and yards a sufficient quantity of materials and plant in stock so as not to delay the carrying out of the works with due expedition and the Engineer and the Engineer's representative shall have free access to the said sheds, store houses and yards at any time for the purpose of inspecting the stock of materials or plant so kept in hand, and any materials or plant which the Engineer may object to shall not be brought upon or used in the works, but shall be forthwith removed from the sheds, store houses or yards by the contractor. The Contractor shall at his own expenses provide and maintain suitable mortar mills, soaking vats or any other equipments necessary for the execution of the works.
- 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 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 4.62 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. If temporary huts are provided by the Contractor on the RailTel/Railway land for labour engaged by him and the work is completed but the contractor's labour refused to vacate and have to be removed by the RailTel, necessary expenses incurred by the RailTel in connection therewith shall be borne by the Contractor.

4.31 **Contractor to supply water for works**

4.31.1 Unless otherwise provided in the contract, the contractor shall be responsible for arrangements to obtain supply of water for the works.

4.31.2 Water supply from the Railway system: Deleted

4.31.3 Contractor to arrange supply of Electric power for works.

4.31.3.1 Unless otherwise provided in the contract, the contractor shall be responsible for arrangements to obtain supply of Electric Power for the works.

4.31.3.2 **Electric supply from the Railway system** – The RailTel may supply to the Contractor part or whole of the electric power wherever available and possible, required for execution of works from the Railway's existing electric supply systems at or near the site of works on specified terms and conditions and such charges as shall be determined by the RailTel and payable by the contractor provided the cost of arranging necessary connection to the Railway's Electric supply systems, and laying of underground/overhead conducts circuit protection, electric power meters, transmission structure, shall be borne by the Contractor and that the contractor shall not be entitled to any compensation for interruption or failure of the Electric supply system.

4.32 **Property in material and Plants:** Deleted

4.33. **Tools, Plant and Materials Supplied by the RailTel**

4.33.1 The Contractor shall take all responsible care of all tools, plants and materials or other property whether of a like description or not belonging to the RailTel and committed to his charge for the purpose of the works and shall be responsible for all damage or loss caused by him, his agents permitted sub-contractor or his workmen or others while they are in his charge. The Contractor shall sign accountable receipts for tools, plants and materials made over to him by the Engineer and on completion of the works shall handover the unused balance of the same to the Engineer in good order and repair, fair wear and tear excepted and shall be responsible for any failure to account for the same or any damage done thereto.

4.33.2 **Hire of RailTel's Plant:** Deleted.

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 vigour 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**
- 4.36.1 The Contractor shall on the order of Engineer suspend the progress of the works or any part thereof for such time or times and in such manner as the Engineer may consider necessary and shall during such suspension properly protect and secure the work so far as is necessary in the opinion of the Engineer. If such suspension is: -
- (a) Provided for in the contract, or
 - (b) Necessary for the proper execution of the works or by the reason of act of God or by some default on the part of the Contractor, and or
 - (c) Necessary for the safety of the works or any part thereof.
- 4.36.2 The Contractor shall not be entitled to the extra costs, if any, incurred by him during the period of suspension of the works; but in the event of any suspension ordered by the Engineer for reasons other than aforementioned and when each such period of suspension exceeds 14 days, the Contractor shall be entitled to such extension of time for completion of the works as the engineer may consider proper having regard to the period or periods of such suspensions and to such compensations as the Engineer may consider reasonable in respect of salaries or wages paid by the Contractor to his employees during the periods of such suspensions.
- 4.36.3 **Suspension lasting more than 3 months** – If the progress of the works or any part thereof is suspended on the order of the Engineer for more than three months at a time, the Contractor may serve a written notice on the Engineer requiring permission within 15 days from the receipt thereof to proceed with the works or that part thereof in regard to which progress is suspended and if such permission is not granted within that time the Contractor by further written notice so served may, but is not bound to, elect to treat the suspension where it affects part only of the works as an omission of such part or where it affects the whole of the works, as an abandonment of the contract by the RailTel.
- 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 wharfage 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 wharfage 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 effected 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 expressively 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** - The contractor shall prepare and furnish to the Engineer once in every month an account giving full and detailed particulars of all claims for any additional

expenses to which the Contractor may consider himself entitled to and of all extra or additional works ordered by the Engineer which he has executed during the preceding month and no claim for payment for and such work will be considered which has not been included in such particulars.

- 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 10% by way of security deposits, until the full amount of security deposit by way of retained earnest money 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:** The contractor shall at all times during the progress and continuance of the works and also for the period of maintenance specified in the tender form after the date of passing of the certificate of completion by the Engineer or any earlier date subsequent to the completion of the works that may be fixed by the Engineer be responsible for and effectively maintain and uphold in good substantial sound and perfect conditions all and every part of the work and shall make good from time to time and at all times as often as the Engineer shall require. Any damage or defect that may during the above period arise in or be discovered or be in any way connected with the works, provided that such damage or defect is not directly caused by errors in the contract documents, act of providence or insurrection or civil riot, and the Contractor shall be liable for and make good to the RailTel or other persons legally entitled thereto whenever required by the Engineer so to do, all losses, damage, costs and expenses they or any of them may incur or be put or be liable, by reason or in consequence of the operations of the contractor or of his failure in any respect.

For this purpose the tenderer will submit their strategy for providing maintenance support including the staff that will be available along with the set of spares for attending to various faults/problems during maintenance period.

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 The contract shall not be considered as completed until a maintenance certificate (Final Acceptance Certificate) shall have been signed by the Engineer stating that the works have been completed and maintained to this satisfaction. The maintenance certificate shall be given by the Engineer upon the expiration of the period of maintenance or as soon thereafter as any work ordered during such period pursuant to clause 4.48.2 of these conditions shall have been completed to the satisfaction of the Engineer and full effect shall be given to this Clause notwithstanding the taking possession of or using the works or any part thereof by the RailTel.
- 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 Bank Guarantee – The Performance Bank 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 security deposit 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 security deposit 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 from any moneys due or accruing to the contractor under this or any other Contractor with the RailTel.

- 4.54.1 **Apprentices Act** – The Contractor shall be responsible to ensure compliance with the provisions of the Apprentices Act 1961 and the Rules and Orders issued therefrom from time to time in respect of apprentices directly through petty contractors or sub-contractors employed by him for purpose of carrying out the contract.

If the Contractor directly or through petty contractor or sub-contractors fails to do so, his failure will be a breach of the contract and the RailTel may, in its discretion, rescind the contract. The contractor shall also be liable for any pecuniary liability arising on account of any violation of the provisions of the Act.

- 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 security deposit 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 security deposit 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** – No quarters shall be provided by the RailTel for the accommodation of the contractor or any of his staff employed on the work.

4.59 **Labour camps**

(1) The Contractor shall at his own expense make adequate arrangements for the housing, supply of drinking water and provision of latrines and urinals for his staff and workman directly or through the petty contractors or sub-contractors and for temporary crèche (Bal-Mandir) where 50 or more women are employed at a time. Suitable sites on Railway/RailTel land, if available, may be allotted to the Contractor for the erection of labour camps either free of charge or on such terms and conditions that may be prescribed by the RailTel. All camp sites shall be maintained in clean and sanitary conditions by the Contractor at his own cost.

(2) **Compliance to Rules for Employment of Labour** – The Contractor(s) shall conform to all laws, bye-laws, rules and regulations for the time being in force pertaining to the employment of local or imported labour and shall take all necessary precautions to ensure and preserve the health and safety of all staff employed directly or through petty Contractors or sub -contractors

on the works.

(3) **Preservation of Peace** – The Contractor shall take requisite precautions and use his best endeavors to prevent any riotous or unlawful behavior by or amongst his workmen and others employed directly or through petty contractor or sub-contractors on the works and preserve the health and safety of all staff employed directly or through petty Contractors or sub -contractors on the works.

(4) **Sanitary Arrangement** – The contractor shall obey all sanitary rules and carry out all sanitary measures that may time to time be prescribed by the RailTel Medical Authority and permit inspection of all sanitary arrangements at all times by the Engineer, the Engineer's Representative or the Medical Staff of the RailTel. Should the Contractor fail to make adequate sanitary arrangements, these will be provided by the RailTel and the cost therefore recovered from the contractor.

(5) **Outbreak of Infectious Disease** – The Contractor shall remove from his camp such labour and their families as refuse protective inoculation and vaccination when called upon to do so by the Engineer or the Engineer's Representative on the advice of the Railway/RailTel Medical Authority. Should Cholera, Plague or other infectious disease break out, the Contractor shall burn the huts, beddings, clothes and other belongings of or used by the infected parties and promptly erect new huts on healthy sites as required by the engineer, failing which within the time specified in the Engineer's requisition, the work may be done by the RailTel and the cost therefore recovered from the Contractor.

(6) **Treatment of Contractor's staff in Railway Hospitals** – Deleted

(7) **Medical facilities at site** – The contractor shall provide medical facilities at the site as may be prescribed by the engineer on the advice of the medical authority in relation to the strength of the contractor's resident staff, and workmen.

(8) **Use of Intoxicants** – The sale of ardent spirits or other intoxicating beverages upon the work or in any of the buildings, encampments or tenements owned, occupied by or within the control of the Contractor or any of his employees shall be forbidden and the Contractor shall exercise his influence and authority to the utmost extent to secure strict compliance with this condition.

(9) **Non-employment of Female Labour** – The contractor shall see that the employment of female labour in cantonment areas, particularly in the neighborhood of soldier's barracks, should be avoided as far as possible.

(10) **Restrictions on the employment of retired Engineers of Railway services within two years of their Retirement**– The contractor shall not, if he is aretired government engineer of Gazetted rank, who has not completed two years from the date of retirement, in connection with his contract in any manner whatsoever without obtaining prior permission of the President and if the contractor is found to have contravened this provision, it will constitute a breach of contract Administration will be entitled to terminate the contract at the risk and cost of the contractor and forfeit his security deposit.

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.

(2) **Medical Certificate of Fitness for Labour** – It is agreed that the contractor shall not employ a person above 15 and below 19 years of age for the purpose of execution of work under this contract unless a medical certificate of fitness in the prescribed form granted to him

by a certifying surgeon certifying that he is fit to work as an adult is obtained and kept in the custody of the contractor or a person nominated by him in this behalf and the person carries with him, while at work, a token giving a reference to such certificate. It is further agreed that the responsibility for having the adolescent examined medically at the time of appointment or periodically till he attains the age of 19 years shall devolve entirely on the contractor and all the expense to be incurred on this account shall be borne by him and no fee shall be charged from the adolescent or his parent for such medical examination.

(3) Period of Validity of Medical Fitness Certificate - A certificate of fitness granted or renewed for the above said purposes shall be valid only for a period of one year at a time. The certifying surgeon shall revoke a certificate granted or renewed if in his opinion the holder of it is, no longer fit for work in the capacity stated therein. Where a certifying surgeon refuses to grant or renew a certificate or revoke a certificate, he shall, if so required by the person concerned, stated his reasons in writing for doing so.

(4) Medical Re-examination of Labourer - Where any official appointed in this behalf by the Ministry of Labour is of the opinion that any person employed in connection with the execution of any work under this contract in the age group 15-19 years is without a certificate of fitness or is having a certificate of fitness but no longer fit to work in the capacity stated in the certificate, he may serve on the Contractor, or on the person nominated by him in this regard, a notice requiring that such person shall be examined by a certifying surgeon and such person shall not, if the concerned official so directs, be employed or permitted to do any work under this contract unless he has been medically examined and certified that he has been granted a certificate of fitness or a fresh certificate of fitness, as the case may be.

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
- (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.

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 upto 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.

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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
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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.



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 bidder shall submit a Performance Guarantee (PG) in the form of an irrevocable bank guarantee amounting to 5% of the contract value (including GST). Model form of Performance Bank Guarantee form is enclosed in Form No.4.

- a. The Instruments for Performance Guarantee should be valid for three months beyond the Completion period. Performance Guarantee shall be submitted within 15 days from the date of issue of LOA. In case the contractor fails to submit the requisite PBG after 15 days from the date of issue of LOA, the contract shall be terminated duly forfeiting EMD and other dues, if any, payable against that contract. The failed contractor shall be debarred from participating in re-tender for that work.
- b. 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.
- c. The Performance Bank Guarantee shall be submitted by the successful bidder after the Letter of Acceptance (LOA) has been issued, but before signing of the contract agreement.

This PBG shall be initially valid up to stipulated date of completion plus three months beyond that. In case, the time for completion of work gets extended, the contractor shall get the validity of P.B.G. extended to cover such time for completion of work plus three months.

- d. The value of P.B.G. 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 Bank Guarantee amounting to 5% (five percent) for the excess value over the original contract value shall be deposited by the contractor.
- e. The Performance Bank Guarantee (PBG) shall be released on completion of satisfactory service period and submission of no due certificate by the contractor.

Wherever the contracts are rescinded, the security deposit should be forfeited and the Performance Guarantee shall be encashed and the balance work should be got done separately.

5.3.2 The security deposit shall be released after the physical completion of the work based on the 'Completion Certificate' issued by the competent authority stating that the contractor has completed the work in all respects satisfactorily. The, however, 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'.

5.3.4 Wherever the contractor is rescinded, the security deposit shall be forfeited and 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.

5.3.5 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 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**

The contractor shall at all times during the progress and continuance of the works and also for the period of maintenance specified in the tender form and after the date of passing of the certificate of completion by the RailTel's representative or any other earlier date subsequent to the completion of the works that may be fixed by RailTel's representative be responsible for and effectively maintain and uphold in good, substantial, sound and perfect condition all and every part of the works and shall make good from time to time and at all times, as often as the RailTel's representative shall require, any damage or defect that may, during the above period, arise in or be discovered or be in any way connected with the works provided that such damage or defect is not directly caused by errors in the contract documents, act of

providence or insurrection or civil riot and the contractor shall be liable for and shall pay and make good to the RailTel or other persons legally entitled thereto whenever required by the RailTel's representative so to do, all losses, damages, costs and expenses they or any of them may incur or be put or be liable to, by reason or inconsequence of the operations of the contractor or his failure in any respect.

For this purpose the tenderer will submit their strategy for providing maintenance support including the staff who will be available along with the set of spares for attending to various faults/problems during maintenance period.

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 6 sets of final cable route plan in hard bound copies on white bond paper of A4 size maximum and 06 sets of CD.

5.19.2 The test or tests specified in Technical supplement 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 700071. 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/repared 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 maintenance/warranty of the work for a period of twelve months from the date of commissioning.

During the period of maintenance/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 maintenance 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 maintenance supervision as defined in clause 20 or the expiry of the last of the respective period of maintenance supervision 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 therefrom 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 Dept). 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 and forfeit the security deposit 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 security deposit 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-imbursement 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 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 been completed under the contract.

5.27.2 The total value of reduction on account of above shall be limited to maximum of 10% (Ten percent) of the total contract value.

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.

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 excluding 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, commission for arranging dispatch by rail direct from manufacturer's factory and completing all necessary formalities in this respect, such as submission of forwarding notes, arranging placement of Wagon, collection of banker's charges for Bank guarantee, Indemnity Bonds inclusive of cost of Stamp etc. as also siding or shunting charges, if any, levied by the Railway.

5.30.2 The prices quoted by the Tenderer shall exclude 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 (excluding 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 authorised 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 PROGRESS PAYMENT EXECUTION OF WORKS:

'Progress 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) GSTIN Registration Certificate
- 4) Commercial Invoices
- 5) Measurement Book
- 6) OTDR report.

- 5.34.1 70% (Seventy percent) of the progress payment against each of schedule item on completion of each block section with all respect shall be paid after successful completion, joint measurement and testing to the satisfaction of Engineer-in-charge.
- 5.34.2 20% (Twenty percent) of the progress payment against each schedule item shall be paid after completion of all work in the entire route.

- 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 etc. (for OFC portion, acceptance of final as build drawings of complete section by RailTel engineer-in-charge)

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 maintenance 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, 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 Bank 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:**

The Contractor shall take out and keep in force a Policy or policies of Insurance for all materials including materials/ equipments supplied by RailTel irrespective of whether used up in the portion of work already done or kept for the use in the balance portion of the work until such works are provisionally handed over to the RailTel. For this purpose, the works are deemed to have been provisionally handed over when provisional acceptance certificate is issued for the locations.

5.40.3 The Contractor shall not be liable for losses/damages to the materials either used up in the portion of work done or his material kept for use at site, in consequence of Mutiny, or other similar causes over which the Contractor has no control and which cannot be insured. Such losses or damages shall be the liability of the Purchaser and if required by the Purchaser, be made good by the contractor at the cost of the Purchaser.

5.40.4 The Contractor should, however, insure the stores brought to site, against risks in consequence of war and invasion, as required under the Emergency Risk (Goods) Insurance Act enforce from time to time.

5.40.5 It may be noted that the beneficiary of the insurance policy should be RailTel or the policies should be pledged in favor of RailTel. The contractor shall keep the policy/policies current till the installations are provisionally handed over to the purchaser. It may also be noted that in the event of contractor's failure to keep the policy current and alive, renewal of policy will be done by purchaser for which the cost of the premium plus 20% of premium shall be recovered from the contractor.

5.40.6 For the purpose of enabling the contractor to take the insurance cover in connection with this contract, the purchaser's Engineer will advise the approximate price of all the RailTel supply materials to the Contractor.

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 Security Deposit / 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 forfeit the Security Deposit 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 Security Deposit/PBG.

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 is 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 Shramikkalyanportal 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 created 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/Security Deposit", contractor shall submit a certificate to the Engineer or Engineer's representatives that "I have uploaded the correct details of contract labours engaged in connection with this contract and payments made to them during the wage period in Railway's Shramikkalyan portal at www.shramikkalyan.indianrailways.gov.in" till _____ Month _____ Year."

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 lumbars 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 forfeiture of Security Deposit 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.

5.45 **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 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 as per Annexure, with assumption of any one item.
- 5.47.2 If the quantity of any item under execution is varying up to $\pm 25\%$ of the total quantity (as per the Schedule of Requirement), the contractor shall have to execute the same item at **similar rates** as applicable in the contract agreement.
- 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.

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 Clause – 1.1 Section – I Chapter - 1	Name of work : Excavation of open trench/HDD, Laying of HDPE Duct and Quad/ PIJF cable Backfilling, blowing/pulling, splicing, termination and testing of OFC cable and termination of Quad / PIJF cable with other associated work in Sakri -Biraul section of East Central Railway.
Minimum Qualifying Criteria (ITT clause 3.15)	<p><u>Technical Capability:</u> Tenderer must have completed works of similar nature, successfully and satisfactorily of values as indicated below:</p> <p>Tenderer must have completed successfully and satisfactorily at least:</p> <p>(a) one single similar work costing not less than 35 % of the advertised tender value of work,</p> <p style="text-align: center;">OR</p> <p>(b) Two similar work costing not less than 20 % of the advertised tender value of work,</p> <p style="text-align: center;">OR</p> <p>(c) Three similar work costing not less than 15 % of the advertised tender value of work,</p> <p>during the preceding three years (i.e. current financial year and three previous financial years). Offers not accompanied by user certificates as per Form no 2, will not be considered.</p> <p>Similar nature of work physically completed within the qualifying period, i.e. the last 3 financial year and current financial year (even though the work might have commenced before the qualifying period) shall only be considered in evaluating the eligibility criteria.</p> <p><u>Financial:</u> The total contract amount received by the tenderer during the last three financial years (i.e. FY: 2016-17, FY: 2017-18, FY: 2018-19 including current financial year (i.e. FY: 2019-20) as per Audited balance sheet should be a minimum of 150% of advertised Tender Value of work. Offers not accompanied by Audited balance sheet will not be considered. The tenderer should produce:</p> <p>(i) Audited balance sheet and income statement of all the preceding three financial years and PAN Number.</p> <p>(ii) Copy of GST registration certificate.</p>
Similar nature of work (ITT clause 3.15)	Works similar to the scope of work as contained in this tender shall mean that "HDD and Open Trenching, Blowing of OFC through HDPE Duct, splicing and testing of OFC executed for Govt. / public Sector/ reputed private sector telecom companies.

Date, Time and Venue of Online Bid Opening of Tender (Preamble Clause 1.6)	Venue : RailTel Corporation of India Ltd., 3 rd and 16 th Floor, Chatterjee International Centre, 33A Jawaharlal Nehru Road, Kolkata – 700 071. Date 30.12.2019 Time : 14:30 hrs.
Completion period of work: Preamble Clause 1.8)	60 (Sixty days) from date of issue of Purchase Order/ Letter of Acceptance
Authority and Address: (Preamble Clause 10)	Asstt. General Manger, /Contracts, RailTel Corporation of India Ltd., Eastern Region, 3 rd Floor, Chatterjee International Centre, 33A Jawaharlal Nehru Road, Kolkata – 700 071.
Earnest Money Deposit (ITT Clause 3.5)	Rs. 2,06,900/- (Rupees two lacs six thousand nine hundred only) to be submitted online payment through gateway through IREPS portal
Validity of offer ITT Clause 3.9 Section – II Chapter - 1	30 (Thirty) days from the date of opening of tender
Maintenance /Warranty period: (SCC Clause 5. 22)	The contractor shall undertake the maintenance of the completed works from the date of issue of PAC for a minimum period of 12 months after completion of work or till the issue of Final Acceptance Certificate (FAC) by RailTel whichever is later.
Security Deposit: (GCC Clause 4.16, Chapter –4, Section-II)	Security deposit should be 5% of contract value.
Contract Performance Guarantee: (SCC-Clause 5.3, Chapter –3, Section-II)	Contract Performance Guarantee should be 5% of Contract value and to be issued in the format as specified in Form No. – 4, chapter – 5.
Materials to be supplied by RailTel): (Preamble Clause 1.17)	HDPE PLB Duct, Optical Fibre cable
Work to be done by RailTel (if any)	Nil

TECHNICAL REQUIREMENTS

Tenderer must have proper Office Set up, Man power, Equipments and Machinery as follows:

(i) **Office Setup:** Tenderer should have a proper office with regular staff, Computers, Fax Machine and Telephone. The Office Address, Telephone No, Fax No., E-mail ID must be specified.

(ii) **Minimum Technical Man Power:** Tenderer should have:

1. Engineer - 1No.
2. Supervisor (Diploma Holder) - 1 No.
3. Splicer (Skilled & Experienced) - 1No.
4. Skilled & Unskilled Man Power - (Sufficient)

(iii) **Minimum Equipments / Machinery:** Tenderer should own :

1. OTDR 2. OFC Blowing Machine 3. OFC Blowing Machine
4. Cable Route Locator 5. Optical Power Meter & Laser Source.

(Documentary proof should be enclosed)

and Tenderer should either own or should have arrangement to hire HDD Machine, JCB Machine and Loading Vehicles.

(iv) **Requirement of Materials:**

1. GI PIPE as per specification given in chapter-9.
2. DWC pipe as per requirement as per specification given in chapter-9
3. PPRC pipe as per specification given in chapter-9.
4. OPTICAL FIBER JOINT CLOSURE as per specification given in chapter-9.
5. FIBER MANAGEMENT SYSTEM (Rack Mounted/ Wall mounted as per requirement) as per specification given in chapter-9.

Besides above all the Materials mentioned in the Schedule of Requirements shall be supplied by the contractor for completion of the work and shall conform to Specifications/Drawings with latest versions as are mentioned in tender document.

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

Eligibility Clause No	Actual Available	Whether Requirement Fulfilled (Yes/No)	Documentary evidence enclosed at
Technical Capability: Tenderer must have completed successfully and satisfactorily at least (a) one single similar work costing not less than 35 % of the advertised tender value, OR (b) two similar work costing not less than 20% of the advertised tender value, OR (c) three similar work costing not less than 15 % of the advertised tender value, of the work during the preceding three financial years (i.e. current financial year and three previous financial years).			
The total contract amount received by the tenderer during the last three financial years including current financial year as per Audited balance sheet (i.e. FY: 2016-17, FY: 2017-18, FY: 2018-19 including current financial year (i.e. FY: 2019-20) should be a minimum of 150% of advertised Tender Value of work			
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			
Equipments/Machinery 1.OTDR 2.OFC blowing machine 3.Splicing Machine 4.Cable Route Locator 5.Optical Power Meter 6.Laser Source 7.JCB machine 8.HDD machine 9.Loading Vehicle			

Signature of the Contractor

CHAPTER - 7**FORMS OF TENDER**

Form No. 1	:	Annexure-A –Format for Affidavit to be submitted by tenderer along with tender bid documents (Original to be submitted offline and scan copy to be uploaded bid documents)
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
Form No. 11	:	Extension of period of completion of work
Form No. 12	:	Qualification Experience
Form No. 13	:	No near-relative declaration and certificates
Form No. 14	:	Vendor data sheet

Form No.1
Annexure-A

FORMAT FOR AFFIDAVIT TO BE SUBMITTED BY TENDERER ALONG WITH THE TENDER BID 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 the 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), do hereby solemnly affirm and state on the behalf of the tenderer including its constituents as under:

1. I/we the tenderer (s), am/are signing this document after carefully reading the contents.
2. I/we the tenderer(s) also accept all the conditions of the tender and have signed all the pages in confirmation thereof.
3. I/we hereby declare that I/we have downloaded the tender documents from Indian Railway website <https://www.ireps.gov.in>. I/we have verified the content of the document from the website and there is no addition, no deletion or no 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 certify that I/we have not made any misleading or false representation in the forms, statements and attachments in proof of the qualification requirements.
5. **I/we also understand that my/our offer will be evaluated based on the documents/credentials submitted along with the offer and same shall be binding upon me/us.**
6. **I/we declare that the information and documents submitted along with the tender by me/us are correct and I/we are fully responsible for the correctness of the information and documents, submitted by us.**
7. I/we undersigned that if the certificates regarding eligibility criteria submitted by us are found to be forged/false or incorrect at any time during process for evaluation of tenders, it shall lead to forfeiture of the tender 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/SD and Performance guarantee 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 tender 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: Date:

****The contents in Italics are only for guidance purpose. 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 "Excavation of open trench/HDD, Laying of HDPE Duct and Quad/ PIJF cable Backfilling, blowing/pulling, splicing, termination and testing of OFC cable and termination of Quad / PIJF cable with other associated work in Sakri -Biraul section of East Central Railway".

This AGREEMENT is made at New Delhi on this _____ day of _____ two thousand and Nineteen, 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 3rd & 16th Floor, Chatterjee International Centre, 33A Jawaharlal Nehru Road, Kolkata - 700071 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 "Excavation of open trench/HDD, Laying of HDPE Duct and Quad/ PIJF cable Backfilling, blowing/pulling, splicing, termination and testing of OFC cable and termination of Quad / PIJF cable with other associated work in Sakri -Biraul section of East Central Railway" 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 "Excavation of open trench/HDD, Laying of HDPE Duct and Quad/ PIJF cable Backfilling, blowing/pulling, splicing, termination and testing of OFC cable and termination of Quad / PIJF cable with other associated work in Sakri -Biraul section of East Central Railway" 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.

रेलटेल
 RAILTEL

Form No. 4**CONTRACT PERFORMANCE GUARANTEE BOND**

(On Stamp Paper of Rs one hundred)
(To be used by approved Scheduled Banks)

In consideration of the RailTel Corporation of India Limited, with Eastern Regional office at 3rd & 16th Floor, Chatterjee International Centre, 33A Jawaharlal Nehru Road, Kolkata – 700 071 (Herein after called the RailTel) having agreed to exempt (Hereinafter called “the said Contractor(s)”) from the demand, under the terms and conditions of an Agreement No./PO No. dated made between RailTel Corporation of India Limited and for (hereinafter called “the said Agreement”) of security deposit for the due fulfillment by the said Contractor(s) of the terms and conditions contained in the said Agreement, on production of a Bank Guarantee for Rs. (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 Corporation of India Ltd. an amount not exceeding Rs. against any loss or damage caused to or suffered or would be caused to or suffered by the RailTel Corporation of India Ltd. by reason of any breach by the said Contractor(s) of any of the terms or conditions contained in the said Agreement.

We, (name of Bank) do hereby undertake to pay the amounts due and payable under this Guarantee without any demur, merely on demand from the RailTel Corporation of India Ltd. stating that the amount as claimed is due by way of loss or damage caused to or would be caused to or suffered by the RailTel Corporation of India Ltd. by reason of breach by the said Contractor(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.

We, (name of bank) undertake to pay to the RailTel Corporation of India Ltd. 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 thereunder and the Contractor(s) / Supplier(s) shall have no claim against us for making such payment.

We, (name of 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 Corporation of India Ltd. under or by virtue of the said Agreement have been fully paid and its claims satisfied or discharged or till RailTel Corporation of India Ltd. 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.

We, (name of bank) further agree with the RailTel Corporation of India Ltd. that the RailTel Corporation of India Ltd. 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 or to postpone for any time or from time to time any of the powers exercisable by the RailTel Corporation of India Ltd. 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 Corporation of India Ltd. or any indulgence by the RailTel Corporation of India Ltd. 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.

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

We (the name of Bank) lastly undertake not to revoke this Guarantee during its currency except with the previous consent of the RailTel Corporation of India Ltd. in writing.

NOT WITH STANDING ANYTHING CONTAINED HEREIN ABOVE

- (i) The liability of the surety under his Bank Guarantee shall not exceed Rs..... (Rupees only).
- (ii) This Bank guarantee shall be valid upto
- (iii) We are liable to pay the guaranteed amount or nay part thereof under this Bank Guarantee only and only if you serves upon the bank, written claim or demand on or before

Dated theday of 2019

for
(Indicate the name of the Bank)

Witness:

Signature :
Name :

Signature :
Name :

NOTE: The Guarantee shall be valid for a period of three months after the expiry of the warranty period of the equipment as per Clause 5.29 Special Condition of the Contract (SCC).

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Form No. 5

STATEMENT OF DEVIATIONS
PROFORMA FOR STATEMENT OF DEVIATIONS

1. 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>
---------------	------------------	--

2. 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 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 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 _____, 2019.

for and on behalf of

(Contractor)

Signature of witness :

Name and witness in Block letters :

Address :

WORKS IN HAND

SI No	System & 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

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Form No. 10**ACKNOWLEDGMENT FOR RECEIVING MATERIALS FROM RAILTEL**

Station:
Date of Issue:

Sub: Receipt of Material from RailTel Corporation of India Ltd.

It is hereby acknowledged that the following materials have been received in full and good condition by me on _____ at _____ for the work under the Agreement no. _____ dated _____.

SI No	Description of the Material	Unit	Quantity Issued	Remarks

(Signature & Seal of the Contractor)

(Material Delivery witnessed by :
 (RailTel Corporation of India Ltd representative)

Form No. 11**EXTENSION OF PERIOD OF COMPLETION OF WORK**

Ref No. : RCIL/RMK/.....

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 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 (similar certificate for OEM also regarding their qualifications as per tender is also required to be submitted with details on similar lines).

SI 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 No. 13**NO NEAR- RELATIVE DECLARATION AND CERTIFICATES**

(To be submitted by either authorized signatory or proprietor, or each partner/ director in case of partnership Firms/Companies/ Agencies)

I _____ son/ daughter/ wife of
 Shri _____ Proprietor/
 Partner/ Director/ Authorized Signatory/ Representative of M/s. _____

(Name and address of the bidder) is competent to sign this declaration /certification and execute the tender document regarding "Excavation of open trench/HDD, Laying of HDPE Duct and Quad/ PIJF cable Backfilling, blowing/pulling, splicing, termination and testing of OFC cable and termination of Quad / PIJF cable with other associated work in Sakri - Biraul section of East Central Railway";

I _____ resident _____ hereby certify that none of relatives of mine/proprietor/ partners/ directors of the Firm/ Company/ Agency is / are employed in the units where he/ she is going to apply for the Tender.

I have carefully read and understood all the Terms & Conditions of the Tender Document and undertake to abide by the same;

I also certify that our Firm/Company/Agency will observe all legal formalities or/and obligations under the contract well within time. In case of failure to observe any of the legal formalities or/and obligations. I shall be personally liable under the appropriate law.

I also hereby certify that the Firm/Company/Agency namely M/s. _____ is currently not blacklisted or debarred by RailTel, or any other Government Department from taking part in Government tenders.

The Information/documents furnished here and along with the tender document are true and authentic to the best of my knowledge and belief. I am well aware of the fact that furnishing of any false information/fabricated documents would lead to rejection of my tender at any stage besides liabilities towards prosecution under appropriate law.

(Signature of Bidder/Proprietor/Partners/Director/Authorised Signatory)

Date:

Place:

Full Name: _____

Address: _____

Seal: _____

Form-14

Jt. General Manager (Finance)
RailTel Corporation of India Ltd. (Eastern Regional Office)
16th Floor, Chatterjee International Centre,
33A Jawaharlal Nehru Road,
Kolkata – 700 071

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	OFC SYSTEM ON 25KV AC TRACTION AND GENERAL SCHEME OF OFC SYSTEM
Chapter 9	PREPARATION OF AS BUILT ROUTE PLAN, SPECIFICATION OF MATERIALS
Chapter 10	TECHNICAL SPECIFICATION, INSTRUCTIONS FOR TRENCHING & LAYING OF OFC WITH PROTECTIVE WORKS
Chapter 11	JOINTING AND TERMINATION OF FIBER OPTIC CABLE
Chapter 12	LIST OF ADDRESSES FOR SPECIFICATION
Chapter 13	DRAWINGS

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SECTION III**CHAPTER - 8****OFC SYSTEM ON 25 KV AC TRACTION AND GENERAL SCHEME OF OFC****1.1 GENERAL**

- 1.1.1 Any Telecommunication circuits in the vicinity of AC Traction running parallel to 25 KV lines are liable to be affected by AC induced voltage. Therefore precautions should be taken to eliminate the possibility of induced voltage affecting equipment and humans.
- 1.1.2 Crossing of track, if any, should be negotiated by underground cables running at right angles to the track as far as practicable.
- 1.1.3 Special protective measures (viz. provision of G.D tubes, fuses and earthing etc.) are required to be taken for telecommunications lines entering 25 KV substation/switching posts.
- 1.1.4 For the human safety considerations, the safe working voltages should be 60 V under normal conditions and 150 V with special precautions and 430 V under fault conditions.
- 1.1.5 Instructions for protection of railway staff/working personals on signaling and telecommunications installations on 25 KV AC traction shall be strictly adhered to. Precautions are required to be taken on account of following:
- (i) Proximity of live conductor.
 - (ii) Pressure of return current in Rails.
 - (iii) Induction in all metallic bodies situated close to over head equipment.

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CHAPTER - 9

PREPARATION OF AS-BUILT ROUTE PLANS, SPECIFICATION OF MATERIALS

9.0 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).

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

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

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

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

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

9.1.5 Avoiding areas prone to water logging.

9.1.6 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.

For the straight runs as far as possible a separation of 10 Meter should be kept from the nearest track. This is as per CCITT recommendation K.8. As a rule a minimum distance of 5.75 M should be maintained between the OHE masts and the cable. In Yards etc. where observance of this rule may be difficult, a minimum distance of 3 Meter should be maintained. In exceptional cases where the cable trench depth is less than 0.5 M the lateral distance may be reduced to 1 M. Make the route of OFC cable within 1 meter of Railway boundary normally.

9.2 As-Built Cable Route plan.

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

9.2.1 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. The name of station should be shown against the location of the Station Master's Office.

9.2.2 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.

9.2.3 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.

9.3 **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.

9.4 **Information in Cable route plan:-**

The cable route plan shall contain following information:-

9.4.1 Whether the cable route is on the **up** or **down** side of the Railway Tracks. Exact locations and lengths where the cable is laid in DWC/G.I/PPRC pipes/ and under the bed on culverts.

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 platform cutting etc.

Locations of Pull Chambers/Joint Pits.

9.5 **Guidelines for finalization of cable route plan:**

9.5.1 The following are the guidelines for preparation of the cable route plan:

Prepare the "1 Km charts" as explained above and enter the relevant changes and details in the "1 Km charts" based on the latest copy of proved OHE/Overhead plan supplied to him by the engineer.

9.5.2 Actual measurement by 30 M steel tape or chain along the route is necessary only in case of important locations, to be termed as "special terrains", for example, approach to repeater station/cable hut, long bridges, big yards, sharp diversions in the cable route from its parallel Course along the main railway tracks due to obstruction, cuttings etc.

9.5.3 Inspect and decide the portions of route falling in category of "special terrains" stated in para Above, i.e. where actual longitudinal measurement is necessary.

- 9.5.4 The remaining portions of the route, i.e. other than the portion decided as "special terrain" as per para 9.5.2 above are to be termed as "straight runs". Actual chaining along the route is not necessary for such "straight runs" and these can be marked on the "1 Km. charts" by taking changes from the OHE/ Overhead alignment plan.
- 9.5.5 The cable route should be started from a repeater/ cable hut/ station. Actual measurement along the route should be done by means of a 30 M steel tape for a few drum lengths up to a convenient point along the main line where from the distances along the route may be reckoned from the OHE/ Overhead alignment Plan. A termination allowance of actual length (prescribed 5M) of cable inside the repeater station/cable hut building should be, in addition to a length of about 10 M (actual length), kept in a pit just outside the building.
- 9.5.6 It should be ensured that both "special terrains" and "straight runs" should consist of full drum lengths, so that the position of joints (other than T-Joint) is fixed without difficulty in both cases.
- 9.5.7 Actual measurements of the separation distance should be done from the centre line of the reference track. In case of 'Special terrains' the separation distance at some points on the route may also have to be reckoned from some other permanent structures depending upon the site conditions.
- 9.5.8 Once the cables are laid, the chainages at diversions, crossings, approaches of bridges, Jointing Chambers and Joints/Extra lengths of Optical fibre cables should be clearly marked on cable route plan.

9.6 **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.

Note1: In non-RE area, wherever distances are reckoned with reference to overhead alignment, the distances from the nearest KM-post provided along the track, may also be mentioned.

Note 2: If any of the above-mentioned drawings are illegible or not clear, the clarifications may be sought from the office of Regional General Manager, RailTel/Eastern Region.

9.7 Specifications of Materials to be used:

9.7.1 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.

9.7.2 OFC Joint Chamber:

The Joint/Loop chamber shall be provided at every joint/loop location to keep the OF cable joint well protected and also to house extra length of cable which may be required in the event of faults at a later date. The Joint chamber shall be of pre-cast RCC type as per construction specification as per drawing no. RCII/ER/DRG-02/06.

9.7.3 Fiber Management System:

24 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 24SCPC 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

9.7.4 Patch Cords:

OFC jumper cable/Patch cords (10 M long) with SCPC-SCPC connector at both ends or (as per site requirement) as per TEC GR No. GR/OF-J-01/03 Jan., 99 with latest amendments.

Material for Providing Additional Protection

9.7.5 G.I. Pipes

GI pipe as per IS 1239/1990/92 (latest) Grade 'B' with associated collars etc.

9.7.6 DWC Pipes

DWC (Double Walled Corrugated) pipe with associated collars etc. as per specn.no.IS 14930 (latest), anti rodent and flame retardant 90/76 mm or as per site requirement.

9.7.7 PPRC Pipe:

PPRC Pipe 75mm nominal dia. PN 16 as per IS specification No.IS 15801 (2008) with fittings.

9.7.8 Concreting in trenches:

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.

9.7.9 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 sand 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.(see Figure-2)

9.7.10 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-castor Stone based route marker scan 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 – 10

ENGINEERING INSTRUCTIONS FOR TRENCHING AND LAYING OF OPTICAL FIBRE CABLE AND TELECOM CABLE:

10.1 **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, and Quad/PIJF cable laying termination of Optical Fiber Cables and Quad/PIJF cable at OFC hut as per the requirement

10.2 **OF CABLE LAYING APPROACH**

On the basis of the survey reports routes for OF cable laying has been finalized by RailTel. The Road Cutting/track crossing permission shall be obtained from road and Railways authorities for laying the Optical Fiber Cable along the finalized route. OF Cable may preferably be laid straight as far as possible. It is essential that the cable is laid after obtaining due permission from all the concerned authorities to avoid any damage (which may result in disruption of services). While the cable is being laid all precautions as mention in Railway Board's Telecom Circular No.17/2013 or latest, shall be secured.

This chapter deals with the specifications under which the various work for trenching & laying of optical fibre cable coming under the purview of the contract are to be executed by the contractor.

10.3 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.

10.4 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 incharge. This shall be recorded properly.

10.4.1 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.

10.4.2 **Laying Protection Pipes on Bridges and Culverts.** In case trenching 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.

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

The Representative of Engineer In-charge of the work will mark the route of the cable in white chalk or lime as per the route plan and the instructions given to him by the Engineer, notwithstanding the cable route shown in the tapping and route plan to meet the requirement of local conditions at site, if any and as required shall be taken by the contractor to be final. The contractor shall be present at the time of marking and he shall furnish to the Engineer's representative required quantities of lime, rope, labour etc. for carrying out this work. The marking will be given on the track side of the trench at a distance approximately one meter away from the centre line of the trench. In the difficult terrains such as water-logged areas, the position of the cable route will be specified by off sets from the centre line of the nearest track.

10.5 **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.

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

10.6.1 **Trenching**

10.6.1.1 **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 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.

10.6.1.2 **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.

10.6.1.3 **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.

There shall be no objection to resort to horizontal boring to bore a hole of required size and to push through DWC Pipe (90/76 mm OD/ID) through horizontal bore at road crossing or rail crossing or small hillocks etc.

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 exercise due care that the soil from trenching intended to be loose for back filling is not mixed 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.

10.6.2 **Depth and Size of the Trench**

Generally trench for OFC cable laying shall be dug up to a nominal depth of 1200 mm. and width 300 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 excavation of trench to a depth lesser than 120 cm and prorata payment will be provide for the trenching and back filling. 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 optical fibre cable and Quad cable/PIJF cable.

When trenches are excavated in slopes, uneven ground, inclined portion, the lower edge shall be treated, as top surface of land and depth of trench will be measured accordingly. 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 cmsto 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.

Metalled, macadamized, concrete and stone paved roads shall also be cut to a depth of 120 cm., refilling with excavated material. The cable shall be laid through PPRC//DWC pipe as per drawing No. RCIL/ER/DRG-03/06. The road surface shall be restored to near original condition with concrete of size 300 mm. x 300 mm. (PCC 1:2:4mix) and curing the concrete to the required number of days etc.

Wherever it is not possible to dig trench up to 120 cm depth due to site conditions, specific approval of site engineer / engineer's representative should be taken before digging trenches of lesser depth. Similarly where digging of trench for more than 1.2 meter depth is required due to site conditions, specific approval of site engineer / engineer's representative should be taken before commencing the work. In both cases prorata payments for the items of schedule shall be made. The cable in these trenches shall be protected by providing second class bricks width wise/ PPRC/GI /DWC as per instructions of site engineer.

10.7 **Laying OF PLB HDPE Duct & PIJF/QUAD CABLE**

After the trench is excavated to the specified depth, the bottom of the trench has to be cleared of all stones or pieces of rock and leveled up properly. A layer of soft

soil (in case the excavated material contains sharp pieces of rock/stones) of not less than 5 cms. is required for leveling the trench to ensure that the cable when laid will follow a straight alignment. Adequate care shall be exercised while laying so that the cables are not put to undue tension/pressure after being laid as this may adversely affect the optical characteristics of cables with passage of time.

The contractor shall ensure that trenching and pipe laying activities are continuous, without leaving patches or portions incomplete in between. In case intermediate patches are left, measurement of the completed portions will be taken only after work in such left over patches are also completed in all respects.

Preparatory to aligning the pipe for jointing, each length of the PLB HDPE Ducts shall be thoroughly cleaned to remove all sand, dust or any other debris that may clog, disturb or damage the optical fiber cable when it is pulled at a later stage. The ends of each pipe and inside of each Socket shall be thoroughly cleaned of any dirt or other foreign materials.

At the end of each day work, the open ends of the pipes sections shall be tightly closed with end caps to prevent the entry of dirt/mud, water or any foreign matter into PLB HDPE Ducts until the work is resumed.

The lesser depths shall be done only with the prior instructions/approval of the Engineer-in-charge & suitable protection shall be provided to PLB HDPE pipes & PIJF/quad cable.

10.8

NON ROCKY AREA:

a) **For depth at 1.2mtrs in non rocky area:** The trench should be made to the best possible depth up to 1.2 mtrs. & min. width of 300 mm bed of trench should be leveled and clear from all size of pebbles. Afterwards properly coupled HDPE duct shall be laid and the overall depth shall be filled and consolidated by pebble free soil up to 200 mm. then final back filling of soil shall be done as per the Drawing No. RCIL/ER/DRG-09/19.

b) **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 excavation of trench 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 DWC pipe and concreting as per site condition shall be done as advised by the Engineer-in-charge.

10.9

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.

- b) The brick protection is required to be provided within station limits i.e. from UP distant signal to DN distant signal. The contractor shall arrange supply and distribution of second class bricks/stone slabs of standard size at site along the excavated trenches and after uniformly covering the cable laid in the trenches by stone-free sieved soil up to 250 mm height above HDPE Duct/ above Quad/PIJF cable if laid along with OFC cable, The contractor shall arrange to place the bricks flat and position them breadth wise so that on an average 8/9 (eight/nine) bricks shall be laid in a meter length. Alternatively RCC/Stone slabs of approx. 50 mm thicknesses & more than 30 cm.in length can be provided.

NOTE-1: In order to be certain that the full requirement of bricks has been arranged by the contractor for placing on the top of the cable to be laid on any day, he shall spread the bricks side by side on the top of the trenches before the depth of the trenches are inspected by the authorized representative.

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.

NOTE-3: Water present in the trench at the time of laying the PLB HDPE Ducts shall be pumped out by the contractor before laying the pipes in the trench to ensure that no mud or water gets into the pipes, thus choking it.

- 10.10 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.

If under unavoidable circumstances, the excavation is to be done between the tracks or between OHE foundation and track, it shall be done to the full depth just before laying the cables and in the presence of the Engineer's representative so as to ensure the safety of train operations.

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.

10.11 **TRACK CROSSING**

All cable crossings across railway tracks shall be done in DWC pipe 90/76 mm OD/ID, threading the cable through these pipes. The contractor shall do the trenching to the required depth wherever necessary such as approaches to track crossing and the length in between the adjacent tracks. Two nylon rope of suitable strength shall be threaded through DWC/PPRC pipe, one to pull the cable and one for future use. The arrangement of cable and G.I. Pipe trucking under Track crossings has been shown in Drg. No. RCIL/ER/DRG-04/06.

10.12 **ROAD CROSSING**

10.12.1 When crossing road ways, it is necessary to lay the cables in such a manner as to avoid the necessity of handling the cable sharply and minimize excavation of road surface as far as possible. Where cable is laid in surfaced trucking, the trucking alignment should be curved down to the pipes and proper brick or concrete joint should be made between trucking and pipe.

10.12.2 The crossing of main roads often involves difficulties especially if traffic is heavy, precautions to avoid accidents to workmen, pedestrians and vehicles should be taken. On minor roads, which can be temporarily closed to traffic, it is possible to cross the entire width of the road and open up. Pipes should be installed quickly in the cutting which is then filled in there by reducing to a minimum time for which the road is closed.

10.12.3 Some roadways which are broad may be opened for half their width, allowing the other half for use of traffic. Pipes are laid trench filled in the first half and the other half opened up after the first half is opened for the traffic. Pipes laid in the second half is linked with those laid in the first half. DWC/PPRC pipe shall be used for road crossings. In all cases pipes should be laid at a depth of 1.2 meter, below the formation level or lower as may be required.

10.12.4 Whenever a cable is laid across an important road particularly one with a special surface it is necessary to provide for future expansion. The following methods may be adopted. (a) Separate pipes shall be laid for separate cable/HDPE duct. Two length of G.I. wire 10 SWG shall be used as lead wire. Two such lengths of G.I. wire shall be laid through the pipe. One wire shall be used for leading in the cable & the other wire shall be kept with suitable overlay to enable cable pulled out at later stage, if required.

10.12.5 At busy road crossings, trenching should be done in nights with appropriate protection and road warnings to road users.

10.12.6 DWCP/PPRC pipe laying under metal Road is indicated in drawing No. RCIL/ER/DRG-03/06.

10.12.7 The tenderer shall be responsible for compliance to applicable laws of the land and

registration/approval from statutory authority, if required.

10.13 CABLE OVER STEEL GIRDER BRIDGES& SLAB BRIDGES:

- 10.13.1 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.
- 10.13.2 The contractor has to supply and fix the C-channel, Z-brackets, special bolts of various sizes, shape bracket (On Girder bridges), ISMC 100 mm X 50 mm, average length 1000 mm, fixed at intervals of 2m centre of the railway alternate steel channel sleeper whichever is applicable, with two numbers Z- shape brackets size 300 mm x 50 mm x 12 mm, (Z- shape depends on number of main girder top flange plates) fixed tightly with 3 Nos. of special bolts with locking pins & nuts, MS Spring washer and washer per each bracket to the existing railway girder. 50 mm dia. GI pipe line is to be run (GI pipe supplied separately) on the edge of above ISMC fixed with '∩' shape bracket, 4 nos. of bolts with locking pins & nuts, MS Spring washers etc., Complete to the finished item of work as directed by the Engineer-in-Charge vide drawing No. RCIL/ER/DRG-08B/06
- 10.13.3 The GI pipe shall be extended by 4 – 6 meters beyond the bridge abutment and joined with brick channeling with RCC/ DWC pipe which shall be extended in the slope of formation, till the trench becomes horizontal at normal surface level. RCC/Brick pillars shall be made to prevent slipping of RCC/DWC pipe as approved by EIC.
- 10.13.4 When laying cable on long bridges, longitudinal expansion caused by temperature differences should be taken into consideration and suitable cable loops should be provided at the pillars of the bridge.
- 10.13.5 The laying of the cable on the bridges is to be done with much care and planning. It is necessary that the cable drum to be laid on the bridge is inspected and tested thoroughly so that damaged cable is not installed.
- 10.13.6 Wherever GI pipes are used, special care should be taken to ensure that G.I. Pipes are coupled properly with the sockets so as to avoid damage to PLB pipe and eventually the OF Cable in the event of pressure coming on the joint and GI Pipe joint giving its way. Rubber bushes shall be used at either ends of the GI pipes to protect PLB pipe. Both the ends of GI Pipe will be embedded in a concrete block of

so that the alignment of GI Pipes remain firm and intact and to avoid entry of rodents.

10.14 **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:

10.14.1 The contractor has to Supply and fix the DWC pipes of size 90 mm outer dia. 75mm dia. and 76mm inner dia. or PPRC pipe 75mm nominal dia. PN16 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 DWC/PPRC pipe support, curing the required no. of days, refilling with excavated soil after laying DWC/PPRC 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.

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

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

- I. wherever hard rock is visible from **surface to a depth of 300 mm.**, Rock has to be cut to a depth and width of 300 mm. & concreting to be done up to ground level with 1:2:4 PCC mix after placing of DWC pipe (90mm./76mm. OD/ID)/PPRC pipe nominal dia. 75 mm. and curing of concrete to the required number of days, clearing of debris etc., complete to the finished item of work as directed by the RailTel Engineer-in-Charge, vide drawing No. RCIL/ER/DRG-10A/19.
- II. where hard rock is encountered from a depth more than **300 mm. up to 550 mm.**, rock has to be cut to a depth and width of 200 mm, concreting to be done 200mm. x 200mm. after placing of DWC pipe(90mm./76mm. OD/ID) (PCC 1:2:4 mix.) and curing of concrete to the required number of days, refilling with excavated soil, rammed and consolidated, complete to the finished item of work as directed by the RailTel Engineer- in-Charge vide drawing No. RCIL/ER/DRG-10B/19.
- III. Where hard rock is encountered from a depth more than **550 mm. up to 1050 mm.**, OFC has to be protected by concreting 200 mm. x 200 mm. after placing of DWC pipe (90mm/76mm. OD/ID) HDPE Duct (PCC 1:2:4 mix) and curing of concrete to the required number of days, refilling with excavated soil, rammed and consolidated, complete to the finished item of work as directed by the RailTel Engineer-in-Charge vide drawing No. RCIL/ER/DRG-10C/19.

Note: Gravel of the size of 20mm. to be used for the PCC.

- 10.15 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 DWC pipe/PPRC pipe/ second class bricks width wise concreting as per site condition as advised by Engineer-in-charge.

10.16 CABLES IN CONGESTED RESIDENTIAL AREAS AND MARSHY AREAS:

- 10.16.1 When laying the cable in residential sections, the cable should be specially protected on both sides up to a distance of about 300 meters beyond the building line. In such cases the cable should be protected by laying cable inside DWC/PPRC pipe.

- 10.16.2 In marshy area where it is not possible to divert the cable route the cable shall be suitably laid and protected as per decision of Engineer depending on site condition, like laying cable in DWC/G.I./PPRC/RCC pipes of 120/103 mm dia. supported on Masonry Pillars/Iron channels etc.

10.17 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.

10.18 LAYING OF CABLE IN SPECIAL CASES:

10.18.1 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.

10.18.2 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.

10.18.3 Laying other than optical fibre cables in the same Trench

No cable other than quad/PIJF cable shall be laid in the trench made for the Optical Fibre cable. Even in such cases, both the cables are to be laid as per approved drawing. Where, however, exceptional circumstances exist, the optical fibre cable may be laid along with another cable in the same trench provided a specific permission of each such case is obtained in writing from Engineer. When optical fibre cable and L.T. power cable have to be laid in the same trench they shall be separated by placing a layer of second class bricks between them vertically (approx. 16 bricks/meter) or laid in DWC pipe.

10.18.4 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.

10.18.5 Laying cable near feeding post:

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

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

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

10.18.7 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.

10.18.8 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.

10.18.9 Provision of damage due to sharp edges

When cable are laid in trucking, care should be taken to see that no ballast or stones have been dropped inside the trouncing and it should be cleared of all ballast and stones before the cover is secured. When the ends of covers are joined together with cement plaster, a piece of paper or wood should be placed under the joint to prevent the cement plaster from falling on the cables.

10.18.10 Laying of HDPE Duct

HDPE duct (33/40 mm dia.) has to be laid in the already excavated trench on bridges through GI/DWC pipes (HDPE duct with accessories will be supplied by RAILTEL). Proper couplers have to be provided for blowing OFC as directed by the RailTel Engineer-in-charge.

10.18.11 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 (OFC Shall be supplied by RailTel) complete to the finished item of work and as directed by the RailTel Engineer-in-charge.

10.19 **HANDLING OF CABLE DRUMS & PAYING OF CABLES:**

10.19.1 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

10.19.2 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.

10.19.3 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.

10.19.4 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.

10.19.5 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.

- 10.19.6 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.
- 10.19.7 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.
- 10.19.8 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.
- 10.19.9 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.
- 10.20 **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.
- 10.21 **PROCEDURE FOR CABLE LAYING/BLOWING:**
- 10.21.1 **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.
- 10.21.2 Wherever cable has to be coiled/looped, the diameter of the coil/loop shall be greater than 50 times the diameter of the cable.
- 10.21.3 The RCC Joint Pit / Pull Chamber to be constructed should be as per the specification given in Drawing No. RCIL/ER/DRG-02/06.

- 10.21.4 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.
- 10.21.5 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.
- 10.21.6 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.
- 10.21.7 The method of mounting the brakes is shown in RE/42/164
- 10.21.8 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.
- 10.21.9 The cable shall be blown using Cable jet blowing method.
- 10.21.10 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.
- 10.21.11 Cable manufacturer's specification will be provided to the contractor prior to blowing.
- 10.21.12 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.
- 10.21.13 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.
- 10.21.14 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.
- 10.21.15 Anti twist tool may be used to avoid twisting of cable while blowing.
- 10.21.16 Cable should always be kept away from vehicular and pedestrian movement over it.

- 10.21.17 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 a thick paste or solid mud. Cleaning of the pipes before the cable blowing is absolutely necessary to remove any such obstructions. Replacing mandrill with nylon brush and rugs.
- 10.21.18 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.
- 10.21.19 The OFC shall be handled with utmost care and industry standard tools are to be used for transporting, loading, unloading and blowing of OFC.
- 10.22 **PROVISION OF CHAMBERS:**
- 10.22.1 Pre cast RCC chamber
Pre cast RCC chamber of dimension 1m x 1m x 0.6 m (depth), & each wall of chamber must be min 65 mm thick & made of cement mortar mixture in 1:6 ratio. For fixing of chamber first a pit of size 1.2 m x 1.2 m x 1.2 m (depth) shall be required to be dug. Pre cast RCC chamber shall be installed in excavated pit. The RCC slab of dimension 1.2m x 1.2m x 0.05m (thickness) is used as cover of chamber with 2 number of handle /slots for lifting of cover and word ‘ “ECR RCIL CHAMBER” engraved on it. After, fixing the pre cast RCC joint chamber, the joint chamber is filled with clean sand up to 30 cms. before closing. Back filling of joint chamber pit with excavated soil shall be carried out in the end. Details are mentioned in drawing No. RCIL/ER/DRG-02/06.
- 10.22.2 Route Marker: The cable markers shall normally be provided at the distance of every 100 meters in front of the OHE Gantry Post 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 “ECR RCIL OFC” engraved and suitably painted with standard trend as per site conditions. In rocky area concreting shall be done. As per the drawings mentioned 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. Stations: Every station will be provided with one number of joint. For through cable 15 mtrs. to be left as coil and for derivation cable 15 mtrs. to be left as a coil in the chamber.
7. 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 1:2:4

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 1:2:4 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.

10.23 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.

10.24 **Execution of HDD (Trench less Horizontal Direct. Drilling - Boring)**

- 10.24.1 Under road/platforms/railway tracks/difficult terrain etc., trench less horizontal directional drilling (HDD) method shall be adopted under the supervision of competent staff hole of required size and to push through DWC/PPRC Pipe (90/76 mm OD/ID) through horizontal bore at road crossing or rail crossing or small hillocks etc. for laying of HDPE pipe (40/33 mm dia.) at a depth of 1.5 meters and more (depth as per instructions of the site engineer).
- 10.24.2 The depth of trench at any of the ends should not be less than 1.5 meter in any case. Both ends of HDPE pipes should be closed properly using accessories and the pits should be properly back filled.
- 10.24.3 There should be no damage to the road/platform/tracks or any such structures etc. enroot during or after the HDD operations.
- 10.24.4 The work includes supply of all RailTel will issue accessories received along with HDPE pipes, if any additional accessories required for execution of laying work, contractor shall arrange it.

- 10.24.5 The contractor should normally adopt HDD by machine. In difficult areas like track crossing, road crossing, sharp bends etc. the contractor may adopt manual pushing method only in short lengths with the permission of the site engineer of RailTel.

NOTE:

The brick protection including supply of second class bricks of standard size at site shall not be required excluding from UP distant signal to DN distant signal where OFC is being provided in HDPE/DWC ducts and quad cables are not laid. However, if quad cables are also laid along with the OFC in HDPE/DWC ducts, the brick protection shall be required as per clause 10.9 b for protection of quad cables.

For protection of OFC and or quad cables at crossing across railway tracks, road crossings, over steel girder bridges and over culverts & arch bridges or any other special cases as decided by the site engineer during execution, DWC duct 90/76 mm dia./PPRC pipe of 75mm. nominal dia. (including supply of duct and other accessories required for protection of OFC/ quad cables) may be used in place of RCC pipes as mentioned in clause no. 10.2, 10.11, 10.12, 10.13, 10.14, 10.24 as per instructions of RailTel's engineers at site.

10.25 SAFETY PRECAUTIONS

10.25.1 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.

10.25.2 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.

10.25.3 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.

10.25.4 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.

10.25.5 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.

10.25.6 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.

10.25.7 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.

10.25.8 **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.

10.25.9 **Traffic Control**

Deleted.

10.25.10 **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.

10.25.10 Precautions for use of explosives during blasting for trenching : I

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

10.26 ALLIED ACTIVITIES

10.26.1 Transportation of Materials: The materials required for executing the work entrusted to the contractors against a work order shall be made available at Project Store Depot. In some cases the materials may be available at sub divisional store godown. 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. The costs of transportation are subsumed in the standard Schedule Rates and therefore no separate charges are payable on this account.

10.26.2 Disposal of Empty Cable Drums :

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

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

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

10.26.5 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.

RAILTEL

CHAPTER – 11

JOINTING AND TERMINATION OF FIBER OPTIC CABLE

11.1 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.

11.2 STRAIGHT JOINT FOR FIBER OPTIC CABLE

11.2.1 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.

11.2.2 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-02/06. (The Optic Fiber straight through joint closure shall be of TVSE, R&M, Raychem, 3M make and shall be approved in advance by RailTel. The joint shall be protected in concrete chamber as approved by engineer- in-charge.)

11.2.3 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.

11.3 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 circular Joint Pit / Pull Chamber of 1 meter outer dia. as given in Drawing No. RCIL/ER/DRG-02/06 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.

11.4 **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.

11.5 **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.

11.6 **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.

11.6 **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.

11.7 **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.

11.8 **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.

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

11.9 **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.

11.9.1 Jointing Pit/ Pull Chamber: The Jointing Pit / Pull Chamber is as per drawing No. RCIL/ER/DRG-02/06. The outer dia. of the circular RCC Jointing Pit / Pull Chamber shall be approx. 1000mm. 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.

11.10 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.

11.11 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.

11.12 TERMINATION JOINT FOR FIBER OPTIC CABLE.

11.12.1 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 Optical Line Terminal Equipment etc. 4.13.2 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 and derive required pigtails. Two pairs of fibers shall be derived from either side cable at every OFC cable hut through pigtails with FC/PC connectors. The remaining fibers shall be looped through. 4.13.2 The procedure for installation of termination joint box depends upon the type of joint enclosure. 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.

11.12.2 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.

11.12.3 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

11.12.4 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.

11.12.5 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.

11.12.6 FIBER SPLICING

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

11.12.7 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.

11.12.8 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.

11.12.9 **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.

11.12.10 **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 pernTEC specifications.

11.13 **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 4.24 below.

11.14 **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

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

S.No.	TOOL's Name
1.	Branch Joint Closure
2.	Termination Box
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 – 12****List of Address for Specification****12.0 Address from where specification copy can be purchased:**

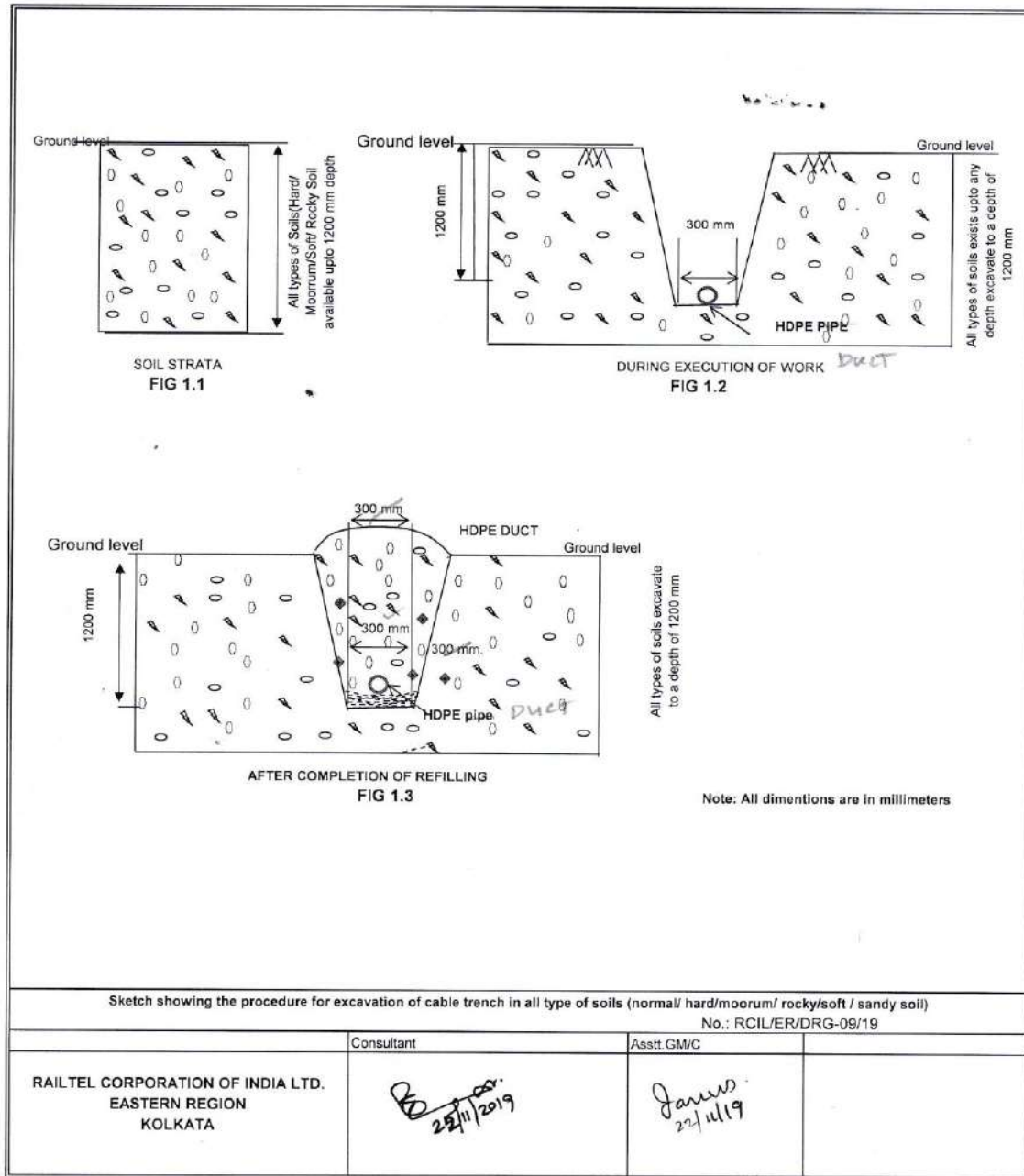
The copy of IRS, RDSO, TEC and BIS specification used in the tender documents can be purchased from following sources.

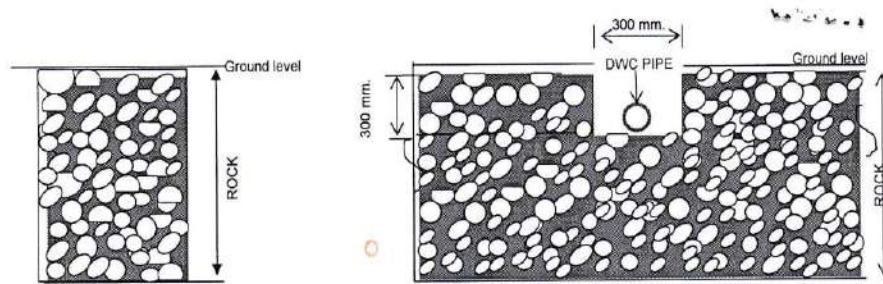
- 12.1 IRS Specification:** i) Manager Publications,
Government of India
Civil Lines, New Delhi- 110054
ii) Government of India Book Depot,
8 - S.K. Roy Road, Calcutta – 700001
- 12.2 RDSO Specification:**
RDSO, Manak Nagar, Lucknow
- 12.3 DOT/TEC/ITD Specification:** Khurshid Lal Bhavan, Janpath,
New Delhi- 110001
- 12.4 B.I.S. Specification:** Directorate General,
Indian Standards Institution,
9- Bahadur Shah Zafar Marg,
New Delhi -110002
F- block, Unity Building,
Narsimhrajra Square,
Bangalore- 560002
534- SardarVallabh Bhai Patel Raod, Mumbai.
5- Chowringhee Approach, PO Princep Street,
Calcutta- 700072
Ahinsa Building (1st floor) , SCO 82-83, Sector 27-
C, Chandigarh- 160017
5-8-56/57, L.N. Gupta Marg, Hyderabad- 208005.
117/418-B, Sarvoday Nagar, Kanpur – 208005
C.I.T. Campus, Adyar, Madras – 600020.
- 12.5** If any specifications and drawings referred but not enclosed in the tender documents may be seen in the RailTel's office on any working day.



CHAPTER – 13

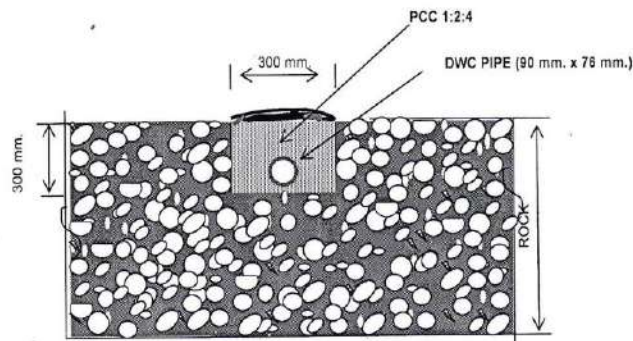
DRAWINGS





SOIL STRATA
FIG 3.1

DURING EXECUTION OF WORK
FIG 3.2

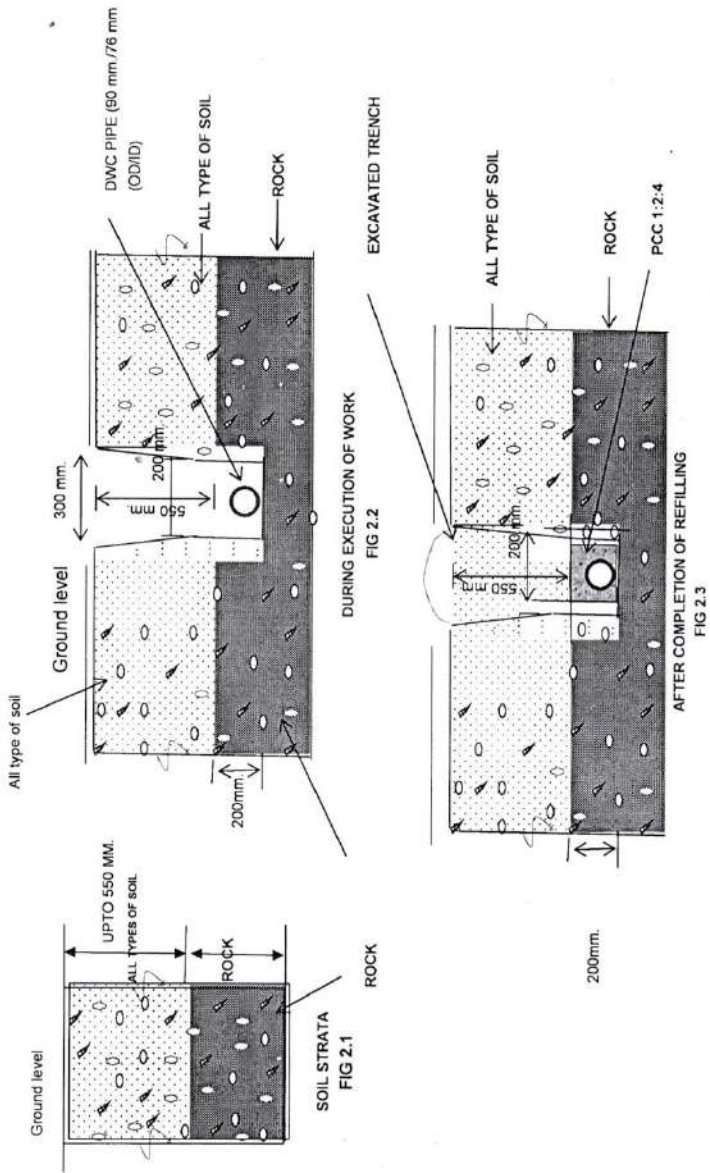


AFTER COMPLETION OF WORK
Fig.3.3

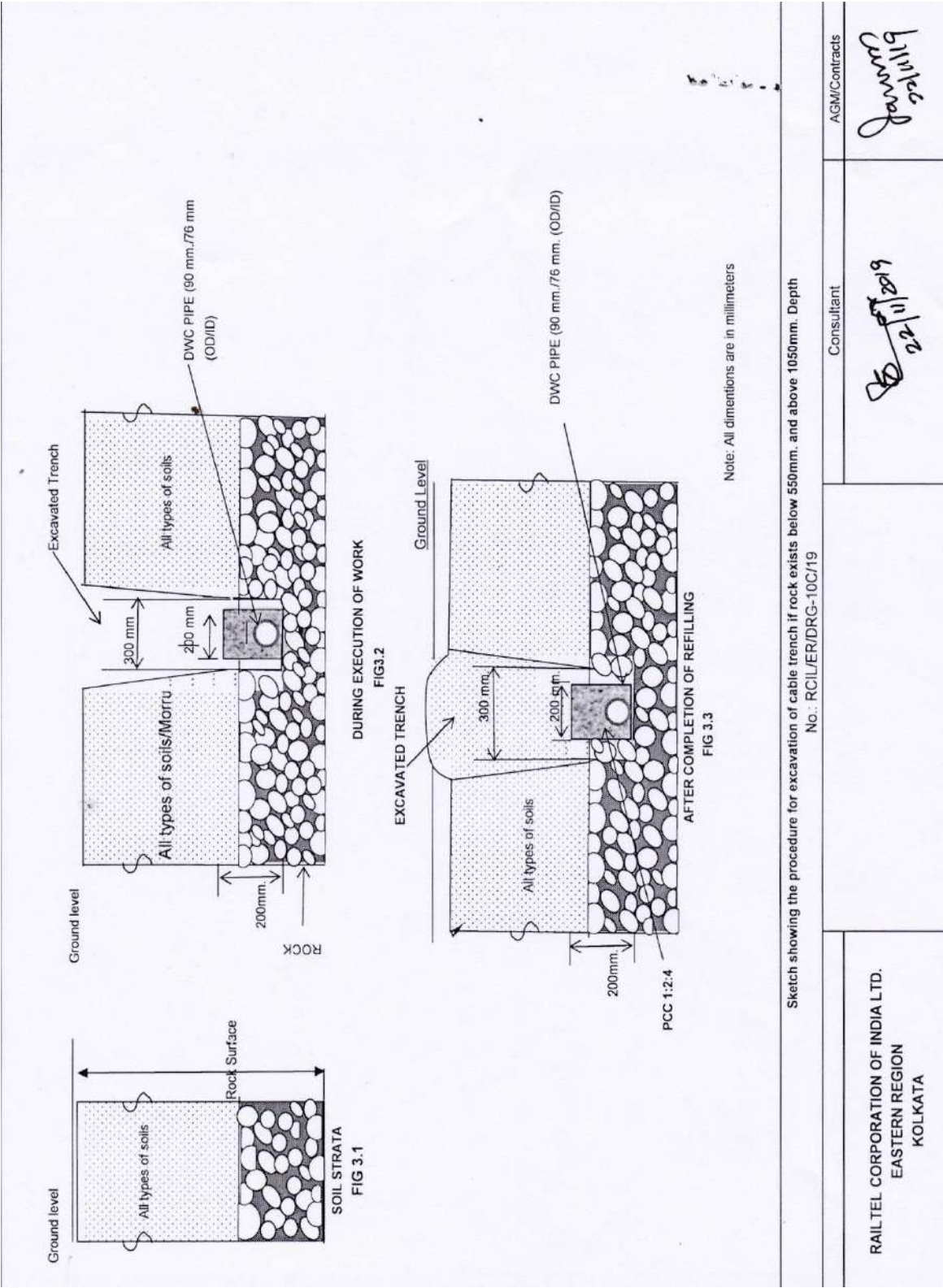
Note: All dimensions are in millimeters

Sketch showing the procedure for excavation of trench if rock exists from surface of ground

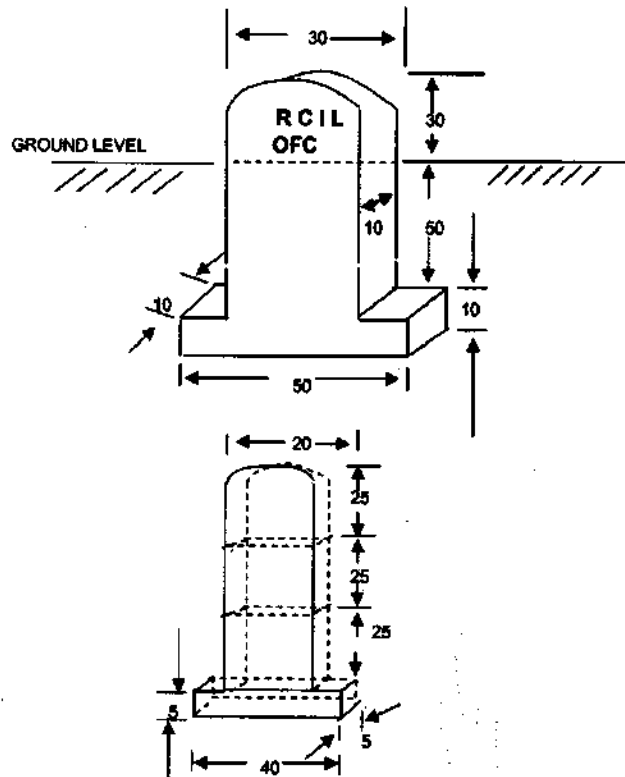
		No.: RCIL/ER/DRG-10A/19	
		Consultant	Asstt. GM/Contracts
RAILTEL CORPORATION OF INDIA LTD. EASTERN REGION KOLKATA		<i>[Signature]</i> 22/11/2019	<i>[Signature]</i> 22/11/19



Sketch showing the procedure for excavation of cable trench if rock exists up to 550 mm. below ground level	
No.: RCIL/ER/DRG-108/19	Asstt.GM/C
Consultant	22/11/2019
RAILTEL CORPORATION OF INDIA LTD. EASTERN REGION KOLKATA	



ANNEXURE 3.1



REINFORCEMENT 6 MM. DIA

NOTE:

ALL DIMENSIONS ARE IN CM.

ALL SIDES ABOVE GROUND TO BE PAINTED WITH RED ENAMELED PAINT TO IS SPECIFICATION WITH TWO COATS AT PLACES OTHER THAN OFC JOINTS.

ALL SIDES ABOVE GROUND TO BE PAINTED WITH GREEN ENAMELED PAINT TO IS SPECIFICATION WITH TWO COATS AT OFC JOINTS.

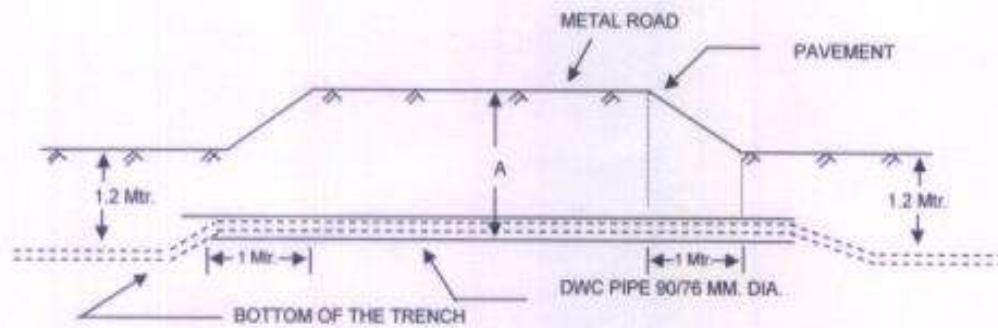
RCIL OFC TO BE ENGRAVED.

ENGRAVED PORTION TO BE PAINTED WITH WHITE ENAMELED PAINT TO IS SPECIFICATION WITH TWO COATS.

RCC CABLE ROUTE MARKER

No.: RCIL/ER/DRG-01/06

	DRAWN BY	CHECKED BY	APPROVED BY
RAILTEL CORPORATION OF INDIA LTD. EASTERN REGION KOLKATA	<i>Janani</i>	<i>Sanjay</i>	<i>Janani</i>

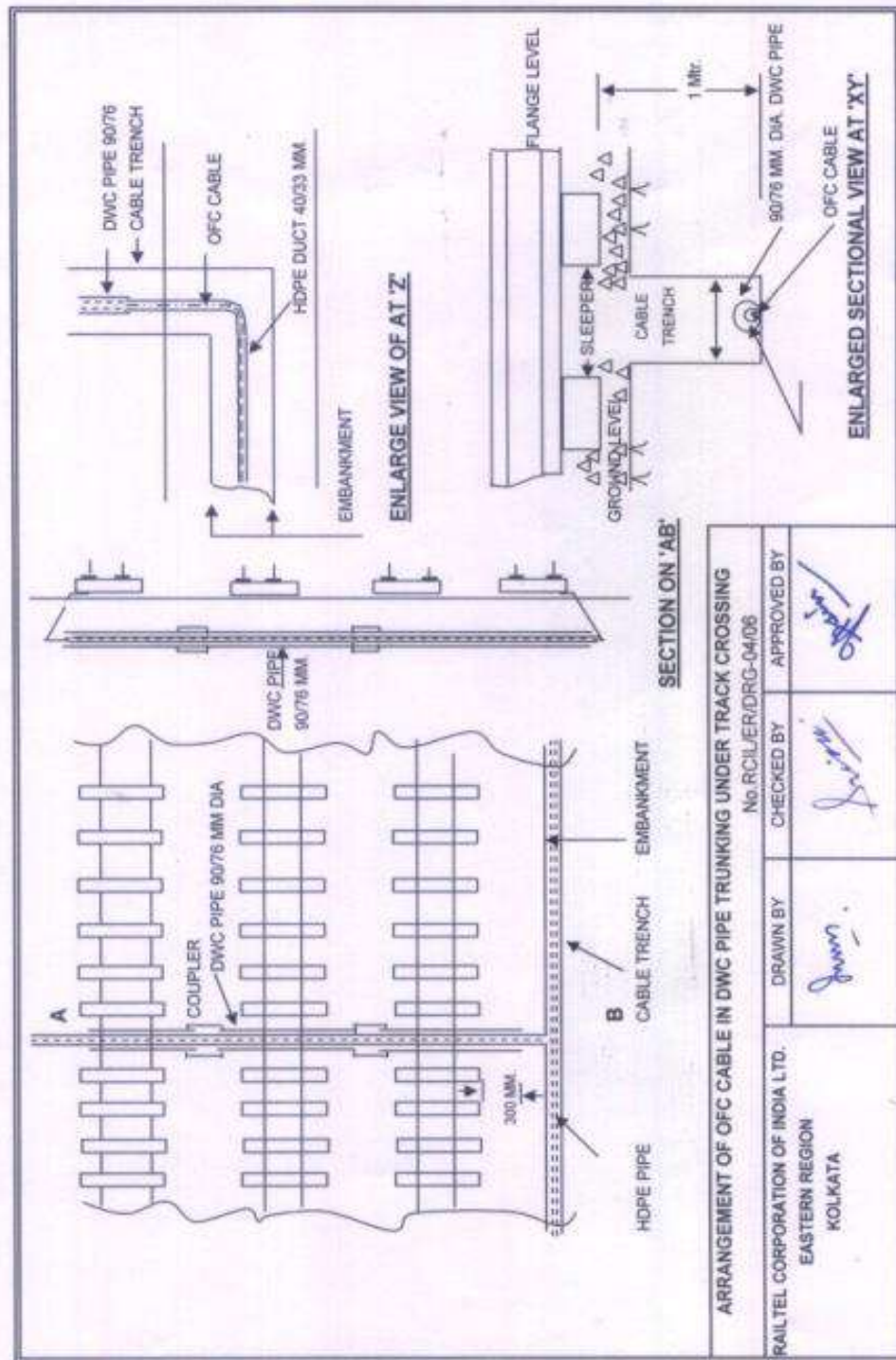
**NOTE**

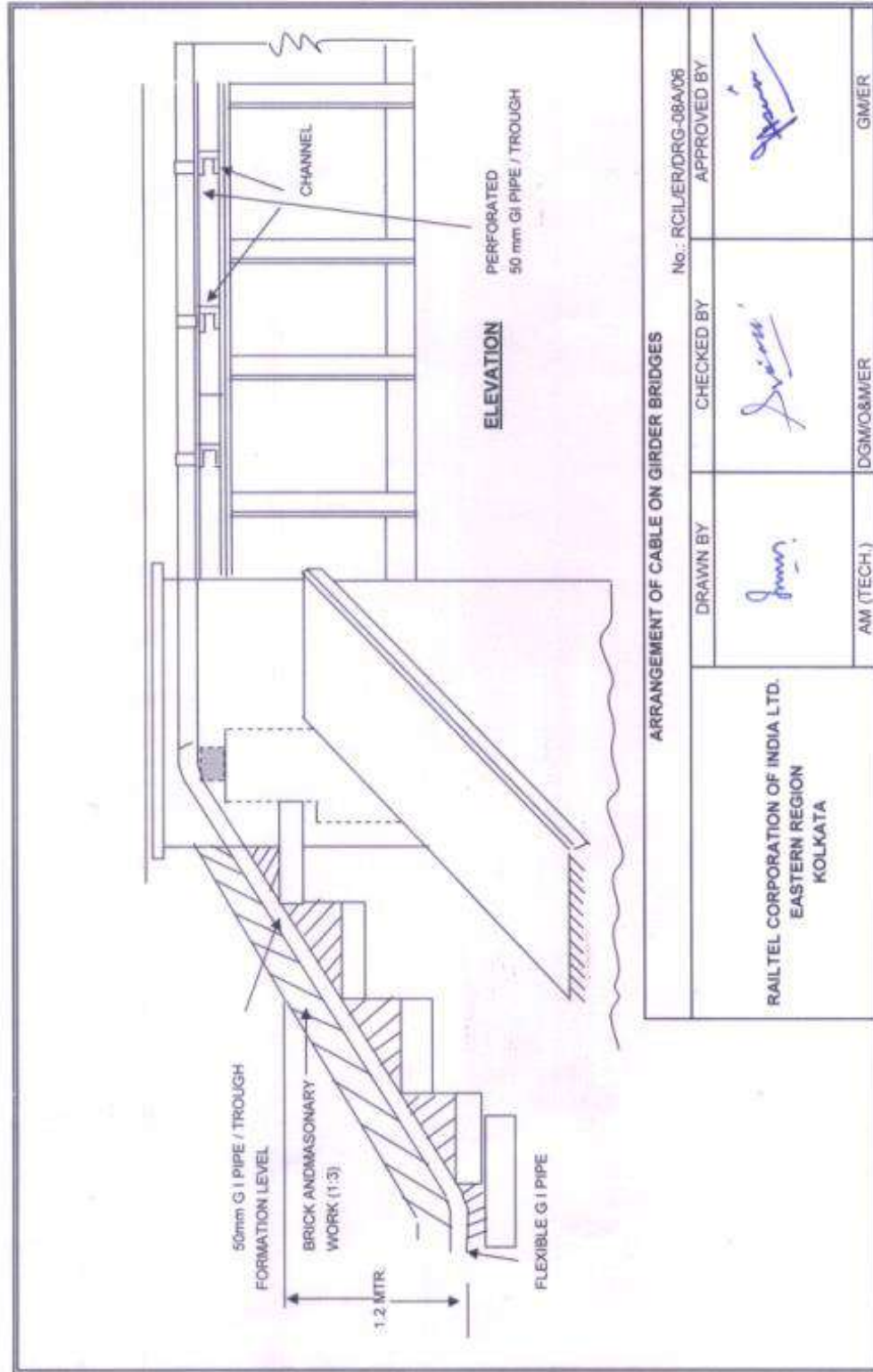
- 1 A = DEPTH WILL BE 1.2 MTR.
OR
AS DECIDED BY ENGINEER IN CHARGE
AS PER SITE CONDITION.
- 2 LENGTH OF THE DWG PIPE SHALL EXTENDED BY
1 MTR. BEYOND ROAD EDGES.

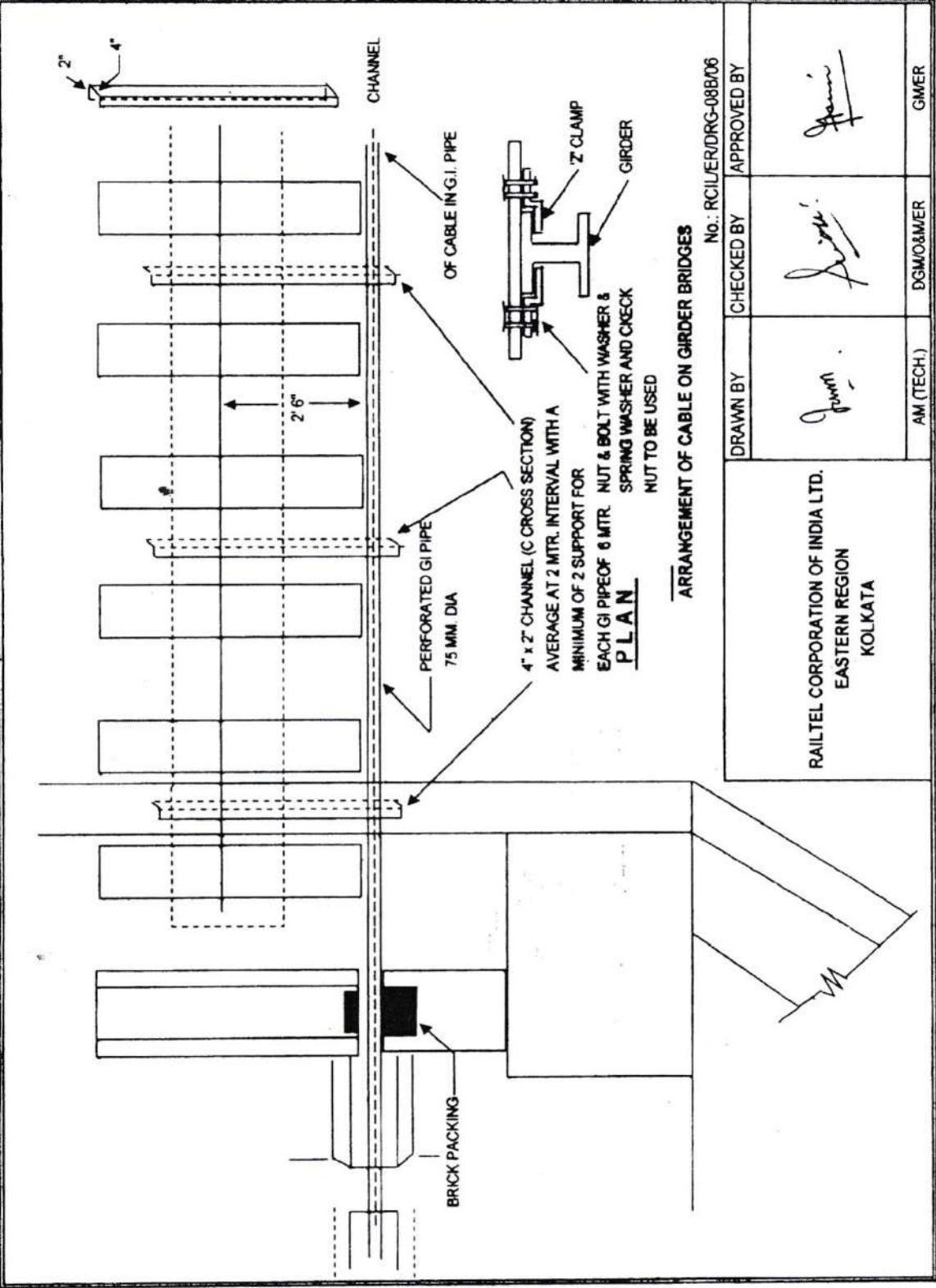
ARRANGEMENT OF DWG PIPE TRUNKING UNDER METAL ROAD

No.RCIL/ER/DRG-03/06

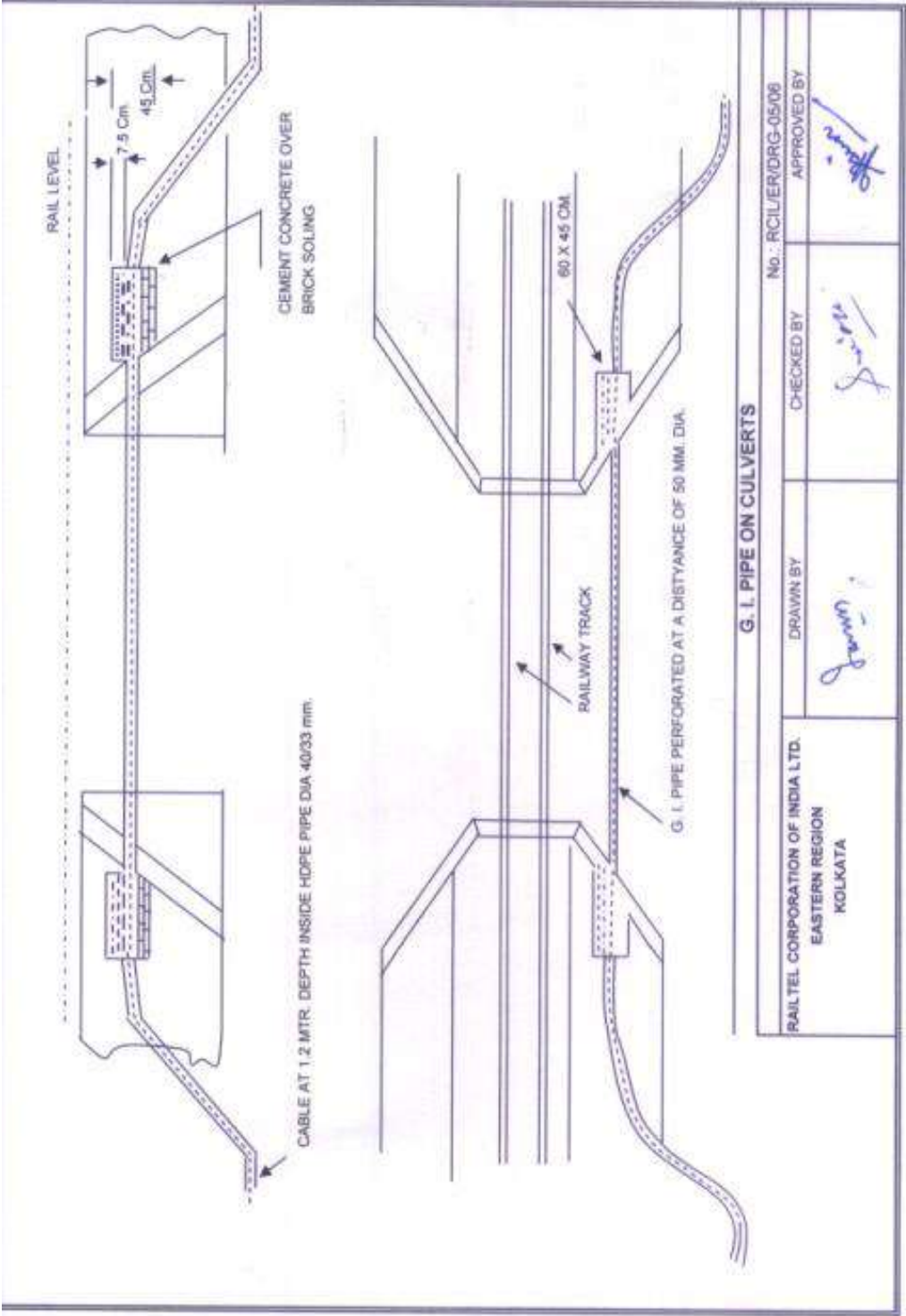
	DRAWN BY	CHECKED BY	APPROVED BY
RAILTEL CORPORATION OF INDIA LTD. EASTERN REGION KOLKATA	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>







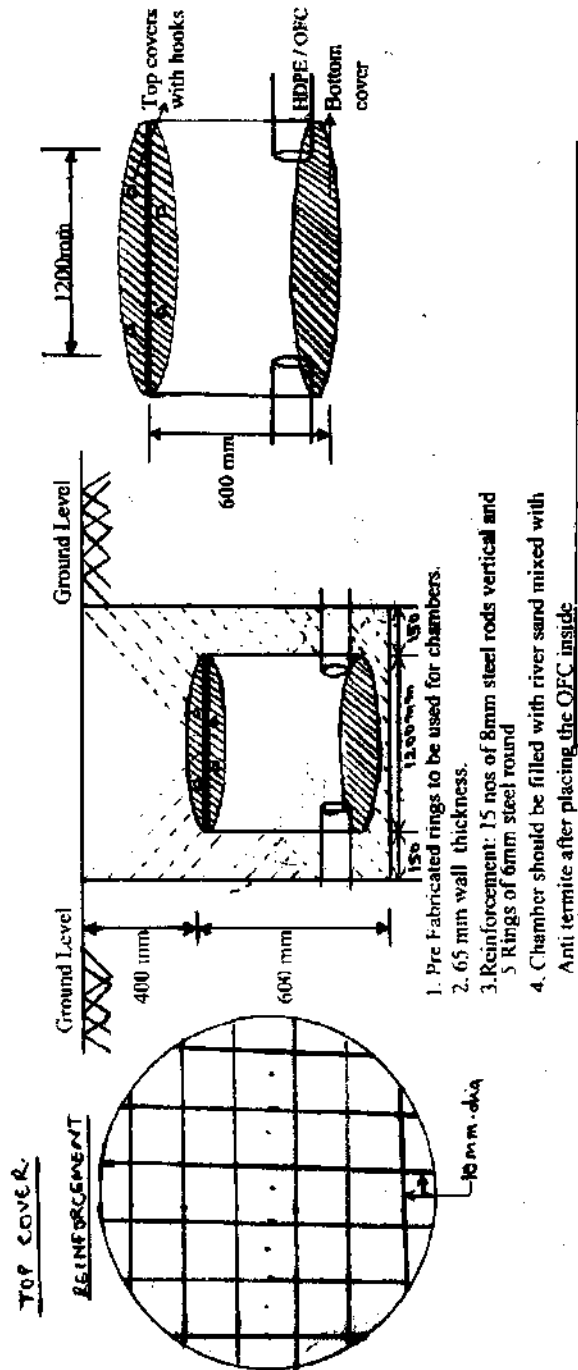
135



ANNEXURE-3.2

RailTel Corporation of India Limited EASTERN REGION KOLKATA

Diagram of Construction of Loop/Splice chamber

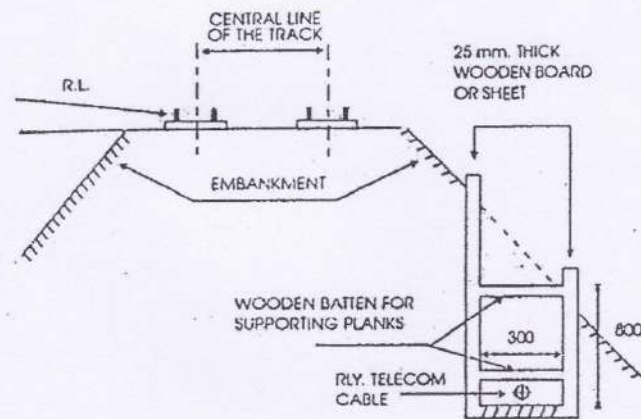


1. Pre fabricated rings to be used for chambers.
2. 65 mm wall thickness.
3. Reinforcement: 15 nos of 8mm steel rods vertical and 5 Kings of 6mm steel round
4. Chamber should be filled with river sand mixed with Anti termite after placing the OFC inside

PROPOSED BY	APPROVED BY
<i>[Signature]</i> SILVER AM (Specs) / 12/11/19	<i>[Signature]</i> 5/11/19 DSM CONSULTER

DRG. NO. RCIL/ER/DRG-02/06

ANNEXURE - 3.3



TRUE COPY

SSTE/P/S D/COR&ALD

NOTE :-
1. DIMENSIONS ARE IN MILLIMETER

	CSTE	DRN	METHOD OF SHORTING EXCAVATING TRENCH FOR CABLE	R.D.S.O./TC/35003
	DY CSTE	CDM		PJ
	SSTE/T	CTI	R.D.S.O.	DT.
	ASTE/T	COMP		NOT TO SCALE