



South Central Railway

Tender Document

Name of the Work:

Telecommunication Works for Provision of IP-MPLS in Secunderabad and Nanded Division of South-Central Railway.

Tender Notice No. C-SG-PT-IPMPLS-SC-NED-02

Dated: 05.05.2026

Office of the
Dy. Chief Signal & Telecom Engineer / Telecom (Project)
Secunderabad

INDEX

S.No.	Description	Page No.
A	Notice Inviting Tender	3
B	Instructions & Guidelines for Submitting e-Tenders	4-11
	Check List for Tenderers	12-39
C	Special Conditions of Contract	40-59
D	Technical Guidelines for S&T Works	60-95
	S&T Drawings and OEM Form	96-117
E	General Conditions of Contract	118-227

Part -A
Notice Inviting Tender

Part -B
Instructions & Guidelines for Submitting e-Tenders

INSTRUCTIONS & GUIDELINES FOR SUBMITTING e-TENDERS
REVISED AS PER GCC APRIL 2022

A. All information and documents submitted by the tenderer shall be complete and legible. In case of any information/document submitted by the tenderer, as visible/downloaded from IREPS portal, being incomplete or illegible, the offer shall be evaluated based on the information/document submitted by the tenderer and legible to the Railway. Decision of Railways in this regard shall be final and binding on the tenderer.

B. Tenderers shall go through the entire tender documents and familiarize themselves with schedule of work, scope of work, conditions of contract, technical specifications, regulations of the tender etc. and submit their offer complete in all respects, duly furnishing all the documents and details required for a valid offer. Railway reserves the right to evaluate the tenders as per their own standards/practices. No claim of the tenderer shall be entertained/accepted on account of any ignorance of the tenderer, any information/document not submitted by them or any incomplete/illegible document submitted by them.

C. Tenderer/s are advised to read the instructions given below and strictly ensure that all the compulsory & important documents as mentioned herein, are uploaded before submitting their tender. No document submitted after Tender Closing Time shall not be considered for evaluation of tender, unless specifically mentioned in this tender document.

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

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

The tenderer whether sole proprietor/a company or a partnership firm/joint venture (JV)/registered society/registered trust/HUF/LLP, etc., if they want to act through agent or individual partner(s), should submit along with the tender, a copy of power of attorney duly stamped and authenticated by a Notary Public or by Magistrate in favour of the specific person whether he/they be partner(s) of the firm or any other person, specifically authorizing him/them to sign the tender, submit the tender and further to deal with the Tender/Contract upto the stage of signing the agreement except in case where such specific person is authorized for above purposes through a provision made in the partnership deed/Memorandum of Understanding/Article of Association/ Board resolution, failing which tender shall be summarily rejected.

A separate power of attorney duly stamped and authenticated by a Notary Public or by Magistrate in favour of the specific person whether he/they be partner(s) of the firm or any other

person, shall be submitted after award of work, specifically authorizing him/them to deal with all other contractual activities subsequent to signing of agreement, if required.

***Note:** If the Power of Attorney is executed and issued overseas, the document will also have to be legalized by the Indian Embassy and notarized in the jurisdiction where the Power of Attorney is being issued. However, the Power of Attorney provided by Bidders from countries that have signed the Hague Legislation Convention 1961 are not required to be legalized by the Indian Embassy if it carries a conforming Apostille Certificate.*

(Ref: Clause 14(i), 14(iii) & 15 of TENDER FORM (Second Sheet) of GCC APRIL 2022).

3. **The tender must be accompanied by a Bid Security as mentioned in Para 5 of Part-1, Instruction to Tenderers (ITT) of GCC APRIL 2022, Para 6(a), 17.5 & 18.6 of TENDER FORM (Second Sheet) along with Annexure-VIA of GCC APRIL 2022, failing which the tender shall be summarily rejected.**
4. **Following documents mentioned at (a) to (h) below, should be furnished along with tender and should be submitted online at the time of tender bidding. Tenders not accompanied by these documents will be summarily rejected.** No post tender communication, in any form will be made or entertained, after opening of tenders, in this regard. Railways may however call for the originals of the credentials for verification or any clarifications/confirmations on the contents of the documents submitted.
 - (a) **TENDER FORM (First Sheet) (Ref: Annexure-I to Part-I of GCC APRIL 2022).**
 - (b) **Works(s) completion certificate(s) as per the requirement of Technical eligibility criteria (Ref: Clause 10.1 and for tenderer participating as JV firm Clause 17.15.1 of TENDER FORM (Second Sheet) of GCC APRIL 2022 as modified vide Special Conditions of Contract and Appendix-IIA of Tender Document.**
 - (c) **Documents as per the requirement of financial eligibility criteria (Ref: Clause 10.2 and for tenderer participating as JV firm Clause 17.15.2 of TENDER FORM (Second Sheet) along with Annexure-VIB of GCC APRIL 2022)**
 - (d) **Documents for evaluating the Bid Capacity, for tenders having advertised value more than Rs.20.00 crore (Ref: Clause 10.3 and for tenderer participating as JV firm Clause 17.15.3 of TENDER FORM (Second Sheet) along with Annexure-VI of GCC APRIL 2022 and Appendix-III).**
 - (e) **Certificate, stating that the tenders/s are liable to be disqualified and all their statements/documents submitted along with bid are true and factual, as per Annexure-V (Ref: Para 6.1 of Part-1, Instruction to Tenderers (ITT) of GCC APRIL 2022).**
 - (f) **In case the tenderer is other than Joint Venture (JV) firm, tenderer has to submit all the documents as mentioned below (Ref: Clause 14(ii) (a) to (c), (e) to (g), (iv) and 18.10 of TENDER FORM (Second Sheet) of GCC APRIL 2022).**

Type of Firm	Documents to be submitted
(a) Sole Proprietorship Firm:	All documents in terms of Para 10 of the Tender Form (Second Sheet) of GCC APRIL 2022.
(b) HUF:	(i) A copy of notarized affidavit on Stamp paper declaring that he who is submitting the tender on behalf of HUF is in the position of Karta of Hindu Undivided Family (HUF) and he has the Authority, power and consent given by other members to act on behalf of HUF. (ii) All other documents in terms of Para 10 of the Tender Form (Second Sheet) of GCC APRIL 2022.
(c) Partnership Firm:	(i) A notarized copy of the Partnership Deed or a copy of the Partnership deed registered with the Registrar. (ii) A notarized or registered copy of Power of Attorney in favour of the individual to tender for the work, sign the agreement, etc. and create liability against the firm. (iii) An undertaking by all partners of the partnership firm that they are not blacklisted or debarred by Railways or any other Ministry/Department of the Govt. of India from participation in tenders/contracts as on the date of submission of bids, either in their individual capacity or in any firm/LLP in which they were/are partners/members. Any concealment/wrong information in regard to above shall make the bid ineligible or the contract shall be determined under Clause 62 of the Standard General Conditions of Contract. (NOTE: THIS DOCUMENT SHOULD BE SIGNED BY ALL THE PARTNERS OF THE FIRM) (iv) All other documents in terms of Para 10 of the Tender Form (Second Sheet) of GCC APRIL 2022.
(d) Company registered under Companies Act-2013:	(i) The copies of MOA (Memorandum of Association)/ AOA (Articles of Association) of the company. (ii) A copy of Certificate of Incorporation. (iii) A copy of Authorization/Power of Attorney issued by the Company (backed by the resolution of Board of Directors) in favour of the individual to sign the tender on behalf of the company and create liability against the company. Note: In case of submission of a "Specific Resolution of Board of Directors" related to the instant tender, then it should be supported by a Specific Authorization/Power of Attorney." (iv) All other documents in terms of Para 10 of the Tender Form (Second Sheet) of GCC APRIL 2022.
(e) LLP (Limited Liability Partnership) registered under LLP Act 2008:	(i) A copy of LLP Agreement. (ii) A copy of Certificate of Incorporation, (iii) A copy of Power of Attorney/ Authorization issued by the LLP in favour of the individual to sign the tender on behalf of the LLP and create liability against the LLP.

	(iv) An undertaking by all partners of the LLP that they are not blacklisted or debarred by Railways or any other Ministry/Department of the Govt.of India from participation in tenders/contracts as on the date of submission of bids, either in their individual capacity or in any firm/LLP or JV in which they were/are partners/members. Concealment/wrong information in regard to above shall make the contract liable for determination under Clause 62 of the Standard General Conditions of Contract. (NOTE: THIS DOCUMENT SHOULD BE SIGNED BY ALL THE PARTNERS OF THE FIRM) (i) All other documents in terms of Para 10 of the Tender Form (Second Sheet) of GCC APRIL 2022.
(f)Registered Society & Registered Trust:	(i) A copy of Certificate of Registration. (ii) A copy of Memorandum of Association of Society/Trust Deed. (iii) A copy of Power of Attorney in favour of the individual to sign the tender documents and create liability against the Society/Trust. (iv) A copy of Rules & Regulations of the Society. (v) All other documents in terms of Para 10 of the Tender form (Second Sheet) of GCC APRIL 2022.

After opening of the tender, any document pertaining to the constitution of Sole Proprietorship Firm/Partnership Firm/Registered Company/Registered Trust/Registered Society/HUF/LLP etc. shall be neither asked nor considered, if submitted after closing of tender.

(g) In case the tenderer is a Joint Venture (JV) firm, tenderer has to submit all the documents as mentioned below:

- (i) Copy of Memorandum of Understanding (MoU) duly executed by the JV members on a stamp paper, shall be submitted by the JV along with the tender. The complete details of the members of the JV, their share and responsibility in the JV etc. particularly with reference to financial, technical and other obligations shall be furnished in the MoU. (Ref: Clause 17.6 of TENDER FORM (Second Sheet) of GCC APRIL 2022 & Appendix-VIII of the Tender Document).

(ii) **Documents of JV Members:****(Ref: Clause 17.14 of TENDER FORM (Second Sheet) of GCC APRIL 2022).**

In case one or more of the members of the JV is/are:

Type of Firm	Documents to be submitted
(a) Partnership Firm:	(i) A notarized copy of the Partnership Deed or a copy of the Partnership deed registered with the Registrar. (ii) A copy of consent of all the partners or individual authorized by partnership firm, to enter into the Joint Venture Agreement on a stamp paper. (iii) A notarized or registered copy of Power of Attorney in favour of the individual to sign the MOU/JV Agreement on behalf of the partnership firm and create liability against the firm. (iv) An undertaking by all partners of the partnership firm that they are not blacklisted or debarred by Railways or any other Ministry/Department of the Govt. of India from participation in tenders/contracts as on the date of submission of bids, either in their individual capacity or in any firm/LLP in which they were/are partners/members. Any concealment/wrong information in regard to above shall make the bid ineligible or the contract shall be determined under Clause 62 of the Standard General Conditions of Contract. (NOTE: THIS DOCUMENT SHOULD BE SIGNED BY ALL THE PARTNERS OF THE FIRM)
(b) Proprietary Firm or HUF:	A copy of notarized affidavit on Stamp paper declaring that his Concern is a proprietary Concern and he is the sole proprietor of the Concern OR he who is signing the affidavit on behalf of HUF is in the position of 'Karta' of Hindu Undivided Family (HUF) and he has the Authority, power and consent given by other members to act on behalf of HUF.
(c) Companies:	(i) A copy of resolutions of the Directors of the Company permitting the company to enter into a JV Agreement, (ii) The copies of MOA (Memorandum of Association)/AOA (Articles of Association) of the company (iii) A copy of Certificate of Incorporation (iv) A copy of Authorization/copy of Power of Attorney issued by the Company (backed by the resolution of Board of Directors) in favour of the individual to sign the tender, sign MOU/JV Agreement on behalf of the company and create liability against the company. Note: In case of submission of a "Specific Resolution of Board of Directors" related to the instant tender, then it should be supported by a Specific Authorization/ Power of Attorney."
(d) LLP firm/s:	(i) A copy of LLP Agreement

	(ii) A copy of Certificate of Incorporation of LLP. (iii) A copy of resolution passed by partners of LLP firm, permitting the Firm to enter into a JV Agreement. (iv) A copy of Authorization/copy of Power of Attorney issued by the LLP firm (backed by resolution passed by the Partners) in favour of the individual, to sign the tender and/or sign the MOU/JV agreement on behalf of the LLP and create liability against the LLP. (v) An undertaking by all partners of the LLP that they are not blacklisted or debarred by Railways or any other Ministry/Department of the Govt. of India from participation in tenders/contracts as on the date of submission of bids, either in their individual capacity or in any firm/LLP or JV in which they were/are partners/members. Any concealment/wrong information in regard to above shall make the contract liable for determination under Clause 62 of the Standard General Conditions of Contract. (NOTE: THIS DOCUMENT SHOULD BE SIGNED BY ALL THE PARTNERS OF THE FIRM)
(e) Society/s or Trust/s:	(i) A copy of certificate of Registration (ii) A copy of Memorandum of Association of Society/Trust Deed (iii) A copy of Rules & Regulations of the Society (iv) A copy of Power of Attorney, in favour of the individual to sign the tender documents and create liability against the Society/Trust.

(iii) All other documents in terms of Para 10 of the Tender Form (Second Sheet) of GCC APRIL 2022.

5. Compliance of **Employment/Partnership, etc. of Retired Railway Employees as per Clause 16 of TENDER FORM (Second Sheet) of GCC APRIL 2022**, failing which contract is liable to be dealt in accordance with provision of **Clause 62 of Standard General Condition of Contract of GCC APRIL 2022 (Note: Information/Certification should be given as per 'Appendix-IV' of the Tender/Technical Bid Document)**.
6. Tenderers shall note that the submission of other following supporting documents, **is important and they shall ensure the same at the time of online bidding of tender**. However, Railways may seek clarifications/details/documents in this regard.
 - (a) Copy of **Vendor Mandate Form as per Appendix-VII** of the Tender Document. All payments to the agency (including the refund of the Earnest Money (EMD) of the unsuccessful bidder) will be remitted through NEFT. The Tenderer is required to declare Bank details and A/C No. etc.in Vendor Mandate Form.

- (b) Copy of the **complete details of the firm as per Appendix-I** of the Tender/Technical Bid Document, to which all correspondences shall be made by the Railway.
 - (c) Copy of **Goods and Services Tax (GST) Registration Certificate containing GST Registration Number.**
 - (d) Copy of Certificate by tenderer for **site visit and familiarization as per Appendix-VI** of the Tender/Technical Bid Document.
 - (e) Copy of the **list of the Personnel/Organisation of the tenderer on hand and proposed to be engaged for this tender as per Appendix-IV** of the Tender/Technical Bid Document.
 - (f) Copy of **list of the plants & machinery of tenderer available on hand and proposed to be inducted and hired for this tender as per Appendix-V** of the Tender/Technical Bid Document.
7. The Railway reserves the right to verify all statements, information and documents submitted by the bidder in his tender offer, and the bidder shall when so required by the Railway, make available all such information, evidence and documents as may be necessary for such verification. Any such verification or lack of such verification, by the Railway shall not relieve the bidder of its obligations or liabilities hereunder nor will it affect any rights of the Railway there under.
8. Any clarification submitted by a Bidder that is not in response to a request by the Railway shall not be entertained or considered
9. All correspondence regarding the tender shall be addressed to:
Office of Dy.CSTE/Project/Tele/ Secunderabad
Ground Floor Microwave Building,
Adjacent to Rail Nilayam,
Secunderabad 500003.
dycsteprojecttelesc@gmail.com

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Checklist for Tenderers			
Sl.No	Requirements	Documents Required/Remarks	Mandatory /Desirable
1	Tenderer shall download and submit Tender Document with the Digital Signature Certificate (DSC) in the name of participating Tendering Firm (Proprietorship/Partnership Firm / Company / Joint Venture (JV) / Registered Society /Registered Trust / Hindu Undivided Family (HUF) / Limited Liability Partnership (LLP) etc as applicable) or the person authorized to submit the Tender.		Mandatory
2	Digital Signature of Tenderer/ Authorized Signatory on Tender Document & Supporting Document along with addresses and phone no. for communication.		Mandatory
3	Whether the tender is submitted on his own (Proprietary Firm) /Partnership Firm / Company / Joint Venture (JV) / Registered Society / Registered Trust / Hindu Undivided Family (HUF) / Limited Liability Partnership (LLP) etc.	Attested copies of the constitution of their concern, and copy of PAN Card along with their tender. Tender Documents to be signed by person legally competent to sign them. If it is NOT mentioned in the submitted tender that tender is being submitted on behalf of a Sole Proprietorship firm / Partnership Firm / Joint Venture / Registered Company etc., then the tender shall be treated as having been submitted by the individual who has signed the tender. A copy of power of attorney duly stamped and authenticated by a Notary Public or by Magistrate in favour of the specific person whether he/they be partner(s) of the firm or any other person, specifically authorizing him/them to sign the tender etc.	Mandatory
4	The tender must be accompanied by a Bid Security		Mandatory
5	TENDER FORM (First Sheet)		Mandatory
6	TENDER FORM (Second Sheet)		Desirable
7	Work(s) completion certificate(s) as per the requirement of Technical eligibility criteria		Mandatory
8	Documents as per the requirement of financial eligibility criteria		Mandatory

9	Documents for evaluating the Bid Capacity, <i>for tenders having advertised value more than Rs.10.00 crore</i>		Mandatory
10	Certificate, stating that the tenderer/s are liable to be disqualified and all their statements / documents submitted along with bid are true and factual		Mandatory
	In case the tenderer is other than Joint Venture (JV) firm, tenderer has to submit all the documents as mentioned below		
11	Type of Firm	Documents to be submitted	
	(a) Sole Proprietorship Firm:	All documents in terms of Para 10 of the Tender Form (Second Sheet)	Mandatory
	(b) HUF:	(i) A copy of notarized affidavit on Stamp Paper declaring that he who is submitting the tender on behalf of HUF is in the position of 'Karta' of Hindu Undivided Family (HUF) and he has the Authority, power and consent given by other members to act on behalf of HUF. (ii) All other documents in terms of Para 10 of the Tender Form	Mandatory
	(c) Partnership Firm:	(i) A notarized copy of the Partnership Deed or a copy of the Partnership deed registered with the Registrar. (ii) A notarized or registered copy of Power of Attorney (iii) An undertaking by all partners of the partnership firm that they are not blacklisted or debarred by Railways or any other Ministry / Department of the Govt. of India from participation in tenders / contracts as on the date of submission of bids, either in their individual capacity or in any firm / LLP in which they were / are partners / members. <i>NOTE: THIS DOCUMENT SHOULD BE SIGNED BY ALL THE PARTNERS OF THE FIRM.</i> (iv) All other documents in terms of Para 10 of the Tender Form	Mandatory
	(d) Company registered under Companies Act-2013:	(i) The copies of MOA (Memorandum of Association) / AOA (Articles of Association) of the company (ii) A copy of Certificate of Incorporation. (iii) A copy of Authorization/Power of Attorney issued by the Company (backed by the resolution of Board of Directors) in favour of the individual to sign the	Mandatory

		tender on behalf of the company and create liability against the company. (iv) All other documents in terms of Para 10 of the Tender Form (Second Sheet) of GCC APRIL 2022.	
	(e) LLP (Limited Liability Partnership) registered under LLP Act-2008:	(i) A copy of LLP Agreement (ii) A copy of Certificate of Incorporation (iii) A copy of Power of Attorney/ Authorization issued by the LLP in favour of the individual to sign the tender on behalf of the LLP and create liability against the LLP. (iv) An undertaking by all partners of the LLP that they are not blacklisted or debarred by Railways or any other Ministry / Department of the Govt. of India from participation in tenders / contracts as on the date of submission of bids, either in their individual capacity or in any firm/LLP or JV in which they were / are partners/members. <i>NOTE: THIS DOCUMENT SHOULD BE SIGNED BY ALL THE PARTNERS OF THE FIRM.</i> (v) All other documents in terms of Para 10 of the Tender Form (Second Sheet)	Mandatory
	(f) Registered Society & Registered Trust:	(i) A copy of Certificate of Registration. (ii) A copy of Memorandum of Association of Society / Trust Deed. (iii) A copy of Power of Attorney in favour of the individual to sign the tender documents and create liability against the Society/Trust. (iv) A copy of Rules & Regulations of the Society. (v) All other documents in terms of Para 10 of the Tender Form (Second Sheet)	Mandatory
12	In case the tenderer is a Joint Venture (JV) firm, tenderer has to submit all the documents as mentioned below		
13	Copy of Memorandum of Understanding (MoU) duly executed by the JV members on a stamp paper, shall be submitted by the JV along with the tender. The complete details of the members of the JV, their share and responsibility in the JV etc. particularly with reference to financial, technical and other obligations shall be furnished in the MoU.		Mandatory

14	<u>Documents of JV Members:</u>		
	Type of Firm	Documents to be submitted	
	Partnership Firm:	(i) A notarized copy of the Partnership Deed or a copy of the Partnership deed registered with the Registrar. (ii) A copy of consent of all the partners or individual authorized by partnership firm, to enter into the Joint Venture Agreement on a stamp paper, (iii) A notarized or registered copy of Power of Attorney in favour of the individual to sign the MOU/JV Agreement on behalf of the partnership firm and create liability against the firm. (iv) An undertaking by all partners of the partnership firm that they are not blacklisted or debarred by Railways or any other Ministry / Department of the Govt. of India from participation in tenders / contracts as on the date of submission of bids, either in their individual capacity or in any firm/LLP in which they were / are partners/members. <i>NOTE: THIS DOCUMENT SHOULD BE SIGNED BY ALL THE PARTNERS OF THE FIRM.</i>	Mandatory
	Proprietary Firm or HUF:	A copy of notarized affidavit on Stamp Paper declaring that his Concern is a proprietary Concern and he is sole proprietor of the Concern OR he who is signing the affidavit on behalf of HUF is in the position of 'Karta' of Hindu Undivided Family (HUF) and he has the Authority, power and consent given by other members to act on behalf of HUF.	Mandatory
	Companies	(i) A copy of resolutions of the Directors of the Company, permitting the company to enter into a JV agreement; (ii) The copies of MOA (Memorandum of Association) / AOA (Articles of Association) of the company; (iii) A copy of Certificate of Incorporation; and (iv) A copy of Authorization / copy of Power of Attorney issued by the Company (backed by the resolution of Board of Directors) in favour of the individual to sign the tender, sign MOU / JV Agreement on behalf of the company and create liability against the company.	Mandatory
	LLP firm/s	(i) A copy of LLP Agreement (ii) A copy of Certificate of Incorporation of LLP	Mandatory

		(iii) A copy of resolution passed by partners of LLP firm, permitting the Firm to enter into a JV agreement (iv) A copy of Authorization /copy of Power of Attorney issued by the LLP firm (backed by resolution passed by the Partners) in favour of the individual, to sign the tender and/or sign the MOU/ JV agreement on behalf of the LLP and create liability against the LLP. (v) An undertaking by all partners of the LLP that they are not blacklisted or debarred by Railways or any other Ministry / Department of the Govt. of India from participation in tenders / contracts as on the date of submission of bids, either in their individual capacity or in any firm/LLP or JV in which they were / are partners/members. <i>NOTE: THIS DOCUMENT SHOULD BE SIGNED BY ALL THE PARTNERS OF THE FIRM.</i>	
	Society/s or Trust/s	(i) A copy of Certificate of Registration (ii) A copy of Memorandum of Association of Society/Trust Deed (iii) A copy of Rules & Regulations of the Society (iv) A copy of Power of Attorney, in favour of the individual to sign the tender documents and create liability against the Society/Trust.	Mandatory
15	All other documents in terms of Para 10 of the Tender Form (Second Sheet)		Mandatory
	Following Documents is also to be submitted by the bidder		
16	Compliance of Employment / Partnership etc. of Retired Railway Employees as per Clause 16 of TENDER FORM (Second Sheet)		Desirable
17	Tenderers shall note that the submission of other following supporting documents, <i>is important and they shall ensure the same at the time of online bidding of tender.</i> However, Railways may seek clarifications / details / documents in this regard:		Desirable
18	Copy of Vendor Mandate Form		Desirable
19	Copy of the complete details of the firm to which all correspondences shall be made by the Railway.		Desirable
20	Copy of Goods and Services Tax (GST) Registration Certificate containing GST Registration Number.		Desirable

21	Copy of certificate by tenderer for site visit & familiarization as per Appendix-VI of the Tender / Technical Bid Document.	Desirable
22	Copy of the list of the Personnel / Organisation of the tenderer on hand and proposed to be engaged for this tender as per Appendix-IV of the Tender / Technical Bid Document.	Desirable
23	Copy of list of the plants & machinery of tenderer available on hand and proposed to be inducted & hired for this tender as per Appendix-V of the Tender / Technical Bid Document.	Desirable
24	Copy of “MANUFACTURER’s AUTHORIZATION FORM (MAF)” from OEM for IPMPLS Routers, Layer 2 Switch as required in this tender as per Appendix – X	Mandatory
25	Copy of Undertaking for NO MALICIOUS CODE LETTER BY BIDDER and OEM as per Appendix – XII	Mandatory
26	Copy of Self-Certification/Declaration of Local Content as per 'Public Procurement (Preference to Make in India) Order 2017 or latest issued by Department of Industrial Policy and Promotion under Ministry of Commerce and Industry as per Appendix XIII. Certification from the statutory auditor of the company (in the case of companies) or from a practicing cost accountant or practicing chartered accountant (in respect of suppliers other than companies) giving the percentage of local content is to be provided if tender value is more than 10Cr.	Mandatory
27	Copy of valid certificate/proof of successful completion of POC of IP-MPLS routers issued/accepted by RDSO.	Optional
28	Copy of integrated MTCTE certification with Essential Requirement (ER) & Indian Telecom Security Assurance Requirement (ITSAR) in compliance TEC 93009: 2024 Rel 3.0 april-2024 issued by TEC for IP-MPLS Routers, Core router, Switches. Or copy of Pro Tem certificate issued by TEC for IP-MPLS Routers, Core router, Switches as per TEC 93009: 2024 Rel 3.0 april-2024 or proof that OEM have applied for the certificate.	Mandatory
29	Copy of either clearance from Trusted Telecom Portal or proof that OEM have applied for the clearance for make and model of the IP-MPLS Routers and switches offered in the tender.	Mandatory
30	Copy of undertaking for procuring of IP-MPLS Routers and Switches from RDSO/TEC approved source or from OEM/ Authorized dealers.	Mandatory
31	The Railway reserves the right to verify all statements, information and documents submitted by the bidder in his tender offer, and the bidder shall when so required by the Railway, make available all such information, evidence and documents as may be necessary for such verification.	

	Any such verification or lack of such verification, by the railway shall not relieve the bidder of its obligations or liabilities hereunder nor will it affect any rights of the railway thereunder.
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APPENDICES

Appendix-I

e-Tender Notice No.:

Name of Work:

PARTICULARS OF TENDER(S)

1. Full name of Contractor /
Construction firm
2. Year of Establishment of Firm
3. Registered head office Address
Telephone no, Fax no,
E-mail address
4. Branch office Address, Telephone no,
Fax no, E-mail address
5. Details of Constitution of firm,
Names of Partners/ Executive/
Power of Attorney holders, etc.
6. Particulars of Registration with Government
Semi-Govt. Organisation, Public Sector
Undertaking & Local Bodies etc.

Appendix-II**e-Tender Notice No.:****Name of Work:****LIST OF WORKS COMPLETE in last 07 (seven) years, ending last day of month previous to the one in which tender is invited**

Sr. No.	Name of work	Name of Organization for whom executed and Contract awarding Authority	Contract agreement No and Date of Award	Approx. Value of Contract		Date of Commencement	
				Agreement Value	Final Value	Scheduled	Actual
1	2	3	4	5	6	7	8

Date of Finish		Period of Completion		Main features of the work	Remarks
Scheduled	Actual	Scheduled	Actual		
9	10	11	12	13	14

Note:

- i. *Supporting documents / certificates (duly attested) from the organisation with whom worked or working should be enclosed.*
- ii. *Certificate from private individuals for whom such works are executed / being executed shall not be accepted.*

Appendix II A**Work Completion certificate (Issued by Organization)**

Name of Organization-

Postal address, Phone No., Email ID, Fax No-

Letter No. Date:-.....

1.	Name of work	
2.	Contract Agreement(C/ A) No. and date	
3. (i)	Name of Contractor with address	
(ii)	In case of JV..... Name and % share of individual firms.	
4.	Original value of contract agreement.	
5.	Date of award of contract	
6.	Has the work physically been completed in all respect, If yes, then actual date of physical completion.	
7.	Work completion date as per contract agreement.	
8.	Total payment made in above contract till the date of Issue of certificate.	
9.	Value of contract as completed final value if final bill prepared	
10.	In case of composite work: Scope of work covered in the Agreement such as Civil work, Signalling work, Telecom work etc. with details of Signalling & Telecom works and payments paid towards S&T works	
11.	Performance of the contractor:	

Note: This certificate to be issued by an Officer not below the rank of JA Grade or Bill Passing Officer in Railways and Bill Passing Officer / Executive In-charge of work in other Govt.department/ Govt. bodies / Public Sector Undertaking. The certificate should bear the signature and seal of the issuing officer, name of the department etc.

(Signature)
Name and Designation of officer
Mobile No. of officer
Seal of officer

Appendix-III

Details as part of Annexure VI of Part-I of GCC

e-Tender Notice No.:

Name of Work:

LIST OF WORKS ON HAND: DETAILS OF EXISTING COMMITMENTS.
BALANCE AMOUNT OF ONGOING WORKS AND WORKS AWARDED NOT YET STARTED

All works in progress and also the works which are awarded to tenderer but yet not started up to the date of opening of tender. In case of no works in hand, a 'NIL' Statement should be furnished. This statement should be submitted duly verified by Chartered Accountant. Any certificate issued by Statutory Auditor / CA must include Unique Document Identification Number (UDIN)

Sr. No.	Name of work	Name of Organization for whom executed and Contract awarding Authority	Contract agreement No and Date of Award	Approx. Value of Contract			Date of Commencement	
				Agreement Value	Payment received	Approx. balance to be received	Scheduled	Actual
1	2	3	4	5	6	7	8	9

Date of Finish		Period of Completion		%age Progress		Reasons for Delay, if any	Main features of the work	Remarks
Scheduled	Expected	Scheduled	Expected	Physical	Financial			
10	11	12	13	14	15	16	17	18

Note :

- The list of works on hand shall be certified with Chartered accountants based on the evidence received from the organisation with whom work is being carried out.
- Certificate from private individuals for whom such works are being executed or has been awarded work shall not be accepted.

Appendix-IV**e-Tender Notice No.:****Name of Work:****LIST OF PERSONELL / ORGANISATION AVAILABLE ON HAND AND PROPOSED TO BE ENGAGED FOR THE SUBJECT WORK**

Sr. No.	Name & Designation	Qualification	Professional Experience	Remarks

Note: - Supporting documents should be attached

I hereby certify that no retired Engineer/Gazetted Officer of the Railways who has retired within 1 year of date of submission of tender and has not obtained permission of competent Authority has been engaged by me/our firm. I also certify that none of my relative is engaged in Engineering or any other Department in South Central Railway.

Signature of Tenderer(s)

Appendix-V**e-Tender Notice No.:****Name of Work:****A. LIST OF PLANT & MACHINERY (OWNED) AVAILABLE ON HAND AND PROPOSED TO BE INDUCTED ON THE SUBJECT WORK**

S.No.	Particulars of equipment's	No. of units	Kind/Make	Capacity	Age and condition	Remarks

B. LIST OF PLANT & MACHINERY PROPOSED TO BE HIRED FOR THE WORK

S.No.	Particulars of equipment's	No. of units	Capacity	Remarks

Appendix-VI

e-Tender Notice No.:

Name of Work:

DECLARATION FOR SITE VISIT

I/We hereby solemnly declare that I /We visited the sites of work personally and have made myself/ourselves fully conversant of the conditions therein and in particular the following:

- i) Topography of the area
- ii) Soil strata at site of work
- iii) Sources and availability of construction materials
- iv) Rates for construction materials, water, electricity including all local takes, royalties, octroi, etc.
- v) Availability of local labour (both skilled and unskilled) and relevant labour rates and labour laws
- vi) Existing roads, approaches, pathway to site of work
- vii) Space for stacking of materials, stores, office etc.
- viii) Availability and rates of private land, etc. required for various purposes
- ix) Trees, shrubs, bushes, debris etc. required to be removed for site clearance
- x) Need of dewatering / pumping etc.
- xi) Climate conditions and availability of working days and working hours
- xii) Frequency / pattern of rail traffic, electrified tracks, road traffic etc.
- xiii) Availability of rail/road traffic block
- xiv) Law and order situation.
- xv) Any other conditions, which may affect rates.
- xvi) Signalling and Telecom installations including stations, Huts and LC Gates and Signal and Telecom gears connected thereto.

I/We have quoted my/our rates for various items in the tender schedule taking into account all the above factors likely to be encountered during execution of work. I/We shall not be entitled for any claim against Railway on account of the above factors.

I/We hereby declare that no such retired engineer or Gazetted Officer (as defined in clause 17.1 of this tender document) retired from government service within one year prior to opening of this tender is working or associated with us.

Signature of Tenderer(s)

Appendix-VII**e-Tender Notice No.:****Name of Work:****MANDATE FORM FOR PAYMENT THROUGH ECS/NEFT**

Firm's Name		
Firm's address/ Tel. No. /FAX no. /Email.ID		
Name of the bank		
Bank Branch Name Address / Tel. No. /Fax No. /Email.ID		
Account no. (as per Core Banking)		
Type of Account		Saving / Current / others (please specify)
MICR Code & IFSC Code		

IMPORTANT NOTE:

Tenderer/s should ensure that they attach a copy of this '**Mandate Form**', **duly verified & signed by the Bank Officials** along with the EMD instruments, in order to enable Railway to release the EMD amount quickly to the unsuccessful tenderers through ECS/NEFT.

Signature of Tenderer(s)

Appendix-VIII

On Non-judicial stamp as per extant rules

**MEMORANDUM OF UNDERSTANDING
FOR JOINT VENTURE AGREEMENT**

1. This Memorandum of understanding executed this _____ day of _____ 20____
between _____ (Name of Co.) _____ a company registered under the
Companies Act 1956 having in registered office at _____ represented through its Director
/ Authorized Representative _____ (hereinafter referred to as
_____ which expression shall unless repugnant to the context thereof
includes its successors) of the **FIRST PART**.

OR

M/s. _____ a partnership firm registered under the
Indian Partnership Act 1932, having its registered office at _____
represented through its Partner Shri _____ / Authorized
Representative _____ (hereinafter referred to as
_____ which expression shall unless repugnant to the context
thereof includes its successors) of the **FIRST PART**.

AND

2. M/s. _____ (Name of Co.) _____
a company registered under the Companies Act 1956 having in registered office at _____
represented through its Director or Authorized
Representative _____ (hereinafter referred to as
_____ which expression shall unless repugnant to the context thereof
includes its successors) of the **SECOND PART**.

OR

M/s. _____ a partnership firm registered under the
Indian Partnership Act 1932, having its registered office at _____
(hereinafter referred to as _____ which expression shall unless repugnant to
the context thereof includes its successors) of the **SECOND PART**.

AND

3. This Memorandum of understanding executed this _____ day of _____ 20____
between _____ (Name of Co.) _____ a company
registered under the Companies Act 1956 having in registered
office _____ through its Director or Authorized
Representative _____ (hereinafter referred to as
_____ which expression shall unless repugnant to the context thereof
includes its successors) of the **THIRD PART**.

OR

M/s. _____ a partnership firm registered under the
Indian Partnership Act 1932, having its registered office at _____ through
its Partner or Authorized Representative _____ (hereinafter referred to as
_____ which expression shall unless repugnant to the context thereof
includes its successors) of the **THIRD PART**.

AND

4. This Memorandum of understanding executed this _____ day of _____ 200____
between _____ (Name of Co.) _____ a company registered under the

Companies Act 1956 having in registered office _____ through its Director or Authorized Representative _____ (hereinafter referred to as _____ which expression shall unless repugnant to the context thereof includes its successors) of the **FOURTH PART**.

OR

M/s. _____ a partnership firm registered under the Indian Partnership Act 1932, having its registered office _____ through its Partner or Authorized Representative _____ (hereinafter referred to as _____ which expression shall unless repugnant to the context thereof includes its successors) of the **FOURTH PART**.

AND

5. This Memorandum of understanding executed this _____ day of _____ 20 _____ between _____ (Name of Co.) _____ a company registered under the Companies Act 1956 having in registered office _____ through its Director or Authorized Representative _____ (hereinafter referred to as _____ which expression shall unless repugnant to the context thereof includes its successors) of the **FIFTH PART**.

OR

M/s. _____ a partnership firm registered under the Indian Partnership Act 1932, having its registered office at _____ through its Partner or Authorized Representative _____ (hereinafter referred to as _____ which expression shall unless repugnant to the context thereof includes its successors) of the **FIFTH PART**.

Whereas, South Central Railway, Secunderabad (SC) hereinafter referred to as Owner/ Customer has invited Tender No/s. _____ hereinafter referred to as the SCR Tender for the work of _____ hereinafter referred to as the said work.

Whereas, the party of the first part i.e.

M/s. _____ (details to be supplied of the expertise in their field).

Whereas, the party of the second part i.e.

M/s. _____ (details to be supplied of the expertise in their field).

Whereas, the party of the third part i.e.

M/s. _____ (details to be supplied of the expertise in their field).

Whereas, the party of the fourth part i.e.

M/s. _____ (details to be supplied of the expertise in their field).

Whereas, the party of the fifth part i.e.

M/s. _____ (details to be supplied of the expertise in their field).

AND whereas parties to this MOU, have agreed to co-operate with each other to associate jointly and to form a Joint Venture Firm to participate in the SCR Tender of Indian Railways.

Now, therefore, in consideration of the premises and mutual promises and of the undertaking contained herein, it is hereby agreed as follows: -

1. The purpose of MOU -

M/s. _____ and _____ agree to co-operate with each other for the purpose of joint participation in the SCR Tender and in the event, the contract is awarded, to jointly execute the contract. The board interface and scope of work of each party is set forth below:-

2. The Name of the Jt. Venture firm shall be _____

3. The parties, hereto, represent that:

- a) They are in possession of all approvals valid authorization for the purpose of the executive of this MOU.
- b) They have not entered into any agreement/MOU of equal or similar nature with any third for the SCR Tender.

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

M/s. _____ %

M/s. _____ %

M/s. _____ %

M/s. _____ %

M/s. _____ %

Lead Member:

That one of the members of the JV shall be its lead member who shall have a majority (at least 51%) share of interest in the JV. The other members shall have a share of not less than 20% each in case of JV with upto three members and not less than 10% each in case of JV with more than three members. In case of JV with Foreign member(s), the Lead Member has to be an Indian firm/company with a minimum share of 51%.

And all rights, interest, liabilities, obligation, work experience and risks (net profits or net losses) arising out of the contract shall be shared or borne by the Parties in proportionate to these shares. Each of the parties shall bound by guarantees, sureties required for the work as well as its proportionate share in working capital and other financial requirements.

4. The Parties to this MOU undertake:

- a) That after submission of the tender, the MOU shall not be modified / altered / terminated during the validity of the tender except when modification becomes inevitable due to succession laws etc., provided further that there is no change in qualification of minimum eligibility criteria by JV after change of composition. The parties to this MOU further agree that, the Lead Member shall continue to be the Lead Member of the JV.
- b) That after the contract is awarded the constitution of the J.V. firm shall not be altered during the currency of contract except when modification becomes inevitable due to Succession Law etc. but no case the minimum eligibility criteria should get vitiated.

5. JOINT & SEVERAL LIABILITY:

In respect of the SCR Tender, all terms shall be complied by each party on back-to-back basis as per specifications of the SCR Tender or any other mutually agreed terms with the

Owner/Customer. The Parties hereto shall, if awarded the contract for the project for which the Joint Venture is formed, be jointly and severally liable to the Indian Railways for executive of the project in accordance with the contract. The Parties hereto also undertake to be liable jointly and severally for the loss, damages caused to the Indian Railways in course of execution or due to non-execution of the contract or part thereof or arising out of the contract.

6. Shri _____ shall be authorized partner/person on behalf of the Joint Venture to deal with tender, to sign the agreement or enter into contract in respect of the said tender, to receive payment, to witness joint measurement of work done, to sign measurement books, and similar such action in respect of SCR tender/Contact. All notices/correspondence with respect to the contract would be sent only to this authorized member of the JV Firm.
7. Notwithstanding anything contained herein, in respect of the SCR Tender with regard to the internal relationship, the inter se liabilities between the parties shall be in proportion to their respective scope of work and shall be subject to the provisions of this MOU.
8. The parties agree that with respect of the SCR Tender neither Party, nor any subsidiary company of either Party, nor any joint venture company or any other entity, in which the Party/ies, is or are in any way interested, shall complete together with or through any third party, nor shall the parties advise, consult for, engage in or otherwise assist in any way any person or entity or any affiliate thereof in respect of any orders or contracts related to the SCR Tender.

9. Responsibility

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

10. Assignability

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

11. Use of Machinery, Instruments, Labour Force etc.

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

12. Duration of MOU

It shall be valid during entire currency of contract including the period of extension, if any and also till the maintenance

period is over or till all the contractual liabilities including warranty/guarantee obligations are discharged completely.

13. Applicable law

This MOU and any arrangement/agreements regarding the performance shall be construed and interpreted in accordance with and governed by the Laws of India and shall be subject to the exclusive jurisdiction of the courts at SECUNDERABAD.

14. Settlement of Disputes

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

15. All communication or notices provided for herein shall be in English Language and be delivered, mailed, or Tele-faxed to the parties addresses as indicated below: -

M/s._____

M/s._____

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

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

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

17. The Parties to this MOU declare and certify that they have not been black listed or debarred by Railways or any other Ministry/Department of the Govt. Of India/State Govt. from participation in tender/contract on or before the date of opening of bids either in their individual capacity or the JV firm or partnership firm in which they were member/partners. In witness whereof, the Parties have caused this MOU to be executed by their respective authorized representative on the date and year mentioned herein above.

Signature:-

Signature:-

Signature:-

Shri_____ of Shri_____ of Shri_____ of

M/s._____ M/s._____ M/s._____

Signature: -

Signature:-

Shri_____ of Shri_____ of

M/s._____ M/s._____

Witnesses: -

1. Name:

Address: -

2. Name:

Address: -

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

Appendix-IX

e-Tender Notice No.:

Name of Work:

STATEMENT OF DEVIATIONS FROM TENDER DOCUMENT

S.No.	Part and Clause no. of Tender Document	Stipulation of Railway	Deviation proposed by Contractor	Financial Implication of Deviation on Railways

Signature of Tenderer(s)

Appendix - X

PROFORMA FOR “MANUFACTURER’S AUTHORIZATION FORM (MAF)”

Note: This authorization letter should be printed on the letterhead of all the **Original Equipment Manufacturer (OEM)** and should be signed by a competent person having the power of attorney to bind the manufacturer.

To

**The Office of Dy.CSTE /Project/Tele/ Secunderabad
Ground Floor Microwave Building,
Adjacent to Rail Nilayam,
Secunderabad 500003.
dycsteprojecttelesc@gmail.com**

Subject: Manufacturer Authorization Form (MAF) to M/s..... for

.....

Ref: Bid No..... dated.....

Dear Sir,

We, M/s....., are established and reputed manufacturer and service provider of (Product details), having our registered office at..... We hereby authorize M/s..... (bidder name), Office to participate in bid and we certify that all IP-MPLS Routers/ Switches are IPv6 ready from Day One and all the hardware and Software for the same shall be provided with the system subsequently upon award of the bid to execute the supply and Installation & Commissioning of our range of products against your above said bid and we shall support in supply and Installation, Commissioning and maintenance of the products.

We further extend our warranty for..... years on our range of products offered by M/s
..... against the Above-said bid.

Thanking you, Best regards,

Authorized Signatory

Appendix - XI

"PROFORMA FOR MEMORANDUM OF UNDERSTANDING "

On Non-judicial stamp of Rs. 100/-

This memorandum of Understanding (MOU) dated..... (the effective date)

M/s..... (OEM Name & address), (which expression shall repugnant to the clause, shall include its successors and permitted assigns) and (Bidder firm name & address), herein after referred to as..... (Bidder firm name), (which expression shall repugnant to the clause, shall include its successors and permitted assigns)..... (OEM Name) and..... (Bidder firm name), may also herein after be referred to as the "Party" or collectively as the "Parties".

Whereas **South Central Railway, Secunderabad, 500003** has issued Tender No: Dated for the work of..... (Name of work). Whereas, (Bidder firm name), intends to bid for the Project; and Whereas, in the event of (Bidder firm name), being successfully awarded the "Project" by the South Central Railway (Bidder firm name), intends to engage (OEM Name) for the supply of materials manufactured by us and also for our services, which has been agreed to by..... (OEM Name); and

Whereas, The Parties intend to enter into a written understanding in this respect. Now therefore, the Parties agree as follows: -

1. Understanding

The Parties agree to work together during the term (as defined in paragraphs below of this "MOU" to prepare and submit the proposals for the Project and, if awarded a contract, to execute the Project in the following manner: -

a. (OEM Name) will Manufacture and Supply... (OEM Name) product, provide certification for IPMPLS equipment, SFP, Layer 2 Switch etc. as per RDSO specification and provide all the documents sought that are required for RDSO inspection at the time of bidding and for RDSO inspection.

b. (OEM Name) hereby undertakes that the IPMPLS equipments, SFP, Layer 2 Switch, etc and other accessories are Supplied as per the RDSO Technical specification and as per the Railway schedule of requirement and installation, testing and commissioning of equipment shall also be over seen by (OEM Name) Engineers and offer security certification as per RDSO specification.

c(OEM Name) hereby undertakes that all Installation, Testing & Commissioning, manuals, Pre-Commissioning Check List will be handed over at the time of supply installation and fulfils the Warranty aspects in compliance to the terms of the tender.

d (OEM Name) Shall:

i) Extend technical support for supply, installation, commissioning and maintenance of the equipment.

ii) Undertake certification of Factory Acceptance Test.

iii) Impart training to Railway officials at its factory premises and at site.

iv) Offer Warranty for equipment as per the condition laid in the tender document

v) Support Railways when AMC/ARC is entered, if any on later date after the expiry of warranty period.

vi) We Confirm that Technical Assistance Centre Presence for Post-Sales Technical Support is available which works 24x7x365 in India.

2. Negation of the formation of Business Organization

This MOU shall not constitute, create, or in any way be interpreted to create a joint venture, partnership or formal business organization of any kind between..... (Bidder firm name), &..... (OEM Name).

3. Termination

This MOU is effective from the effective date and will terminate automatically on the completion of three years Warranty period after completion and commissioning of project.

..... (OEM Name) (Bidder firm name),

Authorized Signatory with seal

Authorized Signatory with seal

Advocate & Notary with seal

Appendix - XII

PROFORMA FOR “NO MALICIOUS CODE UNDERTAKING LETTER BY BIDDER and OEM”

To

**The Office of Dy.CSTE /Project/Tele/ Secunderabad
Ground Floor Microwave Building,
Adjacent to Rail Nilayam,
Secunderabad 500003.
dycsteprojecttelesc@gmail.com**

Tender Reference No.

Sub: Undertaking for No Malicious Code

Dear Sir,

Over and above all our earlier conformations and submissions as per your requirements of the Tender, we confirm that,

1. All proposed hardware and software components in scope of supplies (IPMPLS equipment, SFP, Layer 2 Switch etc.) when shipped by _____, does not contain embedded malicious code that would activate procedures to:
 - a) Inhibit the desired and designed function of the equipment.
 - b) Cause physical damage to the user or equipment during the exploitation.
 - c) Tap information resident or transient in the equipment/networks.
2. We, _____ will be considered to be in breach in case physical damage or malfunctioning is caused due to activation of any such malicious code in embedded software and thus be liable to repair, replace or refund the price of the infected software if reported (or, upon request, return) to the party supplying the software to Customer, if different than _____ .
3. Security breach or damages to system, if any, so caused by any embedded malicious code or otherwise, due to the act of either OEM or bidder or both, the OEM as well as the bidder would be considered liable jointly or severally and shall be banned for conducting any business with Railways. Also, the present contract, may liable to be terminated by the purchaser.

Place:

Date:

Seal and signature of the bidder

Seal and signature of the OEM

(This letter should be submitted duly signed by an authorized Signatories of both Bider and OEM, in case of multiple OEMS different letters to be submitted)

Appendix - XIII

As per DPIIT Notification dated: 21.10.2024

Form 1

Format for Self-Certification regarding Local Content (LC) for Telecom Product, Services or Works to be submitted on non-judicial stamp paper of the value Rs. 100/-

Date:

I _____ S/o, D/o, W/o, Resident of _____ do hereby solemnly affirm and declare as under:

That I agree to abide by the terms and conditions of Department of Telecommunications, Government of India issued vide Notification No: _____ dated _____

That the information furnished hereinafter is correct to the best of my knowledge and belief and I undertake to produce relevant records before the procuring entity or any other authority so nominated by the Department of Telecommunications, Government of India for the purpose of assessing the LC.

That the LC for all inputs which constitute the said Telecom Product/Services/Works has been verified by me and I am responsible for the correctness of the claims made therein.

That in the event of the LC of the Telecom Product/Services/Works mentioned herein is found to be incorrect and not meeting the prescribed LC norms, based on the assessment of an authority so nominated by the Department of Telecommunications, Government of India, **I and my Statutory auditor or cost auditor (if applicable) will be liable for actions as specified in Clause (9) of the DPIIT PPP-MII Order dated 19.07.2024 for all incorrect/false facts and figures.**

I agree to maintain detailed breakup / information (separately for each product) to substantiate my claim for LC in the Company's record for a period of 2 years and shall make this available for verification to any authority. I shall also maintain records of local content pertaining to items bought from other domestic manufacturers / traders.

[Please provide following information]

- i. Name and details of the local supplier (Registered Office, Manufacturing unit location, nature of legal entity)
- ii. Date on which this certificate is issued
- iii. Telecom Product/Services/Works for which the certificate is produced
- iv. Procuring agency to whom the certificate is furnished
- v. Percentage of LC claimed
- vi. Name and contact details of the unit of the manufacturer
- vii. Sale Price of the product
- viii. Ex-Factory Price of the product
- ix. Freight, insurance and handling
- x. Total Bill of Material
- xi. List and total cost value of inputs used for manufacture of the Telecom product/Services/Works
- xii. List and total cost of inputs which are locally sourced. Please attach LC certificates from local suppliers, if the input is not produced in-house.
- xiii. List and cost of inputs which are imported, directly or indirectly

I hereby certify that, having read all the provisions of the above order and principles / basis of calculations, the local content calculation does not include the following:

- a. Imported items sourced locally from resellers/distributors.
- b. The license fees / royalties paid/ technical charges paid out of India.
- c. Procurement / supply of repackaged / refurbished/rebranded imported products

I hereby also certify to the best of my knowledge and belief that all the particulars furnished above are correct and complete. I agree to comply with the terms and conditions of the DPIIT PPP-MII order dated 19.07.2024 and DoT PPPMII Notification dated.....

I understand that any incorrect declaration regarding the local content or failure to substantiate the claim of LC will result in penalties as specified in Clause (9) of the DPIIT PPP-MII Order dated 19.07.2024.

I further certify and take personal responsibility that I have applied my mind to the calculations and principles of LC as specified in this order and I shall, having declared the LC shall not seek recourse to change it on any ground. Any changes made by me on any grounds in a bid in LC after bid submission shall make my bid non-responsive and I shall hold myself liable for civil/criminal action arising out of any such change. I understand and agree that any such post bid change in LC content shall also be a valid ground for blacklisting of the firm from future contracts/bids.

Signature:

Name:

Designation: CEO/MD

Address:

Email Address:

Mobile No.:

Place:

Date:

(Certification of Statutory Auditor / Cost Auditor is also required for this tender as per the guidelines)

Part -C
Special Conditions of Contract

General:

1. The contract shall be governed by Indian Railways Standard General Conditions of Contract April 2022 as amended/corrected from time to time (GCC).
2. These special conditions supplement the Regulations for tenders and contracts, the General Conditions of Contract (April 2022 with latest ACS) and the notes appearing under the relevant chapters and sub-chapters of the Standard Schedule of Rates, 2024 and should be considered a part of the contract document.
3. The General Conditions of Contract (GCC) shall mean the Indian Railways Standard General Conditions of Contract April 2022 as amended and/or corrected from time to time at the date of opening of tender.

Definition of Similar Nature of Work:

“Supply, installation, testing and commissioning of telecom networks like IP-MPLS (OR) Dense Wave length Division Multiplexing (DWDM) (OR) Network Operation Centre in Indian Railways / any other department under the Government of India or any Public Sector Undertaking (PSU) under the Government of India or any State Government or any Joint Venture Organization of the Government of India and any State Government.”.

SCOPE OF WORK:

- a. Design, supply, installation, integration, configuration, testing and commissioning of IP-MPLS in Secunderabad and Nanded Division of South-Central Railway.
- b. Creation of new 10G IP-MPLS backbone network over single dark fibre in the section.
- c. Interfacing, integrating and testing legacy SDH networks with IP-MPLS at boundary locations as per the site requirements.
- d. Migration of existing services from SDH networks and provisioning of new services on IP-MPLS as per the site conditions and instructions of the Engineer in-charge and no separate payment will be paid on this account.
- e. Supply, installation, integration, configuration, testing and commissioning of divisional NOC along with LED Display and PC Workstation for displaying IP-MPLS network created taking into account capacities of complete deployment of IP-MPLS network over South Central Railway.

Note:

- i. The Railway reserves the right to supply its own materials if the contractor fails to supply within a reasonable period and the contractor will execute the labour portion as directed by the Engineer. Liquidity damages will be imposed for non-supply of material. Thus, if the material is used from railway stocks due to non-supply from contractor, a deduction of 21.5% of the contracted amount for the corresponding item for quantity used for the work but defaulted by the contractor as applicable at the time of execution will be made from contractor's bills. The engineer's interpretation regarding quantities used is final.
- ii. The contractor shall be liable to render full accountal for all the materials issued by the Railway. If any quantity of Railway 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 twice 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.

A. TIME OF COMPLETION:

- a. All works including documentation shall be completed within the period as mentioned in NIT inclusive of the intervening monsoon period from the date of issue of acceptance letter, excluding Training of staff. The contractor would be expected to adhere to the progress of work as per the accepted mile stone chart. Liquidated damages as per rules in force will be levied on the belated supply of materials and execution of

work in the event of failure on part of the contractor to complete the supplied and execution of work within the period of completion of work as stated.

- b. In the event of failure of the part of the contractor for maintaining the progress. Thoroughly/commensurate progress with reference to time limit given in contract, the Railway reserves the right to terminate or to withdraw the whole balance work or part thereof at the discretion of the engineer-in-charge the security deposit and performance guarantees shall be forfeited by them as per relevant clauses.

B. PAYMENT TERMS:

Terms of Payment

- a. All bills shall be subject to any deduction or recovery which the Railway may be entitled to make under the contract.
- b. The contractor shall be entitled to be paid from time to time by way of “On Account” payments as per Clause 46 of GCC. While processing payment of any “On Account” bill, the contractor shall submit a certificate to the Engineer or Engineer’s representatives that “I have uploaded the correct details of contract labour engaged in connection with this contract and payments made to them during the wage period in Railway’s Shramik Kalyan portal at ‘www.shramikkalyan.indianrailways.gov.in’ till _____ Month, _____ Year.”
- c. **Summary of Payment Schedule**

S.No.	Activity	Payment Schedule
Items in Schedule A (Supply Items)		
1	Supply of equipment	50%
2	Installation of IP-MPLS routers/ equipment at site	10%
3	Completion of installation and testing of IP-MPLS routers/ equipment without migration of existing TDM / IP services	10%
4	Completion of Divisional NOC installation and testing at Division and connecting to Zonal Headquarters	10%
5	Completion of migration of existing TDM / IP services and 1G services to IP-MPLS network	15%
6	Completion of the whole project with as made documentation (Final Bill Only)	5%
Items in Schedule B (Supply and Installation Items)		
1	Supply of equipment	50%
2	Installation of IP-MPLS routers/equipment at site	10%
3	Completion of installation and testing of IP-MPLS routers/ equipment without migration of existing TDM / IP services	10%
4	Completion of Divisional NOC installation and testing at Division and connecting to Zonal Headquarters	10%
5	Completion of migration of existing TDM / IP services and 1G services to IP-MPLS network	15%
6	Completion of the whole project with as made documentation (Final Bill Only)	5%
Items in Schedule B (Installation Items)		
1	Installation of IP-MPLS routers/ equipment at site	60%
2	Completion of installation and testing of IP-MPLS routers/ equipment without migration of existing TDM / IP services and new services	10%
3	Completion of Divisional NOC installation and testing at Division and connecting to Zonal Headquarters	10%
4	Completion of migration of existing TDM / IP services and new services to IP-MPLS network	15%
5	Completion of the whole project with as made documentation (Final Bill Only)	5%

S.No.	Activity	Payment Schedule
Items in Schedule C (Supply and Installation Items)		
1	Supply of equipment	50%
2	Installation of LED display, PC workstation, POE switches at site	10%
3	Completion of installation and testing of IP-MPLS routers without migration of existing TDM / IP services	10%
4	Completion of Divisional NOC installation and testing at Division and connecting to Zonal Headquarters	10%
5	Completion of migration of existing TDM / IP services and 1G services to IP-MPLS network	15%
6	Completion of the whole project with as made documentation (Final Bill Only)	5%

d. Conditions to be Fulfilled for Payment of Supply Items

Payment for supply items shall be done on the production of the following documents.

- i. Store Receipt Certificate issued by the Consignee
 - ii. Original Inspection Certificate issued by the Inspecting Authority viz. RDSO / RITES / Railway Representative and Material Inspection Certificate at Consignee store or Inspection Waiver Certificate issued by competent authority
 - iii. Manufacturer's / supplier's warranty certificate for the material supplied
 - iv. Delivery Challan in duplicate
 - v. Indemnity bond indemnifying the Railway Administration, until the completion of work, against all damages, costs, charges, expenses, loss and liability, which the Railways may sustain, incur or be put to, by reasons or in subsequence directly or indirectly due to the contractor not fulfilling the portion of the contract involving the installation, testing and commissioning of the items supplied by the contractor.
- e. "ON Account Payment": On account payment made to the contractor shall be without prejudice to the final making up of the accounts (except where measurements are specifically noted in the measurement book is final measurements and such have been signed by the contractor) and shall in no respect be considered or used as if evidence of any particular quantity, of work having been executed nor of the manner of its execution being satisfactory. Each on account bill/final bill shall invariably be accompanied by the joint material statement (materials drawn from the stores vs. Material utilized at site on the work for which materials have been drawn from Railway Store). Contractor shall intimate at least one month in advance in writing of his intention to claim any Bill exceeding Rs. 10 lakhs either for supply or for labour Portion so as to plan Finances. Without such notice, his bill is liable to be withheld for want of funds. Billing Cycle-Odd months or Even months will be followed (as per contractor's choice) except in March Month.
- f. In case of any dispute in interpretation of Payment clauses, the decision of Railways is final and binding on the Tenderer.
- g. The contractor shall submit bills/gate passes/ invoices for the materials purchased by them to Railways at the time of supplying the materials to nominated Railway Stores Depot or nominated Railway site.
- h. RDSO/RITES inspection charges shall be borne by the contractor. For the signalling materials to be inspected by the RDSO/RITES, the contractor shall pay directly to RDSO/RITES their inspection charges at the rate of 1% of the rate accepted under the agreement.
- i. No stores will be considered ready for delivery until RDSO/RITES have certified in writing they have been inspected and approved by them. Facilities must be given by the contractor to the Railway or their nominee for inspection of stores, manufacturer and fabrication. The materials mentioned with RDSO Specification implies that the item to be referred with the existing latest Specification.

- j. PFA/Construction, Secunderabad, South Central Railway will be the accounts officer-in- charge of payment etc., under this contract.

k. Final Payment

- i) Final payment of 5% of the contract value shall be made as per Clause 51(1) of GCC.
- ii) For releasing final bill, the contractor shall submit a certificate to the Engineer or Engineer's representatives that "I have uploaded the correct details of contract labour engaged in connection with this contract and payments made to them during the wage period in Railway's Shramik Kalyan portal at 'www.shramikkalyan.indianrailways.gov.in' till _____ Month, _____ Year."
- iii) For all the works in the section covered in this contract and reconciliation of material 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".

C. Technical Conditions:

1. The IP-MPLS Routers shall be as per RDSO Document No. STT/TAN/IPMPLS/2020 Version 3.0 or latest.
2. IP-MPLS device shall support interoperability with the existing IP-MPLS infrastructure. The device must support monitoring and management through the existing IP-MPLS Network Management System (NMS).
3. For the items in the Tender schedule namely, IP-MPLS Routers, Layer 2 Switch (24 Port), PC Workstation the following points shall be followed and the tenderer should submit an undertaking for compliance of point no. (a), all relevant documents in compliance to point no. (b) as mentioned in this condition along with the bid otherwise the offer/bid will be summarily rejected and all relevant MOUs in compliance to point no. (c) to be submitted before supply.
 - a. The equipment shall be procured from:
 - i. If there is any RDSO approved source, then the equipment to be procured from the RDSO approved source or its authorized dealer/distributor.
 - ii. If there is no RDSO approved source but there is TEC approved source, then the equipment to be procured from the TEC approved source or its authorized dealer/ distributor.
 - iii. If there is no RDSO or TEC approved source then the equipment to be procured from the OEM or its authorized dealer/ distributor
 - b. Make, Model, Specification of the offered equipment along with OEM authorization (as per Appendix – X) if the tenderer is other than OEM shall be submitted along with the tender.
 - c. MOU with RDSO approved Source or TEC approved source or the OEM, covering Supply, installation, testing, commissioning of system including maintenance and after sales support required during warranty period and beyond warranty period shall be submitted before supply of material as per Appendix XI.
4. Tenderer should submit the certificate issued by the OEM (IP-MPLS Routers) stating that "All IPMPLS Routers/ Switches shall be IPv6 ready from Day One and all the hardware and Software for the same shall be provided with the system" with the bid otherwise the offer/bid will be summarily rejected.
5. Tenderer must submit the Undertaking for NO MALICIOUS CODE LETTER BY BIDDER and OEM (as per Appendix – XII).
6. IP-MPLS Routers shall be procured only from OEMs with a successful POC completed with TAN-3 or the latest version, and a letter/MoU from the OEM in this regard shall be submitted prior to the supply of materials.
7. **Proof of Concept: (for IP-MPLS Routers):**
 - i. PoC is not required for the firms which have successfully completed PoC of the equipment as per RDSO Guidelines.

- ii. For those products not covered in Sr. No (i) above, PoC as issued by RDSO vide Reference Document No.: STT/TAN/IP-MPLS/2020 Ver.: 3.0 dated 04-07-2025 or latest along with POC guidelines issued by RDSO letter RDSO- TELEoLKO(TECH)/8/2020 dtd 26.07.2024, must be ensured. PoC shall be carried out preferably in RDSO Lab or in any of the nominated Sections/Division, if field inputs are required. For some functionalities, which may not be possible to demonstrate in RDSO Lab or field, may be demonstrated in Govt./NABL accredited Lab/OEM Premises. POC shall be carried out in the presence of Railway/RDSO official from tenderers before supply of material. However, PoC shall be completed within 120 days from the issue of LOA, failing which the contract is liable to be terminated duly forfeiting EMD and other dues, if any payable against that contract. In case contract is terminated railway shall be entitled to forfeit Bid Security and other dues payable to the contractor against that particular contract, subject to maximum of PG amount. The failed contractor shall be debarred from participating in re-tender for that work.

Note: The modules such as WDM, Optical SFPs, etc. described in tender will not be part of Router's POC. They can be part of router or can be provided externally however the routers should work with these modules.

8. MTCTE (Mandatory Testing and Certification of Telecommunication Equipment) certification with Essential Requirement (ER) & Indian Telecom Security Assurance Requirement (ITSAR) for IPMPLS equipment along with the interface modules. The tenderer must submit any of the following documents along with the bid otherwise the offer/bid will be summarily rejected
 - a. The tenderer must submit integrated MTCTE certification with Essential Requirement (ER) & Indian Telecom Security Assurance Requirement (ITSAR) in compliance TEC 93009: 2024 Rel 3.0 april-2024 issued by TEC for the OEM of IP-MPLS Routers.
 - b. Or, the tenderer must submit Pro Term certificate issued by TEC for IPMPLS Routers as per TEC 93009: 2024 Rel 3.0 april-2024.
 - c. Or, the tenderer must submit proof that the OEM have applied for the certificate.
9. **Trusted Telecom Portal Compliance:** The make and model of the IP-MPLS Routers and switches offered in the tender shall either be cleared through the Trusted Telecom Portal or must have been applied for such clearance prior to the opening of the tender. The tenderer shall submit documentary proof to this effect along with a certificate confirming that the OEM(s) are recognized as Trusted Telecom Suppliers for any of their products or equipment. Failure to submit these documents along with the bid shall result in summary rejection of the offer.
10. IP-MPLS routers shall need to be cleared through Trusted Telecom Portal and shall submit the integrated MTCTE certification with (ER) & (ITSAR) in compliance TEC 93009: 2024 Rel 3.0 april-2024 before supply of equipment to South Central Railway with the relevant documentation as per Railway Board Telecom Circular Number 12/2023 dated 11.10.2023 and as per latest TAN.
11. For IPMPLS routers the tenderer must submit the declaration of Local Content as per 'Public Procurement (Preference to Make in India) Order 2017 or latest issued by Department of Industrial Policy and Promotion under Ministry of Commerce and Industry as per Appendix XIII (Authority:- Ministry of Commerce and Industry letter no. P- 45021/2/2017- B.E.-II – Part(4)Vol.II, dated 19.07.2024 and % Local content as per Ministry of Communication (Dept of Telecommunications Gazette Notification, dated:21-10-2024) with the bid otherwise the offer/bid will be summarily rejected.

- D. Warranty:** The warranty for this tender will be for a period of 12 months from the date of commissioning. Warranty for a period of 12 months shall be applicable from the date of issue of Final Acceptance Certificate, which will be considered as date of commissioning of complete system for the purpose of Warranty. Since the essence of the equipment being provided is the reliability & proneness for trouble free working at site, the Contractor shall confirm that in case the equipment provided do not meet the Railways requirement and end objective, they shall replace and take away the equipment at no cost to the Railways. Any payment done by Railways shall be refunded back.

E. Deploying Qualified / Trained Manpower:

- a. Tenderer shall deploy adequate number of competent and trained personnel for work as per instructions of Engineer in charge of Railways. It is responsibility of the contractor to deploy skilled staffs.
- b. All contractors' staff & Supervisors must display Identity Badges while working in Railway Premises and put on Helmets & Florescent coloured Safety Jackets while working on Tracks duly name of Firm/Contractor labeled on Rear side. No extra payments will be made for above Items. OEM's authorized Installation Engineers must be mobilized well in advance for commissioning of E.I. Dataloggers, BPAC etc as the case may be, without fail. Safety at work Site to be ensured as per (Chief admin. Officer/Con/Sc's letter No. W.Con/496/PL/C/T&C/XIX(Safety), dated 29.02.2016 or latest).

F. EXECUTIVE AUTHORITY IN CHARGE OF THE WORK: The Deputy Chief Signal & Telecom Engineer/Project/Tele/South Central Railway, Secunderabad or any other officer nominated by CSTE signal & telecom Engineer (Projects) SC Railway, will be the Engineer -in- charge of this work. He shall nominate a field officer who shall be the Executive Engineer for the work and shall coordinate for day-to-day execution of the work and any clarifications or instructions given by the said engineer/executive engineer shall be final and binding on the contractor. Regarding alterations & Interpretations to the contents of the contract or any other matter connected with the contract, the Chief signal & telecom Engineer (Projects) South Central Railway, will be the final authority and his decision shall be final and binding on the contractor.

G. FUNCTIONAL REQUIREMENTS: Technical Details are furnished below:

- (a) South Central Railway is implementing OFC base IP-MPLS network as a backbone for migrating existing TDM / IP services along with 4G LTE-R. This shall be done in accordance to RDSO IP-MPLS specification No. STT/TAN/IP-MPLS/2020 Version 3.0 or latest.
- (b) Creation of new 10G IP-MPLS backbone network over single dark fibre in the section.
- (c) Interfacing, integration and testing of legacy SDH networks with IP-MPLS at boundary locations.
- (d) Migration of existing services from SDH networks and provisioning of new services on IP-MPLS.
- (e) Label Switch Router (LSR), Label Edge Router (LER), Core Router shall have integrated Mandatory Testing and Certification of Telecommunication Equipment (MTCTE certification) as per the relevant TEC ER & ITSAR (Indian Telecom Security Assurance Requirements).
- (f) IP-MPLS routers and Core Router shall need to be cleared through Trusted Telecom Portal of National Security Council Secretariat (NSCS) before supply to South Central Railway with the relevant documentation as per Railway Board Telecom Circular Number 12/2023 dated 11.10.2023.
- (g) It shall be the responsibility of the contractor and OEM to stabilise the transport network (IP-MPLS network elements) as demanded by the Railway for functionality of its 4G LTE-R network. Failure to meet the demands of the bandwidth, stability and performance requirements as required for Railway's 4G LTE-R network may lead to action as per this tender document including rescinding the contract and forfeiting full Performance Guarantee and Security Deposit. The decision of the Railway in this case shall be final.
- (h) The IP-MPLS networking solution proposed for installation by the contractor shall be capable of running on both dual dark fibre and single dark fibre.
- (i) South Central Railway shall provide either -48V DC or unregulated 230 V AC for the IP-MPLS network depending on the site conditions. As such it could be assumed that -48 V DC would be provided at stations while unregulated 230 V AC would be provided at mid-section locations. However, the same may vary as per site conditions.
- (j) Divisional NOC needs to be deployed at Secunderabad Divisional Headquarters, Nanded Divisional Headquarters and to be connected to Zonal Headquarters in accordance to RDSO IP-MPLS specification No. STT/TAN/IP-MPLS/2020 Version 3.0 or latest.
- (k) Each Sectional headquarters shall be demonstrated with one workstation to manage the network of the section through workstation terminal. The following are the Sectional headquarters in SC and NED Division.

Secunderabad Division			
S.No.	Sectional Headquarters	Section From	Section To
1	BIDR	KNAJ	GR
2	NLDA	BMMP	VNUP
3	KMT	PPY	MTMI
		DKJ	SYI
4	MDR	MTMI BP	JPND
5	BDCR	CMW	MUGR
		BDCR BP	SPL
6	RC	RC	WADI
Nanded Division			
S.No.	Sectional Headquarters	Section From	Section To
1	CPSN (old Name AWB)	MMR	KMV
2	J	BDU	DGPP
3	PBN	MVO	PBN
		PBN	PRLI
4	PAU	PIZ	LBG & MRV
5	AK	BMF	AK
6	NED	NED	HDGR(Excluding)
		SVN	KEK
7	ADB	HDGR(Including)	PMKT

- (l) The PC workstation shall have the following minimum specifications above locations.

S.No.	Parameter	Specification
1	Processor	Latest generation x86 Intel Processor / AMD Processor
2	Number of Cores	4 Core or higher
3	Frequency	1.6 GHz or higher
4	Memory	32 GB or higher
5	Operating System	Windows Operating System or Linux, latest
6	LAN / Ethernet	10 / 100 / 1000 base T, onboard / on slot Gigabit Ethernet (RJ45), IPv6 compliant
7	Hard Disk Drive	2 x 500 GB SATA III SSD
8	USB Ports	USB 3.0 minimum 2 numbers
9	USB / PS/2 mouse and keyboard	USB wireless keyboard and mouse
10	Monitor	24 Inch LED colour monitor

- (m) **Crimped CAT6 UTP Patch Cord:** CAT6 patch cord shall be of good quality (LSZH – Low Smoke Zero Halogen) and of reputed make with 24 AWG conductor dia conforming to ANSI/TIA/EIA-568-C.2. One sample shall be approved by the consignee / Engineer in-charge before supply.
- (n) **CAT6 UTP Cable:** CAT6 cable shall be of good quality and of reputed make. One sample shall be approved by the consignee / Engineer in-charge before supply.
- Type – Unshielded Twisted Pair, CAT6, ANSI/TIA-568-C.2 compliant
 - Conductors – 24AWG solid bare copper
 - Insulation – Polyethylene
 - Separator – Cross shaped separator between pairs
 - Jacket – Flame retardant PVC (Must for safety compliance)
 - Approvals – UL listed, ETL verified to ANSI/TIA-568-C.2
 - Packing – Proper box packing (Not loose)
- (o) **Single Mode Optical Patch Cords:** The patch cords shall be of good quality and of reputed make. One sample shall be approved by the consignee / Engineer in-charge before supply.

S.No.	Parameter	Unit	Measurement
1	Insertion Loss (IL)	dB	≤ 0.2
2	Return Loss (RL)	dB	≥ 50
3	Repeatability	dB	≤ 0.2

S.No.	Parameter	Unit	Measurement
4	Changeability	dB	≤ 0.2
5	Operating Temperature	°C	-35 to +70
6	Storage Temperature	°C	-35 to +70
7	Fibre Type		G657(A1/A2) / G652D
8	Fibre Diameter	µm	SM-9

- (p) **Switch Board Cable 10 Pair 0.5 mm:** It shall be annealed copper conductor, PVC insulated switch board telephone cable as per specification no. GR/WIR-06/03 Mar 2002 or latest. It shall be of good quality and reputed make such as Finolex / Bhansali / Delton.
- (q) **Core Router:** as per RDSO IP-MPLS specification No. STT/TAN/IP-MPLS/2020 Version 3.0 or latest. Design, fabrication and supply of standard 19" rack mountable modular Core Router minimum non-blocking capacity of 04Tbps full duplex at full services scales, support Minimum 400 Gbps full duplex per slot capacity. with all necessary accessories, cards, interfaces, SFPs (optic / copper as per site requirement), RJ45 and software (with perpetual licenses, if any required) as per RDSO Technical Advisory Note No. STT/TAN/IP-MPLS/2020 Version 3.0 or latest. The equipment shall broadly have the following requirements as per RDSO TAN 3.0.

1. Chassis bundle including aggregator router with dual main control card redundancy design supporting as per functional and technical requirements of Core Routers
2. 8 x 100GE interfaces equally distributed in minimum two-line cards with 100G with suitable optics.
3. 8 x 50GE interfaces equally distributed in minimum two-line cards with 50GE with suitable Optics
4. 8 x 10GE interfaces, equally distributed in minimum two-line cards with suitable Optics.
5. Minimum of 2 interface slots vacant for future expansion.
6. Any other interfaces as per RDSO Technical Advisory Note No. STT/TAN/IP-MPLS/2020 Version 3.0 or latest

(Note: Inspection by RDSO)

I	Functional and Technical requirements of Core Routers
1	General Specifications & Architecture
1.1	Router shall be chassis based & shall have modular architecture for scalability. Chassis shall be 19" rack mountable type.
1.2	Router shall work on -48VDC nominal power supply (with a voltage variation -40 V to -57 V DC). Router shall have 1+1 redundant, field replaceable DC power supply units. In case of failure of one power supply unit/card, other power supply unit/card will take full load without any interruption of services.
1.3	The Mission Critical IP-MPLS Network shall be based on highly resilient, multiservice technology to provide traffic engineered service assurance and bandwidth guaranteed behaviour for mission critical, delay sensitive and bandwidth intensive services & applications.
1.4	The network design shall cater for capability to engineer traffic links between nodes with user defined bandwidth guarantee and QoS profile. Allocation of user configurable queues shall be supported for differentiated treatment to traffic for speed and reliability. It shall be possible to re-route traffic from failed routes to protected routes with no impact on active sessions.
1.5	The modular operating system shall run all critical functions like various routing protocol, forwarding plane and management functions in separate memory protected modules. Failure of one module shall not impact operations of rest of the OS.

1.6	The router shall provide a non-blocked switching matrix upto system capacity.
1.7	Shall support online insertion and removal (OIR) of line cards that is non-disruptive in nature for fast reboot, minimum network downtime etc. Online insertion and removal of one-line card shall not lead to any packet loss for traffic flowing through other line cards for both unicast and multicast traffic.
1.8	Router shall support System & Event logging functions as well as forwarding of these logs onto a separate Server for log management. Event and system logging history functions shall be available. The Router shall generate system alarms on events. Facility to put selective logging of events onto a separate hardware for the analysis of log shall be available.
1.9	The Router shall support various software models/sensors for capturing different health parameters from the devices.
1.1	The router shall have suitable onboard visual indication for various functionalities/failures.
1.11	The Router shall have console management access, with the provision for remote out-of-band management capability.
1.12	Shall able to support multiple VPN's for different services with traffic engineering defined.
1.13	The routers shall support both L2 and L3 services on all interfaces.
1.14	The router shall have the ability to interact with open standard based tools.
1.15	All the routers, Routing EMS/SDN controller shall be capable for seamless integration and interworking. Routing EMS/SDN Controller or Manager or features required of SDN controller/manager can be of same or different OEMs, however it should support standard interfaces like NETCONF/YANG/BGP-LS/PCEP/RESTCONF etc. to interoperate with routers of multiple OEMs in the network.
	NMS must be capable to support/integrate/manage multi OEM devices (Routers and Switches).
1.16	Shall have provision for display of input and output error statistics on all interfaces.
1.17	Shall have provision for display of Input and Output data rate statistics on all interfaces.
1.18	After fulfilling minimum interface requirements, the Router shall have minimum of 2 interface slots vacant for future expansion.
1.19	Router shall support minimum non-blocking capacity of 4 Tbps full-duplex or higher at full services scales. It shall have support Minimum 400 Gbps full-duplex per slot capacity.
1.2	Shall have redundant controller and Switch fabric cards (1+1) for high availability. There shall not be any degradation of performance in case of failure of the redundant module.
1.21	Router shall have hot-swappable/ pluggable redundant (1+1) hot standby fans/fan units.
1.22	All line cards, Power Supply Cards, Fan Tray & Controller Cards shall be hot swappable and field replaceable unit (FRU) for high availability.
1.23	All interfaces on the routers shall provide wire-rate throughput.
1.24	The router shall support 10GE, 40GE, 100GE, interface.
1.25	The router shall support multi-rate interfaces

1.26	The Core Router shall have the provision of following interfaces or as per purchaser requirement: (i) 8 x 100GE interfaces equally distributed in minimum two-line cards. (ii) 8 x 40G interfaces equally distributed in minimum two-line cards. (iii) 8x10G interfaces, equally distributed in minimum two-line cards. Note:(2) Interfaces mentioned above shall be provided in minimum two separate modular/line cards.
2	Protocol Supported:
2.1	The network shall be implemented with standard based protocols as defined by IETF, IEEE, ITU-T, etc.
2.2	All the network equipment shall be IPv4 and IPv6 fully capable and shall fully support IPv4 and IPv6.
2.3	Router shall support, Border Gateway Protocol, Intermediate System- to- Intermediate System [IS-IS], Open Shortest Path First [OSPF]), Virtual Router Redundancy Protocol (VRRP) or equivalent, BGP Prefix Independent Convergence, Segment Routing and LDP.
2.4	Shall support link aggregation using LACP as per IEEE 802.3ad and MC-LAG or EVPN Multihoming.
2.5	Shall support MPLS Provider/Provider Edge functionality. MPLS VPN, MPLS mVPN (Multicast VPN), AS VPN, DiffServ Tunnel Modes, MPLS TE (Fast re-route), DiffServ-Aware TE, Inter-AS VPN, Resource Reservation Protocol (RSVP), VPLS, VPWS, Ethernet over MPLS, EVPN, Segment routing and Segment routing Traffic engineering.
2.6	The router shall support BGP link-state (BGP-LS).
2.7	The router shall support Netconf, YANG and other modern system management protocols.
2.8	It shall Support SNMP V3.
2.9	Router shall support performance monitoring for Layer-2 and layer-3 services (like Y.1731, TWAMP or others).
2.1	Router shall support layer-3 and layer-2 MPLS VPN, VPLS and EVPN.
2.11	Router shall support BFD with interval of 100 ms or better for routing engine based session and 10 ms or better and distributed sessions.
2.12	Router shall support Point to Point and Point to Multipoint LSP for Unicast and Multicast traffic.
2.13	The router shall support Internet Group Management Protocol (IGMP) v2 and v3.
2.14	The router shall support IEEE 1588v2 Precision Timing Protocol (PTP) and Synchronous Ethernet (SyncE) for network synchronization. The Router Shall support GNSS.
2.15	It shall support Multicast troubleshooting tools (like Mtrace and mfib ping or equivalent).
2.16	It shall support FRR & BFD.
2.17	The Router shall support Equal Cost Multi Path (ECMP) routing for load-balancing.
2.18	The router shall support Protocol Independent Multicast-PIM-SM & SSM.
3	Quality of Service

3.1	It shall provide per-service, per-forwarding class queuing and shaping features.
3.2	Ability to configure hierarchical queues in hardware for IP QoS at the egress to the edge.
3.3	Platform shall support Classification, hierarchical shaping, scheduling, and policing for the control upstream and downstream traffic.
3.4	Router shall have min 3 level of scheduling for HQOS, per VLAN QoS. Shall support at least 8 hardware queues to be available for each GE interface on the router.
3.5	Shall support Traffic Classification using various parameters like source physical interfaces, source/destination IP subnet, protocol types (IP/TCP/UDP), source/destination ports, IP Precedence, 802.1p, MPLS EXP, DSCP.
3.6	Shall support Strict Priority Queuing or Low Latency Queuing to support real time application-like Voice and Video with minimum delay and jitter.
3.7	Similar QOS shall be supported for all types of Ethernet interface including Bundled interfaces.
3.8	The list of IP match criteria should include Source IP address and mask, Destination IP address and mask, IP protocol, UDP source port, TCP source port, UDP destination port, TCP destination port.
3.9	The Router shall support VLAN CoS preservation. Shall support the IEEE 802.1p priority bits.
3.1	Appropriate service differentiation must be applied according to the 802.1p bits. This will require the mapping of the 802.1p bits to DSCP values and EXP-bits in the MPLS header when the service is offered over a (partially) MPLS-enabled network.
3.11	End-to-end delay budgets are strictly-enforced to support critical applications SCADA, VOICE, Video.
3.12	It shall support Priority queuing, Class based weighted fair queuing Congestion Management or equivalent.
3.13	Traffic Conditioning: Committed Access Rate/Rate limiting.
4	Security
4.1	Security forms an integral part of a network design to protect both the end-customers and the network infrastructure. The solution that vendor proposes shall have the necessary provisions to implement the necessary security measures.
4.2	Shall support Access Control List to filter traffic based on Source & Destination IP Subnet, Source & Destination Port, Protocol Type (IP, UDP, TCP, ICMP etc) and Port Range etc.
4.3	Shall support per-user Authentication, Authorization and Accounting through RADIUS or TACACS+.
4.4	Multiple privilege level authentications for console and telnet access through Local database or through an external AAA Server.
4.5	Support for monitoring of Traffic flows for Network planning and Security purposes.
4.6	High Availability features like node protection, path protection, link protection as per media availability.
4.7	Router shall have Debugging features to display and analyse various types of packets.
4.8	Ingress and egress packet filtering based on L2-L4 criteria at wire speed. The

	possibility to log the actions on individual filter rules shall be supported.
4.9	Authentication of routing protocol updates: IS-IS, OSPF, BGP.
4.1	It shall support SSH (Secure Shell).
5	Performance
5.1	Router shall support minimum non-blocking capacity of 4 Tbps full-duplex or higher at full services scales.
5.2	The router shall have capability of minimum 2 Million IPv4, 500K IPv6 routes.
5.3	The router shall support minimum 128K MAC address.
5.4	Router shall support 16k multicast routes.
5.5	It shall support 2K Multicast group.
5.6	Router shall support minimum 8K MPLS PWE3.
5.7	Router shall support minimum 8K VPLS.
5.8	Router shall support minimum 1K MPLS L3 VPN.
5.9	The router shall support minimum 10K labels and 10 label stacks.
5.1	Shall support 64 ECMP (equal cost multipath).

- (r) **24 Port Layer 2 Manageable Switch (For Non-PoE and PoE switches):** The following specifications are to be read in conjunction with RDSO specification number RDSO/SPN/TC/65/2021 Ver 6.0 or latest.

S.No.	RDSO Specification Clause	Railway Requirement
5.1.1	24 Nos. 10/100/1000 Base-T, 2 Nos. 10G Base-T ports and 2 Nos. 10G SFP+ ports Stackable Managed Switch.	24 Nos. 10/100/1000 Base-T and 4x1G SFP uplink ports populated with 1 single mode SFP fibre module for Non-PoE Switches.
5.1.1	24 Nos. 10/100/1000 Base-T PoE ports, 2 Nos. 10GBase-T ports and 2 Nos. 10G SFP+ ports Stackable Managed Switch. 370W PoE Budget from Day 1 and potential to be expanded to 740 watts	24 Nos. 10/100/1000 Base-T and 4x1G SFP uplink ports populated with 1 single mode SFP fibre module. 370W PoE Budget from Day 1 and potential to be expanded to 740 watts for PoE switches.
5.2.1	The LAN switch shall be available with minimum 128 Gbps switching fabric.	The LAN switch shall be available with minimum 56 Gbps switching fabric.
5.2.2	The LAN switch shall have minimum packet forwarding rate of 95.24 million packets per second at 64-byte packet length.	The LAN switch shall have minimum packet forwarding rate of 41.67 million packets per second at 64-byte packet length.
5.2.5	The switch should be stackable with a minimum stacking bandwidth of at least 80 Gbps. It should support stacking of at least 4 units or higher or Virtual Switching System (VSS) or Equivalent technology. For stacking the switches shall be either dedicated stack ports or Ethernet uplink ports	The switch should be stackable for a minimum of 4 units with minimum required stacking bandwidth with single IP management with ethernet uplink ports.
5.2.6	The switch should support external redundant power supply (RPS). The Switch should have min 2 AC PSUs and support AC & DC modular power supply.	The switch should have internal AC power supply and redundant power supply is not required.

S.No.	RDSO Specification Clause	Railway Requirement
5.3.2	It shall support for Automatic Negotiation of link speed and duplex to help minimise the configuration & errors.	It shall support for Automatic Negotiation of trunking protocol, to help minimise the configuration and errors.
5.3.4	It shall support edge port in STP/RSTP/MSTP mode and Ethernet Ring Protection Switching (ERPS) (ITU-T G.8032)	It shall support edge port in STP/RSTP/MSTP mode and Ethernet Ring Protection Switching (ERPS) (ITU-T G.8032) or equivalent.
5.4.3	It shall have supports QoS Flow Actions, Remark 802.1p priority tag, TOS/DSCP tag, Bandwidth Control and Three Color Marker.	It shall have supports QoS Flow Actions, Remark 802.1p priority tag, TOS/DSCP tag, Bandwidth Control.
5.4.6	There shall be weighted Random Early Detection (WRED) to provide congestion avoidance.	There shall be SRR, Weighted Tail Drop / weighted Random Early Detection (WRED) to provide congestion avoidance
5.4.9	There shall be support for Asynchronous data flows upstream and downstream from the end station or on the uplink using ingress policing and egress shaping.	The switch shall support ingress policing and egress shaping.
5.5.17	It shall support for up to 1500 access control entries (ACEs).	It shall support for upto 600 access control entries (ACEs).
5.6.3	It shall have support for RMON groups though the use of a mirrored port, which permits traffic monitoring of a single port, a group of ports, or the entire switch from a single network analyzer or RMON probe.	It shall have support for RMON and port mirroring.

(s) LED Display 65" with PC and fixing accessories etc.

1. Display Size: 65 inch
2. Screen Type: LED
3. Resolution Standard: 4K
4. Resolution (pixels): 3840x2160
5. No of HDMI Port: 3 or more
6. No of USB Port: 3 latest or more
7. Built In Wi-Fi: YES
8. Ethernet (RJ45): 1 or more
09. Analog Audio Input: YES
10. Number of Speakers: 2
11. Speaker Output RMS: 20 W or higher
12. Power Consumption: 172 W, 0.5 W (Standby) or less
13. Remote: YES
14. Windows operating systems supported
15. Bluetooth
16. Supported Video Formats:
MPEG1/MPEG2TS/AVCHD/MP4/AVI/WMV/LPCM/MP3/WMA/JPEG or any other
17. Refresh Rate (Hz): 50
18. fixing accessories etc

(t) PC Workstation(as per RDSO Technical Advisory Note No. STT/TAN/IP-MPLS/2020 Version 3.0 I. PC Workstation) with 24 inch 2 monitors.

S. No.	Parameter	Specification
i.	Processor	Intel Core i5/AMD latest processor released year 2024 after
ii.	No. of Cores	6 Core or higher
iii.	Frequency	1.8 GHz or higher
iv.	Memory	32 GB or higher
v.	Operating System	ubuntu latest version
vi.	LAN/ Ethernet	10/100/1000 base T, Onboard/ on slot Gigabit Ethernet (RJ45), IPv6 compliant.
vii.	Hard Disk Drive	2 x 500GB SSD (Minimum 1 No NVMe SSD)
viii.	USB Ports	USB 3.0 min. 2 Nos.
ix	USB/ PS/2 mouse and keyboard	USB wireless keyboard and mouse
x	Monitor	2 Nos 24-inch LED Color Monitor

(u) DESIGNS, DRAWINGS AND DOCUMENTS:

The Drawings for the work can be seen in the office of the Dy.CSTE/Projects/Tele/SC and / or CSTE/Projects/Co-ord/SC, South Central Railway at any time during the office hours. The drawings are only for the guidance of Tenderer(s). Detailed working drawings (if required) based generally on the drawing mentioned above, will be given by the Engineer or his representative from time to time.

(v) Execution of work: The following items shall be ensured while executing the work.

1. Material with RDSO specifications shall be procured from RDSO approved vendors only. If no RDSO approved vendor is available, material shall be procured from other sources as approved by Authority.
2. All the equipment shall be installed and commissioned by OEM's authorised Engineers. OEM Installation certificates, testing certificates, Pre- commissioning checklists etc., shall be arranged by the contractor. Procedures specified in the latest RDSO TAN shall be followed
3. Installation shall comply with the requirements to the following Indian Railways manuals/books and respective Zonal Railway practices in vogue-Indian Railways.

I	Indian Railways Signal Engineering Manual (latest edition).
II	Indian Railways Telecom Manual (latest edition)
III	Indian Railways Engineering code
IV	Indian Railways P - Way Manual
V	Indian Railways Works Manual
VI	Indian Railways AC traction Manual
VII	General & Subsidiary Rules of Indian Railway

4. All tools & plants, measuring instruments etc. required for inspection, installation, testing & commissioning shall be arranged by the contractor and shall be the contractor's property of

contractor.

5. The contractor shall fill the salient details of contract labours engaged in the contract and ensure updating of each wage payment to them on Shramik Kalyan portal on monthly basis and the record shall be made available for the inspection.
6. All the underground cables shall be provided with punched name plates showing Drum No, total no. of cores, and from and to details etc. Cable termination particulars of location boxes shall be laser printed, laminated and fixed to the location box door using 2mm thick Perspex sheet cover.
7. The complete trenching, cable laying activity shall be video recorded and submitted in CD / Pen drive.
8. All the contacts of relay shall not be used, at least one front contact and one back contact shall be kept as spare for future requirements.
9. All the flexible wires shall be terminated using suitable size lugs. These lugs shall be crimped and soldered. Wire identification tags / sleeves / Ferrules of insulation material shall be provided at both ends of the wire with terminal particulars printed on it.
10. All the cable entries shall be closed properly using concrete / Silica Gel or any other compound to avoid entry of rodents or cable theft.
11. Cable termination particulars of location boxes shall be laser printer, laminated and fixed to the location box door using 2mm thick Perspex sheet cover.
12. Design, wiring, testing, energisation, preparation of pre-commissioning checklists and commissioning involved in the alterations of EI shall be executed by Competent Engineers of OEM.
13. All the new gears installed need to be tested before commissioning to ensure that the gears are in proper working order.

H. Programme of Work Execution

- a) Time is the essence of this contract and time schedule shall be strictly adhered to. The entire work as per the contract will have to be completed within 12 (twelve) months from the date of issue of Letter of Acceptance (LOA), on a progressive basis. The contractor shall be responsible for progress of work on progressive basis from the date of issue of LOA. Since the progress of the work is critically related to the supply of material by the contractor, he shall be responsible for supply of duly inspected material on a progressive basis, so that the work can be completed within stipulated period.
- b) Contractor on his part shall employ adequate number of supervisors, technicians and supporting staff commensurate with working area available. He will also arrange required material and equipment to complete the job most expeditiously so as to ensure that the work is completed within the stipulated period and to the entire satisfaction of Engineer in-charge.
- c) The contractor is expected to have worked out a detailed programme for execution of the work well before issue of LOA by Railway and submit a Detailed Time and Activity Schedule within **15 days** of the issue of LOA and order of material for the execution of work aiming at completing the entire work within the stipulated completion time. This schedule shall thereafter be approved by the Engineer in-charge.
- d) Railway reserves the right to modify the schedule while approving the same as well as at any stage during execution if situation so warrants. Once approved, in the event of any slippage from the time schedule especially when resulting into time overrun of the work the contractor shall submit revised schedule duly justifying the circumstances without any delay. The revised schedule shall be approved by the Engineer in-charge only when considered justified in his opinion. Otherwise, it may attract penal action on the contractor as per the provisions of this contract.
- e) The contractor shall be held responsible for the execution of the work according to the Programme given for the execution of the work in full compliance of the approved documents, drawings and also various clauses of technical specification and requirement. Failure to comply with any of these will be dealt as per provisions of GCC.
- f) The contractor shall programme his work in such a manner so as not to interfere in the working and movement of trains. No extra payment shall be allowed on this account and for taking any precautions or wastage of contractor's labour, time etc. due to train working.

- g) No facility whatsoever, e.g. provisions of approach road and provision of temporary level crossing etc. shall be provided by Railway for carting material. Approach roads within the Railway limits can be used for carting materials.

I. Inspection of Material

- a) The inspecting authority of the equipment / material to be supplied shall be RDSO / RITES / Consignee as mentioned in the Bill(s) of Quantities.
- b) All equipment, materials, fittings and components with RDSO approved sources shall be procured from RDSO approved firms as per approved IRS / RDSO / TEC specifications and should be inspected by RDSO. All equipment, materials, fittings and components with RDSO recommended sources shall be procured from RDSO approved / recommended firms as per approved IRS / RDSO / TEC specifications and should be inspected by RDSO. Further, items which do not have RDSO / TEC specification or for which RDSO has not approved any sources or where RDSO does not inspect certain materials as a matter of their policy the inspection shall be carried out by RITES / Authorised Railway representative as decided by CSTE/Projects/Co-ord/SC.
- c) All the safety items such as wire coils, connecting terminals, fuses, power supply equipment, indoor signalling cables etc. shall be inspected by RDSO.
- d) Mechanical items such as relay racks, Aluminium ladder etc. shall be got approved by the Railways and all the mechanical items are to be purchased from RDSO / RITES approved list firms only.
- e) **Guidance on RDSO Inspections:** Following critical items will continue to be inspected by RDSO as per instructions contained in Rly Board's Lr No: 74/RS (G)/379/2/Pt dated 04.03.1991 and 18.06.1991.
- i) All types of signalling relays;
 - ii) Block instruments;
 - iii) Axle counter equipment;
 - iv) Signal machines;
 - v) Point machines;
 - vi) Colour light signal transformers
 - vii) Electrical signal lamps;
 - viii) Voltage stabilisers and other power supply equipment.
 - ix) Electric signal reversers;
 - x) Signal roundels and lenses;
 - xi) Electric lever lock and circuit controller.
 - xii) Circuit controller;
 - xiii) Electric key transmitter;
 - xiv) Fuses, Fuse Block & Terminal blocks (PBT Type);
 - xv) Electric Point and lock detector.

Signalling items other than those mentioned above will be inspected by RDSO provided the order value is more than ₹. 5 lakhs mentioned vide Rly Board's Lr No: 2000/RS (G)/379/2 dated 06.09.2017. This stipulation supersedes any contradictory provision in Bill(s) of Quantities.

- f) In case the total value of an item to be supplied as per RDSO / IRS specification is less than ₹. 5 lakhs (₹. Five Lakhs only), the same shall be inspected by RITES / Consignee, subject to supplies being from sources approved by RDSO. However, certain specified items irrespective of value shall invariably be inspected by RDSO as per extant policy of Indian Railways.
- g) **Change of Inspection Clause:** In spite of above stipulations, if there is a need to change inspection to Consignee from RDSO / RITES, such change shall be authorised by **CSTE/Projects/Co-ord/SCR** in which case the equivalent monetary amount as applicable for original inspection clause shall be deducted by Railway as Inspection Charges.
- h) The contractor shall be required to furnish manufacturer's / supplier's warranty certificate for the material supplied.
- i) The contractor shall give sufficient notice of time to RDSO / RITES / Railway's representative when the material is ready for testing / inspection. All facilities as may be necessary shall be provided for carrying out the tests.
- j) During the execution of the contract, samples may be taken from the material employed for the purpose of test and / or analysis under the conditions laid down in specification; such samples to be prepared for testing and forwarded to the testing entity shall be without any additional costs to the Railway.
- k) **Inspection Charges:** For the Signalling / Telecom and other materials to be inspected by RDSO / RITES, the contractor shall pay to RDSO / RITES / Consignee inspection charges as per extant rules

directly i.e. all the inspection charges shall be borne by the contractor. Cost of the tests / analysis required from outside agencies or independent consultants etc. shall be borne by the contractor. Any material to be used for this work shall not be procured from any sources banned for business dealing with Indian Railways under any circumstances.

- l) Material should be in properly packed condition and the consignee reserves the right to reject the material even though it was passed by RDSO / nominated inspecting authority of Railways if it is received in damaged or defective condition.
- m) All the materials and workmanship used in this work shall be of extremely good quality and high class in every respect and is expected to give trouble free service.

J. Stores – Receipt and Accountal

- a) Exchange of proper requisition and receipt shall be done on a suitable form between the contractor and the Railway's authorised representative.
- b) The contractor shall issue a receipt along with the demand slip for the material required for the work and obtain receipt when any material is returned to stores. These transactions shall be done with the Consignee.
- c) All stores drawn by the contractor shall be accounted for either as installed as per site measurements recorded or as per surplus stores returned to the respective Consignee (stores).
- d) The contractor shall submit Material Transaction Statement along with the "On Account" bills.

K. Maintenance of Works

- a) The period of maintenance for this contract is **24 months** after the date of commissioning of complete system.
- b) The contractor shall at all times during the progress and continuance of the works and also for the period of maintenance and after the date of passing of the certificate of completion by the Railway'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 Railway's representative shall require, any damage or defect that may occur 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 instruction or civil riot, and the contractor shall be liable for and shall pay and make good to the Railway's or other person legally entitled thereto whenever required by the Railway'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 in consequence of the operations of the contractor or his failure in any respect.
- c) Normal day to day operations and preliminary diagnosis to the extent possible shall be handled by the Railway based on the guidelines and training provided by the OEM / contractor.
- d) During the maintenance period, the contractor shall remain responsible for fault rectification, regular preventive and corrective maintenance in accordance to the maintenance schedules defined in the maintenance manuals approved by OEM or RDSO or Railways. The maintenance engineer of the OEM shall visit all the sites ensuring regular maintenance. No separate charges shall be paid for the engineers' visits.
- e) The contractor shall deploy qualified service engineers available round the clock for the purpose of maintenance.
- f) The contractor shall submit monthly report of system availability, failure details and failure root cause analysis without fail to Railway.
- g) Following are the details of penalties for default in maintenance of works.
 - i) Failure to deploy qualified service engineers – ₹. 1,000/- per day of default.
 - ii) Time taken for failure restoration (Non-NMS site) more than 5 hours – ₹. 1,000/- per hour (more than 5 hours) per failure
 - iii) Time taken for failure restoration (NMS site) more than 2 hours – ₹. 10,000/- per hour (more than 2 hours) per failure
 - iv) Failure to make scheduled visit for preventive maintenance – ₹. 10,000/- per default of visit per site.

L. Price Variation Clause: Not Applicable

Price variation clause is not applicable in this contract across all the schedules.

M. Variation in Contract Quantities

- a) In addition to Clause 41 and 42 of GCC, the following clause shall also be applicable. The procedure detailed below shall be adopted for dealing with variations in quantities during execution of works contracts.
- b) Unless otherwise specified in the special conditions of the contract, the accepted variation in quantity of each individual item of the contract would be upto 25% of the quantity originally contracted, except in case of foundation work.
- c) The contractor shall be bound to carry out the work at the agreed rates and shall not be entitled to any claim or any compensation whatsoever upto the limit of 25% variation in quantity of individual item of works.
- d) In case an increase in quantity of an individual item by more than 25% of the agreement quantity is considered unavoidable, the same shall be executed at following rates.
 - i) Quantities operated in excess of 125% but upto 140% of the agreement quantity of the concerned item, shall be paid at 98% of the rate awarded for that item in the tender.
 - ii) Quantities operated in excess of 140% but upto 150% of the agreement quantity of the concerned item shall be paid at 96% of the rate awarded for that item in the tender.
 - iii) Variation in quantities of individual items beyond 150% will be avoided and would be permitted only in exceptional unavoidable circumstances and shall be paid at 96% of the rate awarded for that item in the tender.
- e) Variation to Quantities of Minor Value Item:
The limit for varying quantities for minor value items shall be 100% (as against 25% prescribed for other items). A minor value item for this purpose is defined as an item whose original agreement value is less than 1% of the total original agreement value.
 - i) Quantities operated upto and including 100% of the agreement quantity of the concerned minor value item, shall be paid at the rate awarded for that item in that particular tender.
 - ii) Quantities operated in excess of 100% but upto 200% of the agreement quantity of the concerned minor value item, shall be paid at 98% of the rate awarded for that item in that particular tender.
 - iii) Variation in quantities of individual minor value item beyond 200% will be avoided and would be permitted only in exceptional unavoidable circumstances and shall be paid at 96% of the rate awarded for that item in that particular tender.
- f) As far as Standard Schedule of Rates (SSOR) items are concerned, the variation limit of 25% would apply to the value of SSOR schedule(s) as a whole and not on individual SSOR items. However, in case of Non SSOR items, the limit of 25% would apply on the individual items irrespective of the manner of quoting the rate (single percentage rate or individual item rate).
- g) In cases where decrease is involved during execution of contract:
 - i) The contract signing authority can decrease the quantities of items up to 25% of individual item.
 - ii) For decrease beyond 25% for individual items or 25% of contract agreement value, the approval of an officer not less than rank of S.A. Grade may be taken, after obtaining "No Claim Certificate" from the contractor and with finance concurrence.

N. Training

The tenderer shall undertake to impart training to Railway staff either at the site of installation and the OEM factory premises / at a reputed institute in different aspects of the equipment such as its architecture, functioning and planning, management, supervision, field installation, commissioning, testing and maintenance in both hardware and software areas in order to transfer technical know-how.

The following shall be the various aspects of the training.

- a) The courses should include hands on training, visits to installations apart from formal classes.
- b) The OEM should train the Railway personnel to such level of proficiency that they may carry out changes in the IP-MPLS routers and their configurations without the help of the OEM.
- c) The training course to be conducted at the manufacturing facilities shall be designed to train the trainees in all aspects of system engineering, equipment operation, installation and functional details, theory of operation of equipment, troubleshooting and familiarisation with the equipment at card and component level.
- d) Expenses of travel for railway staff by rail shall be borne by Railway.

- e) The subjects of training, details of courses, course contents, documentation etc. shall be made available to Railway in soft format.

Part -D
Technical Guidelines for S&T Works

Technical Guidelines for S&T Works

A. General Technical Conditions and Specifications

1.0	GENERAL:
1.1	The detailed Specification for the work which is to be carried out by the contractor are as stipulated here under. Notwithstanding whatever contained in the specifications, the field supervisor/Executive engineer for the work shall decide as per site conditions and shall be binding on the contractor. In case of any dispute regarding soil condition/type of trenching and other conditions the decision of the Engineer for the work shall be final and binding.
1.2	The work shall be carried out according to the drawings approved by the Railways and shall confirm to the provision of Codes, Signal Engineering Manual, RE Manual, Block Manual and Schedule of Dimensions are deemed to be a part of the Contract Agreement. The contractor shall be solely responsible for the proper execution of the work as per specification.
1.3	The respective drawings can be obtained from the office of the Dy.CSTE/Project/Tele/SC
2.0	CABLE LAYING:
2.1	CABLE PLAN:
	Cable route plan and cable distribution chart for each cable shall be prepared by contractor for each station and block section leaving adequate spare conductors overall i.e., 20% of working conductors on overall shall be left spare up to outer most points and 10% beyond outer most points. These plans shall be approved by railways before starting the cable laying works.
2.2	CABLE TRENCHING:
2.2.1	The trenching and cable laying shall be done as per the approved cable route plan diagram
2.2.2	RCC duct shall be laid at a depth not less than 600 mm. All signalling, Power, HDPE duct shall be drawn in the duct. The RCC duct shall be laid for Home to Home and also for the tail cables trench that is from the main cable path up to the function. RCC duct shall be filled with River sand / Sieved quarry dust not less than 50mm above the cable top. The joints of RCC duct covers shall be sealed with cement mortar. The trench shall be refilled after closing of the duct.
2.2.3	Where power cables are to be taken through the RCC duct, the RCC duct (as per SCR drawing no 5778) shall be used. where no power cables are required to be taken in the RCC duct, RCC duct (as per SCR drawing no: 5778A) can be used.
2.2.4	When cables are to be laid in rocky areas, in the path nominated for RCC duct the rock shall be cut to a depth of not less than 400 mm, place the RCC duct and concrete the remaining portion up to ground level, with 1:3:6 concrete mix after laying of cables.
2.2.5	In areas where continuous sheet rock is encountered, the cables shall be laid in GI pipes of adequate diameter and complete length of the GI pipe shall be clamped and concreted with 1:3:6 concrete mix up to the height/width of 300 mm above /adjacent to the GI Pipe.

2.2.6	Excavation of cable trench excluding home to home shall be made in all kinds of soils including clearing roots of trees, rocks etc., to a depth of 1.2 Mtr and to a width of not less than 0.30 Mtr providing proper protection as required by Railways while crossing power cables, pipelines etc., the bottom of the trench shall be leveled and got rid of any sharp materials. Trenches shall be straight as far as possible and steep angles shall be avoided. Railways will indicate alignment of the main cable route as well as track/road crossings.
2.2.7	The trench path shall be straight as far as possible. The trenching shall be carried out without causing damage to the working cables. A qualified engineer shall be deployed at the work spot continuously. The guidelines issued vide Railway Board Lr No.2021/Tele/5(2)/3-Part(1)(3425647) dated 12.06.2023 for taking up digging activity near S&T cables shall be followed. Necessary bushes/trees/jungle shall be cleared before taking up the trenching. They shall be laid as close to the Railway land boundary as possible.
2.2.8	The progress of trenching, availability of cable, pipes etc., shall be closely co-ordinate to ensure that the trenches remain open for minimum possible time.
2.2.9	Whenever the track crossing is to be done, the same shall be done in least possible time in the presence of Railway Civil Engineering Representative.
2.2.10	It is desirable that the excavation of trenches is not done in long lengths and does not remain uncovered overnight. It is preferable that trenches are dug, cable laid and refilling done on the same day.
2.2.11	The cable trench depth shall be full except where local conditions of soil prevent same. The decision of Engineer in this regard is final. However in all cases where depth is less than 800mm; protective measures are to be undertaken. Wherever rock formation/ foundations, pipes or cables are experienced and trenching cannot be done to a depth of even 800mm, the trench shall be dug as far as possible and protective measures taken to avoid damages of cable as decided by the Railway's representative. The relevant item of Schedule shall be operated.
2.2.12	In all such cases of lower depth, the Railway supervisor shall record the reasons for such low depth in the site register. Payment of trenching shall be made proportionate to the depth of trench and no payment shall be made for any extra excavation carried out of additional depth or width of the trench out in the slopes etc.
2.2.13	Proportionate payment shall be allowed where the required depth cannot be achieved due to geographical contours.
2.2.14	The work shall be done as per approved drawings. The approved drawings required if any can be obtained from the office of Dy CSTE/Project/Tele/SC.
2.2.15	During excavation of the trenches, the earth should not be thrown on the ballast. The side of the trenches, away from the track should throw the earth. Complete excavated earth shall be backfilled in the trench after laying the cable and rammed well.
2.2.16	Micro Tunnelling/Trenchless Digging: Track Crossings, Road crossings, Platform crossings, Trenching in Circulating area, shall be carried out by Micro tunnelling / Trench less digging to the extent possible. Micro tunnelling / trenchless digging shall also be adopted in difficult terrains/marshy areas/water logged areas if it is found advantageous for quick delivery of the project. Micro tunnelling shall be carried out at a depth of not less than 1.5m from rail level. Micro tunnelling / trenchless digging shall include supply and insertion of HDPE duct of Dia 110 mm, PE 80 (IS 4984). If micro tunnelling is not feasible for track crossings / Road crossings, horizontal boring method vide SCR Drawing No. 5770 shall be followed.

2.2.17	a) Track Crossings, Road crossings, Platform crossings, Trenching in Circulating area, shall be carried out by Micro tunneling / Trench less digging to the extent possible. Micro tunneling / trenchless digging can also be adopted in difficult terrains/marshy areas/water logged areas if it is found advantageous for quick delivery of the project . Micro tunnelling shall be carried out at a depth of not less than 1.5m from rail level. Micro tunneling / trenchless digging shall include supply and insertion of HDPE duct of Dia 110 mm, PE 80 (IS 4984). b) If micro tunnelling is not feasible for track crossings / Road crossings, horizontal boring method vide SCR Drawing No. 5770 shall be followed. For track crossings, micro tunnelling/ horizontal boring shall be done at a depth not less than 1.0 mts from the bottom of the sleeper. c) If both the above-mentioned methods are not feasible, manual track crossing / road crossing shall be done as per SCR Drawing No. 5768 d) RCC pipe used for manual crossing shall be of non-pressure NP2 class (light duty) of 150 mm dia. with collars joined with a stiff mixture of cement mortar in the proportion of 1:2 (1 cement: 2 fine sand) including testing of joints etc. e) The surface area shall be brought back to its original state after completion of cable laying. f) Wherever the above three options are not feasible, cables shall be taken over the foot over bridge in lieu of track crossing. Cable shall be laid inside HDPE pipe of Dia 110 mm, PE 80 (IS 4984) of suitable diameter properly clamped to the FOB structure.
2.3	CABLE LAYING:
2.3.1	Cable Laying
a.	Provisions of Signalling Engineering Manual shall be broadly followed.
b.	Before the cables are laid, a visual inspection of cable shall be made and it shall be tested for insulation and continuity of cores. The insulation resistance of new cable shall not be below 500 M. Ohms per KM at 20 degrees centigrade.
c.	If there is wide disparity between insulation of different conductors, the conditions of the cable should be thoroughly checked before permitting its use. Bedding and armoring shall be inspected to see that there has been no damage during transit or in storage.
d.	Cable wheels shall be used normally to mount the drums before rolling them. In case where the Cable wheels not available or the area is not convenient for rolling the Wheel Drums along the route, the drum shall be mounted on the axle at one end of trench and cable unwinded using adequate number of men ensuring that the insulation of the cable is not damaged and no kink/twist is formed.
e.	Before laying of cable in the trench, a visual inspection shall be adequate for any damage or defect throughout its length. A Video recording with clear depth of Trench & it's location to affixed structure shall be made before laying the cable.
f.	Normally, cable laying should be commenced only after the relay room and cable termination box on the route at the respective stations are ready, and the cable should be fully terminated at the relay room/apparatus cases, immediately after the cables are laid. However, if for any reason the cables are to be laid in advance, special care should be taken to ensure that the coiled cable near the relay room/apparatus case is fully protected before and during final termination. The coiled cable should be fully covered with a layer of bricks in its entire length and provided with an adequate number of cable markers. On no occasion the ends of the cable should be left unprotected.
g.	Cable laying shall commence only after the depth and width of the trench, quality of bricks etc. are jointly inspected by the Railway Engineers Representative and Contractor's representative and approved.

h.	Cables shall never be taken over the running tracks at the time of cable laying by the contractor as this is likely to cause accidents to trains and damage to cables. In case where the cable is required to be transported across the tracks, the same shall be done in the presence of Railway Supervisory staff after safety precautions have been taken to post flagmen on all the sides as may be required to stop any train approaching the site of the fouled line.
i.	At each end of the main cable/tail cable/power cables an extra coil length of 6 to 8 meters should be kept.
j.	At the time of commissioning of the cables, the insulation values of the cable should again be checked and the value obtained shall not be below 10 M. Ohms per km at 50 degrees c. If there is wide disparity between insulation of different conductors, the conditions of the cable should be thoroughly checked before permitting its use. The readings shall be recorded in the register for all cables.
k.	The contractor shall furnish the final as made cable plan and cable route plan showing the distance of cables from the nearest track center at every 30 M interval and location of apparatus cases.
l.	The Supply of tentative Cable Route Plan shall be a pre-requisite for releasing payment towards trenching. The Engineer may split the Total trench (yard/ work area) into suitable no of sub locations for release of quantities pertaining to that area.
m.	RFID Cable route markers shall be provided in both main and redundant trenches at every 100 mts and at the locations of Track crossing and OFC Loop Chamber.
n.	The entire cable path (both main and redundant paths) shall be provided with cable route markers as per DRG. No. 15-D1 of IRSEM. The cube test reports of each sample of the concrete batch shall be submitted. The Cable markers shall be provided at an interval of 50 mtrs. Additional cable markers shall also be provided at every cable joint/cable diversion. Cable markers shall be painted with standard colour code.
o.	TRACK/ROAD CROSSINGS: Whenever signaling/power cable has to cross the track/road, it shall be ensure the following
i.	The cable crosses the track/road at right angles.
ii.	The cable normally does not cross in between or inside points and crossings.
iii.	The track/road crossings to be carried out as per the drawings.
iv.	The work includes removal of ballast, cutting of trench across track/road at the places indicated by the Railways and covering the trenches after placing RCC pipe/pipes in position.
2.3.2	BRIDGE CROSSINGS: On bridges, the cables are to be laid through GI pipe/trough and taken through CC/GI pipe on either ends suitably buried on both sides of the bridges for a sufficient depth so as to meet the bottom of the cable trench, then fixing the pipe in concrete of size 0.5m x 0.5m in both abutments. Separate pipes/troughs shall be used for power/signaling cables. Suitable supporting clamps shall be manufactured as required by Railways at the rate of 1 clamp/meter depending upon the type of girder. Before fixing GI pipes, perforated holes of 5mm dia shall be drilled at an interval of 0.3 Mtrs. to avoid theft of GI pipes. All the above works shall be carried out in presence of Railway representative only. The work shall be executed as per Drg No. SK/SC/CN/West/76/86 (for girder Bridges and SK/SC/CN/West/12/87 for concrete slab bridges.
2.3.3	RCC DUCT and LAYING: RCC duct shall be laid at a depth not less than 600 mm. All signalling, Power, HDPE duct shall be drawn in the duct as instructed by Engineer. The RCC duct shall be laid for the main cable path and also for the tail cables trench that is from main cable path up to the function. The RCC duct shall be filled with River sand / Sieved quarry dust not less than 50 mm above the cable top. The joints of RCC duct covers shall be sealed with cement mortar. The trench shall be refilled after closing of the duct. When cables are to be laid in rocky areas, in the path nominated for RCC

	duct, the rock shall be cut to a depth of not less than 400 mm, place the RCC duct and concrete the remaining portion up to ground level, with 1:3:6 concrete mix after laying of cables. Wherever power cables are required to take 230V AC power supply, it shall be laid in the separate partition of RCC duct. The RCC duct shall be supplied as per SCR DRG No.5778 and it is to be adopted for laying of Signalling, Telecom and 2X35 Sq.mm XLPE power cable. Where no electrical power cable is required to be laid, RCC Duct as per SCR DRG No.5778A can be used. Cube test for RCC Duct for each batch of casting as prescribed in relevant IS codes shall be carried out at NABL accredited laboratories. Slump tests for concrete shall be carried out and recorded as per approved QAP. Materials such as steel, cement, sand etc. used in RCC Duct shall be tested as per relevant IS codes and approved QAP.
2.4	LAYING OF HDPE DUCT IN SPECIAL CASES:
2.4.1	NEAR POWER CABLE: HDPE duct in GI pipe 75 mm dia or RCC Pipe 150 mm dia supported on Masonry. When the contractor comes across any other cable already laid, he shall as a power cable (LT or HT), the trench shall be dug as far away from the route of first report thefact to the Engineer. Should the cable be identified by the Engineer the power cable as practicable.
a.	Crossing of Optical Fibre Cable Duct with another cable: Crossing of the Optical Fibre Cable /HDPE Duct with another cable shall be avoided wherever possible. Where, however, this is not possible, the Optical Fibre Cable/HDPE duct 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.
b.	Laying of cable other than Optical Fibre Cable / HDPE ducts in the same trench: No cable other than quad cable shall be laid in the trench for the optical fibre cable/HDPE duct. Even in such cases, both the cables are to be laid as per approved drawing. Where, however, exceptional circumstances exist, the Optical Fibre Cable/HDPE duct may be laid along with another cable in the same trench provided aspecific permission of each such case is obtained in writing from engineer. When Optical Fibre Cable/ HDPE duct and LT power cable have to be laid in the same trench they shall be separated by placing a layer of brick between them vertically (approx. 16 bricks /meter) or laid in RCC pipe.
2.4.2	LAYING OF HDPE DUCT THROUGH PIPES:
a.	The HDPE duct shall be laid through RCC pipes at the locations marked on the route plan and as advised by the Engineer or his representative.
b.	For laying the HDPE duct 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 HDPE duct is threaded through the pipe, one lead wire is permanently left in the pipe with a suitable overlay at two ends, to enable the HDPE duct to be pulled out at a later stage if required to do so.
c.	On arch bridges and culvert bridges the HDPE ducts will be threaded through GI/RCC pipes etc. While threading the HDPE duct through these pipes the contractor shall do the trenching to the required depth wherever necessary for which no extra charge will be paid.
2.4.3	LAYING OF HDPE DUCT NEAR FEEDING POST: In the vicinity of feeding posts, as far as possible the HDPE duct shall be laid on the side of the track opposite to the feeding post. Further the optical fibre cable /HDPE duct shall be at least one meter away from any metallic part of d other equipment at the

	substation which is fixed on the ground and at least one meter away from the substation earthing. In addition, the HDPE duct shall be laid in CC pipes 150 mm dia (standard 2 meters length) complete or capable of being split into two half as per specn. No. ISS-458 latest for a length of 300 meters on either side of the feedingpoint.
2.4.4	RUNNING OF HDPE DUCTS AT FOUNDATIONS OTHER THAN OHE MASTS ANDFROM PIPE OUTLETS: Damage to HDPE duct is likely to occur if care is not taken in laying HDPE duct where the bed changes from solid support such as a foundation pipe or bridge to soft support such as soft soil. The HDPE duct must not press against the edge of the solid support. The soft soil near the edge must be tamed and HDPE duct raised slightly.
2.4.5	LAYING NEAR OILY SURFACE: If during the excavation of trenches for laying HDPE ducts, the contractor or his representative notices the presence of oil or oily substance or any other chemical which is likely to cause shall bring the matter the deterioration of the HDPE Duct 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 HDPE duct route or he shall protect the HDPE Duct in such places in such manner as advised in writing by the Engineer or his representative. No additional charges are payable.
2.4.6	SPECIAL SOIL CONDITION: HDPE duct 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.
2.4.7	PROVISION FOR DAMAGE DUE TO SHARP EDGES: When HDPE Duct are laid in trunking, care should be taken to see that no ballast or stones have been dropped inside the trunking 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 HDPE Ducts.
2.4.8	HANDLING OF HDPE DUCT DRUMS & PAYING OFF HDPE DUCTS:
a.	The drums shall be unloaded by the side of the Railway track from either a crane or any other suitable means very carefully so as not to cause any damage to the HDPE duct. The drums at site shall be protected until they are laid.
b.	On each drum there are two ends, A&B. The 'B' end of the one HDPE duct length shall meet "A" end of the next HDPE duct at a joint. The 'A' end shall be normally on the top unless indicated otherwise on a drum.
c.	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.
d.	The drums shall normally be unrolled at the same place and the HDPE duct carried by workmen near the trench. The drums, shall not be dragged in any case. But where drums of HDPE duct have to be moved, would always be rolled in the direction of the arrow, otherwise the coils tend to unwind and the HDPE duct may get battered. In case no direction arrow is marked on the drum, remove several battens and determine the direction in which the HDPE duct is coiled. The arrow should then be painted on the drum pointing in the opposite direction in which the upper HDPE duct end is coiled so that future handling of the HDPE duct drum is facilitated and then replace the battens carefully.
e.	The drum should be properly mounted on jacks (or on a HDPE duct wheels) making sure that the spindle is large enough to carry the weight without bending and that it is

	laying horizontally in the side so as to prevent the drum creeping to one side or the other while it is rotating. Before attempting to pull off the HDPE duct, remove the end protection box attached to the flange of the drum and cut the security ropes so as to leave the HDPE duct free to move.
f.	If a portion of HDPE duct only is taken out from the HDPE duct drum, the battens should be immediately replaced to prevent damage to the balance of the HDPE duct. This is important.
g.	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.
h.	All care should be taken in handling HDPE duct drums with a view to ensure safety not only of the HDPE ducts but also of the working party handling them. The man should not be allowed to break the HDPE duct drum by standing in front but only from side.
2.4.9	REWINDING AND REDRUMMING OF HDPE DUCTS: If for any reason it is found necessary to rewind a HDPE Duct on a drum, HDPE Duct drum with a proper barrel diameter not less than of the original drum should be chosen. The drums should be mounted on HDPE Duct jacks during rewinding operations using proper size of spindles passed through flange holes, which will not buckle under the lead. The HDPE duct should not be bent opposite to the set it is having already. In the re-drumming operations, drums should be turned that the HDPE Duct passes from the bottom of the original set with as little gap as possible. Replace all the lagging on the HDPE Duct drum.
2.5	HDPE DUCT LAYING: It is advisable to employ the same people at the same place or job while HDPE Duct is being laid. Before commencement of the laying, inspection of the trench and inspection of protection works should be carried out so as to ensure their conformity with the specification. The trench bottom should be clean, smooth and free of small stone. When the soil contains stone or pieces of rock and therefore cannot be raddled, sieved earth about 10 cm. Thick should be used both for the bedding on which the HDPE Duct is laid and for covering the HDPE Ducts. The HDPE Duct drum should be brought as close to the cable trench as possible. It should be lifted with the aid of HDPE Duct jacks firmly mounted on a support of stone or wood. The spindle should be a minimum of 55mm diameter and have a clearance from ground by 5 to 10 cm. Where necessary the HDPE duct drum may be placed at such a point so that 2/3 of the HDPE duct is laid directly in one direction and the balance in other direction. Care should be taken in such a case to see that there are no kinks or loops in the HDPE duct. The wooden battens on the drum should be carefully removed shortly prior to laying and before the drum is mounted on the jack should be carefully removed. While rolling a HDPE duct drum for laying, the drum shall be supported on an axle running through its center, 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 HDPE duct shall be carefully uncoiled by gently pulling the HDPE duct as assisted as necessary by carefully turning the drums. The quick pulling of the HDPE duct or turning the drums shall be avoided at all costs. Each HDPE duct drum shall be braked while laying is in progress to prevent sharp bending or buckling, particularly when the HDPE duct coils

	are sticking together. The method of mounting the brakes is shown in the drawing no.RE/42/164. 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. It is customary for the mate to stand in a commanding position where he can view the entire route, and should evenly timed calls to his men to pull. If there is proper synchronization between the mate's calls and the pulling by the men, the HDPE duct will leave the drum without difficulty. It is important that the HDPE duct should be pulled with steady and even pulls and not be unnecessarily jerked or strained. On no account should a HDPE duct be allowed to twist or kink, as this is likely to spring the armour and fracture the outer serving of the HDPE duct. When pulling HDPE duct around bends, one or two men should be stationed to give the HDPE duct the correct bend when it passes. While laying the HDPE duct, employ adequate number of men such that the HDPE duct can be conveniently carried by them in both hands without such that the maximum sag of the HDPE duct between any two persons is stretched arms. The distance between any two persons carrying the HDPE duct shall be from 2 to 10 Mtrs depending upon weight of HDPE duct not more than 0.5 Mtrs. The HDPE duct shall be gently drawn by pulling the HDPE duct, which may be assisted as required, by smoothly and slowly turning the winch. The HDPE duct shall not be twisted on any account. Before laying is commenced, the HDPE Ducts shall be uncoiled first in a straight line supported by men and then carried to the trench and laid gently & carefully ensuring that HDPE duct is not stretched while putting in the trench. While laying work is in progress one man must continuously observe the HDPE Duct along its length in order to determine whether any indentations, holes or other damaged parts are apparent. Such damaged parts have to be protected immediately by the HDPE Duct jointer provided with the laying party. When two or three turns of HDPE Duct are left on the drum, the pulling should be stopped and the inner end of the HDPE Duct removed from the slot in the drum. Pulling should then be continued. If this is not done the HDPE Duct end is likely to be stretched and damaged. The ends of the optical fibre HDPE Duct should have an overlap of 1 Mtr at the end of each drum for jointing purpose. The conditions of the HDPE Duct shall be visually inspected throughout its length and in case any damage or defect is noticed, the trench shall not be filled up until the engineer's representative is notified to examine and authorize filling of the trench.
2.5.1	MINIMUM BENDING RADIUS: HDPE ducts 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 HDPE ducts should be 30 times the diameter of the HDPE duct but wherever possible larger radius should be used.
a.	Wherever HDPE duct has to be coiled/looped the diameter of the coil/loop shall be greater than 30 times the diameter of HDPE duct.
b.	The pit to be constructed should be as per the specification given in the Drg. No.Core/S&T/Ald/Sk/435/95 and HDPE Duct joint enclosure to be fixed inside the pit wall.
2.5.2	CABLE MARKERS: The cable markers shall normally be provided at the distance of every 50 meters on the

	HDPE Duct route and also at places or corners wherever the route of the HDPE Duct changes. The joint indicators shall be provided at all types of cable joints. The cable markers and joint markers provided shall be of standard concrete type will letters “ SCR OFC Cable ” engraved and suitable painted with standard trench as per site conditions. The design of route indicator shall be got approved from Railway in advance. In addition, electronic cable markers of proven design shall also be provided.		
	TOOLS REQUIRED FOR TRENCHING, HDPE DUCT LAYING AND FILLING:		
	TOOL’S NAME:		
	1. HDPE duct jack,	2. Reopening device	3. Free hood hook
	4. Shackle free head hook	5. Growling hook,	6. Pulling bolt,
	7.Tension meter,	8. Pulley	9. Anti twist device (swivel)
	10. Roller	11. Flexible HDPEduct	12. Pulling rope
	13. Brush	14. Chain	15. Measuring cord for straingauge
	16. Slip winch,	17. Wire rope,	18. Portable VHF set,
	19. Measuring tape,	20. Powrah,	21. Iron plate,
	22. Loader backhoe for drilling,	23. Warming tape,	24. Caterpillar tractor
	25. Fork lifter,	26. Vehicle van type	27. Tachometer,
	28. Road measurer.		
2.6	LAYING OF OFC CABLE AND INSTALLATION OF OFC EQUIPMENT:		
2.6.1	BLOWING OF OPTICAL FIBRE CABLES IN HDPE DUCT: Blowing of optical fibre cable shall be accomplished using blowing machines as per standard TEC practice and keeping in view the specifications of the duct manufacturer.		
2.6.2	JOINTING AND TERMINATION OF FIBRE OPTIC CABLE: The works shall be carried out as per the procedures laid down in section X of Indian Railways Telecom Manual - 2021		
2.6.3	ACCEPTANCE TEST FOR FIBRE OPTIC CABLE The procedure for testing Fibre Optic Cable shall be jointly finalized by Railways. 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 the 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 .2.6.23 below.		
2.6.4	SYSTEM TEST PROTOCOL FOR OPTICAL FIBRE CABLE FIELD TEST Route:_____ Date:_____ Station No of midsection splices: Section: Measured by:		

	Length (by OTDR): _____ Length as per meter marking on cable Sheath: _____			
2.6.5	TOOLS AND EQUIPMENT, REQUIRED FOR JOINTING AND TERMINATION OF OPTIC FIBRE CABLE:			
	TOOL's Names:			
	Branch joint closure	Termination Box	Rubber End Block	Sheath Clamp
	Bushing	Strength member holder	Heat Shrinkage tube	power cord AC/DC
	Arc fusion splicer Machine	Walkie-Talkie 12 V DC source	Tuber heater	Precision cleaver
	Cable Sheath Stripper	Fibre stripper	knife for HDPE cutting	hexa for strength membrane
	isopropyl alcohol or methanol of high specific gravity	Johnson buds	Tweezers	Gun heater blower type.
	Sleeve for splice protection,	OTDR	Stickers for numbering of splicer's	Portable k. Oil generator
	Umbrella's 2 Nos.	Dust protection for splicing machine.		
	A cable chamber as per SCR Drawing No. 5766 shall be constructed near the Relay room, LC Gate and cable coil loops shall be kept in this chamber duly filled in with sand and sealed with RCC slab.			
3.0	FOUNDATIONS GENERAL:			
a.	The top level of the foundation shall be in level with the existing rail level as far as possible. The proportion of cement, sand, ballast shall be in the proportion of 1:3:6 for casting foundations for signals, location boxes and the proportion will be cured for a period not less than 7 days.			
b.	Fine aggregate must consist of sand, stone, ballast not exceeding 20mm size and cement. The sand and ballast must be clean and free from soil, clay, shells, soft or flaky materials or any vegetable. Ballast must be washed when necessary to ensure cleanliness.			
c.	Sand used must be tidal river sand and must be free from any salts.			
d.	Water used for mixing must be clean and free from any oil, alkali and acid.			
e.	Materials for concrete must be carefully and accurately measured for every batch.			
f.	Mixing must be done in a mixing trough or a M.S. Sheet, which should not be, more than half full at the time of mixing. Two men shall use square ended shovels and not powrahs. Water must be added by pouring water must be continuous until all materials and water are thoroughly mixed and uniformly combined.			
g.	When batch is fully mixed, it must be used without any delay. The aggregate shall be deposited in uniform layer not exceeding 15 Cms. Tamping and spreading of each layer to be done as to cause it to settle thoroughly in the form and produce a dense mass.			

h.	Forms must be drenched with water before the concrete is placed against them and must not be removed in less than 36 hours afterwards.		
i.	A template for each foundation should be prepared suiting the holes in the base of the location box or signal post (for which foundation is cast) in order to hold the anchor bolts in position till the foundation is cured. The template shall be removed before the top of the foundation is given fine finishing.		
j.	The exterior surface of the foundation should be finely finished leaving 4 Cms. Of thread portion of the anchor bolt free to enable erection of signal post or location boxes. All foundations shall be cast under the direct supervision of the inspector-in-charge of the work. Curing must be done for all foundation for not less than 7 days.		
k.	No payment shall be made for any extra excavation carried out in the slope and width of the pit, including for foundations where soil is loose and pit is to be dug for more depth.		
l.	Earth work and stone pitching shall be done where the boxes/signals are laid on edges of embankments or the height of the location boxes heights are unreachable to maintainers. This item shall be paid for separately.		
m.	The following Drawings shall be adopted for apparatus cases.		
	Type of foundation	Drawing no.	Annexures
1	Signal shunt	SC/N/CN/62/B/1	Annexure - 16
4.0	APPARATUS CASES (LOCATION BOXES):		
a.	Location box foundations are to be laid in such a way that the door are parallel track in open condition. The boxes shall be installed in rear of the signals covered by them such that the signal aspect can be watched while taking readings etc. The open door shall be farther than 2.36 Mtrs from centre of the nearest track.		
b.	The work consists of pit excavation, casting foundations with bolts of adequate size having cement concrete of ratio of 1:3:6 with stone ballast of 20/30mm size as Drawing Nos specified above. The Railway will indicate the position of location of apparatus cases.		
c.	The apparatus case of full size (GKP type) with 'E' type lock & key, fixed on one side of the door as per DRG. No. S&T/MFT/2378 (Single) shall be supplied by the contractor. E Type lock of Ward No. 32 / 31 as per RDSO DRG. No. SA 3376/M and Key to DRG. No. S.3377 shall be used.		
d.	All apparatus cases/battery boxes shall be erected on concrete foundation and plumbed. It should be clear of infringement when the doors kept open perpendicular to the track. All foundations shall be plastered on all sides and earthwork shall be made up to the required level. All the apparatus/battery boxes used shall be painted on inner side with white paint before fixing the shelf planks and terminal board after a primary coating with red oxide and with Aluminum paint on outer side after installation at site.		
e.	Wooden planks/reapers of 20 to 25mm thick to be sized and planed for fixing ARA terminal/fuse block. Wood screws of proper size shall be used. The size of terminal boards and shelf planks shall be as required by Railway. Two holes on either side of terminal/fuse block shall be made if required for carrying out wiring termination. Shelf plank be securely fixed in level on suitable M.S. Angle brackets. Wood polish varnish shall be applied before fixing terminal/gadgets.		
f.	The underground signalling cable shall be taken into the apparatus case/battery boxes and properly secured by wooden clamps/cable gland plates.		
g.	The cables shall be neatly skinned, bunched and terminated. All cores of cable shall be terminated on the terminal board at locations and in relay rack at the required places in the order as approved by inspector in charge. All the power cables (Aluminum) shall be provided with Aluminum lugs using crimping tool.		

h.	All apparatus cases shall be provided with 'E' type lock arrangements on one or both the doors as per instructions at site. Contractor shall procure material and fabricate for fixing of 'E' type lock if such provision did not exist on the apparatus case. Location box, E-type locks are covered by a separate item of schedule or Railway supplied.
i.	After all the signaling cables are taken inside the apparatus case/battery box the side opening shall be closed with masonry work and plastered. The inner side is then filled with sand and finally the bottom is sealed with sealing compound.
j.	Earth work and pitching shall be done in all cases of location box erection after completing all works of termination and testing up to such a height and width around the box such that the technician can easily reach the contents inside. Earth work and pitching is covered under a separate item of schedule.
5.0	SIGNALS:
a.	The work includes excavation of pits and casting of signal foundations as per relevant schedule item and standard drawings.
b.	The signal foundation shall be casted as per SCR DRG No. 5772 for signal on one side of the track and as per DRG No. RDSO/M-00011/R4 for signals in between tracks which are likely to infringe as per IRSOD. The top surface of the signal foundation shall normally be at rail level.
c.	Signal pole shall be securely fixed to surface base and erected on signal foundation and plumbed. The gap between the signal pole and surface base shall be filled up with lead wool or any other approved substance to avoid tilting. Multi unit colour light signal upto 2/3/4 aspect shall be properly mounted on signal post with or without route indicator. Soon after installation, the pole shall be painted with Aluminum/white enamel after giving a coat of primer and the signal unit shall also be painted as per the standard practice.
d.	Wherever route indicator junction type or stencil type is to be erected, it shall be mounted on the top of the signal pole and a large off set bracket shall be fixed with 'U' bolt of 20mm dia 2 Nos. On the signal pole for mounting multi unit colour light signal. The tail cable shall be first terminated on the route indicator and separate wiring shall be run to colour light multi-unit signal from route indicator.
e.	To take the wires into the Multi unit, a vertical slot of not less than 25mm x 37mm in size shall be made on the Signal pole. Suitable protection shall be provided on the slotted pole before cable is taken through it and care shall be taken that no damage to insulation of tail cable is caused.
f.	All the signal aspects have to be focused properly. LED signal units may be employed where supplied by Railways.
g.	Signal units door shall be locked using universal locks. Universal locks are covered by a separate item of schedule or Railway supplied.
h.	The cables are to be taken through the pole to the unit without damaging the insulation and armour then skinned and terminated.
i.	All the signal units are to be wired as per approved practice by Railway. The wiring is to be tested jointly. In case of conventional bulbs, the signal shall be focused correctly in daytime at bright light at 90% of rated voltage. i. For LED aspects, the following shall be ensured as per manufacturer's spec: ii. Current regulator earth should be ensured. iii. Jumper selection to be done to suit conventional/led ecr as the case may be. Jumper selection shall be such that ON aspects shall be "Non blanking" and off aspects shall be "blanking".
j.	The signal post shall be properly plumbed and fitted with ladder having a platform and guarding on the top.

k.	Necessary ladder with concreted supports as required shall be provided.
l.	All the signal posts and signals shall be installed clear of infringements. (i.e., 2.36 Mtrs. From the central line of the nearest track). Markers and number plates shall be fixed wherever necessary as per signaling plan using suitable clamps. Signal number has to be painted on the "Number plate" as well as on the door outside. All fittings are to be tightened properly. Signal unit shall be locked properly.
m.	Protective mesh shall be provided for all signal units. Payment is covered by a distinct item.
n.	Necessary earthwork shall be made around each signal if required by Railways. The earth work and pitching shall be paid separately under a different item of schedule.
o.	Supply of signal accessories, post, CLS unit, LED aspect, Ladders etc are covered by separate item of schedule or supplied by Railways.
5.1	CALLING ON SIGNALS/POST TYPE SHUNT SIGNAL: Off set bracket shall be fixed with 'U' bolts of suitable size on signal pole for mounting calling on signal. Vertical slotted hole not less than 25 X 50mm in size shall be provided on the signal pole to take tail cable. Care shall be taken that no damage is caused to insulation.
5.2	POSITION LIGHT SHUNT SIGNAL GROUND TYPE:
a.	The work includes excavation of pits casting of shunt signal foundations as per Drg. NO.SC/N/CN/62-B using Anchor bolts of size 20mm X 450mm. The position of shunt signals will be indicated by Railways in the signaling plan.
b.	Foundations for shunt signal should be of cement concrete with ratio of 1:3:6 using stone ballast of 20/25mm size to be cast at location shown by the Railway's representative. The foundation to be plastered in all sides.
c.	The position light shunt signal shall be properly mounted on post and plumbed.
d.	Necessary earthwork shall be made for each position light shunt signal if required by Railway. The cables are to be taken through the post to the unit, skinned and terminated.
e.	Position light shunt signal are to be wired as per approved practice by Railway. The wiring is to be tested jointly. The shunt signal to be focused correctly in day time at bright light at rated voltage. The signal unit's back door covers are to be locked using universal locks.
5.3	Electrical signalling arrangements
a.	Track relays, line relays point contactors, overload relays, transformers, track feed chargers, rectifiers, charged secondary cells, track feed resistance, EKT, telephone plugs etc., shall be fixed neatly in the apparatus case as required by Railways. The wiring shall be carried out in a neat manner. Coil bunched and tested. The relays wherever fixed shall be fixed in such a manner that they cannot be easily removed or tilted. Anti tilting arrangement shall be made for shelf type relays. Details of cable terminations and wiring particulars shall be painted inside the apparatus cases door in addition to documentation. Relay fixing arrangements shall be firm and rigid to avoid any chance of vibration due to train movements.
b.	All electrical equipment wherever provided shall be earthed as directed by engineer. Description of equipment, relay etc., shall be neatly painted inside the apparatus cases door. All the internal wiring shall be tested from point to point in full, jointly by contractors authorized Engineer and Railways supervisor.
c.	Charged secondary cells if installed inside apparatus cases, shall be fixed firmly leaving working space for taking specific gravity reading and distilled water topping. The date of installation, capacity and serial number shall be painted on each cell and the inner side of the door.

d.	Battery links (lead) with suitable bolts and nuts shall be used for connecting cells. Petroleum jelly is to be applied on terminals immediately after connection. The specific gravity and voltage reading shall be recorded in a separate register and handed over to Railway duly signed.
e.	The Terminals are to be fixed on teak wood reapers of approx 50x20x940 mm for Full box and 50x20x470mm for half box.
f.	Track circuit accessories, chargers, EJBs of axle counters etc shall be mounted on horizontal teak wood planks of 20x300x940 (or 470mm for half LB). Batteries shall be mounted on hard wood planks of 40 mm thick planks.
6.0	POINT MACHINES:
a.	Electrically operated point machines combined type shall be fitted in level to all points as per Signalling plan on long sleepers on extended gauge tie plate, clear of infringement as per the latest RDSO Drg.
b.	The point machine shall be installed after cleaning both inside and outside the machine, after greasing/oiling to all moving parts. The point machine shall be hand operated and detection and motor-controlling contacts shall be adjusted before taking to site. All unwanted openings shall be covered with MS sheets.
c.	The point machines shall be fixed with proper bolts, nuts and flat/spring washers with correct size of holes through the special sleepers to avoid lateral/longitudinal play, on extended Gauge Tie Plate.
d.	All point connecting rods shall be connected to point machines without any strain and with Min. offset. All connecting rods shall be in level and correct size of bolts and nuts shall be used to avoid longitudinal play. Any changes in the connecting rodding during installation which necessitates welding and offsets shall be carried out by the Contractor at site. The welding shall be by smithy process. Lengthy rodding shall be supported suitably by roller guides.
e.	Separate junction box shall be installed clear of infringement near the point machine and the respective cables shall be terminated. The leading in wires from the box to point machine shall be taken through GI pipes securely fixed respectively to machine and Junction box (coaxially arranged). The wiring inside the point machine for motor and detector circuit shall be carried out neatly. All the electrical wiring shall be tested for insulation and earth and all connections tightened. PVC copper wire/cable of sufficient capacity shall be used for wiring point machines as per standard practice approved by Railways.
f.	Wiring between Termination box to machine shall be done using 3/20 or 3/ 0.737 wires. Cost of wires and junction box is separately covered.
g.	Point machines and junction boxes shall be painted and point numbers shall be painted neatly. Wiring diagram shall be painted on the inside of the point machine cover.
6.1	ADJUSTMENT AND TESTING:
a.	The point machine shall be worked by crank handle and the housing of switch rail with the stock rail shall be checked.
b.	The point machine shall be worked both ways with proper feed without undue friction and working current shall be recorded.
c.	The point detector and lock connections are adjusted in such a way that with a 3.25mm thick test piece obstruction placed between the switch and stock rail at 150mm from the top of switch.
d.	The point does not get locked. The point detection circuit is not completed (contact not made).
e.	Both shall be tested independently.

6.2	SIDING CONTROL:
a.	Method - I: (Points operated by 1 Lever GF): Erection of single lever frame near the siding points on 'A' type foundation and running rodding between the ends of cross over points duly interposing the compensator. The facing end of the siding points shall be provided with a hand plunger lock normally locking the points and is to be unlocked by the key from the EKT fixed near the single lever frames. The apparatus case near the sidings points will have to be fitted with Electric key transmitter and a magneto telephone. Trap points are to be fitted with Trap Indicators.
b.	Method - II: (Locally operated Points by Spring Levers): Drilling of holes on switch rails and on sleepers, fixing of switch extension pieces, H.P. lock, setting HP lock stretcher, adjusting the opening of switches and spring along with Permanent Way Officials. Cutting of notches on Split Lock Stretchers, filing, adjusting. Fixing of 'E' type locks on the HP lock for succession key locking arrangement and testing the point for obstruction test as laid down in Signal Engineering Manual.
c.	Fixing Point/Trap indicator stand and point/trap indicator including lenses with required bolts and nuts, washers, connecting the Point Indicator base with connecting rod to the switch rail, adjusting the Point Indicator for correct operation as per SEM and focusing. 3 Nos. of 20mm X 200/250mm bolts are required to fix Point/Trap indicator stands onto the sleepers. If the Point happens to be in the track circuit zone, necessary arrangements for insulating the split lock stretcher, switch extension pieces from switch rail has to be carried out by enlarging holes on split lock stretchers and switch extension pieces.
7.0	TRACK CIRCUITS:
a.	Track circuits shall be provided to confirm to para 8 of IRS specification S.36/69.
b.	The work includes bonding of rail joints which shall be made with rope wire, holes are to be drilled close to fish plates on the web of rail and the bond wires are fixed by driving channel bond pin, tightly. In point track circuit parallel jumpers bond wires/cables shall be provided as required by the Railways.
c.	The work includes bonding of rail joints which shall be made with rope wire, holes are to be drilled close to fish plates on the web of rail and the bond wires are fixed by driving channel bond pin, tightly. In point track circuit parallel jumpers bond wires/cables shall be provided as required by the Railways.
d.	Four TLJ boxes (two at track feed end and two at relay end) shall be fixed clear of infringement and the respective track circuit tail cable 2 x 2.5 Sq.mm PVC copper conductor from the apparatus case shall be terminated. The connection from the TLJ boxes to the rail should be through the solid wire rope which should be fixed to the Rail by channel Bond pin both at feed and relay ends. The GI wire from TLJ boxes to sleepers should be covered with suitable PVC colored sleeve and there upon neatly clipped on the sleepers to prevent shorting with rails. Insulations / gromates - PVC shall be provided on TLJ box to prevent gi wire earthing. Double lead wire shall be provided both for feed and relay ends.
e.	Both TLJ boxes shall be painted and track circuits shall be neatly numbered as required by Railways.
f.	Rail joint insulation RDSO type shall be provided with long bolts and nuts at places marked by Railways. The required long bolts and nuts will be supplied by Railways. Every rail joint insulation shall be tested jointly after installation. Wherever point track circuit is involved, the gauge/crossing tie plates/stretcher bars and switch extension pieces shall be insulated. Only non-insulated gauge tie plate/crossing plate/leading and following stretchers for the above will be supplied by the Railways. Insulation shall be provided correctly and tested jointly. After providing insulation, it should be inserted in the presence of Railway representative only. The switch extension pieces/'D' clamp

	fittings also should be insulated. The contractor shall supply all insulations as per schedule.
g.	Polarity bonding in point track circuit in duplicate shall be provided for each point track using wire rope insulated.
h.	After completing the installation of track circuit, it shall be energized, tested, adjusted and readings recorded in a register/track circuit history card.
i.	Wire rope, TLJBs, 2.5 Sq.mm cable is supplied by Railway or covered by separate schedule items.
j.	Exothermic bonding sourced from RDSO approved / recommended firms where covered in schedule.
k.	Miscellaneous material like bond pins, tools, sleeves, drill bits, lugs for termination etc shall be catered by contractor as part of labour portion of work.
l.	Chokes shall be provided on both relay end and feed end of the track circuit.
8.0	HIGH AVAILABILITY SINGLE SECTION DIGITAL AXLE COUNTERS:
8.1	HASSDAC consists of axle detectors & associated electronics (1 or 2 or 3 or 4) confining a track section connected together by a transmission medium where transmission is in VF range. It is capable of counting axles, doing count comparison, finding direction of axle movement, supervision, relay drive and transmission of counts and health of axle detectors & field units. - Track clear indication shall only be given when IN count and OUT count are equal and equipment is functioning all right. This implies that until all axles that enter a section are completely counted out, the section concerned shall not show as clear. - Axle counter shall show occupied the moment any of the axle counter subassemblies belonging to the section is damaged, missing or has become faulty - Axle Counter shall use amplitude/phase change techniques or any other fail-safe techniques for safe and reliable wheel detection functions. - Axle counter shall have arrangement so that wheels of push trolleys, dip lorry, rail dollies etc. are not counted by it. These wheels shall not result in axle counter going to error. Trolley protection track circuit shall not be required with phase detection. - Axle counter operation shall be independent of wear & tear of wheels as permitted vide Indian Railway's Schedule of Dimension, lateral displacement of wheels on rails etc. The manufacturer shall specify the minimum diameter of the wheels, condition of wheels etc., to which the performance of equipment shall not be affected. - Axle Counter operation must be independent of type of sleepers in the section such as wooden, RCC, or steel etc. and shall work on all types of rail profiles and construction such as welded or non-welded rails of 52 kg / 60 kg / 90R etc. Axle counter shall operate up to the limit for worn-out rail as given below: Sl. No. Rail section Vertical wear in mm. 1. 60 Kg / metro 13.00 2. 52 Kg / meter 8.00 3. 90 R 5.00 - Axle counter shall be suitable for train speeds up to 250 Km/h. - Axle counter system shall be designed for ease of maintainability and testability. - The equipment shall be robust in construction and shall work on the permanently energized principle. Any defect occurring in the equipment shall not result in a condition that will lead to unsafe situation. - The equipment shall be of continuously self-checking type and shall have

	separate indication to show conditions of track clear and track occupied (including fault). Any disturbance or failure in the equipment including power supply failure shall result in withdrawal of clear indication and occupied indications shall be lit. Card wise failure indication shall be provided. It is desirable to give suitable indication of the nature of failure. Also total system failure and O.K. indications shall be provided. k. Axle detector/Track Device & field units shall have no moving parts and shall require negligible maintenance. l. The equipment shall be so constructed as to prevent unauthorized/irregular access to sub-assemblies of the system. Authorized persons should, however, have access to these sub-assemblies for the purpose of installation and maintenance by unlocking the outer cover/breaking of seal provided on the outer cover. m. The field unit shall be provided with testing, measuring and adjusting facilities for maintenance. n. The equipment shall be fully solid-state using carefully chosen components of grade. o. The system shall provide for continuous supervision of axle detector including the cable connecting the counting device and axle detector. Any defect in these shall be immediately detected, error code displayed and the system should go in error mode. 4.0.18 The maximum axle count, the axle counter can handle should be > 1024. 4.0.19 Response time of train occupancy for any track section shall be less than 1.0 second. p. Clearance time of any track section after train leaves the section shall be less than 2.5 sec. q. Axle counter system design shall take into consideration system growth capability and architecture of digital axle counter shall be such that it is fit to be used on all the sections of Indian Railways including suburban sections. r. Environmentally, slight moisture condensation shall not lead to malfunction or failure of equipment. s. The design of axle counter shall take into account switching transients that may occur either inside or outside the system and of any magnitude., up to and including interruption of full short circuit current. t. Axle counter shall withstand the effect of lightning & surges incorporating lightning & surge protection as per RDSO/SPN/144. u. The equipment shall conform to the Safety Integrity Level 4 as per CENELEC Standard. v. The axle counter should not affect the operation of other wayside signalling equipment. The axle counter shall neither affect or be affected by presence in vicinity of track side signalling equipment like AFTC, TPWS, AWS etc. w. Error rate should not be more than 2 errors per million correctly counted axles, and if there is error, it should not result in unsafe condition. The equipment shall be capable of simultaneously counting in and / or counting out from the ends of the monitored section. Response of rocking of wheels on Axle Detector: If any sensor is influenced two or more times consecutively without a proper count pulse, the system should go to error. If both sensors are influenced four or more times consecutively without a proper count pulse the system should go to error. x. Axle counter should tolerate induced voltage of at least 150V AC, 50Hz on the quad cable. Any external surge protection device required to achieve this shall be part of SSDAC supply. It shall fulfill fail safety requirements as per RDSO/SPN/144. It shall fulfill the requirements of Signal Engineering Manual as per RDSO/SPN/144. The software shall fulfil the software
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	requirements as per RDSO/SPN/144. Both hardware and software functions will be partitioned to ensure that integrity of certified design will not be compromised through routine software and hardware upgrades. Design of axle counter will maximize the use of vendor independent implementations.
8.2	CONFIGURATION: Single section axle counter will work in following configurations: - One detection point Single section: In terminal lines / siding. - Two detection points Single section: In straight line. - Three detection points Single section: In point zone. - Four detection points Single section: In point zone. - Three-detection points two sections and also scalable for consecutive sections in astraight line. - Use as High Availability SSDAC system (HA-SSDAC) (e.g. for BPAC applications): High availability system uses proven electronic circuits of standard SSDAC, duplicated on same board/card. This system also facilitates use of redundant communication channels by using quad/OFC to overcome common mode failures. System provides two vital relay outputs from two channels that are used in 'OR' mode to interface with interlocking/block circuits. System uses for 'Auto-reset Feature' to reset the failed channel of system by correctly working channel under steady state conditions. Complete electronics of high availability SSDAC system is integrated in the same chassis of a standard single channel SSDAC. Interfaces for the operator still remains the same and he is required to manually reset the system only when both channels of the systems have failed. Single reset interface will sendreset command to both the channels and the reset command is extended to electronic via drop contact of vital relay of concerned channel. The High Availability SSDAC system can be provided with - Single track sensor input fed to both channels of HA-SSDAC. - Dual track sensor inputs fed to different channels of HA- SSDAC. Note: The option [selection] of single-track sensor/dual track sensor can be exercised by the ordering authority based on density of traffic and considering MTBF requirements.
8.3	AXLE DETECTOR/TRACK DEVICE: The track device comprising of the coils sealed in acover mounted on the rail. It will detect the wheel of rolling stock axle passing over the device. AXLE DETECTOR: It comprises of two sets of TX/RX coils / sensors. The TX/RX coils shall operate at frequencies above 20 KHz. Different frequencies shall be used for each set of TX/RX coils. These shall be capable of withstanding environmental conditions given and specified later. The inductance of axle detectors shall not vary more than $\pm 6\%$ within the specified temperature range. The transmitter/receiver coils in the track shall be of web mounted type. The fasteners should be tightened at specified torque using torque wrench. Axle counter performance shall not be affected by the flooding of track. The axledetector shall be actuated only by wheel flanges and not by other parts of trains e.g. rail brakes, toilet pipes, suspended chains, electrical inductors in locomotives, air- conditioning equipment and other electrical /electronic equipment in train /engine. One set of axle detector shall not influence another set of detector mounted ≥ 2 meters away. The axle detector should not infringe with the Schedule of Dimensions of Indian Railways. The length of inbuilt cable with Axle Detector shall be 5 / 10 / 15 Mtr. Only.

	Only shielded cable is to be used to carry track device signal to field unit.
8.4	COUNTING DEVICE/DIGITAL AXLE COUNTER FIELD UNIT (TRACK SIDE): Counting device/digital axle counter field unit is the track side electronic assembly that energise the axle detectors for detecting the passing wheels determining the direction of movement and supervision of track section or occupancy/output device, keeping the count of wheels. It is capable of communicating with other counting device at the other end of the track section. Digital Axle Counter field Unit. a. It shall have 2 out of 2 architectures. b. It shall detect and count axles passing over the axle detector. It shall determine the direction of passing of axles. Provision should be there for lightning & surge protection in the field unit power supply input and communication line input/output. The field units should be able to communicate with each other for transmission loss up to 30dB. Suitable arrangements shall be made for providing electrical isolation between external relay circuit and internal circuit. It shall have provision for setting unique address of each field unit. The address shall be of minimum 8 bits. EARTHING: Provision of earthing should be there in the field unit and reset box. The earth terminal shall be suitable for taking upto 4mm dia. copper wire with lug.
8.5	DETECTION POINT: Detection point comprises of one axle detector/track device and the field unit connected to it. TRACK SECTION: The portion of track confined by associated axle detectors & field units. The occupancy of this section being supervised by the axle detectors. SECTION BALANCING: Axle counter determines whether the track section in question is clear / occupied, based on the information of detected (in counts and out counts) numbers of axles, which is received from the axle detectors confining the section in question.
8.6	RESETTING: Resetting results in bringing to zero the records of counted axles. PREPARATORY RESET: After resetting, axle counter shall continue to show occupied until one train movement through the section carries out correct balancing of track section. CONDITIONAL HARD RESET: The reset is activated after physical verification of a condition from different location like the clearance of the track section from site using linebox. The axle counter will show clear after the conditional reset. Resetting: A voltage sensitive feature shall ensure that without the operation of resetting key, the system will not come back to initial or original condition for the following cases: Power fails and restores back. Voltage fluctuation beyond upper and lower limits. Removal of printed circuit cards from the system. In case OUT count has been registered before any IN count. 2 It shall be possible to reset each field unit from reset box only.

	For HA-SSDAC auto-resetting module will send reset automatically if one channel only has failed. If all the field units of an axle counter section are placed in the same station, same/one reset box can be used to reset all the field units of one section in parallel. If any field unit of an axle counter section is placed in different station, then separate reset box shall be used for resetting that field unit. If reset is applied to only one field unit, the axle counter section will not reset and will continue in occupied condition. In two detection point single section and three detection point two section configuration, when reset is applied to both the field units the axle counter section should go in “preparatory reset mode”. The preparatory reset LED in both reset boxes should glow and reset counter should increment. The axle counter section will be still in occupied state although the axle counts of individual field units will become zero. The axle counter section will become clear only after more than one in count from one end and same number of out count from the other end have taken place. The common field unit in three detection point two section configurations shall accept reset command from two separate reset boxes for adjacent sections. In one detection point single section, three detection point single section and in four detection point single section configuration, the reset command from reset box will be transmitted only after verifying that verification switch have been pressed & turned in the verification box at site as a proof of the axle counter section being clear physically. On availability of reset command to all the field units of a section, the section will reset and show clear and reset counter should increment. The reset box with LCD display should work from 24V DC supply.
8.7	EVENT LOGGER: Logs the events occurring in the field unit with date and timestamping. a. Each field unit should be provided with in-built event logger. b. The event logger should work automatically without any other input required to be given by staff. c. Digital Axle Counter failures shall not affect in any way the correctness of the information recorded in the Event Logger, neither shall it cause its loss nor change. d. The event logger shall record events happening in the axle counter system. The data registered in the event logger must be secured against erasing by unauthorized persons. Event logged should be date/time stamped. It should be possible to download logged events to a commercial computer through standard port. The process of event logging and downloading of logged events should not hamper the normal working of axle counters in any manner.
9.0	MULTI SECTION DIGITAL AXLE COUNTERS:
a.	MSDAC shall be preferably of 2-out-of-3 system for high reliability and availability. If tender is offering 2 out of 2 systems, then proven record of equipment reliability must be produced to Railways. A separate set of Axle counters for UP line & DN line to be provided so that failure of equipment of one direction shall not affect the other line.
b.	MSDAC to be connected through Relay Interface to EI (unless other interfacing methods are approved by RDSO).
c.	Preparatory Resets to be provided. Resetting arrangements & Supervisory Track Sections shall be as per approved system configuration. Supervisory reset to be programmed logically, on approval by Railways.

d.	Occupation of next Track section should be used for Replacing Auto Signal to Danger.
e.	MSDAC should comply with all other requirements as per RDSO Specifications.
f.	The Axle counter system shall have a separate port to connect to the station data logger for monitoring the section wise clear/occupied information. Standard Data Logger protocol as specified in RDSO/SPN/99 shall be used for this purpose, as per clause no. 5.5.5 of RDSO specification for MSDAC.
g.	The equipment shall be robust in construction and shall work on the permanently energized principle. Any defect occurring in the equipment shall not result in a condition that will lead to unsafe situation.
h.	The equipment (central evaluator & field unit) shall be of continuously self-checking type and shall have separate indication to show conditions of track clear and track occupied (including fault).
i.	Any disturbance or failure in the equipment including power supply failure shall result in withdrawal of clear indication and occupied indication shall be lit. Disturbance / failure related to a track section shall not influence the normal working of other track sections.
j.	Card wise failure indication shall be provided in central evaluator & field unit. It is desirable to give suitable indication of the nature of failure. Also, total system failure and O.K. Indications shall be provided.
k.	Axle detector & field unit shall have no moving parts and shall require little maintenance.
l.	The central evaluator & field units shall be provided with testing, measuring and adjusting facilities for indicating proper functioning of equipment and for facility of maintenance.
m.	The equipment shall be fully solid-state using carefully chosen industrial grade components.
n.	Response time of train occupancy for any track section shall be less than 1.0 second.
o.	Clearance time of any track section after train leaves the section shall be less than 2.5sec.
p.	Axle counter shall withstand the effect of lightning & surges incorporating lightning and surge protection as per RDSO/SPN/144.
q.	Error rate should not be more than 2 errors per 1 million correctly counted axles, and if there is error, it should not result in unsafe condition.
r.	The equipment shall be capable of simultaneously counting in and / or counting out from the ends of any track section.
s.	Response of rocking of wheels on Axle Detector: If any sensor is influenced two or more times consecutively without a proper count pulse, the system should go to error. If both sensors are influenced four or more times consecutively without a proper count pulse, the system should go to error.
t.	Axle counter should tolerate induced voltage of at least 400v AC, 50 Hz on the quad cable.
u.	Both hardware and software functions will be partitioned to ensure that integrity of certified design will not be compromised through routine software and hardware upgrades.
w.	Axle counter system shall be capable of working in all sections including non-electrified, 25 kv 50 Hz AC, 1500 V DC & 750 V DC electrified areas.
x.	The currents or their harmonics flowing in the rolling stock & rails shall not affect the digital axle counter.

y.	The equipment shall be insensitive to extraneous magnetic or electric fields such as due to traction return currents on electrified sections, traction motor failures, vehicle magnetism or due to any other source.
9.1	Vital Relay Drive & Relay Unit
a.	Free and occupied indication of an axle counter section (track section) shall be available in the form of vital relay pick up and drop contact respectively. Vital relay/s will be driven by central evaluator.
b.	The vital relay shall be 24 V DC, 1000-ohm plug-in type. In section clear condition, the relay driver output shall be more than 20 V DC and in occupied condition; it should be less than 2.0 V DC.
c.	The design should incorporate fail safety feature such that when the vital relay is in dropped condition as per status of the track section, if any external voltage appears across the vital relay coil which can pick up the vital relay, then the system should detect it and the concerned axle counter section/track section will go to error state.
d.	The relay unit shall provide housing for all vital relays.
e.	The relay unit shall have enough space for mounting vital relays (up to 39) for max. No. Of track sections supported by MSDAC.
9.2	AXLE DETECTORS:
a.	These shall be capable of withstanding environmental conditions as per rdso specifications. The inductance of axle detectors shall not vary more than $\pm 6\%$ within the specified temperature range.
b.	The transmitter/receiver coils in the track shall be of web mounted type. The fasteners should be tightened at specified torque using torque wrench. Axle counter performance shall not be affected by the flooding of track.
c.	The axle detector shall be actuated only by wheel flanges and not by other parts of trains e.g. Rail brakes, toilet pipes, suspended chains, electrical inductors in locomotives, air-conditioning equipment and other electrical /electronic equipment in train /engine.
d.	The length of inbuilt cable with Axle Detector shall be 15mtr. Only.
9.3	Resetting:
a.	User input track section wise reset shall be possible.
b.	Track section wise resetting shall be easily configurable as preparatory reset or conditional hard reset.
c.	Resetting of a track-section shall not disturb other track-sections in any way.
d.	The resetting of the track section shall be recorded in the event logger.
e.	A voltage sensitive feature shall ensure that without the operation of re-setting key, the system will not come back to initial or original condition for the following cases - Power fails and restores back in field unit and/or central evaluator. Voltage fluctuation beyond upper and lower limits in field unit and/or central evaluator. - Removal of printed circuit cards from the system (field unit and/or centralevaluator.) - In case OUT count has been registered before any IN count. - It shall be possible to reset each track section from reset box/reset module of reset panel only.

	v. Provision shall be made for recording every operation of resetting by means of non-resettable counter. For one reset operation, the counter should not increment by more than one. vi. For track section on a straight line confined by two detection points, when reset is applied, the axle counter section shall go to “preparatory reset mode”. The preparatory reset LED in reset box/reset module of reset panel shall glow and reset counter shall increment. The axle counter section will be still in occupied state. The axle counter section will become clear only after more than one in count from one end and same number of out count from the other end have taken place.
9.4	CENTRAL EVALUATOR:
a.	The Central Evaluator unit shall be housed in a pre-fabricated rack to be supplied alongwith the system.
b.	The Central Evaluator shall be based on 2 out of 3 logic. Central evaluator based on 2 out of 2 logic may be considered through cross acceptance/ approval.
c.	The Central Evaluator shall be able to connect up to 40 detection points.
d.	The Central Evaluator shall connect to digital axle counter field units in star configuration.
e.	The Central Evaluator will provide one vital relay output for each track section.
f.	The Central Evaluator shall be able to generate relay outputs for up to 39 track sections.
g.	Each detection module in central evaluator shall support track section of 8 detectionpoints
h.	The Central Evaluator shall be able to receive the reset command generated from reset unit for section wise resetting of track section(s).
i.	The Central Evaluator shall provide input to the event logger for registration and recording of events occurring in the multiple section digital axle counter.
j.	The Central Evaluator will have an RS-232 port to interface with electronic interlocking(SSi) system as per RDSO/SPN/148.
k.	The Central Evaluator will have a separate port to connect to the station data logger for monitoring the section wise clear/occupied information. Standard data logger protocol as specified in RDSO/SPN/99 shall be used for this purpose.
l.	The following information shall be sent to station data logger: • Track section nomenclature as per signalling plan. • Status of track section i.e. Clear, occupied, failed or preparatory reset. Application of reset command track section wise.
m.	Provision should be there for lightning & surge protection in the central evaluator powersupply input and communication line input/output.
9.5	DIGITAL AXLE COUNTER FIELD UNIT:
a.	It shall determine the direction of passing of axles.
b.	Provision should be there for lightning & surge protection in the field unit power supplyinput and communication line input/output.
c.	The field units should be able to communicate with central evaluator for transmission loss up to 20db.It shall identify and communicate in the following conditions to the

	central evaluator: • Power fails and restores back • Voltage fluctuation beyond upper and lower limits • Removal of printed circuit card(s) from the unit In case out count has been registered before any in count.
d.	It shall transmit axle counts and health status to central evaluator at regular intervals
e.	It shall have provision for setting unique address of each field unit. The address shall be minum 8 bit.
f.	Earthing: provision of earthing should be there in the central evaluator, field unit and reset box. The earth terminal shall be suitable for taking up to 4mm dia. Copper wire withlug.
9.6	EVENT LOGGER:
a.	The event logger shall be inbuilt in the central evaluator.
b.	It should be possible to download logged events to a commercial computer throughstandard port.
c.	The process of event logging and downloading of logged events should not hamper thenormal working of axle counter in any manner.
d.	The event logger shall record following events at the minimum:
e.	Resetting of a track-section, field unit or central evaluator.
f.	Failures/errors in field units or central evaluator.
g.	Breakdown of communication link (s).
h.	Change in relay status for section occupied / clear.
i.	Changes in 5 v output of DC-DC converter beyond limits.
j.	Change in date / time.
k.	Provision should be there to log minimum 40,000 events. In case of its memory becoming full, the event logging should be on last in first out principle.
9.7	DIAGNOSTICS: • Diagnostic system of the axle counter shall provide • Local and remote diagnostics and testing of system through a serial connection. • Self-detection of errors and display through error codes and brief description indiagnostic terminal. • Diagnostic functions shall be carried out on a permanent basis without disturbingnormal operation of the equipment. Information on the state of the equipment in failure situations and on operations performed by the staff shall be registered with time stamping.
10.0	CABLE TERMINATION RACK:
a.	Cable termination racks shall be erected in the relay room at the required location as shown by the Railway with suitable foundation bolts and cement concreted. The cable

	termination racks shall be painted soon after installation before cable termination work is taken up. Suitable cable ducts wherever required shall be provided to bring all outside cables to the termination rack. All the cables are to be neatly skinned, fixed on the cable bracket and terminate in order. The cable armours and the rack should be earthed. Internal wiring and termination particulars are to be written with paint.
b.	Relay/Cable Termination rack shall be powder coated.
c.	6 way terminal blocks/ Wago Type terminals as the case maybe are to be fixed on Decolam/Hylam sheet and held rigidly by mechanical screws at CTR. The number of 6-way terminals is to be painted serially on the C.T. Rack and details of termination are painted on decolam/hylam sheet and fixed in the relay room. 6-way blocks/wago terminals are covered as a supply item or supplied by Railway.
d.	As made terminal particulars shall be prepared in linen/polyester tracing signed and handed over to the Railways.
11.0	RELAY RACKS:
a.	The provisions of Signalling Engineering Manual shall be broadly followed in relay erection and wiring.
b.	Relay rack frame to accommodate 2/3-way, relay rack is to be fabricated out of 2 Nos. Vertical supporting angle of 65mm x 65mm x 2075mm and bottom and top frame angle of 65mm x 65mm x 1100mm (for 2 way) or 1650mm (for 3 way). Relay rack is to be fabricated out of 40mm x 32mm x 2048mm angles in vertical position spaced 530mm apart by the flats one at the top and the other at the bottom welded to the angle. The relay racks are fitted to the frame angle by 20 x 75mm bolts with washers and spring washers.
c.	The frame is held rigidly by the base assembly and electrically isolated by insulator. Angle plates 65 x 130 x 6mm are welded to the vertical frame angle at the top to facilitate fixing of 'I' bracket is electrically isolated by insulator. Ladder is fixed to the ladder supporting angle by 12 x 20mm bolts and nuts with washers and spring washer. The base assembly is anchored to the ground by means of 'J' type foundation bolts 12 x 100mm with washer and spring washer. For further details for fabrication, the drawing may be referred to. The exact requirements of wall angles and cable ladder are to be arrived at taking the disposition of the relay racks in the relay room. The cable ladder brackets are to be provided with plastic sleeves to avoid damage to the wires and multi core cables run on the ladder. Alternative ladder arrangement for carrying the wires as per the instructions or approval of inspector in charge of the work can be fixed.
d.	Relay racks erected in the relay room shall accommodate 'Q' style/k-50 relays in different racks as indicated in the sketch showing the disposition of rack (9 rows of 6 relays grouped in pairs such that the one relay gap between such pairs for enabling examination by technician). While working out the relay requirements it must be ensured that at least one front and one back contact is left as spare.
e.	The disposition of relays in the relay rack shall have to be carried out as per the directions of the site inspector. A typical circuit diagram with contacts numbered will be given for guidance and the contact numbering is to be planned accordingly taking into the account of the contact configuration of the relays supplied by the Railways.
f.	Important points to be kept in mind while numbering the circuit diagram. • Maintaining uniformity.

	• Maintain same contact for stick path in stick circuit. (A1/A2 in case of QNI relays), (81, 82 in case of k-50 relays). • The principle of similar relays at one location shall be normally adhered to. • As far as possible, allot same contact for vital circuits.FOR EXAMPLE: i) RR front contact used in UCR, HR circuit shall be same. ii) UCR front contact used in HR circuit shall be same. iii) HR front contact shall be same for lighting circuits. iv) ASR/ASPR back contact proved in HR shall be same. v) UCR, RR back contact used in ASR circuit shall be same. vi) The cross-protection contact used in UCR, HR, circuit shall be same i.e.,RR back contact in UCR circuit, UCR back contact in the HR circuit.
12.0	INTER CHANGEABILITY OF RELAYS: As far as possible, the contacts shall be so allotted that definite contacts are allotted first and then the deciding contacts so thatrelays of any contact configuration may be installed. FOR EXAMPLE: i. In QNI relays, (B5, B6) (B7, B8) (C5, C6) (C7, C8) will decide the contact configuration. These contacts are called deciding contacts. If possible, these contacts shall not be allotted. Should the above contacts be allotted, decide immediately whether it is 12f/4b or 8f/8b and post in the contact analysis book. ii. In case of k-50 relays, (61, 62) (63, 64) are deciding contacts for selecting 5F/3Bor 4F/4B relays. iii. In case of TMA relays (41, 42) are deciding contacts for selecting 5F/3B for 4F/4B relays.
13.0	PICKING UP OF REPEATER RELAYS: If repeating relays over and above the relays shown in the approved circuit diagram arerequired to be picked up, the following sequential proving shall be ensured.
a.	RPR: Front contact shall be proved in UCR circuit and back contact shall be proved in ASR circuit. It may also be ensure that RR front/back contact is proved in positive limb and RPR front/back contact in negative limb of UCR/ASR circuits.
b.	UCPR: Front contact shall be proved in HR circuit and back contact in ASR circuit.
c.	UGPR: Front contact shall be proved in Route Lamp circuit and back contact in ASR circuit.
d.	HPR: Front contact shall be proved in HG lamp circuit and back contact in ASR circuit.
e.	JSLPR: Front contact shall be proved in JSLR stick circuit and back contact shall be proved in HR circuit
f.	CHLPR: Front contact shall be proved in stick circuit of KLCPR: CHLR and back contactin EKT lock coil circuit. LXPPR: In case of siding and level crossing gate, if the key transmission is directly by the operation of knob in panel, then back contact of aboverepeating relays (LXPPR, KLCPR) shall be proved in LXYR, KLYR circuit).
g.	CHFPR: Front contact shall be proved in EKT lock coil circuit and back contact shall be proved in HR circuit.

h.	TPPR: i) Back contact shall be proved in TPR (Main Relay) picking up circuit. ii) TPPR shall pick up through front contact of TPR (Main relay). iii) TPR (Main relay) front contact shall be nominated in ASR circuit. iv) TPR (Main Relay) back contact shall be nominated in UYR1, UYR2 circuit. In WLR circuit or where TPR contacts are proved for track locking, TPR (Metal to carbon) relay contact shall be nominated. Where all other TPR's are metal to metal relays.
i.	ASPR: i) Front contact shall be proved in WLR circuit and back contact shall be proved in HRcircuit. In WLR circuit the contacts on positive and negative should be of different relays. ii) ASR stick feed shall be through last repeating relay front contact in Metal to Carbon relay circuit. In case of metal to metal relays, the main ASR should pick up through the back contact of last repeating relay and the stick circuit should be through the first and last relays. iii) In UYR circuit, JSLR circuit back contact of last repeating relay of ASR shall be nominated.
j.	NWSR: Back contact shall be proved in N/R circuit. RWSR: (i.e., W.I) and also conflicting relay pick up circuit. For example NWSR backcontact shall be proved in RWSR pick up circuit and RWKPR circuit and vice versa. Front contact shall be proved in NWKPR/RWKPR pick up circuit.
k.	NWKPR: Back contact shall be proved in N/R circuit RWKPR: (i.e., W.I) and conflicting relay pick up circuit front contact shall be proved in UCR/HR circuits.
l	Whenever the circuit is branching of through the front and back contact of the samerelay, the contacts nominated shall be of the same relay
m.	Frames for fixing 6 Nos. of 'Q' style relays in a row with mounting arrangements are to be fixed to the relay rack by suitable screws/bolts and nuts. The interconnection between the Panel and relay rack as well as between the 'Q' style relay racks, are to be carried out as per instructions at site. Suitable mounting arrangements and fixtures are to be supplied by Contractor. There shall be clear gaps between relays to enable seeing their contacts position by Technician.
n.	Relay plug boards of 'Q' series relays are to be fixed to the relay rack on frames made out of MS flat of suitable size. Not more than 48 relays are to be mounted on a rack and at least one front and one back contact must be left as spare in a relay. For fixing K-50 relays pre wired tag, tag blocks have to be fixed on the relay racks.
o.	Suitable mounting arrangements for fixing non-deteriorating fuses, condensers and resistors to suit the circuit requirements are to be fabricated on Bakelite Hylam sheet together with necessary screws bolts and nuts.
14.0	WIRING:
a.	The provisions of Signalling Engineering manual shall be broadly followed in relay erection and wiring.
b.	The equipment are to be wired in relay room, station master's office power supply arrangements, Location box. CT box, battery box and in other locations as per circuit diagram.
c.	Contact numbering for the relays shall be made as per the approved circuit diagram issued by the Railway and type of relay proposed to be used on the installation.
d.	Wiring inside one rack for shelf type and plug in type (Metal to Carbon) contact relays.

e.	Relay rack wiring housing plug in type relays conforming to BRS-930 and BRS-931 and shelf type relays conforming to BS-1659 shall be done with "PVC insulated unsheathed flame retarding type single core flexible wire 1100 V grade having 16/0.2mm annealed copper conductor and nominal cross-sectional area of 0.5 Sq.mm of common colourcode to the specification IS: 694" 1 or wiring these relays the above wired shall be terminated on eyelets/lugs of standard design.
f.	The sequence of wiring and testing: - Erection of relay racks - Fixing of relay bases as per disposition chart prepared - Fixing of fuses and terminals - Drawing of wires from contact to contact - Testing including wire count wrt wiring diagram by supervisor (je/se/sse) - Soldering after due corrections - Testing including wire count wrt wiring diagram by supervisor (JE/SE/SSE) of soldered wires. - Testing of wire to wire by officer (ADSTE/ DSTE) - Plugging of relays after due corrects taking care of the relay code pins for ensuring correct contact configuration. The clips shall be locked properly and firmly. - Additional/extra holes for code pin if any shall be sealed with epoxy/ m- seal - Clips shall be checked for proper insertion by inspecting from rear - Energization of relays - Connection of simulation panel and panel, block instt etc - Functional testing by supervisor - Simulation testing wrt TOC of the installation by officer (ADSTE/DSTE) - Functional testing including correspondence with field gears
14.1	Wiring of proved type relays (metal to metal contact):
a.	For wiring the above relays the use of single strand tinned copper wire of 0.6mm and 1.0mm 1100V grade PVC insulated flame proof shall be used. The use of multi core cable of 100 core, 60 core, 40 core and 20 core having the above conductor dia and grade is permitted. Size of conductor shall be chosen based on current to be carried through these conductors. The wire and cable used shall generally conform to IS: 694.
b.	The wiring between the terminal board of the panel and the unwired tag block on the relay rack is to be carried out using multi-core cables (40 core or 60 core) 0.6mm/1.0 mm dia annealed tinned copper wire to IS : 694. The wiring on the 'q' series relay rack is to be carried out by 16/0.2 mm dia single core multistrand flexible A.T. Copper wire to I.S. 694.
c.	Soldering at the tag block terminals shall be made using good quality solder and flux. Care must be taken to prevent dropping of excessive solder from terminal thereby causing failure/unwanted connection or short by fusing of PVC insulation in the row below it. It is advisable to raise the wires by mechanical means and temporarily interposing a wooden or plastic sheet between the adjacent rows while soldering, to collect the excessive solder that may be dropping out.

d.	After testing, the loose wires on the cable ladder shall be neatly bunched and laced with twine black. A suitable colour code for wiring shall be adopted as required by Railways.
e.	Various supplies associated with signaling viz., 110V AC, 110V DC, 60V DC, 24V DC, 12/24V AC and 12/24V DC flashing are to be brought out to the equipment room. Necessary measuring instruments are to be mounted on the Hylam sheet.
f.	The incoming cables to the relay room are to be neatly arranged and fixed to the cable supporting and guiding rack. The duct shall be filled with sand and plastered neatly to avoid entry of mice or reptiles.
g.	After the complete testing by the Railways representative and before commissioning the installation, the relays shall be sealed with sealing bands and wires.
h.	The nomenclature of each relay shall be painted both in front and rear side of each relay with contact configuration. The relay index sheet duly painted of details of relay and their position in the relay rack shall be manufactured out of decolum/novapan sheet and fixed in the relay room. All the relays to be plugged shall be checked visually and defect if any, noticed shall be replaced duly reporting the same to the Railways. As made relay rack wiring and contact chart of all relays shall be prepared in linen/polyester sheets, duly signed and handed over to Railways for preparation of handing over documents to maintenance organization.
i.	Suitable arrangements shall be made in the relay rack for fixing condenser and resistance unit, required for slow to release feature. Letter painting shall be made against each unit to identify circuit to which it is used.
j.	All circuits shall be carefully protected by individual fuses in the relay room and locations grouped preferably to facilitate easy fault location. Fuses shall be so arranged that they can easily be placed without causing interference to other circuits. Charts showing the arrangements of fuses and the circuits in which they are used shall be prepared and kept in the relay room. Fuses for all signalling circuits shall be of the non-deteriorating type as per RDSO specification.
k.	Fixing of EKT/HKT with micro switches 2 NO/2NC at gate lodge, S.M's office on Teakwood board, providing telephone at site/gate lodge/SM's office, carrying out wiring of EKT/HKT, telephone using 16/0.2mm wire and testing as per approved circuit diagram and commissioning the same wiring has to be neatly clipped wherever necessary
14.2	Earthing arrangements
	a) Earths as per SCR Drawing No. 5775 shall be provided for all Signals, Location boxes. b) The MS flat connecting earth electrode and location box/signal post shall be welded on both sides. c) All nuts / bolts used to connect MS Flat to function/any other connection used for earthing shall be galvanized. d) The earth resistance achieved shall not be more than 10 Ohm. Additional Earths shall be provided and paralleled if required to achieve final earth resistance of less than 10 ohms. e) Earth Chamber shall be filled with River sand / Robo sand. f) Earth resistance value shall be painted on the function with date of measurement.

	The armours of all the cables and apparatus case/battery box shall be earthed as directed by Engineer
	One ring earth, containing not less than four copper plate earthing units as per SCR Drawing No. 5776 and 5777 shall be provided at each goomty & central relay room. All four earth pits shall be interconnected using 35 x 6 mm GI flat duly welded. The earth resistance of ring earth shall be less than 1 ohm.
	<u>EARTHING WITH GI PIPE ELECTRODE:</u> The work includes excavation of a pit at a given location as per Drg. No. G/SG/09/2002 on natural soil, fixing earth pipe covering the same with a mixture of 30 kg. Of charcoal, 30 kg. Of common salt and earth. This includes brick masonry around the earth. GI pipe of size 50mm x 2000 x 3.5 mm thick with 12mm dia holes on the sides at intervals of 300mm. The equipment to be earthed shall be connected to the earth pipe by means of 19 Strand Signal Cable or equivalent for Relay/ Eqpt Rooms and 2C/2.5 Sq.mm cables for Signals/ Location Boxes by neatly soldering at equipment end and earth pipe end. Earth resistance shall be measured and painted on the earth pipe with date. The earth resistance shall be always less than 10 ohms. The provisions of Signalling Engineering Manual Shall be broadly followed.
15.0	TESTING AND COMMISSIONING:
15.1	TESTING OF RELAY INTERLOCKING:
a.	Indoor testing Testing of Electrical Signaling Circuits shall be broadly as per Signalling engineering Manual. Testing of relay interlocking consists of energization of relays by connecting the simulation panel. Clearing of signals on the simulation panel and carrying out the following tests (As per table of control): i) Negative tests ii) Dead/Approach locking tests. iii) Route/Back locking tests. iv) Testing of conflicting signals. All other circuits viz., SM's key, CHLR, LXPR, KLCPR are provided correctly in the respective signaling circuits.
b.	Testing of outdoor gears: Testing of outdoor gears consist of: i) Signals ii) Motor operated points iii) Track circuits iv) LC gates (interlocking)

	v) Sidings vi) Slots.
	Testing and commissioning of outdoor equipment: 1. Cable meggering and pairing up of conductors shall be done. 2. All the power cables shall be made through and power supply shall be extended to all locations. 3. After the power cables are energized, check up each limb of the power cable whether any earth fault exists using multimeter. This will indicate whether any cable conductor is faulty (i.e., earthed). 4. Testing of signals: a. Signals shall be initially tested from the LOC box to attend to minor troubles of bulb holders, wiring etc., b. All the aspects shall be checked by giving 110 V Ac feed from Loc. Box and then the test shall be repeated by giving feed from relay room CT rack. This shall be repeated by giving feed from relay room CT rack. This test shall be done for each aspect, route and pilot lamp of shunt signals. c. Care shall be taken to ensure that no train is approaching during this test to avoid misleading information to drivers. d. Ensure that signal number plate is provided and unit back door is fastened and locked properly. Door locking is very important to prevent sun rays falling on to lenses to give phantom indications. Focus the signal aspects, record the aspect voltages and ensure that it is within the permissible limit (90% of rated voltage of the bulb).
c.	Check up the interlocking of LC gates, siding points: a. Check up for the proper functioning of electrical transmission of key transmitters. b. Check up the panel indications. c. Connect magneto telephone communication between SM and LC gate/siding. d. Ensure that respective signals cannot be taken OFF if LC/siding controls are not available with SM (i.e., on panel). e. Ensure that when the signals are taken off, respective LC gate/siding key cannot be extracted from the EKT.
15.2	TESTING : SIGNALLING: The contractor shall make such tests as may be necessary to demonstrate to the satisfaction of the Railway that the apparatus and the system as installed are in accordance with the specification and contract. The contractor shall provide such instruments and apparatus as may be necessary for conducting the tests. The following tests of equipment and installation shall be made in addition to tests enumerated in draft Indian Railway Standard Specification No. RDSO/SPN/13 for “Electrical Signaling and Interlocking Fittings and Mechanical signaling and interlocking to IRS S-18/1978. Tests specified in clause 27(i) of the General Conditions: a. Service test to determine those protective devices functions as intended. b. Service test to determine that control system as intended. c. Test to determine that all circuits confirm to approved circuit, plan by individually, electrically checking each contact selection. d. Test of all electrically operated devices to determine that electrically operating characteristics are in accordance with specification designated by the Railway. e. Test of insulation resistance of each complete circuit in accordance with engineer's instruction.

	f. The insulation resistance shall be not less than as specified in the signal engineering manual. g. The responsibility of fault localization in the defective or inoperative installation during the execution and testing and restoration thereof shall be that of the contractor. h. The contractor shall co-operate in conducting tests and trials and wherever them the special conditions of the contract, contained herein shall prevail. i. Bulbs shall be subjected to premature burning in co-operation with signaling staff. j. Battery chargers, stabilizers & transformers are to be protected before installation as per engineer's instructions.
16.0	AS MADE DETAILS: After commissioning of the entire installation, as made tracings of documents/plans shall be made on tracing film to Railway standard size and also 6 copies of booklets consisting of the following documents shall be made: 1. Signaling plan. 2. As made track bonding diagram 3. As made cable distribution plan 4. As made cable route plan 5. As made apparatus case wiring diagram, termination and cable particulars. 6. As made cable termination rack particulars. 6a. Power distribution 6b. Circuit diagram 6c. Panel termination particulars 6d. Table of control 7. Cable meggering readings 8. Copies of CRS sanction, safety certificate. 9. Relays and other equipment details (field equipment). 10. Sighting committee report. 11. Relay contact particulars 12. Equipment arrangement plan (Floor Diagram) of all rooms incl Dy.SS room.
17.0	GENERAL:
	Signal and interlocking fittings; all signal and interlocking fittings should be in accordance with I.R.S. Specification no. S-10 unless otherwise specified. All relay interlocking principles contained in IRS S-36 shall be applicable for all relay interlocking works.
18.0	DRAWINGS FOR LABOUR PORTION : The respective drawings for Labour portion can be obtained from the office of the Dy.CSTE/Project/Tele/Secunderabad on any working day.
19.0	POWER SUPPLY ARRANGEMENTS: • The power supply arrangements are required to be broadly as per provisions of Signalling Engineering Manual. • Integrated power supply arrangement shall be installed, wired and commissioned for various supplies required for signaling. • The contractor shall manufacture a power supply panel for mounting meters, fuse etc., as required by Railways and shall install on suitable angles and mounted to the wall, leaving sufficient working space for maintenance as per drawing.

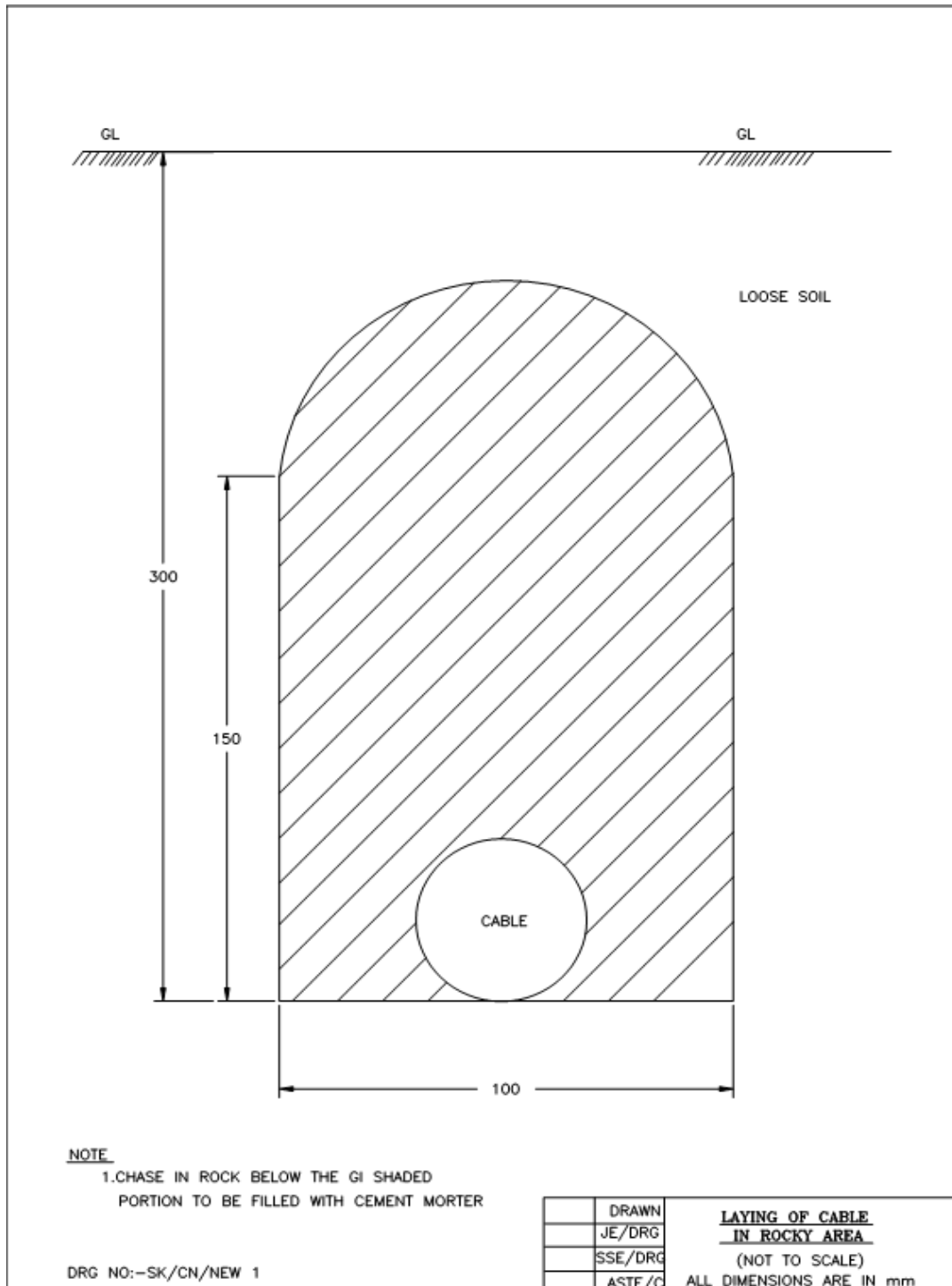
a.	The power rack shall be painted suitably and uniformly before installation. Distribution details shall be painted on each equipment. Fixing of Ammeters, Voltmeters and HRC fuses shall be made on Hylam of thickness not less than 6mm.
20.0	LEAD ACID / MAINTENANCE FREE BATTERIES:
a.	The charged batteries shall be provided in the battery room locations as per drawing/instructions.
b.	The cells shall be arranged neatly with sufficient working space for maintenance.
c.	CHARGING OF A BATTERY: The initial charging of secondary cells shall be done as per section 5 of chapter 16 in IRSEM
d.	BATTERY CONNECTIONS AND ARRANGEMENTS: Cells are to be connected with suitable links sufficient to carry full load. Immediately, after connection, petroleum jelly shall be applied on battery terminals. The wiring shall be carried out by 10 sq.mm multi strand copper wire. The details of batteries and the capacity, circuit, date of installation etc., should be painted. The specific gravity and voltage reading shall be recorded for each cell in a separate register, along with the guarantee certificate of the supplier and handed over to Railway duly signed. A wooden stand for keeping hydrometer shall be fixed in each battery room
21.0	POWER PANEL: Power Board with both sides laminated Hylam sheet of 6mm thickness to suit single relay rack /CT rack decided by the site engineer in charge already erected in equipment room and meters as required are to be fixed.
22.0	TELEPHONES: Desk type telephones shall be fixed on the telephone stands/apparatus cases/battery boxes. The wooden stand shall be fabricated by the contractor and firmly fixed on to the wall if installed in station building platform/gate lodge. A suitable wooden box shall be manufactured for telephone battery with locking arrangements and fixed near the telephone. Telephones if installed in apparatus cases/battery boxes near the top points/siding points/home signals it shall be securely fixed on wooden shelves. Telephone battery shall be kept in the same apparatus case/battery box. It shall be ensured that no other gadgets shall be kept in the apparatus case/battery box and separate door lock arrangements shall be made to protect the telephone battery if installed near home signal/top point/siding points for traffic purpose.
23.0	BLOCK INSTRUMENTS: SGE block instruments/UFSBI block panel as applicable shall be installed on places indicated by Railways. Separate jumper cables between Relay room and respective block instruments shall be laid through cable ducts. The instruments shall be connected to the Test panel through separate cables. The cables shall be fixed properly inside the Block counters/Block Instruments and terminated.
24.0	PAINTING:
	All signalling equipment shall be painted in accordance with Signal Engineering Manual/Existing practice
a.	SIGNAL POSTS AND FITTINGS: COLOUR LIGHT SIGNAL:

	i. Post for Second Distant signal alternate bands of 300mm width of black and yellow shall be used in Double Distant Territories. For all other signal posts White Aluminium paint should be used. ii. Fittings (Hood and Mechanism box) . "Black", the rear of the mechanism box and background may be painted white where necessary, with the approval of Chief Signal and Telecommunication Engineer.
b.	DOUBLE LINE BLOCK INSTRUMENTS: 1. DOUBLE LINE BLOCK INSTRUMENTS: (i) Wood work .. "Spirit Polish" (ii) Metal casing .. "Green" Enamel
c.	ELECTRICAL SIGNALING APPARATUS: i. Point machines, key transmitters ... "BLACK" ii. Junction boxes, battery boxes and apparatus cases:- iii. Junction boxes. Post type. Inside "White" outside "Chocolate" (Red oxide paint should be used). iv. Junction boxes. Ground type and apparatus cases: inside "white" outside "white" (aluminium paint should be used).
d.	CABLE MARKERS: i. Cable stakes ... 'Black' ii. Cable markers ... 'Black' iii. Body ... 'Black' iv. Figures ... 'White' v. Concrete Markers Telecom: Body in Orange, Letters (Engraved) : White Note: For Cable the Lettering shall be SCR, Signal; For Telecom the lettering shall be "SCR, 6-Quad or SCR OFC or SCR, OFC/6-Quad" as the case maybe. The letters shall be of about 75mmx 35 mm size.
e.	INDOOR PAINTING: i. Painting of complete relay rack/cable termination rack and ladder and its fixtures and other equipment installed in the relay room as per the instructions of CSI/SI and writing all cable termination numbering particulars in rack and also on board, relay numbering, nomenclature and other details both on relays and racks, rack numbering, particulars of condensers, and fuses, resistances both at fixing boards as well as in the particulars board, axle counter equipment details, cable numbering as cables. And any other details requires in relay room for panel interlocking circuits by CSI/SI. ii. Painting equipment rack and wiring all equipment numbering details, painting of hard wood planks provided on the equipment rack and power board racks, details of equipment fixed on power board. iii. Painting of Battery bank Titles and Particulars Summary. Boards with computer lettering on PVC plastic sheets of about 3-5mm shall be used in lieu of painting on walls. iv. Painting numbering on secondary cells, writing circuit details in the battery room as instructed by CSI/SI at site. v. Painting generator panel particulars, instruction board to operating staff, generator numbers etc., in the Generator room. vi. Painting all termination particulars in the panel, block instruments, EKTs, Crank Handle box, axle counter resetting box, resetting plunger box in the SM's office/panel room.

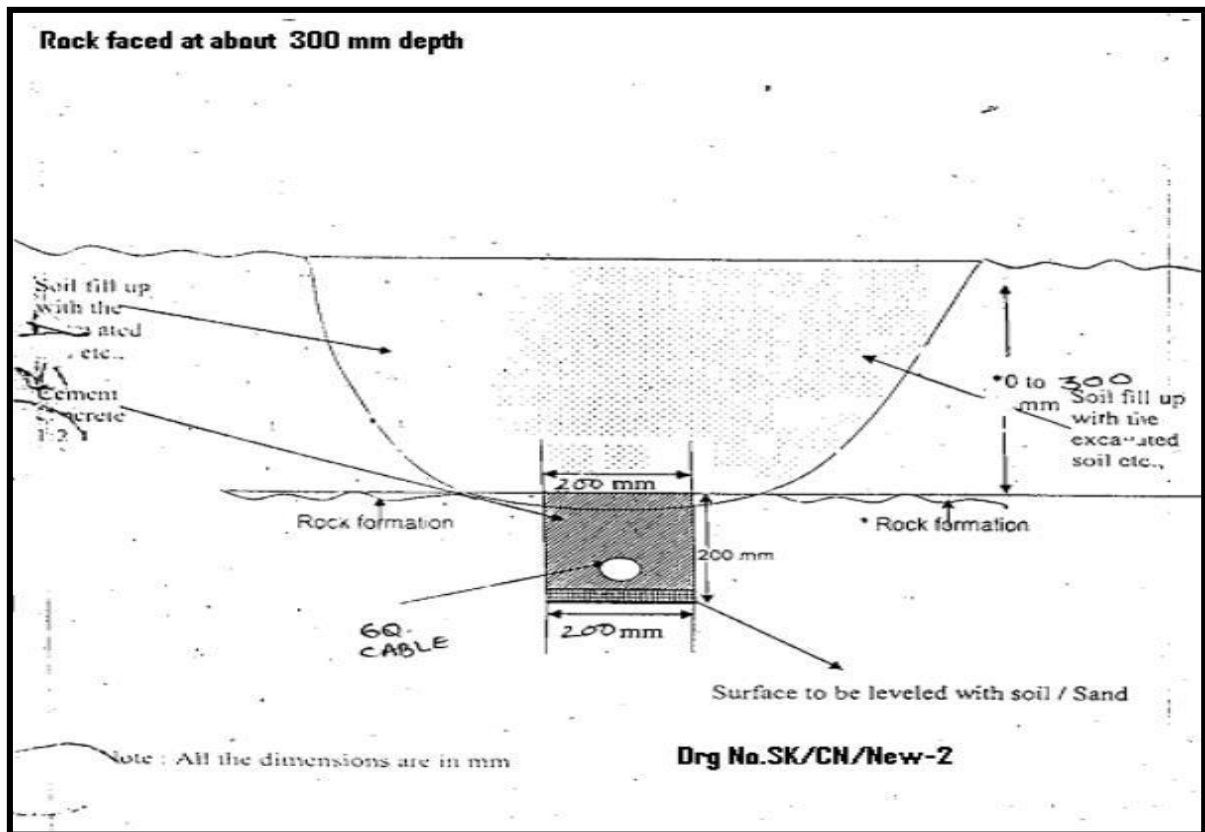
f.	OUTDOOR PAINTING: Supply of approved quality of paint and painting the following equipment in two coats duly scrapping the rust as directed by CSI/SI at site. Color scheme shall be as per SEM as prescribed in previous paras. - Colour light signal post complete with route indicators, ladders, calling on signals, shunt signals are to be painted both inside and outside including numbering of signals, cable termination details as per standard practice. - GKP location boxes both inside and outside with location number, particulars of cable termination and other equipment kept inside the location. - Track circuits: painting block joint numbers, feed/relay end details on rails, TLJBs, details of feed equipment with track circuit numbers and battery with track circuit number and date of installation. - Point Machine layout complete including point number, circuit diagram inside the cover, junction box details point contactor unit number in location box etc., Key locked points with HPLs, connecting rods, point indicator, HKT tail cable termination particulars in the location box etc.
25.0	CRANK HANDLE INTERLOCKING: KLCR box with relays for crank handle interlocking shall be installed in SM's room/Cabin/apparatus cases as indicated by Railways. The necessary chaining of crank handle with key and associated works shall be carried out. The particulars of wiring shall be neatly painted.
26.0	WARNING/STOP BOARD:
a.	Warning/stop boards fitted on the Rails/angle/channel shall be erected and concreted at locations as indicated by Railway representative and as per approved Signalling plan and shall be clear of all infringement. If necessary, existing warning/stop boards shall be shifted and re-erected on the place required by Railways.
b.	The Warning Board shall be as per Drg No. SK/13/89, The BSLB shall be as per SK/751 Stop Boards, Axle counter warning boards, CO Boards etc shall be as per approved Drawings.
c.	The rail post and other fittings shall be painted as required by Railways.
27.0	OEM'S SITE INSTALLATION CERTIFICATE: OEM certification for the installation before commissioning to be issued for each of the equipment meticulously: (as applicable) (a) EI; (b) SSDAC / MSDAC/HA-SSDAC; (c) UFSBI / BPAC; (d) AFTC; (e) IPS; (f) DATA LOGGER (g) IPMPLS OEM is required to issue "Site Installation Certificate" addressed to CSTE of the Railway, as per format given at Annexure-19.

B. S&T Drawings and OEM Form

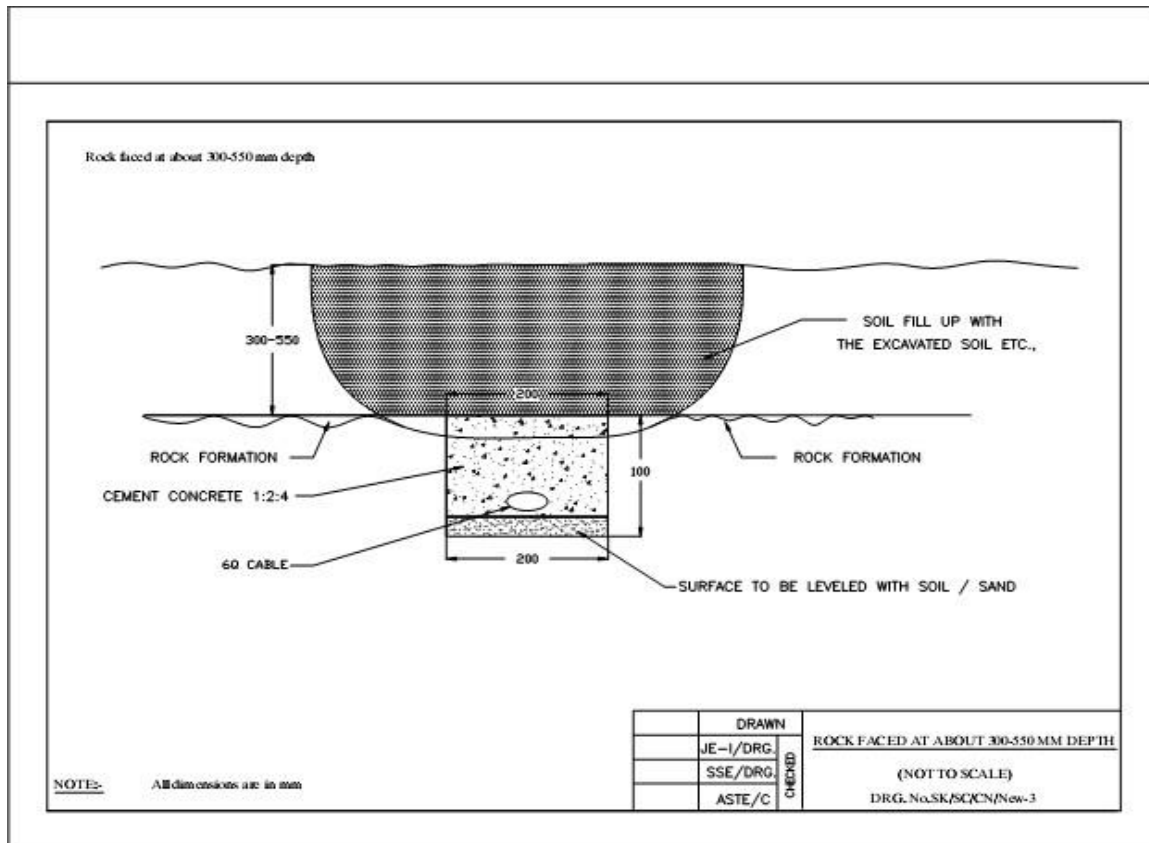
Annexure-1



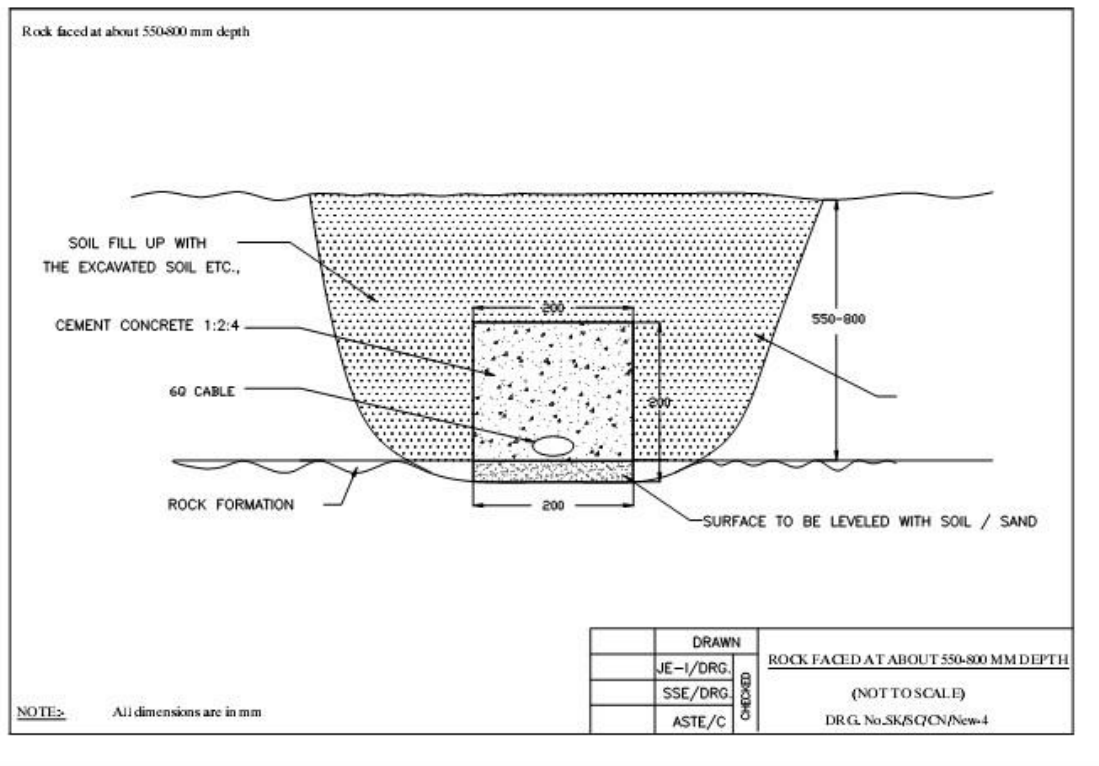
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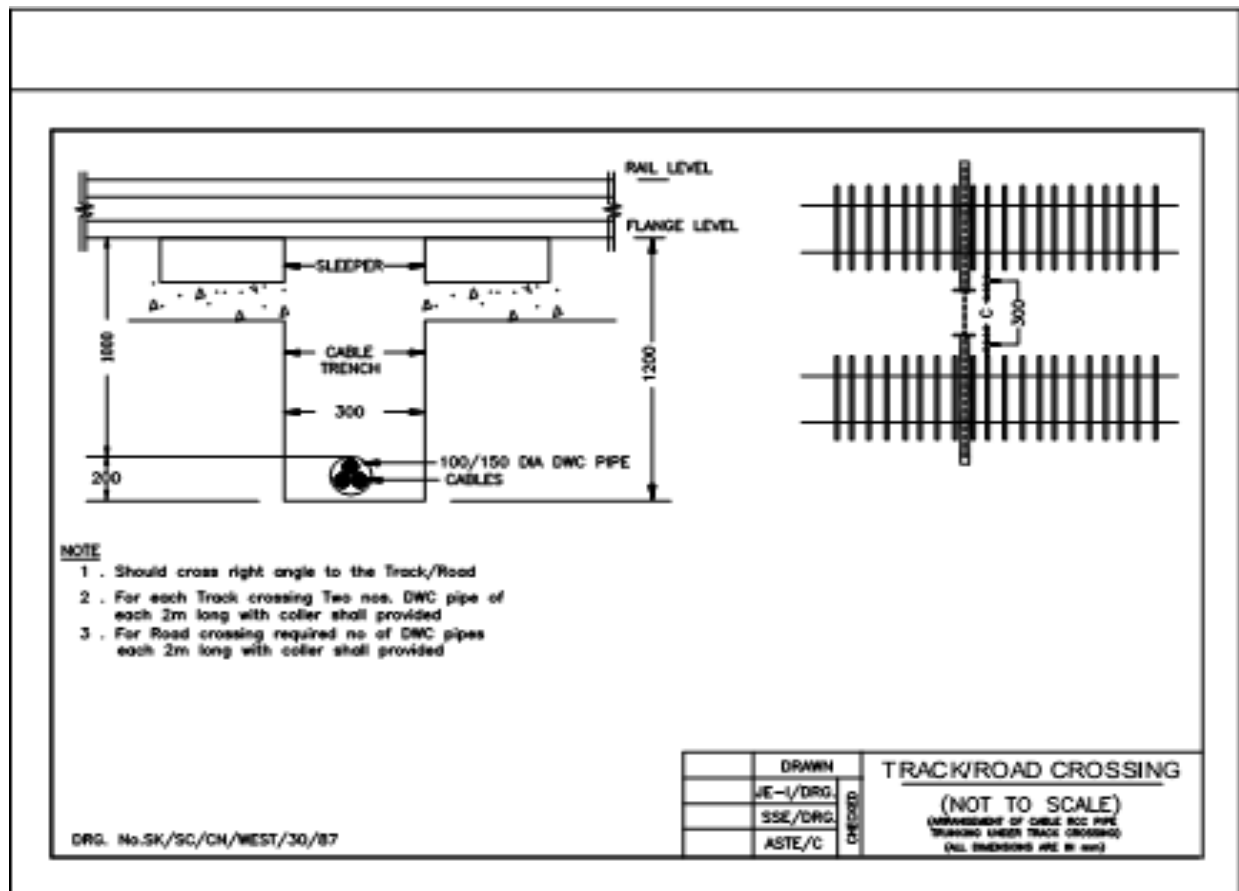
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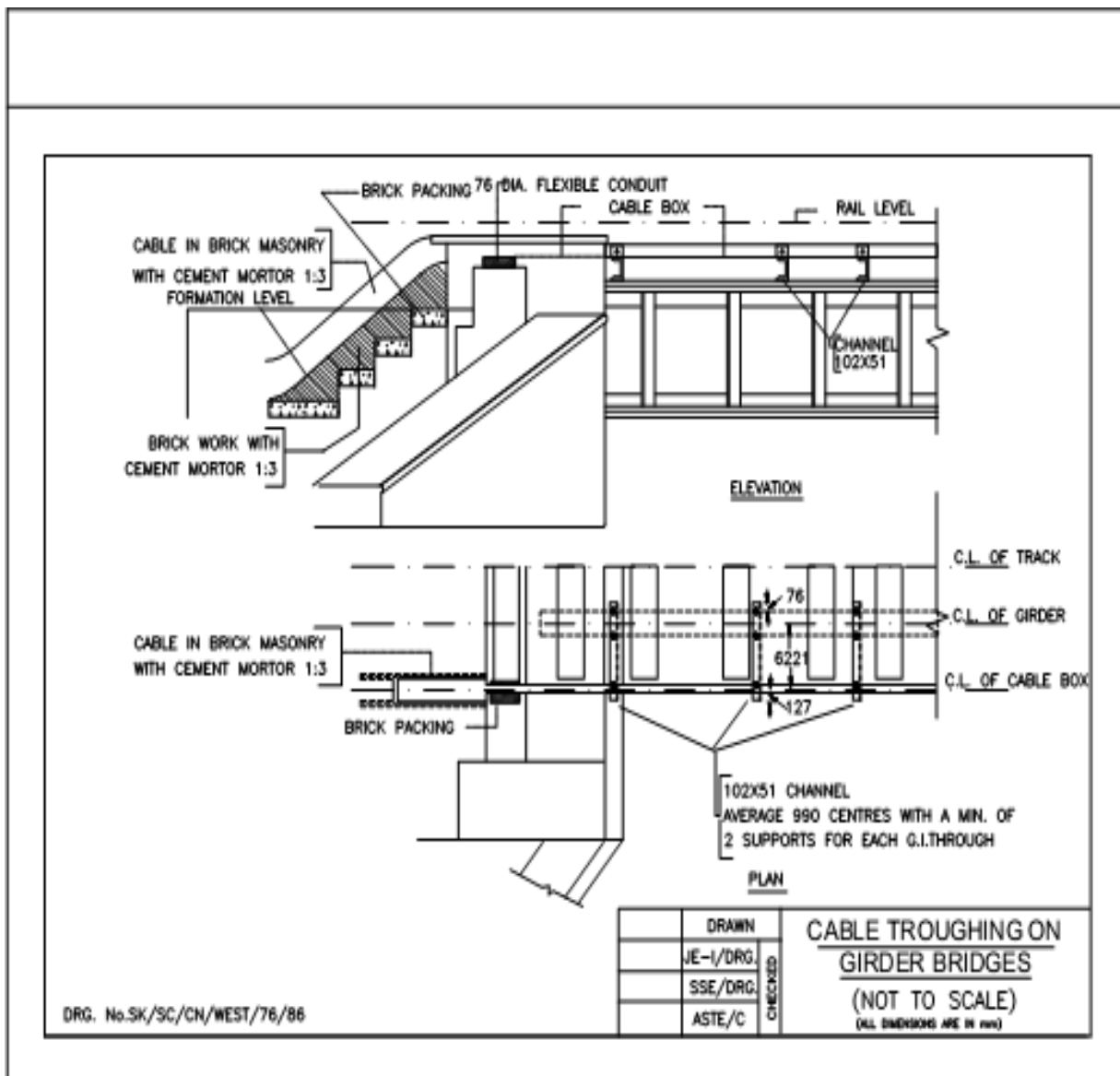
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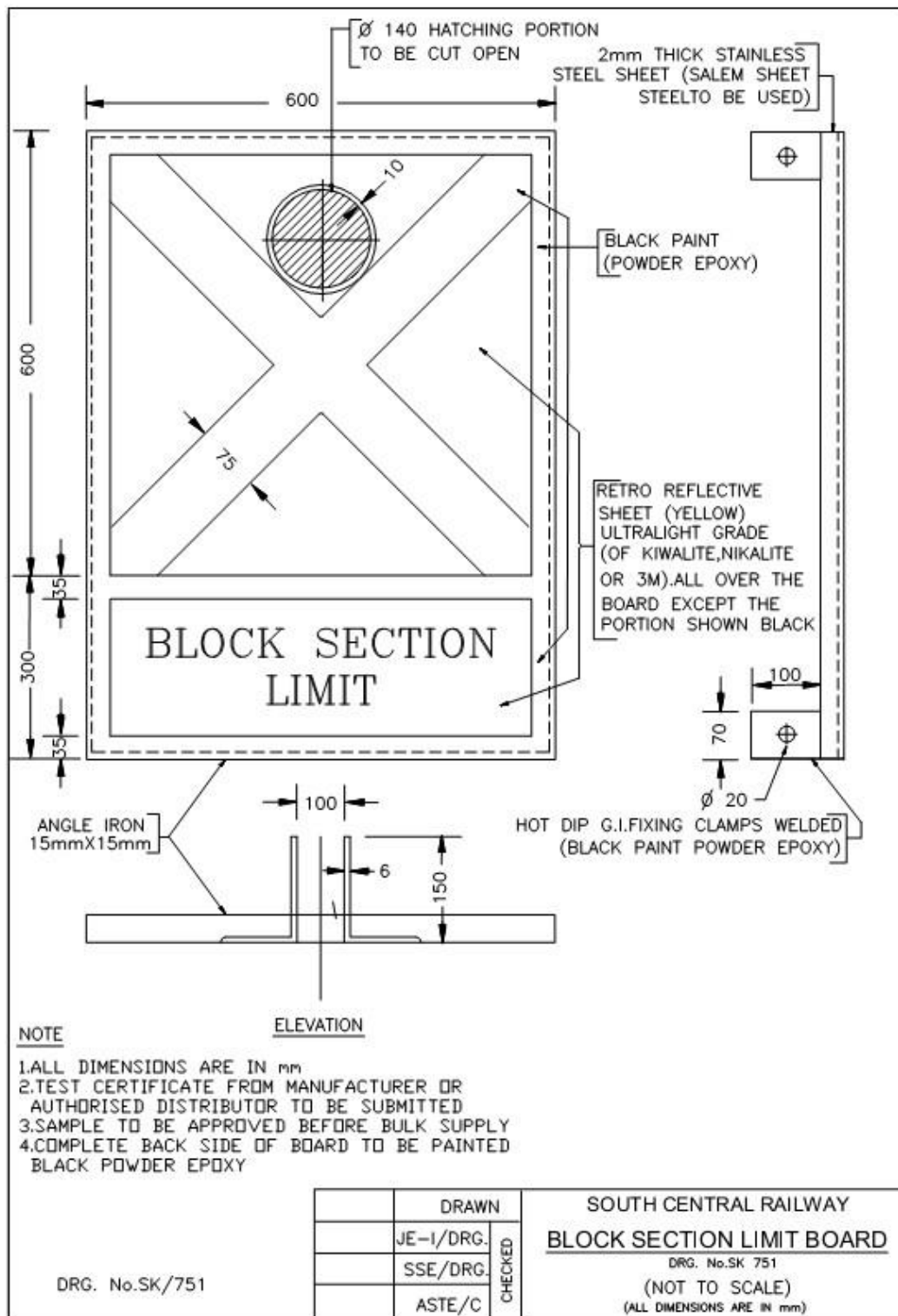
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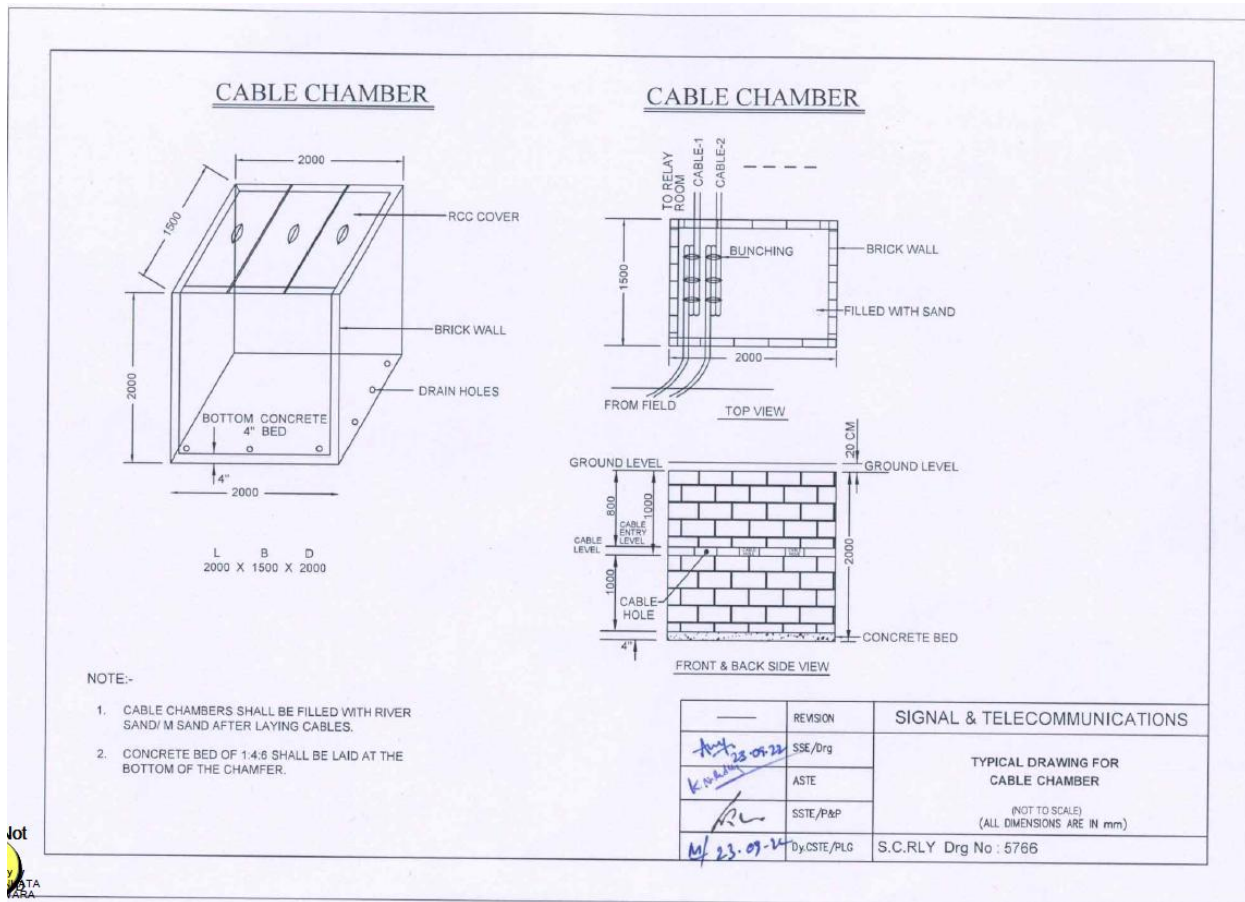
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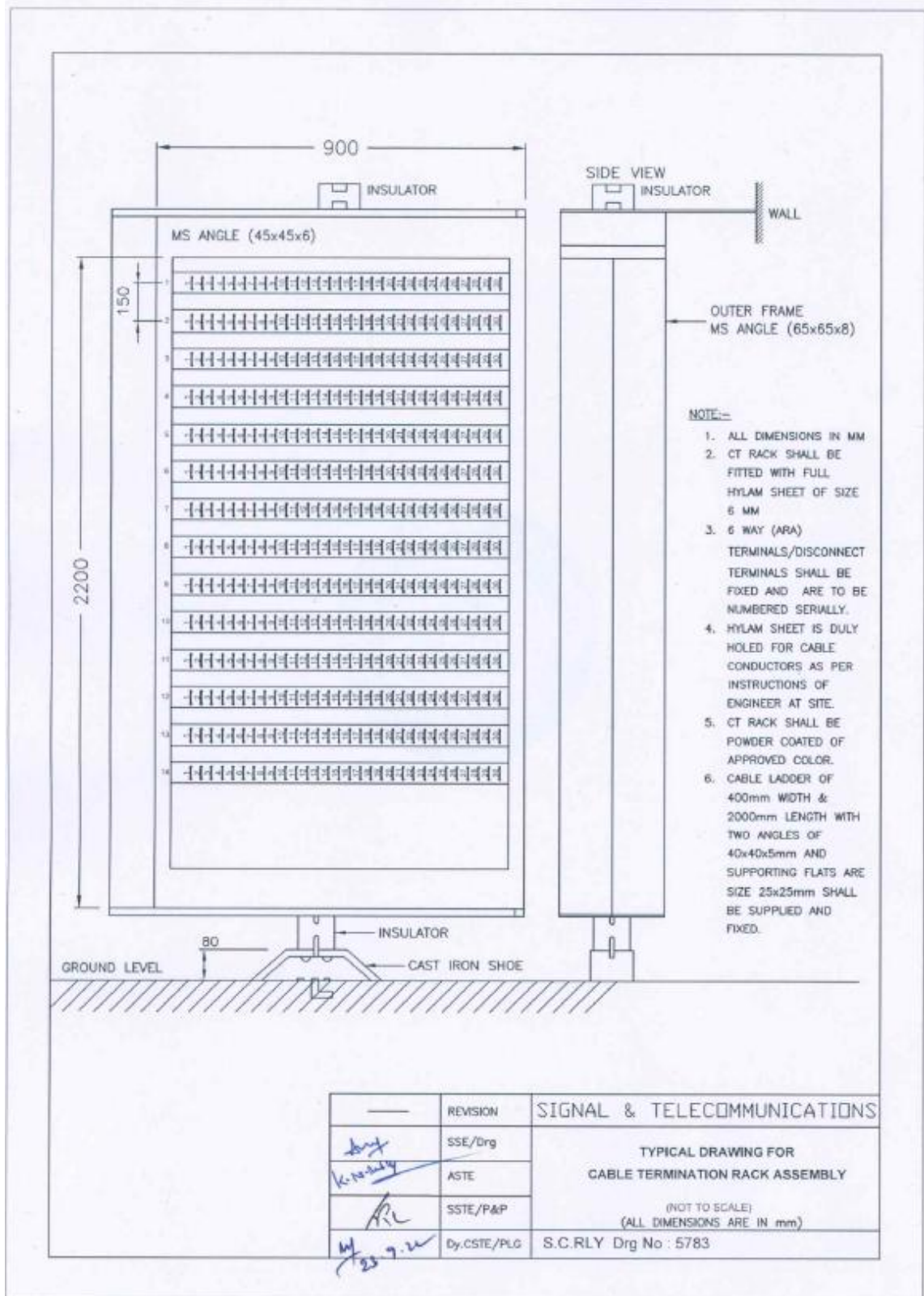
Annexure-4

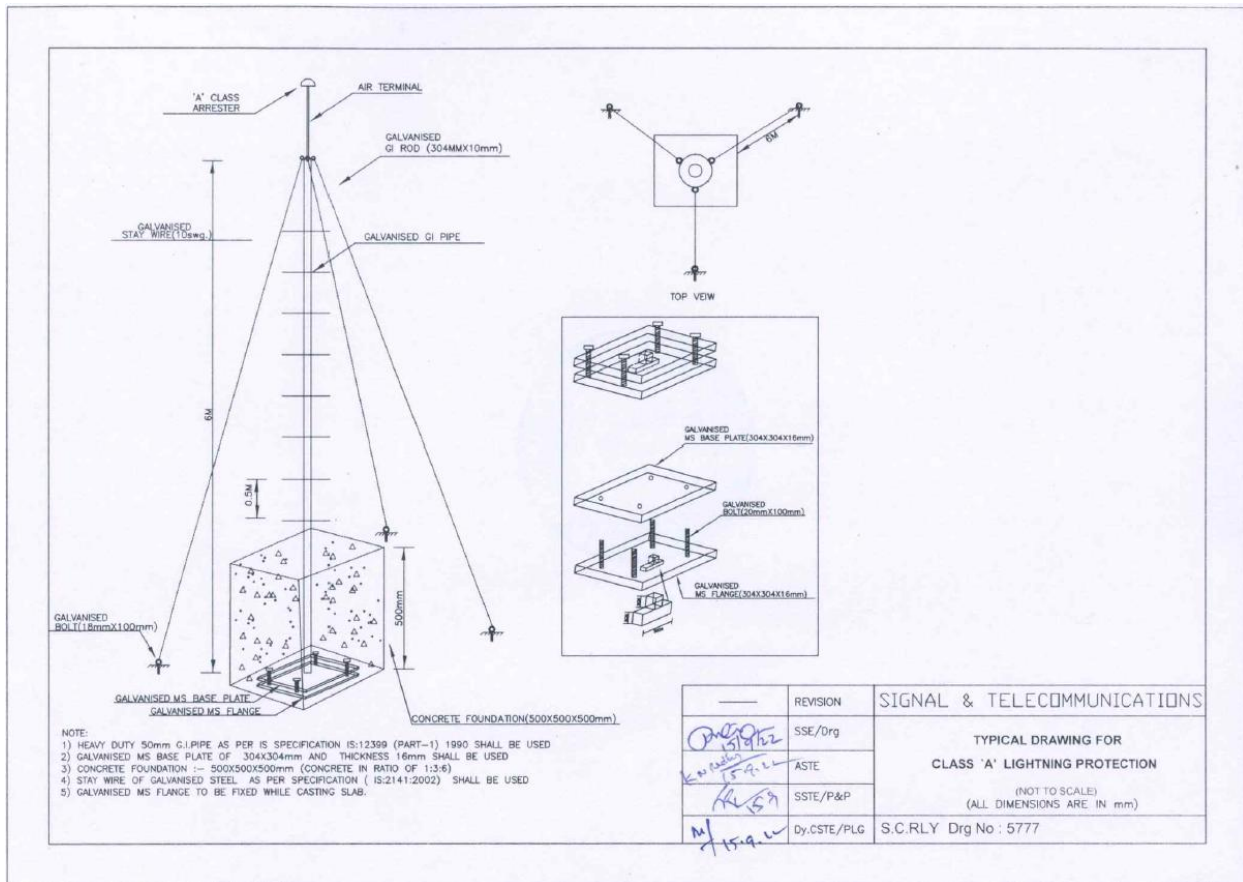


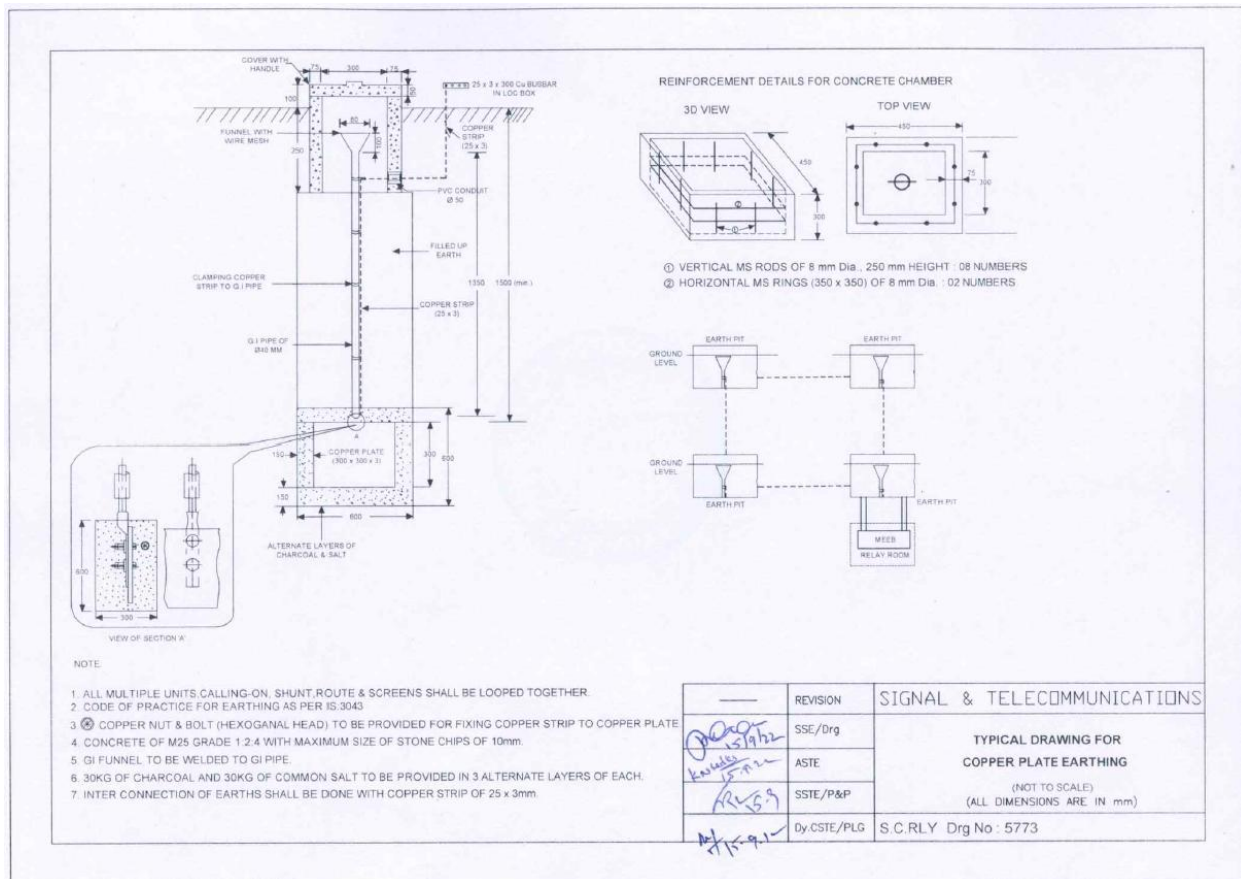
Annexure-5



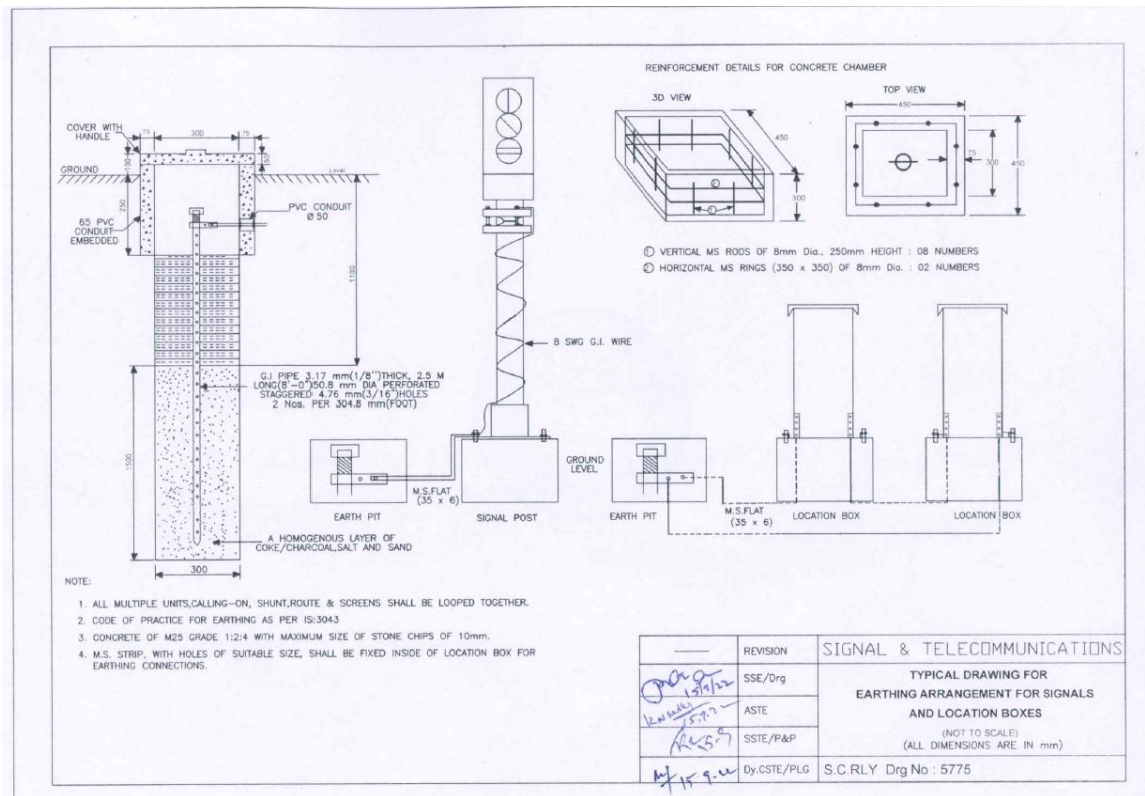
Annexure-6



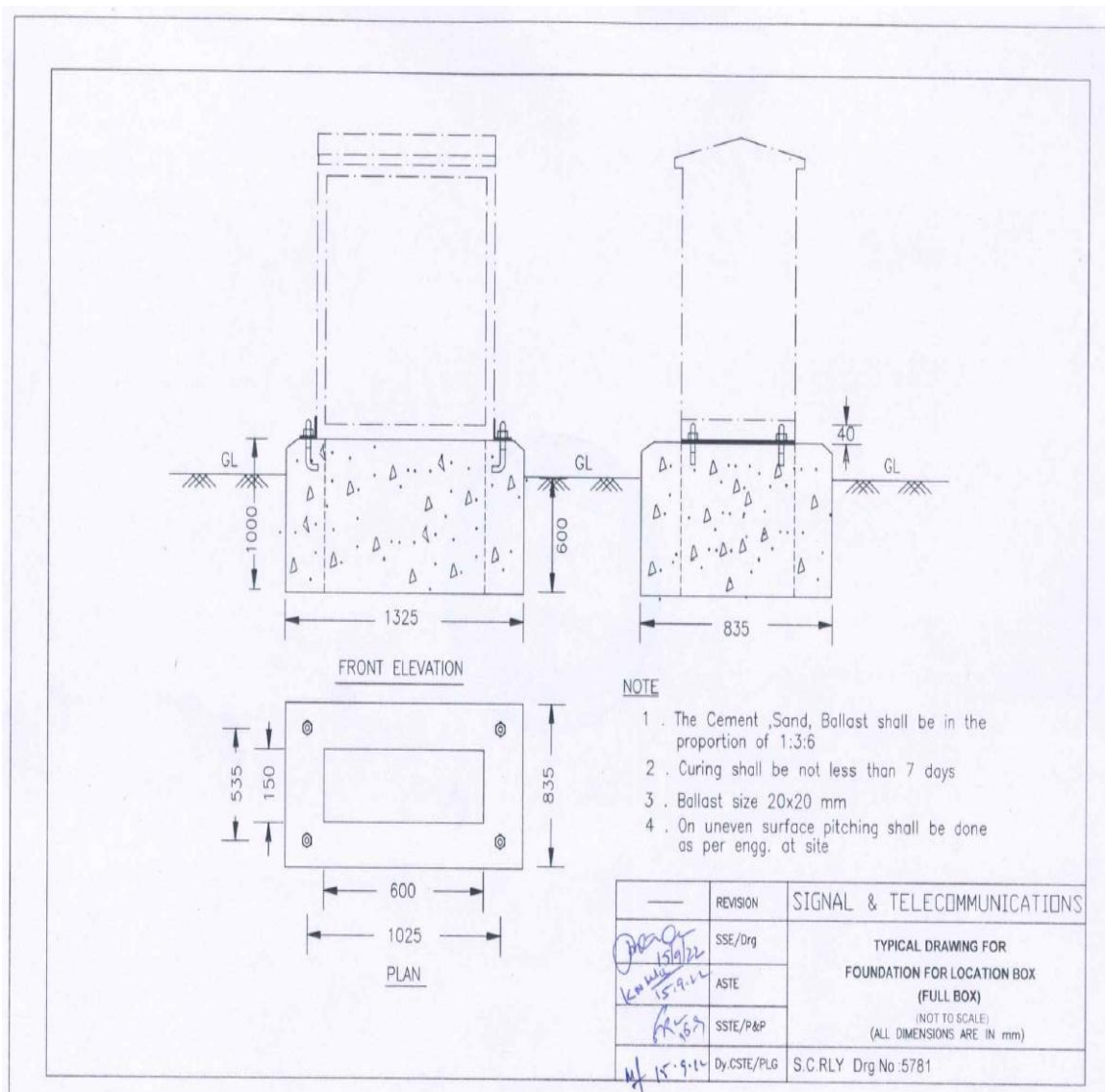




Annexure-9



Annexure-10



Annexure-11

1. The length of Gland plate is 940 mm with 40X40X5 mm angular size.

2. 12 nos of Holes of size 25 mm shall be drilled in the angular.

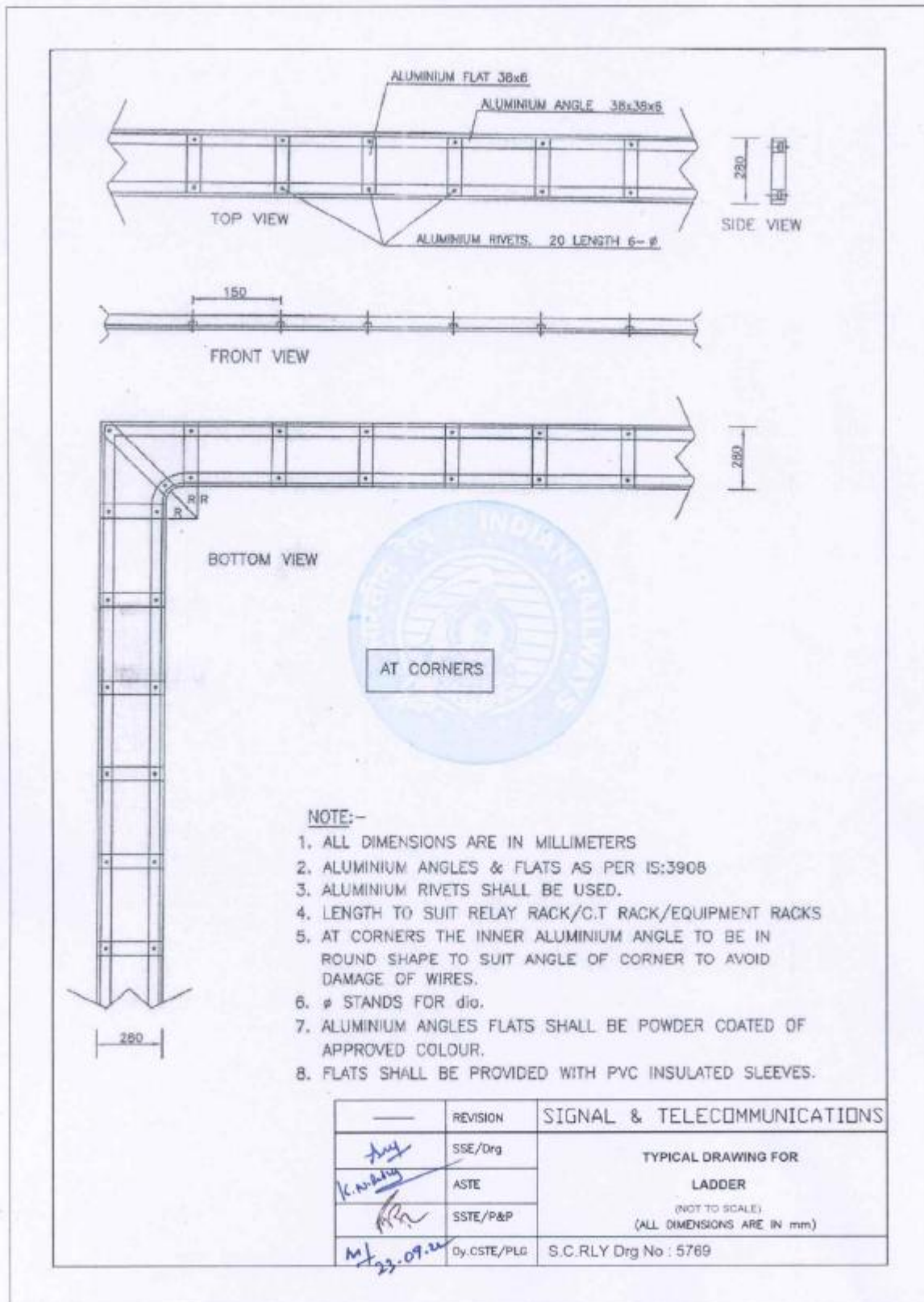
3. suitable sized holes to fix washer shall be drilled on both sides of cable entry hole

4. The gland plate shall be supplied with washer with suitable holes,screw&bolt to fix cable armours

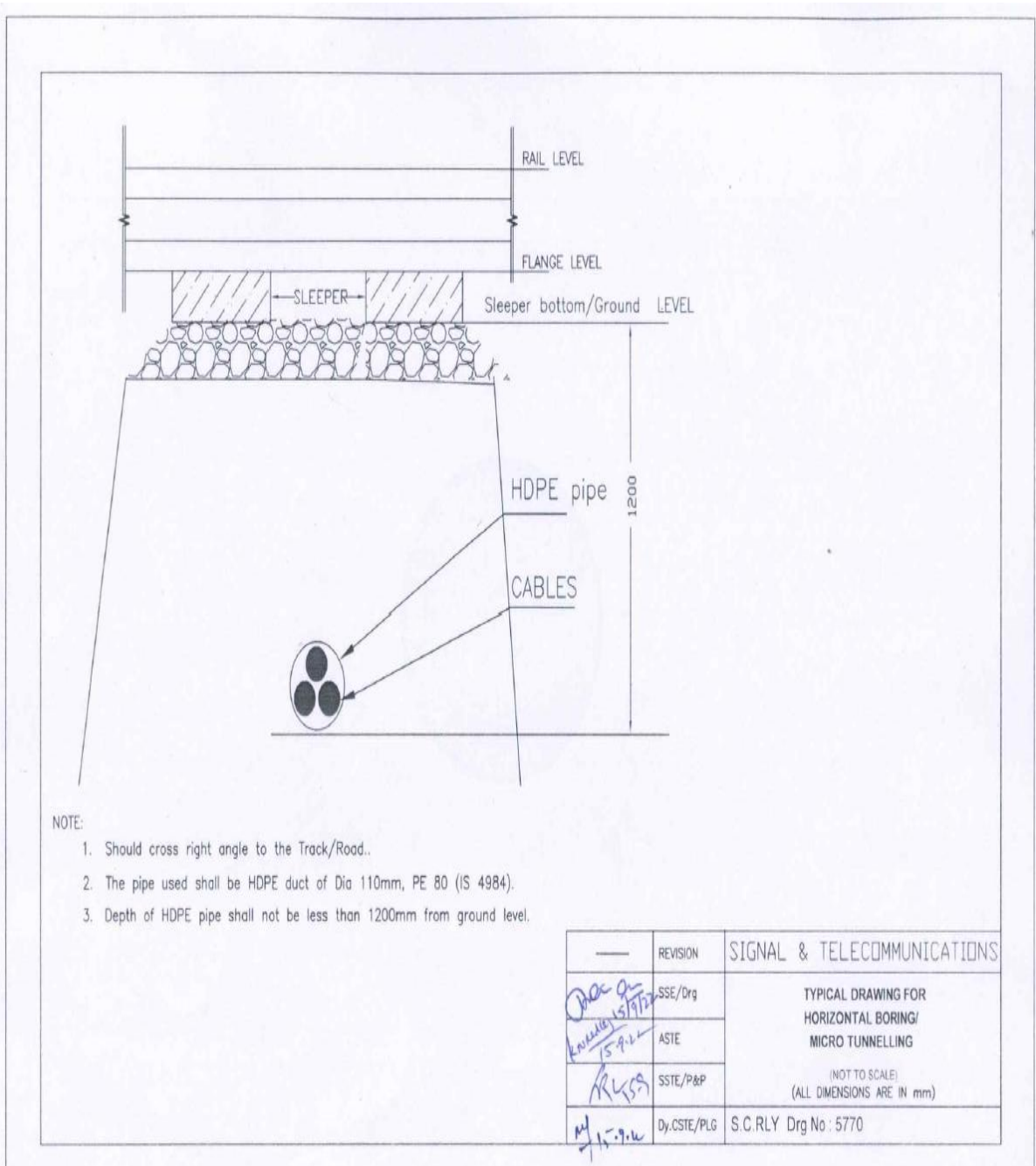
5. The gland plate shall be of M.S

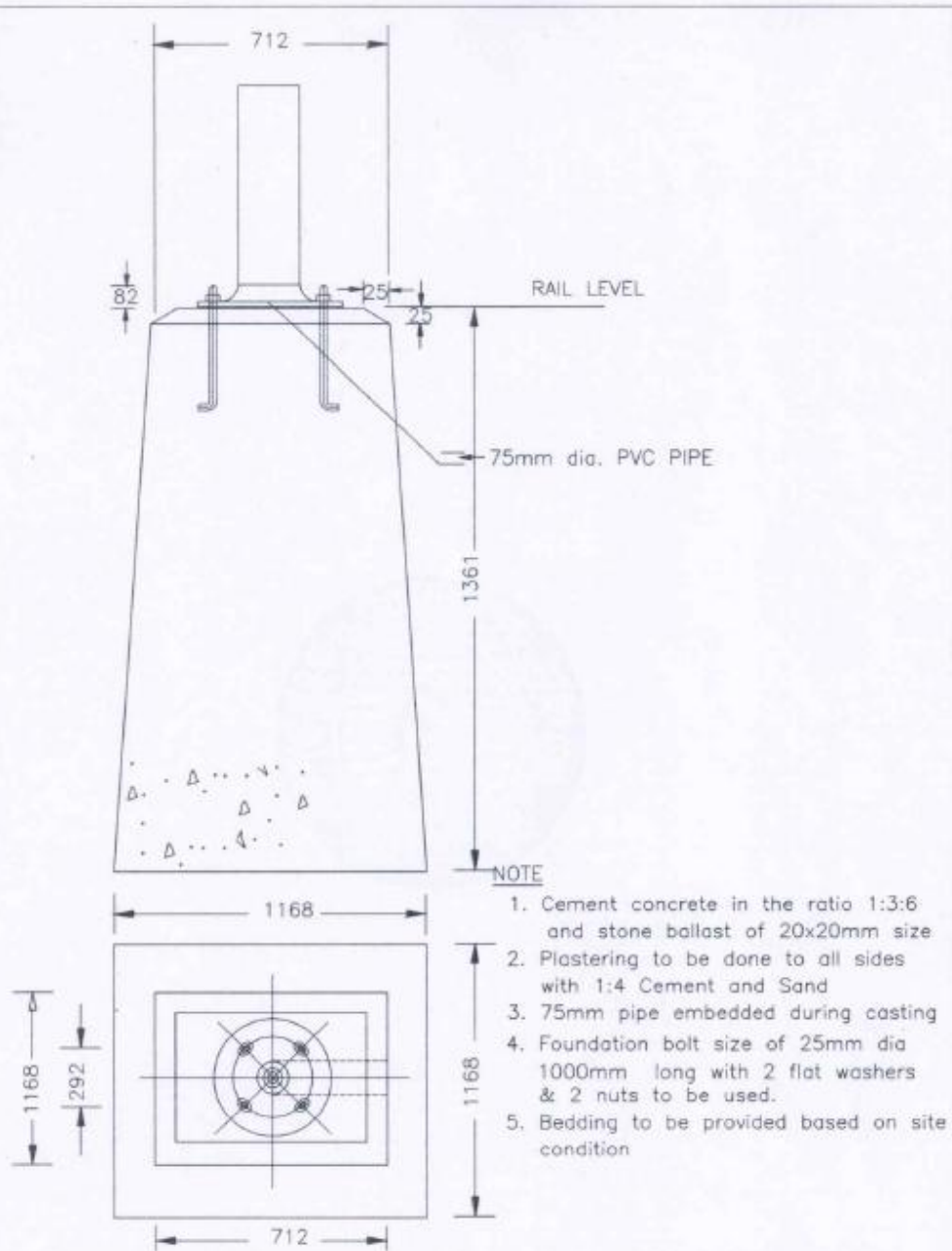
REVISION	SIGNAL & TELECOMMUNICATIONS	
SSE/Drg	TYPICAL DRAWING FOR GLAND PLATE FOR FULL LOCATION BOX (NOT TO SCALE) (ALL DIMENSIONS ARE IN mm)	
ASTE		
SSTE/P&P		
Dy.CSTE/PLG	S.C.RLY Drg No : 5774	

Annexure-12



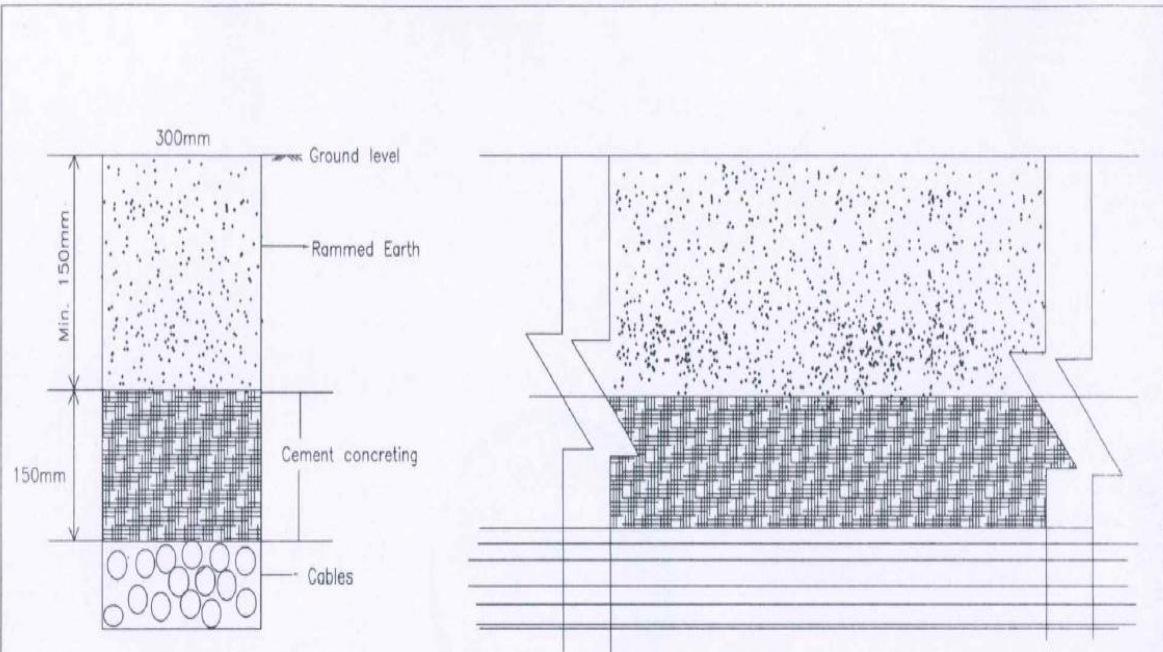
Annexure-13





—	REVISION	SIGNAL & TELECOMMUNICATIONS
<i>15/9/22</i>	SSE/Drg	TYPICAL DRAWING FOR MAIN SIGNAL FOUNDATION (NOT TO SCALE) (ALL DIMENSIONS ARE IN mm)
<i>15.9.22</i>	ASTE	
<i>15.9</i>	SSTE/P&P	
<i>m/15.9.22</i>	Dy.CSTE/PLG	S.C.RLY. Drg No : 5772

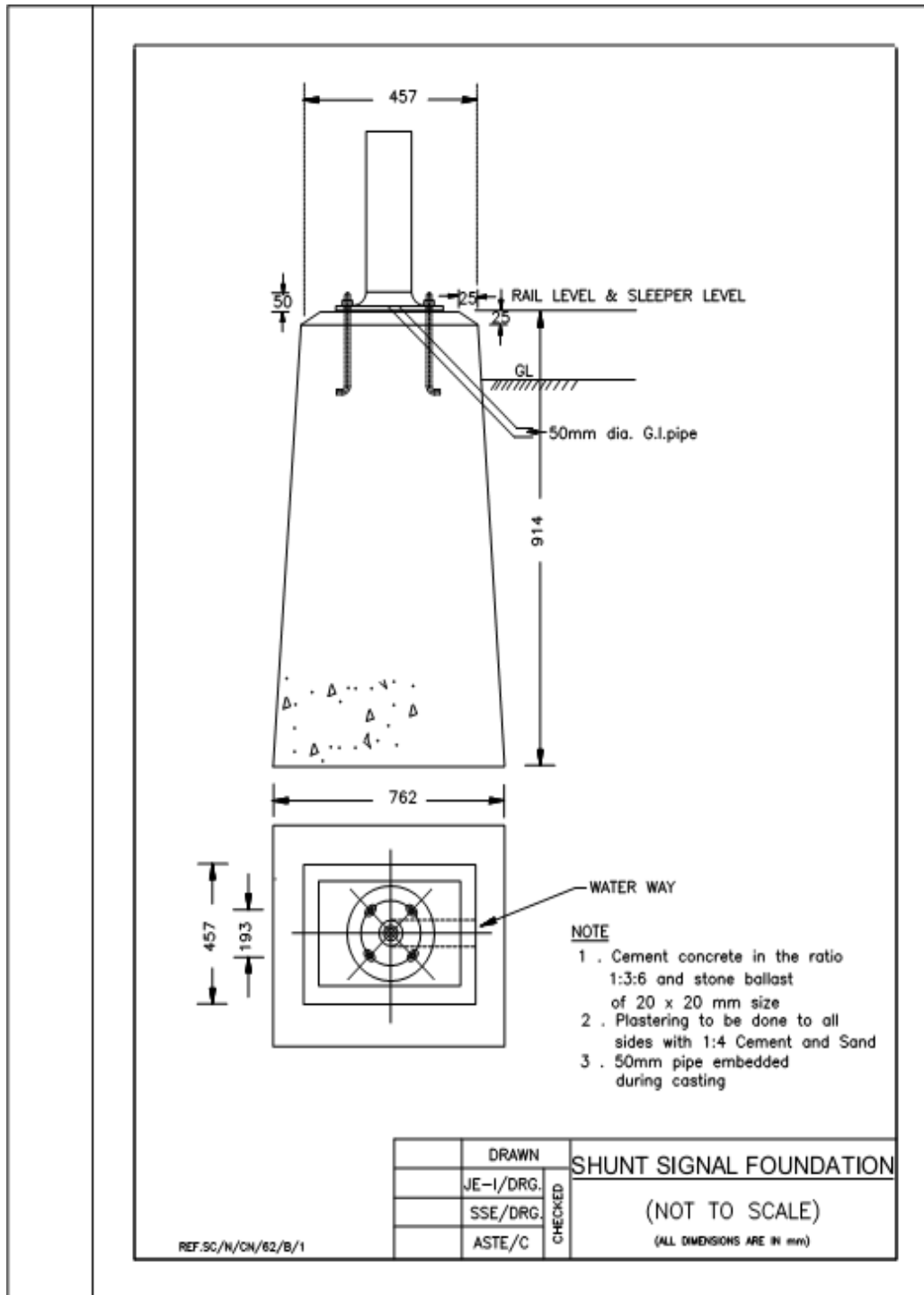
Annexure-15

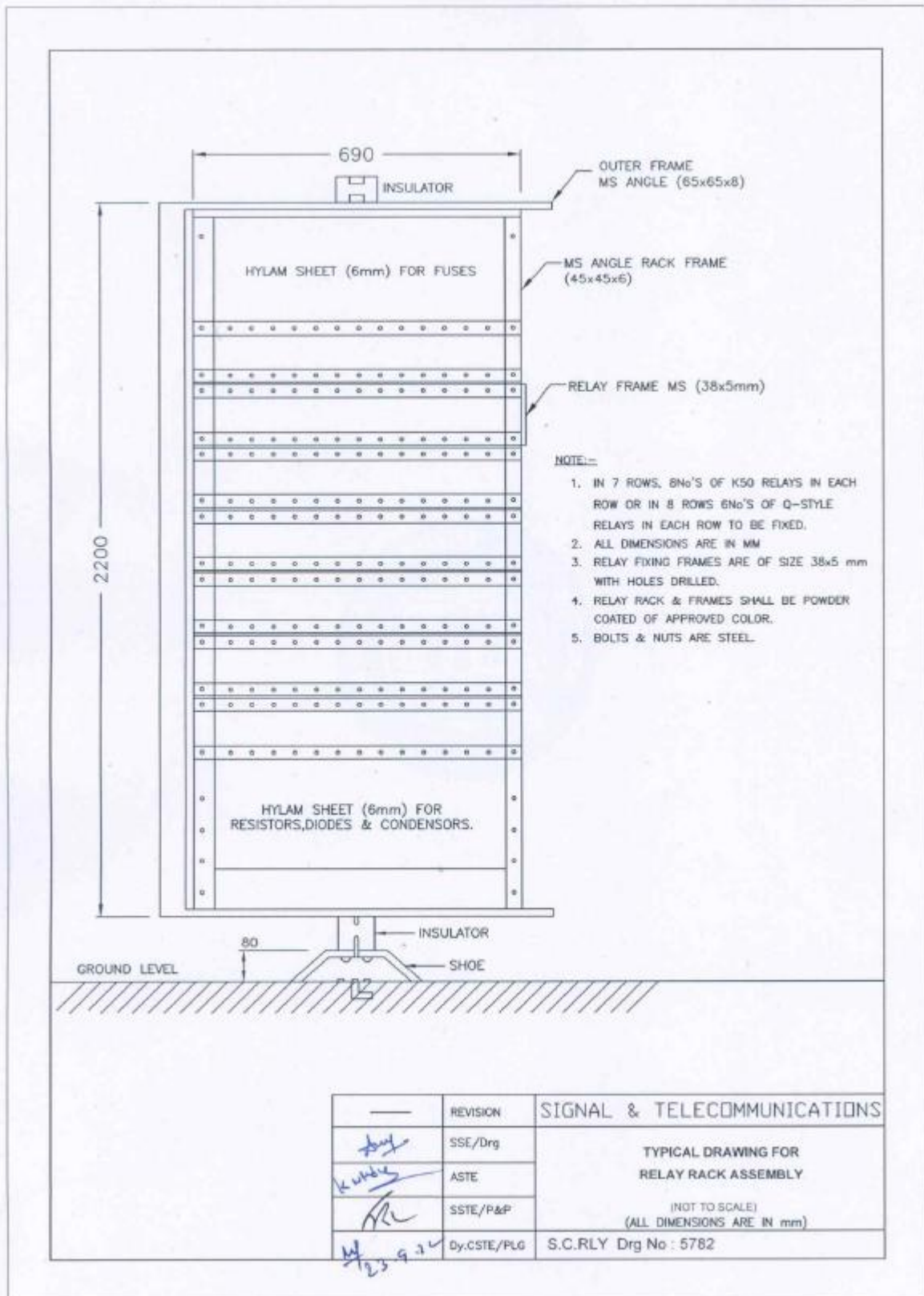


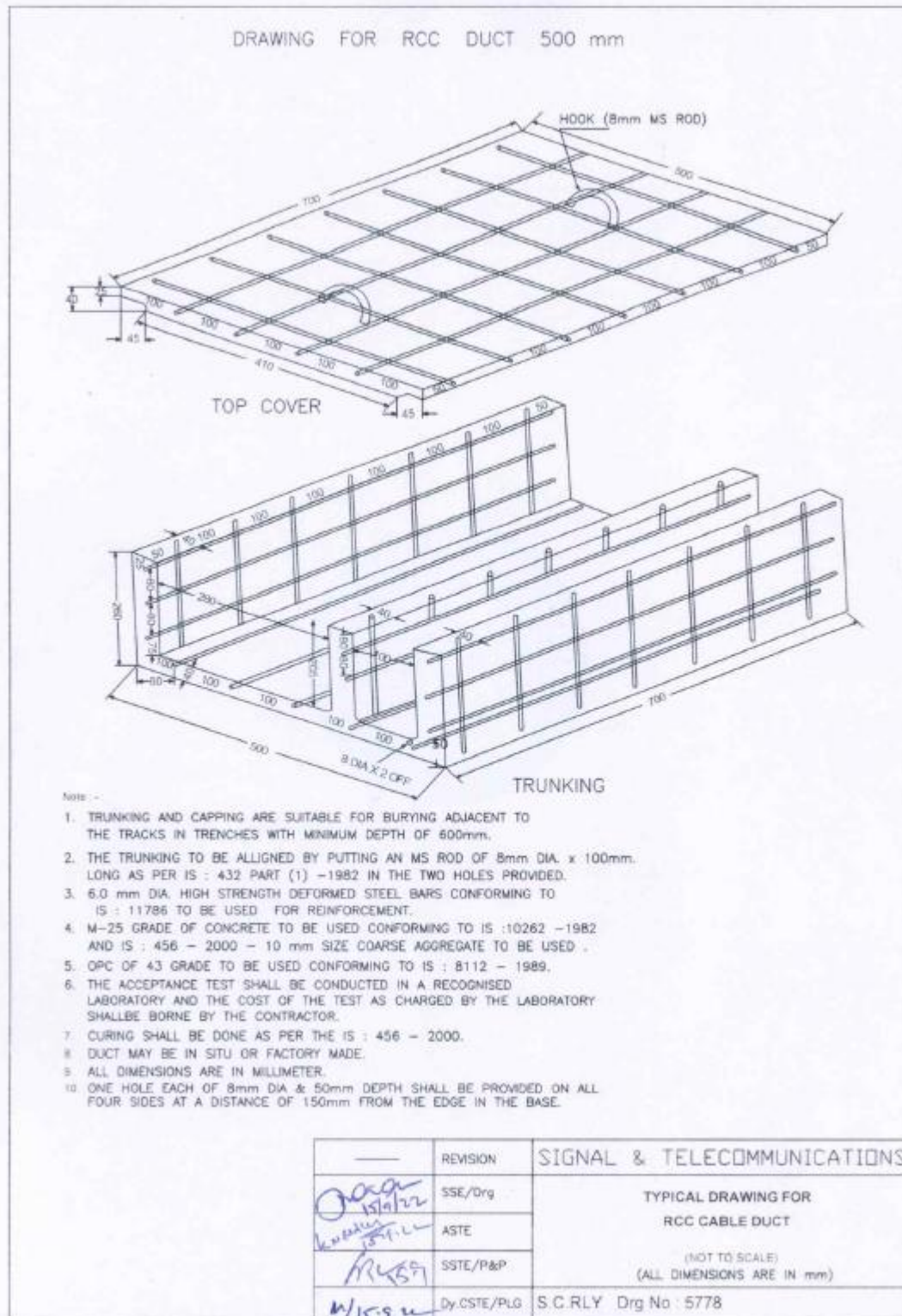
- 1.The concreting shall be of 1:3:6 proportion.
- 2.The concreting shall be water cured for min 7 days.
- 3.The ballast used shall be of size 20mm.

—	REVISION	SIGNAL & TELECOMMUNICATIONS
<i>DRG</i> <i>15/11/22</i>	SSE/Drg	TYPICAL DRAWING FOR PROTECTION ARRANGEMENT FOR CABLES AT LESS DEPTH (NOT TO SCALE) (ALL DIMENSIONS ARE IN mm)
<i>K. S. R.</i> <i>15/9/22</i>	ASTE	
<i>R. S. S.</i>	SSTE/P&P	
<i>M. S. S.</i> <i>15/9/22</i>	Dy.CSTE/PLG	
		S.C.RLY Drg No : 5771

Annexure-16







OEM'S SITE INSTALLATION CERTIFICATE

To

CSTE/

Railway

Dated:

This is to certify that verification of system installation (details given below) has been completed by undersigned (OEM representative) and all necessary arrangements like earthing, surge Protection, power supply, power and communication cables and equipment wiring meet the required standards of engineering for trouble free working of installed system.

1. System being commissioned:-

2. Station / Section:-

3. Division:-

4. Date of commissioning:-

Name of RDSO approved Original Equipment Manufacturer:

Part -F
General Conditions of Contract

PART I

Instructions to Tenderers (ITT)

1.0 Applicability: These instructions and conditions of contract shall be applicable for all the tenders and contracts of railways for execution of 'Works' as defined in GFR 2017.

1.01 Order of Precedence of Documents: In a contract agreement, in case of any difference, contradiction, discrepancy, with regard to conditions of tender/contract, specifications, drawings, Bill(s) of Quantities etc., forming part of the tender/contract, the following shall be the order of precedence:

- i. Letter of Award/ Acceptance (LOA)
- ii. Bill(s) of Quantities
- iii. Special Conditions of Contract
- iv. Technical Specifications as given in tender documents
- v. Drawings
- vi. Indian Railways Standard General Conditions of Contract updated with correction slips issued up to date of inviting tender or as otherwise specified in the tender documents.
- vii. Indian Railways Unified Standard Specification (IRUSS-2019) updated with correction slips issued up to date of inviting tender or as otherwise specified in the tender documents, if applicable in the contract.
- viii. CPWD Specifications 2019 Vol I & II updated with correction slips issued up to date of inviting tender or as otherwise specified in the tender documents, if applicable in the contract.
- ix. Indian Railways Unified Standard Specifications (Works and Material) 2010 updated with correction slips issued up to date of inviting tender or as otherwise specified in the tender documents, if applicable in the contract.
- x. IR Specifications/Guidelines updated with correction slips issued up to date of inviting tender or as otherwise specified in the tender documents.
- xi. Relevant B.I.S. Codes updated with correction slips issued up to date of inviting tender or as otherwise specified in the tender documents.

1.1 Interpretation: These Instructions to Tenderers shall be read in conjunction with the Standard General Conditions of Contract which are referred to herein and shall be subject to modifications additions or suppression by Special Conditions of Contract and/or Special Specifications, if any, annexed to the Tender Forms.

1.2 Definition: In these Instructions to Tenderers, the following terms shall have the meanings assigned hereunder except where the context otherwise requires:

- (a) "Railway" shall mean the President of the Republic of India or the administrative officers of the Railway or Successor Railway authorized to deal with any matter, which these presents are concerned on his behalf.
- (b) "General Manager" shall mean the Officer-in-Charge of the general superintendence and control of the Zonal Railway/Production Unit and shall also include Addl. General Manager, General Manager (Construction) and shall mean and include their successors of the Successor Railway.

(c) “Chief Engineer” shall mean the Officer-in-Charge of the Engineering Department of Railway and shall also include Chief Engineer (Construction), Chief Electrical Engineer, Chief Electrical Engineer (Construction), Chief Signal & Telecom Engineer, Chief Signal & Telecom Engineer (Construction), Chief Mechanical Engineer and shall mean and include their successors of the Successor Railway.

(d) “Divisional Railway Manager” shall mean the Officer-in-Charge of a Division of Zonal Railway and shall mean and include Divisional Railway Manager of the Successor Railway.

(e) “Engineer” shall mean the Divisional Engineer or Executive Engineer, Divisional Signal & Telecom Engineer, Divisional Electrical Engineer, Divisional Mechanical Engineer in executive charge of the works and shall include the superior officers, both Open Line and Construction Organisations, of Engineering, Signal & Telecom, Mechanical and Electrical Departments, i.e. the Senior Divisional Engineer/Deputy Chief Engineer, Senior Divisional Signal & Telecom Engineer / Dy. Chief Signal & Telecom Engineer, Senior Divisional Electrical Engineer / Deputy Chief Electrical Engineer, Senior Divisional Mechanical Engineer and shall mean & include the Engineers of the Successor Railway.

(f) “Tenderer” shall mean the person / firm / co-operative or company whether incorporated or not who tenders for the works with a view to execute the works on contract with the Railway and shall include their representatives, successors and permitted assigns.

(g) “Limited Tenders” shall mean tenders invited from all or some contractors on the approved or select list of contractors with the Railway.

(h) “Open Tenders” shall mean the tenders invited in open and public manner and with adequate notice.

(i) “Works” shall mean the works contemplated in the drawings and Bill(s) of Quantities set forth in the tender forms and required to be executed according to the specifications.

(j) “Specifications” shall mean the Specifications for Materials and Works of the Railway as specified under the authority of the Ministry of Railways or Chief Engineer or as amplified, added to or superseded by special specifications if any, appended to the Tender Forms.

(k) Standard Schedule of Rates (SSOR) shall mean the schedule of Rates adopted by the Railway, which includes-

1. “Unified Standard Schedule of Rates of the Railway (USSOR)” i.e. the Standard Schedule of Rates of the Railway issued under the authority of the Chief Engineer from time to time, updated with correction slips issued up to date of inviting tender or as otherwise specified in the tender documents;
2. “Delhi Schedule Of Rates (DSR)” i.e. the Standard Schedule of Rates published by Director General/ Central Public Works Department, Government of India, New Delhi, as adopted and modified by the Railway under the authority of the Chief Engineer from time to time, updated with correction slips issued up to date of inviting tender or as otherwise specified in the tender documents.

(l) “Drawings” shall mean the maps, drawings, plans and tracings, or prints thereof annexed to the Tender Forms.

(m) “Contractor’s authorized Engineer” shall mean a graduate engineer or equivalent, having more than 3 years experience in the relevant field of construction work involved in the contract, duly approved by the Engineer.

(n) Date of inviting tender shall be the date of publishing tender notice on IREPS website if tender is published on website or the date of publication in newspaper in case tender is not published on website.

(o) “Bill of Quantities” shall mean Schedule of Item(s) included in the tender document along with respective quantities.

1.3 Words importing the singular number shall also include the plural and vice versa where the context requires.

CREDENTIALS OF CONTRACTORS

2. Application for Registration and Approved list of contractors:

2.1 Works of construction and of supply of material shall be entrusted for execution to contractors whose capabilities and financial status have been investigated and approved to the satisfaction of the Railway. A list of approved contractors may also be maintained by the Railway. The said list be revised periodically once in a year or so by giving wide publicity through advertisements etc. For registration, the contractor including a contractor who is already on the approved list shall apply to the concerned General Manager (Construction) / Chief Administrative Officer (Construction) / Principal Chief Engineer / Principal Chief Signal & Telecommunication Engineer / Principal Chief Mechanical Engineer / Principal Chief Electrical Engineer/ Divisional Railway Manager, furnishing particulars regarding:

- (a) his position as an independent contractor specifying engineering organization available with details of partners / staff / engineers employed with qualifications and experience;
- (b) his capacity to undertake and carry out works satisfactorily as vouched for by a responsible official or firm; details about the transport equipments, construction tools and plants etc. required for the work, maintained by him;
- (c) his previous experience of works similar to that to be contracted for, in proof of which original certificates or testimonials may be called for and their genuineness verified, if needs be, by reference to the signatories thereof;
- (d) his knowledge from actual personal investigation of the resources of the area/zone or zones in which he offers to work;
- (e) his ability to supervise the work personally or by competent and duly authorized agent;
- (f) his financial position;

2.2 An applicant shall clearly state the categories of works and the area/zone/division(s)/district(s) in which he desires registration in the list of approved contractors.

2.3 The selection of contractors for enlistment in the approved list would be done by a committee for different value of slabs as notified by Railway.

2.4 An annual fee as prescribed by the Railway from time to time would be charged from such approved contractors to cover the cost of sending notices to them and clerkage for tenders etc. Notices shall be sent to them on registered e-mail address and registered postal address.

TENDERS FOR WORKS

3. Tender Form: Tender Forms shall embody the contents of the contract documents either directly or by reference and shall be as per specimen form, Annexure-I. e-Tender Forms shall be issued free of cost to all tenderers.

4. Omissions & Discrepancies: Should a tenderer find discrepancies in or omissions from the drawings or any of the Tender Forms or should he be in doubt as to their meaning, he should at once notify the authority inviting tenders. The tender inviting authority may, if deemed necessary, clarify the same to all tenderers. It shall be understood that every endeavour has been made to avoid any error which can materially affect the basis of tender and successful tenderer shall take upon himself and provide for the risk of any error which may subsequently be discovered and shall make no subsequent claim on account thereof.

5. Bid Security:

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

Value of the Work	Bid Security
For all works	2% of the estimated cost of the work

Note:

- (i) The Bid Security shall be rounded off to the nearest ₹100. This Bid Security shall be applicable for all modes of tendering.
 - (ii) Any firm recognized by Department of Industrial Policy and Promotion (DIPP) as 'Startups' shall be exempted from payment of Bid Security detailed above.
 - (iii) Labour Cooperative Societies shall submit only 50% of above Bid Security detailed above.
- (b) It shall be understood that the tender documents have been issued to the tenderer and the tenderer is permitted to tender in consideration of stipulation on his part, that after submitting his tender he will not resale from his offer or modify the terms and conditions thereof in a manner not acceptable to the Engineer. Should the tenderer fail to observe or comply with the said stipulation, the aforesaid amount shall be liable to be forfeited to the Railway.
- (c) If his tender is accepted, this Bid Security mentioned in sub para (a) above will be retained as part security for the due and faithful fulfillment of the contract in terms of Clause 16 of the Standard General Conditions of Contract. The Bid Security of other Tenderers shall, save as herein before provided, be returned to them, but the Railway shall not be responsible for any loss or depreciation that may happen thereto while in their possession, nor be liable to pay interest thereon.
- (2) The Bid Security shall be deposited either in cash through e-payment gateway or submitted as Bank Guarantee bond from a scheduled commercial bank of India or as mentioned in tender documents. The Bank Guarantee bond shall be as per **Annexure-VIA** and shall be valid for a period of 90days beyond the bid validity period.
- (3) **In case, submission of Bid Security in the form of Bank Guarantee, following shall be ensured:**

- i. A scanned copy of the Bank Guarantee shall be uploaded on e-Procurement Portal (IREPS) while applying to the tender.
- ii. The original Bank Guarantee should be delivered in person to the official nominated as indicated in the tender document before closing date for submission of bids (**i.e. excluding the last date of submission of bids**).
- iii. Non submission of scanned copy of Bank Guarantee with the bid on e-tendering portal (IREPS) and/or non submission of original Bank Guarantee within the specified period shall lead to summary rejection of bid.
- iv. The Tender Security shall remain valid for a period of 90 days beyond the validity period for the Tender.
- v. The details of the BG, physically submitted should match with the details available in the scanned copy and the data entered during bid submission time, failing which the bid will be rejected
- vi. The Bank Guarantee shall be placed in an envelope, which shall be sealed. The envelope shall clearly bear the identification “**Bid for the ***** Project**” and shall clearly indicate the name and address of the Bidder. In addition, the Bid Due Date should be indicated on the right hand top corner of the envelope.
- vii. The envelope shall be addressed to the officer and address as mentioned in the tender document.
- viii. If the envelope is not sealed and marked as instructed above, the Railway assumes no responsibility for the misplacement or premature opening of the contents of the Bid submitted and consequent losses, if any, suffered by the Bidder.

6. Care in Submission of Tenders:

- (a) (i) Before submitting a tender, the tenderer will be deemed to have satisfied himself by actual inspection of the site and locality of the works, that all conditions liable to be encountered during the execution of the works are taken into account and that the rates he enters in the tender forms are adequate and all-inclusive to accord with the provisions in Clause-37 of the Standard General Conditions of Contract for the completion of works to the entire satisfaction of the Engineer.
- (a)(ii) Tenderers will examine the various provisions of The Central Goods and Services Tax Act, 2017(CGST)/ Integrated Goods and Services Tax Act, 2017(IGST)/ Union Territory Goods and Services Tax Act, 2017(UTGST)/ respective state’s State Goods and Services Tax Act (SGST) also, as notified by Central/State Govt.& as amended from time to time and applicable taxes before bidding. Tenderers will ensure that full benefit of Input Tax Credit (ITC) likely to be availed by them is duly considered while quoting rates.
- (a)(iii) The successful tenderer who is liable to be registered under CGST/IGST/UTGST/SGST Act shall submit GSTIN along with other details required under CGST/IGST/UTGST/SGST Act to railway immediately after the award of contract, without which no payment shall be released to the Contractor. The Contractor shall be responsible for deposition of applicable GST to the concerned authority.

- (a)(iv) In case the successful tenderer is not liable to be registered under CGST/IGST/UTGST/SGST Act, the railway shall deduct the applicable GST from his/their bills under reverse charge mechanism (RCM) and deposit the same to the concerned authority.
 - (b) When work is tendered for by a firm or company, the tender shall be signed by the individual legally authorized to enter into commitments on their behalf.
 - (c) The Railway will not be bound by any power of attorney granted by the tenderer or by changes in the composition of the firm made subsequent to the execution of the contract. It may, however, recognize such power of attorney and changes after obtaining proper legal advice, the cost of which will be chargeable to the Contractor.
- (a)(v) *Contractor shall be liable to pay/refund the amount collected as GST to the Indian Railways along with interest and penalties, if any imposed by the authorities, in case GST input tax credit of Indian Railways is denied/rejected by the tax authorities due to reasons mentioned below but not limited to:*

Wrong/incorrect invoices issued by Contractor;

No-filing of GST returns;

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

Any other non-compliance done by Contractor;

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

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

6.1 The tenderers shall submit a copy of certificate stating that all their statements/documents submitted alongwith bid are true and factual. Standard format of certificate to be submitted by the bidder is enclosed as **Annexure-V**. In addition to Annexure-V, in case of other than Company/Proprietary firm, Annexure –V(A) shall also be submitted by the each member of a Partnership Firm / Joint Venture (JV) / Hindu Undivided Family (HUF) / Limited Liability Partnership (LLP) etc. as the case may be. Non submission of above certificate by the bidder shall result in **summarily** rejection of his/their bid. It shall be mandatorily incumbent upon the tenderer to identify, state and submit the supporting documents duly self attested/digitally signed by which they/he is qualifying the Qualifying Criteria mentioned in the Tender Document.

CONSIDERATION OF TENDERS

7. Right of Railway to Deal with Tenders: The Railway reserves the right of not to invite tenders for any of Railway work or works or to invite open or limited tenders and when tenders are called to accept a tender in whole or in part or reject any tender or all tenders without assigning reasons for any such action. In case if tender is accepted in part by Railway administration, Letter of Acceptance shall be issued as counter offer to the Tenderer, which shall be subject to acceptance by the Tenderer.

7A. Two Packets System of Tendering: With a view to assess the tenders technically without being influenced by the financial bids, 'Two Packets System of tendering' shall be adopted wherein tender documents provide for the same.

7B. Pre Bid Conference: Intenders having advertised value more than Rs 50 Crore or as mentioned in the tender document, Railway shall conduct Pre Bid Conference(s) with the prospective bidders.

7C. Make in India Policy: Provisions of Make in India Policy 2017 issued by Govt. of India, as amended from time to time, shall be followed for consideration of tenders.

7D. Permission to Bid for a bidder from a country which shares Land boundary with India: Any bidder from the countries sharing a land border with India will be eligible to bid in any procurement of works (including turnkey projects) only if the bidder is registered with the Competent Authority. The Competent Authority for registration will be the Registration Committee constituted by the Department for Promotion of Industry and Internal Trade (DPIIT), Government of India. For interpretation of this para, Department of Expenditure, Ministry of Finance, Government of India letter F.No.6/18/2019-PPD dated 23/07/2020 shall be referred.

7E. Clarification of Bids: To assist in the examination, evaluation & comparison and pre-qualification of the Tender, the Railway may, at its discretion, ask any Bidder for a clarification of its Bid. Any clarification submitted by a Bidder that is not in response to a request by the Railway shall not be entertained or considered. The Railway request for clarification and the response of the bidder in this regard shall be in writing.

However, if a Bidder does not provide clarification of its bid by the date and time communicated in the Railway request for clarification, the bid shall be evaluated as per the documents submitted along with the bid.

8. Execution of Contract Document: The Tenderer whose tender is accepted shall be required to appear in person at the office of General Manager/General Manager (Construction), Chief Administrative Officer (Construction), Divisional Railway Manager or concerned Engineer, as the case may be, or if tenderer is a firm or corporation, a duly authorized representative shall appear (there would be no need for appear in person if agreement is signed digitally) and execute the contract agreement within seven days of notice from Railways that the Contract Agreement is ready. Failure to do so shall constitute a breach of the agreement affected by the acceptance of the tender. The Contract Agreement shall be entered into by Railway only after submission of valid Performance Guarantee by the Contractor. In such cases the Railway may determine that such tenderer has abandoned the contract and there upon his tender and acceptance thereof shall be treated as cancelled and the Railway shall be entitled to forfeit the full amount of the Bid Security and other dues payable to the Contractor under this contract. The failed Contractor shall be debarred from participating in the re-tender for that work.

9. Form of Contract Document: Every contract shall be complete in respect of the document it shall so constitute. Not less than 2 copies of the contract document shall be signed by the competent authority and the Contractor and one copy given to the Contractor (there would be no need of signing two copies if agreement is signed digitally).

(a) For Zone Contracts, awarded on the basis of the percentage above or below the applicable chapter(s) of Standard Schedule of Rates (SSOR) for the whole or part of financial year, the contract agreement required to be executed by the tenderer whose tender is accepted shall be as per specimen form, Annexure-II. During the currency of the Zone Contract, work orders as per specimen form Annexures-III, for works not exceeding ₹ 5,00,000 each, shall be issued by the Divisional Railway Manager / Executive Engineer under the agreement for Zone Contract.

(b) For contracts for specific works, the contract document required to be executed by the tenderer whose tender is accepted shall be an agreement as per specimen form Annexure- IV.

ANNEXURE - I

RAILWAY
TENDER FORM (First Sheet)

Tender No. _____

Name of Work _____

To

The President of India

Acting through the _____ Railway

I/We _____ have read the various conditions to tender attached hereto and agree to abide by the said conditions. I/We also agree to keep this offer open for acceptance for a period of _____ days from the date fixed for closing of the tender and in default thereof, I/We will be liable for forfeiture of my/our "Bid Security". I/We offer to do the work for _____ Railway, at the rates quoted in the attached bill(s) of quantities and hereby bind myself/ourselves to complete the work in all respects within _____ months from the date of issue of letter of acceptance of the tender.

2. I/We also hereby agree to abide by the Indian Railways Standard General Conditions of Contract, with all correction slips up-to-date and to carry out the work according to the Special Conditions of Contract and Specifications of materials and works as laid down by Railway in the annexed Special Conditions/Specifications, Standard Schedule of Rates (SSOR) with all correction slips up-to-date for the present contract.

3. A Bid Security of ₹ _____ has already been deposited online/ submitted as Bank Guarantee bond. Full value of the Bid Security shall stand forfeited without prejudice to any other right or remedies in case my/our Tender is accepted and if:

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

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

5. We are a Labour Cooperative Society and our Registration No. is with and hence required to deposit only 50% of Bid Security.

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

Signature of Witnesses:

(1) _____

(2) _____

Signature of Tenderer(s)

Date _____

Address of the Tenderer(s)

ANNEXURE - I (Contd. ...)

TENDER FORM (Second Sheet)

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

- (a) Tender Forms – First Sheet and Second Sheet
- (b) Special Conditions/Specifications (enclosed)
- (c) Bill(s) of quantities (enclosed)
- (d) Standard General Conditions of Contract and Standard Specifications (Works and Materials) of Indian Railways as amended/corrected upto latest correction slips, copies of which can be seen in the office of _____ or obtained from the office of the Chief Engineer, _____ Railway on payment of prescribed charges.
- (e) Standard Schedule of Rates (SSOR) as amended / corrected upto latest correction slips, copies of which can be seen in the office of _____ or obtained from the office of the Chief Engineer, _____ Railway on payment of prescribed charges.
- (f) All general and detailed drawings pertaining to this work which will be issued by the Engineer or his representatives (from time to time) with all changes and modifications.

2. Drawings for the Work: The Drawing for the work can be seen in the office of the _____ and / or Chief Engineer, _____ Railway at any time during the office hours. The drawings are only for the guidance of Tenderer(s). Detailed working drawings (if required) based generally on the drawing mentioned above, will be given by the Engineer or his representative from time to time.

3. The Tenderer(s) shall quote his / their rates as a percentage above or below the Standard Schedule of Rates (SSOR) of _____ Railway as applicable to _____ Division except where he/they are required to quote item rates and must tender for all the items shown in the Bill(s) of Quantities attached. The quantities shown in the attached Bill(s) of Quantities are given as a guide and are approximate only and are subject to variation according to the needs of the Railway. The Railway does not guarantee work under each item of the Bill(s) of Quantities. The tenderer(s) shall quote rates / rebates only at specified place in Tender Form supplied by Railway. Any revision of rates / rebates submitted (quoted) through a separate letter whether enclosed with the bid (Tender Form) or submitted separately or mentioned elsewhere in the document other than specified place shall be summarily ignored and will not be considered.

4. Tenders containing erasures and / or alterations of tender documents are liable to be rejected. Any correction made by tender(s) in his/their entries must be attested by him / them.

5. The works are required to be completed within a period of _____ months from the date of issue of acceptance letter.

6. Bid Security:

(a) Subject to exemptions provided under para 5(1) (a) of Part-1 (ITT) of this document, the tender must be accompanied by a Bid Security as mentioned in tender documents, failing which the tender shall be summarily rejected.

(b) The Tenderer(s) shall keep the offer open for a minimum period of 60 days (in case of two packet system of tendering 90days) from the date of closing of the Tender. It is understood that the tender documents have been issued to the Tenderer(s) and the Tenderer(s), is / are permitted to tender in consideration of the stipulation on his / their part that after submitting his / their tender subject to the period being extended further, if required by mutual agreement from time to time, he will not resile from his offer or modify the terms and conditions thereof in a manner not acceptable to _____ Railway. Should

the tenderer fail to observe or comply with the foregoing stipulation, the amount deposited or Bank guarantee bond submitted as Bid Security for the due performance of the above stipulation, shall be forfeited to the Railway.

(c) If his tender is accepted,

- (i) the Bid Security mentioned in sub para(a) above deposited in cash through e-payment gateway will be retained as part security for the due and faithful fulfillment of the contract in terms of Clause 16 of the Standard General Conditions of Contract;
- (ii) the Bid Security mentioned in sub para(a) above submitted as Bank guarantee bond, will be encashed as part security for the due and faithful fulfillment of the contract in terms of Clause 16 of the Standard General Conditions of Contract.

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

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

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

8. If the tenderer(s) deliberately gives / give wrong information in his / their tender or creates / create circumstances for the acceptance of his / their tender, the Railway reserves the right to reject such tender at any stage.

9. If any partner(s) of a partnership firm expires after the submission of its tender or after the acceptance of its tender, the Railway shall deem such tender as cancelled/contract as terminated under clause 61 of the Standard General Conditions of Contract, unless the firm retains its character as per partnership agreement. If a sole proprietor expires after the submission of tender or after the acceptance of tender, the Railway shall deem such tender as cancelled / contract as terminated under clause 61 of the Standard General Conditions of Contract.

10. Eligibility Criteria:

10.1 Technical Eligibility Criteria:

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

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

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

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

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

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

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

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

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

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

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

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

Note for Item 10.1:

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

In case tenderer submits work experience certificate issued by public listed company, the tenderer shall also submit along with work experience certificate, the relevant copy of work order, bill of quantities, bill wise details of payment received duly certified by Chartered

Accountant, TDS certificates for all payments received and copy of final/last bill paid by company in support of above work experience certificate.

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

V= Advertised value of the tender in crores of Rupees

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

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

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

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

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

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

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

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

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

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

- 5. If a bidder has successfully completed a work as subcontractor and the work experience certificate has been issued for such work to the subcontractor by a Govt. Organization or public listed company as defined in Note for Item 10.1 Para 10 of the Tender Form (Second Sheet), the same shall be considered for the purpose of fulfillment of credentials.*
- 6. In case a work is considered similar in nature for fulfillment of technical credentials, the overall cost including the PVC amount (if paid) of that completed work or substantially completed work, shall be considered and no separate evaluation for each component of that work shall be made to decide eligibility.*
- 7. In case of newly formed partnership firm, the credentials of individual partners from previous propriety firm(s) or dissolved previous partnership firm(s) or split previous partnership firm(s), shall be considered only to the extent of their share in previous entity on the date of dissolution / split and their share in newly formed partnership firm. For example, a partner A had 30% share in previous entity and his share in present partnership firm is 20%. In the present tender under consideration, the credentials of partner A will be considered to the extent of $0.3 \times 0.2 \times \text{value of the work done in the previous entity}$. For this purpose, the tenderer shall submit along with his bid all the relevant documents which include copy of previous partnership deed(s), dissolution deed(s) and proof of surrender of PAN No.(s) in case of dissolution of partnership firm(s) etc.*
- 8. In case of existing partnership firm, if any one or more partners quit the partnership firm, the credentials of remaining partnership firm shall be re-worked out i.e., the quitting partner(s) shall take away his credentials to the extent of his share on the date of quitting the partnership firm (e.g. in a partnership firm of partners A, B & C having share 30%, 30% & 40% respectively and credentials of Rs 10 crore; in case partner C quits the firm, the credentials of this partnership firm shall remain as Rs 6 crore). For this purpose, the tenderer shall submit along with his bid all the relevant documents which include copy of previous partnership deed(s), dissolution deed(s) and proof of surrender of PAN No.(s) in case of dissolution of partnership firm(s) etc.*
- 9. In case of existing partnership firm if any new partner(s) joins the firm without any modification in the name and PAN/TAN no. of the firm, the credentials of partnership firm shall get enhanced to the extent of credentials of newly added partner(s) on the same principles as mentioned in item 6 above. For this purpose, the tenderer shall submit along with his bid all the relevant documents which include copy of previous partnership deeds, dissolution/splitting deeds and proof of surrender of PAN No.(s) in case of dissolution of partnership firm etc.*
- 10. Any partner in a partnership firm cannot use or claim his credentials in any other firm without leaving the partnership firm i.e., In a partnership firm of A&B partners, A or B partner cannot use credentials of partnership firm of A&B partners in any other partnership firm or propriety firm without leaving partnership firm of A&B partners.*
- 11. In case a partner in a partnership firm is replaced due to succession as per succession law, the proportion of credentials of the previous partner will be passed on to the successor.*
- 12. If the percentage share among partners of a partnership firm is changed, but the partners remain the same, the credentials of the firm before such modification in the share will continue to be considered for the firm as it is without any change in their value. Further, in case a partner of partnership firm retires without taking away any credentials from the firm, the credentials of partnership firm shall remain the same as it is without any change in their value.*
- 13. In a partnership firm "AB" of A&B partners, in case A also works as propriety firm "P" or partner in some other partnership firm "AX", credentials of A in propriety firm "P" or in other partnership firm "AX" earned after the date of becoming a partner of the firm AB shall not be added in partnership firm AB.*

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

11. Tenderer Credentials:

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

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

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

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

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

14. Documents to be Submitted Along with Tender

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

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

(a) Sole Proprietorship Firm:

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

(b) HUF:

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

(c) Partnership Firm:

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

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

(e) Company registered under Companies Act 2013:

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

(f) LLP (Limited Liability Partnership):

- (i) A copy of LLP Agreement
- (ii) A copy of Certificate of Incorporation
- (iii) A copy of Power of Attorney/Authorization issued by the LLP in favour of the individual to sign the tender on behalf of the LLP and create liability against the LLP.
- (iv) An undertaking by all partners of the LLP that they are not blacklisted or debarred by Railways or any other Ministry / Department of the Govt. of India from participation in tenders / contracts as on the date of submission of bids, either in their individual capacity or in any firm/LLP or JV in which they were / are partners/members. Concealment / wrong information in regard to above shall make the contract liable for determination under Clause 62 of the Standard General Conditions of Contract.
- (v) All other documents in terms of Para 10 of the Tender Form (Second Sheet).

(g) Registered Society & Registered Trust:

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

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

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

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

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

15. The tenderer whether sole proprietor / a company or a partnership firm / registered society / registered trust / HUF / LLP etc if they want to act through agent or individual partner(s), should submit along with the tender, a copy of power of attorney duly stamped and authenticated by a Notary Public or by Magistrate in favour of the specific person whether he/they be partner(s) of the firm or any other person, specifically authorizing him/them to sign the tender, submit the tender and further to deal with the Tender/ Contract up to the stage of signing the agreement except in case where such specific person is authorized for above purposes through a provision made in the partnership deed / Memorandum of Understanding / Article of Association /Board resolution, failing which tender shall be summarily rejected.

A separate power of attorney duly stamped and authenticated by a Notary Public or by Magistrate in favour of the specific person whether he/they be partner(s) of the firm or any other person, shall be submitted after award of work, specifically authorizing him/them to deal with all other contractual activities subsequent to signing of agreement, if required.

Note: A Power of Attorney executed and issued overseas, the document will also have to be legalized by the Indian Embassy and notarized in the jurisdiction where the Power of Attorney is being issued. However, the Power of Attorney provided by Bidders from countries that have signed the Hague Legislation Convention 1961 are not required to be legalized by the Indian Embassy if it carries a conforming Appostille certificate.

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

(a) Should a tenderer

- i) be a retired Engineer of the gazetted rank or any other gazetted officer working before his retirement, whether in the executive or administrative capacity or whether holding a pensionable post or not, in the Engineering or any other department of any of the railways owned and administered by the President of India for the time being, OR

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

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

AND

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

THEN

the tenderer will give full information as to the date of retirement of such Engineer or gazetted officer from the said service and as to whether permission for taking such contract, or if the Contractor be a partnership firm or an incorporated company, to become a partner or director as the case may be, has been obtained by the tenderer or the Engineer or officer, as the case may be from the President of India or any officer, duly authorized by him in this behalf, shall be clearly stated in writing at the time of submitting the tender.

- b) In case, upon successful award of contract, should a tenderer depute for execution of the works under or to deal matters related with this contract, any retired Engineer of gazette rank or retired gazetted officer working before his retirement in the Engineering or any other department of any of the railways owned and administered by the President of India for the time being, and now in his employment, then the tenderer will ensure that retired Engineer or retired gazetted officer had retired from government service at least 1 year prior to the date of his employment with tenderer and in case he had retired from service within a year then he possesses the requisite permission from the President of India or any officer, duly authorized by him in this behalf, to get associated with the tenderer.
- c) Should a tenderer or Contractor being an individual, have member(s) of his family or in the case of partnership firm/ company / joint venture (JV) / registered society / registered trust etc. one or more of his partner(s)/shareholder(s) or member(s) of the family of partner(s)/shareholder(s) having share of more than 1% in the tendering entity employed in gazetted capacity in the Engineering or any other department of the railway, then the tenderer at the time of submission of tender, will inform the authority inviting tenders the details of such persons.

Note: -If information as required as per 16.a), b), c) above has not been furnished, contract is liable to be dealt in accordance with provision of clause 62 of the Standard General Condition of contract.

JOINT VENTURE (JV) IN WORKS TENDERS

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

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

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

a minimum share of 51%.

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

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

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

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

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

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

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

17.9 Similarly, after the contract is awarded, the constitution of JV shall not be normally allowed to be altered during the currency of contract except when modification become inevitable due to succession laws etc. and minimum eligibility criteria should not get vitiated. Failure to observe this stipulation shall be deemed to be breach of contract with all consequential penal action as per contract conditions.

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

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

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

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

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

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

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

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

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

- (i) A notarized copy of the Partnership Deed or a copy of the Partnership deed registered with the Registrar.
- (ii) A copy of consent of all the partners or individual authorized by partnership firm, to enter into the Joint Venture Agreement on a stamp paper,
- (iii) A notarized or registered copy of Power of Attorney in favour of the individual to sign the MOU/JV Agreement on behalf of the partnership firm and create liability against the firm.
- (iv) An undertaking by all partners of the partnership firm that they are not blacklisted or debarred by Railways or any other Ministry / Department of the Govt. of India from participation in tenders / contracts as on the date of submission of bids, either in their individual capacity or in any firm/LLP in which they were / are partners/members. Any Concealment / wrong information in regard to above shall make the bid ineligible or the contract shall be determined under Clause 62 of the Standard General Conditions of Contract.

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

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

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

- (i) A copy of resolutions of the Directors of the Company, permitting the company to enter into a JV agreement,
- (ii) The copies of MOA (Memorandum of Association) / AOA (Articles of Association) of the company
- (iii) A copy of Certificate of Incorporation
- (iv) A copy of Authorization/copy of Power of Attorney issued by the Company (backed by the

resolution of Board of Directors) in favour of the individual, to sign the tender, sign MOU/JV Agreement on behalf of the company and create liability against the company

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

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

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

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

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

17.14.7 A Power of Attorney executed and issued overseas, the document will also have to be legalized by the Indian Embassy and notarized in the jurisdiction where the Power of Attorney is being issued. However, the Power of Attorney provided by Bidders from countries that have signed the Hague Legislation Convention 1961 are not required to be legalized by the Indian Embassy if it carries a conforming Apostille certificate.

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

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

(a) For Works without composite components

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

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

(b) For works with composite components

The technical eligibility for major component of work as per para 10.1 above, shall be satisfied by either

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

Each other (non-lead)member(s) of JV, who is/ are not satisfying the technical eligibility for any component of the work as per para 10.1 above, shall have technical capacity of minimum ~~25%~~ 10% of the cost of any component of work mentioned in technical eligibility criteria. i.e., each other (non-lead) member of must have satisfactorily completed or substantially completed during the last 07 (seven) years, ending last day of month previous to the one in which tender is invited, one similar single work for a minimum of 10% of cost of any component of work mentioned in technical eligibility criteria.

Note for Para 17.15.1:

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

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

17.15.2 Financial Eligibility Criteria

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

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

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

17.15.3 Bid Capacity

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

18. Participation of Partnership Firms in works tenders:

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

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

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

18.4 Once the tender has been submitted, the constitution of the firm shall not normally be allowed to be modified / altered / terminated during the validity of the tender as well as the currency of the contract except when modification becomes inevitable due to succession laws etc., in which case prior permission should be taken from Railway and in any case the minimum eligibility criteria should not get vitiated. The

re-constitution of firm in such cases should be followed by a notary certified Supplementary Deed. The approval for change of constitution of the firm, in any case, shall be at the sole discretion of the Railways and the tenderer shall have no claims what-so-ever. Any change in the constitution of Partnership firm after submission of tender shall be with the consent of all partners and with the signatures of all partners as that in the Partnership Deed. Failure to observe this requirement shall render the offer invalid and full Bid Security shall be forfeited.

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

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

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

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

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

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

(a) Joint and several liabilities:

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

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

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

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

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

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

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

18.11 Evaluation of eligibility of a partnership firm:

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

19.0 Advances to Contractor –

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

(Signature)

(Designation)

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

ANNEXURE - I (Contd. ...)**TENDER FORM (Third Sheet)****Name of Work:** _____**BILL OF QUANTITIES****1. Standard Schedule of Rates (SSOR) Items:**

SL	Item No. of SSOR	Description of Item of Work	Approximate Quantity	Unit	Rates in Figures and Words to be filled by tenderer (₹)	Amount (₹)
1	2	3	4	5	6	7

2. Non Standard Schedule of Rates (SSOR) Items:

SL	Item No.	Description of Item of Work	Approximate Quantity	Unit	Rates in Figures and Words to be filled by tenderer (₹)	Amount (₹)
1	2	3	4	5	6	7

The quantities shown in above Bill of Quantities are approximate and are as a guide to give the tenderer(s) an idea of quantum of work involved. The Railway reserves the right to increase/ decrease and/or delete or include any of the quantities given above and no extra rate will be allowed on this account.

I/We undertake to do the work at _____ % above/below the Standard Schedule of Rates (SSOR) of the _____ Railway as applicable to _____ Division or at the rates quoted above for each item.

Dated _____

Signature of the Tenderer(s)

Note: Columns 1 to 5 shall be filled by the office of the Authority inviting tender. Columns 6 & 7 shall be filled by the Tenderer(s) only when percentage tenders are not invited.

ANNEXURE – II

AGREEMENT FOR ZONE CONTRACT

CONTRACT AGREEMENT No. _____ DATED _____. ARTICLES OF AGREEMENT made this _____ day of _____ between the President of India acting through the _____, _____ Railway hereinafter called the "Railway" of the one part and _____ hereinafter called the "Contractor" of the other part.

WHEREAS the Contractor has agreed with the Railway during the period of _____ months from _____ to _____ for the performance of:

(a) New Works, additions and alterations to existing structures, special repair works and supply of building materials subject to the contract value for such works not exceeding ₹ _____.

(b) All ordinary repair and maintenance works at any site between kilometer _____ and kilometre _____ as will be set forth in the work orders (which work orders shall be deemed and taken to be part of this contract) that will be issued during the said period at _____% above/below the Standard Schedule of Rates (SSOR) of the _____ Railway, corrected up to the latest correction slips and Standard Specifications of the _____ Railway corrected upto latest correction slips and the Special Conditions and Special Specifications, if any in conformity with the drawings (if any) that will be issued with the work order, aforesaid AND WHEREAS the performance of the said work is an act in which the public are interested.

NOW THIS INDENTURE PRESENTS WITNESSETH That in consideration of the payment to be made by the Railway, the Contractor will duly perform the works set forth in the said Work Order and shall execute the same with great promptness, care and accuracy, in a workman like manner to the satisfaction of the Railway and will complete the same on or before the respective dates specified therein in accordance with the said specifications and said drawings (if any) and said conditions of contract and will observe, fulfill and keep all the conditions therein mentioned, (which shall be deemed and taken to be part of this contract as if the same had been duly set forth herein), AND the Railway both here-by agree that if the Contractor shall duly perform the said work in the manner aforesaid and observe and keep the said terms and conditions, the Railway will pay or cause to be paid to the Contractor for the said works on the completion thereof the amount due in respect thereof at the rates specified above.

Contractor _____

Designation _____

Address _____

Railway _____

(For President of India)

Witnesses (to signature of Contractor):

Signature of witnesses with address _____

Date _____

Signature of witnesses with address _____

Date _____

ANNEXURE - III**WORK ORDER UNDER ZONE CONTRACT**

WORK ORDER NO. _____, DATED _____ UNDER CONTRACT AGREEMENT

NO. _____ DATED _____.

Name of Work _____ (SITE) _____

Schedule of Drawings _____

Authority _____ Allocation _____

The Contractor(s) _____ is / are hereby ordered to carry out the following works at _____ % above/below the Standard Schedule of Rates (SSOR) of _____, updated with correction slips issued up to date of inviting tender or as otherwise specified in the tender documents under Zone Contract Agreement here-in-before referred to:

SL	Item No.	Description of Item of Work	Approximate Quantity	Unit	Rates in Figures and Words (₹)	Amount (₹)
1	2	3	4	5	6	7
Total Approximate Value of Work = ₹ _____						

The works herein mentioned are required to be completed on or before _____ (Date). The quantities provided herein are approximate and subject to variation under Clause 42 of the Standard General Conditions of Contract updated with correction slips issued up to date of inviting tender or as otherwise specified in the tender documents.

Divisional Railway Manager/Divisional _____ Engineer
 _____ Division
 _____ Railway

Date _____

for President of India

I agree to complete the works herein set forth on or before the date specified under the Zone Contract Agreement herein before referred to in conformity with the drawings hereto annexed and in accordance with the General and Special (if any) Conditions of Contract updated with correction slips issued up to date of inviting tender or as otherwise specified in the tender documents and the Standard Specifications of _____ Railway updated with correction slips issued up to date of inviting tender or as otherwise specified in the tender documents.

I also agree to maintain such works for the period specified below from the date of completion:

- Repair and maintenance work including white/color washing: three calendar months from date of completion.
- All new works except earth work: Six calendar months from date of completion.

Contractor _____ (Signature)

Railway: Designation _____

Address _____

For President of India)

Date _____

Date _____

Signature of Witnesses (to Signature of Contractor) with address

1. _____

2. _____

ANNEXURE - IV

RAILWAY

CONTRACT AGREEMENT OF WORKS

CONTRACT AGREEMENT NO. _____ DATED _____

ARTICLES OF AGREEMENT made this _____ day of _____ 20____ between President of India acting through the Railway Administration hereafter called the "Railway" of the one part and _____ herein after called the "Contractor" of other part.

WHEREAS the Contractor has agreed with the Railway for performance of the works _____ set forth in the Bill(s) of Quantities hereto annexed upon the Standard General Conditions of Contract, updated with correction slips issued up to date of inviting tender or as otherwise specified in the tender documents and the Specifications of _____ updated with correction slips issued up to date of inviting tender or as otherwise specified in the tender documents and the applicable Standard Schedule of Rates (SSOR) of _____ updated with correction slips issued up to date of inviting tender or as otherwise specified in the tender documents and the Special Conditions and Special Specifications, if any and in conformity with the drawings here-into annexed AND WHEREAS the performance of the said works is an act in which the public are interested.

NOW THIS INDENTURE WITNESSETH that in consideration to the payments to be made by the Railways, the Contractors will duly perform the said works in the said Bill(s) of Quantities set forth and shall execute the same with great promptness, care and accuracy in a workman like manner to the satisfaction of the Railway and will complete the same in accordance with the said specifications and said drawings and said conditions of contract on or before the _____ day of _____ 20____ and will maintain the said works for a period of _____ Calendar months from the certified date of their completion and will observe, fulfill and keep all the conditions therein mentioned (which shall be deemed and taken to be part of this contract, as if the same have been fully set forth herein), AND the Railway, both hereby agree that if the Contractor shall duly perform the said works in the manner aforesaid and observe and keep the said terms and conditions, the Railway will pay or cause to be paid to the Contractor for the said works on the final completion thereof the amount due in respect thereof at the rates specified in the Bill(s) of Quantities hereto annexed.

Contractor _____ (Signature) Railway: Designation _____

Address _____ (For President of India)

Date _____ Date _____

Signature of **Witnesses** (to Signature of Contractor) with address:

Witnesses:

ANNEXURE-V

Reference -Para 6.1 of ITT

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

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

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

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

10. I/We have read the clause regarding restriction on procurement from a bidder of a country which shares a land border with India and certify that I am/We are not from such a country or, if from such a country, have been registered with the competent Authority. I/We hereby certify that I/we fulfil all the requirements in this regard and am/are eligible to be considered (evidence of valid registration by the competent authority is enclosed)

SEAL AND SIGNATURE
OF THE TENDERER

Place:

Dated:

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

ANNEXURE-V(A)

Reference -Para 6.1 of ITT

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

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

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

SEAL AND SIGNATURE
OF THE CONSTITUENT FIRM/CONSTITUENT PARTNER

Place:

Dated:

ANNEXURE – VI

Reference -Para 10.3 & 17.15.3 of Tender Form (Second Sheet) of Annexure I of ITT

TENDERER'S CREDENTIALS (BID CAPACITY)

RAILWAY

For tenders having advertised value more than Rs 10 crore wherein eligibility criteria includes bid capacity also, the tenderer will be qualified only if its available bid capacity is equal to or more than the total bid value of the present tender. The available bid capacity shall be calculated as under:

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

Where,

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

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

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

Note:

- (a) The Tenderer(s) shall furnish the details of -
 - (i) Maximum value of construction works executed and payment received in any one of the previous three financial years or the current financial year (up to date of inviting tender) for calculating A, and
 - (ii) Existing commitments and balance amount of ongoing works with tenderer as per the prescribed proforma of Railway for statement of all works in progress and also the works which are awarded to tenderer but yet not started upto the date of inviting of tender for calculating B. In case of no works in hand, a 'NIL' statement should be furnished.
The submitted details for (i) and (ii) above should be duly verified by Chartered Accountant.
- (b) In case if a bidder is JV, the tenderer(s) must furnish the details of
 - (i) Maximum value of construction works executed and payment received in any one of the previous three financial years or the current financial year (up to date of inviting tender) by each member of JV for calculating A, and
 - (ii) Existing commitments and balance amount of ongoing works with each member of JV either in individual capacity or as a member of other JV as per the prescribed proforma of Railway for statement of all works in progress and also the works which are awarded to each member of JV either in individual capacity or as a member of other JV but yet not started upto the date of inviting of tender for calculating B. In case of no works in hand, a 'NIL' statement should be furnished.
The submitted details for (i) and (ii) above should be duly verified by Chartered Accountant.
- (c) Value of a completed work/work in progress/work awarded but yet not started for a Member in an earlier JV shall be reckoned only to the extent of the concerned member's share in that JV for the purpose of satisfying his/her compliance to the above mentioned bid capacity in the tender under consideration.
- (d) The arithmetic sum of individual "bid capacity" of all the members shall be taken as JV's "bid

- capacity”.
- (e) In case, the tenderer/s failed to submit the above statement along with offer, their/his offer shall be considered as incomplete and will be rejected **summarily**.
 - (f) The available bid capacity of tenderer shall be assessed based on the details submitted by the tenderer. In case, the available bid capacity is lesser than estimated cost of work put to tender, his offer shall not be considered even if he has been found eligible in other eligibility criteria/tender requirement.

Annexure –VIA

Para 5 of the Instructions to Tenderers

(Bid Security)

*Bank Guarantee Bond from any scheduled commercial
bank of India*

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

Name of the Bank: -----

President of India,

Acting through FA&CAO/CN/SCR/SC,

South Central Railway,

Beneficiary: FA&CAO/CN/SCR/SC, South Central Railway

Date:.....

Bank Guarantee Bond No.:

Date:-----

In consideration of the President of India acting through **Dy.CSTE/Projects/Tele/SC (Designation & address of Contract Signing Authority)**, South Central Railway, Secunderabad, 500025 (hereinafter called "The Railway") having invited the bid for _____ through Notice inviting tender (NIT) No.._____, We have been informed that **[Insert name of the Bidder]**.....
(hereinafter called "the Bidder") intends to submit its bid (hereinafter called "the Bid") .

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

AND

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

1. KNOW ALL MEN that by these present that I/We the undersigned **[Insert name(s) of authorized representatives of the Bank]**, being fully authorized to sign and incur obligations for and on behalf of the Bank, confirm that the Bank, hereby, unconditionally and irrevocably guarantee to pay to the Railway full amount in the sum of **[Insert required Value of Bid Security]** as above stated.
2. The Bank undertakes to immediately pay on presentation of demand by the Railway any amount up to and including aforementioned full amount without any demur, reservation or recourse. Any such demand made by the Railway on the Bank shall be final, conclusive and binding, absolute and unequivocal on the Bank notwithstanding any disputes raised/ pending before any Court, Tribunal, Arbitration or any Authority or any threatened litigation by the Bidder or Bank.
3. The Bank shall pay the amount as demanded immediately on presentation of the demand by Railway without any reference to the Bidder and without the Railway being required to show grounds or give reasons for its demand of the amount so demanded.
4. The guarantee hereinbefore shall not be affected by any change in the constitution of the Bank or in the constitution of the Bidder.
5. The Bank agrees that no change, addition, modifications to the terms of the Bid document or to any documents, which have been or may be made between the Railway and the Bidder, will in any way absolve the Bank from the liability under this guarantee; and the Bank, hereby, waives any requirement for notice of any such change, addition or modification made by Railway at any time.

6. This guarantee will remain valid and effective from.....*[insert date of issue]*till*[insert date, which should be minimum 90 days beyond the expiry of validity of Bid]*. Any demand in respect of this Guarantee should reach the Bank within the validity period of Bid Security.
7. The Bank Guarantee is unconditional and irrevocable.
8. The expressions Bank and Railway herein before used shall include their respective successors and assigns.
9. The Bank hereby undertakes not to revoke the guarantee during its currency, except with the previous consent in writing of the Railway. This guarantee is subject to the Uniform Rules for Demand Guarantees, ICC Publication No.758.
10. The Bank hereby confirms that it is on the SFMS (Structured Financial Messaging System) and shall invariably send the advice of this Bank Guarantee to the following bank details –

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

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

Date

.....

Place.....

Bank's Seal and authorized signature(s)

[Name in Block letters]

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

[P/Attorney] No.

Witness:

1 Signature, Name & Address & Seal

2 Signature, Name& address & Seal

Bank's Seal

*[P/Attorney]*No.

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

Annexure –VIB

Reference -Para 10.2 & 17.15.2 of Tender Form (Second Sheet) of Annexure I of ITT

Each Bidder or each member of a JV must fill in this form separately:**NAME OF BIDDER/JV PARTNER:**

Annual Contractual Turnover Data for the Previous 3/4 Years (Contractual Payment only)			
Year	Amount Currency	Exchange Rate	Indian National Rupees Equivalent
Average Annual Contractual Turnover for last 3 years			

1. The average annual contractual turnover shall be calculated as an average of “total contractual payments” in the previous three financial years. However, in case balance sheet of the previous year is yet to be prepared/ audited, the audited balance sheet of the fourth previous year shall be considered for calculating average annual contractual turnover.
2. The information supplied shall be substantiated by data in the audited balance sheets and profit and loss accounts for the relevant years in respect of the bidder or all members constituting the bidder.
3. Contents of this form should be certified by a Chartered Accountant duly supported by Audited Balance Sheet duly certified by the Chartered Accountant.

SEAL AND SIGNATURE OF THE BIDDER

Certified that all figures and facts submitted in this form have been furnished after full consideration of all observations/notes in Auditor's reports. _____

(Signature of Chartered Accountant)**Name of CA:** _____**Registration No:** _____**(Seal)**

Part II

STANDARD GENERAL CONDITIONS OF CONTRACT

1. (1) Definitions: In these Standard General Conditions of Contract, the following terms shall have the meaning assigned hereunder except where the context otherwise requires:

- (a) "Railway" shall mean the President of the Republic of India or the Administrative Officers of the Railway or of the Successor Railway authorized to deal with any matters which these presents are concerned on his behalf.
- (b) "General Manager" shall mean the Officer in-charge of the General Superintendence and Control of the Railway and shall also include Addl. General Manager, the General Manager (Construction) and shall mean and include their successors, of the successor Railway.
- (c) "Chief Engineer" shall mean the Officer in-charge of the Engineering Department of Railway and shall also include Chief Engineer (Construction), Chief Signal & Telecommunication Engineer, Chief Signal & Telecommunication Engineer (Construction), Chief Electrical Engineer, Chief Electrical Engineer (Construction), Chief Mechanical Engineer and shall mean & include their successors, of the Successor Railway.
- (d) "Divisional Railway Manager" shall mean the Officer in-charge of a Division of the Railway and shall mean and include the Divisional Railway Manager of the Successor Railway.
- (e) "Engineer" shall mean the Divisional Engineer or the Executive Engineer, Divisional Signal & Telecom Engineer, Divisional Electrical Engineer, Divisional Mechanical Engineer in executive charge of the works and shall include the superior officers of Open Line and Construction organisations on the Railway of the Engineering, Signal & Telecom, Electrical and Mechanical Departments, i.e. the Senior Divisional Engineer/Deputy Chief Engineer, Senior Divisional Signal & Telecom Engineer / Dy.Chief Signal & Telecom Engineer, Senior Divisional Electrical Engineer / Deputy Chief Electrical Engineer, Senior Divisional Mechanical Engineer and shall mean & include the Engineers of the Successors Railway.
- (f) "Engineer's Representative" shall mean the Assistant Engineer, Assistant Signal & Telecommunication Engineer and Assistant Electrical Engineer, Assistant Mechanical Engineer in direct charge of the works and shall include any Sr. Section/Junior Engineer of Civil Engineering/Signal and Telecommunication Engineering/Mechanical Engineering/Electrical Engineering Departments appointed by the Railway and shall mean and include the Engineer's Representative of the Successor Railway.
- (g) "Contractor" shall mean the Person/Firm/LLP/Trust/Co-operative Society or Company whether incorporated or not who enters into the contract with the Railway and shall include their executors, administrators, successors and permitted assigns.
- (h) "Contract" shall mean and include the Agreement, the Work Order, the accepted Bill(s) of Quantities or Chapter(s) of Standard Schedule of Rates (SSOR) of the Railway modified by the tender percentage for items of works quantified, or not quantified, the Standard General Conditions of Contract, the Special Conditions of Contracts, if any; the Drawing, the Specifications, the Special Specifications, if any and Tender Forms, if any.
- (i) "Works" shall mean the works to be executed in accordance with the contract.
- (j) "Specifications" shall mean the Standard Specifications for Materials & Works of Railway as specified by Railway under the authority of the Chief Engineer or as amplified, added to or superseded by Special Specifications, if any.
- (k) Standard Schedule of Rates (SSOR) shall mean the schedule of Rates adopted by the Railway, which includes-

1. "Unified Standard Schedule of Rates of the Railway (USSOR)" i.e. the Standard Schedule of Rates of the Railway issued under the authority of the Chief Engineer from time to time, updated with correction slips issued up to date of inviting tender or as otherwise specified in the tender documents;
2. "Delhi Schedule Of Rates (DSR)" i.e. the Standard Schedule of Rates published by Director General/ Central Public Works Department, Government of India, New Delhi, as adopted and modified by the Railway under the authority of the Chief Engineer from time to time, updated with correction slips issued up to date of inviting tender or as otherwise specified in the tender documents.

(l) "Drawing" shall mean the maps, drawings, plans and tracings or prints there of annexed to the contract and shall include any modifications of such drawings and further drawings as may be issued by the Engineer from time to time.

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

(n) "Temporary Works" shall mean all temporary works of every kind required for the execution completion and/or maintenance of the works.

(o) "Site" shall mean the lands and other places on, under, in or through which the works are to be carried out and any other lands or places provided by the Railway for the purpose of the contract.

(p) "Period of Maintenance" shall mean the specified period of maintenance from the date of completion of the works, as certified by the Engineer.

(q) 'Contractor's authorized Engineer' shall mean a graduate Engineer or equivalent, having more than 3 years experience in the relevant field of construction work involved in the contract, duly approved by Engineer.

(r) Date of inviting tender shall be the date of publishing tender notice on IREPS website if tender is published on website or the date of publication in newspaper in case tender is not published on website.

(s) "Bill of Quantities" shall mean Schedule of Item(s) included in the tender document along with respective quantities and rates, accepted by the Railway.

1. (2) Singular and Plural: Words importing the singular number shall also include the plural and vice versa where the context requires.

1.(3) Headings and Marginal Headings: The headings and marginal headings in these Standard 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 the contract.

GENERAL OBLIGATIONS

2. (1) Execution Co-Relation and Intent of Contract Documents: The contract documents shall be signed in triplicate by the Railway and the Contractor. The contract documents are complementary and what is called for by anyone shall be as binding as if called for by all, the intention of the documents is to include all labour and materials, equipments and transportation necessary for proper execution of work. Materials or works not covered by or properly inferable from any heading or class of the specifications shall not be supplied by the Railway 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.

2.(2) If a work is transferred from the jurisdiction of one Railway to another Railway or to a Project authority or vice versa while contract is in subsistence, the contract shall be binding on the Contractor and

the Successor Railway/Project in the same manner & take effect in all respects as if the Contractor and the Successor Railway/Project were parties thereto from the inception and the corresponding officer or the Competent Authority in the Successor Railway/Project will exercise the same powers and enjoy the same authority as conferred to the Predecessor Railway/Project under the original contract/agreement entered into.

2. (3) If for administrative or other reasons the contract is transferred to the Successor Railway, the contract shall, notwithstanding any things contained herein contrary thereto, be binding on the Contractor and the Successor Railway in the same manner and take effect in all respects as if the Contractor and the Successor Railway had been parties thereto from the date of this contract.

3. (1) Law Governing the Contract: The contract shall be governed by the law for the time being in force in the Republic of India.

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.

3.(3) Environmental and Forest clearances:

The Railway represents and warrants that the environmental and forest clearances pertaining to the work commensurate with the progress of work/agreed programme, will be obtained by Engineer. In the event of any delay in securing respective clearances leading to delay in execution of work, the Contractor shall be entitled to Extension of Time for the period of such delay in accordance with the provisions of Clause-17A(ii).

4.Communications to be in Writing: All notices, communications, reference and complaints made by the Railway or the Engineer or the Engineer's Representative or the Contractor inter-se concerning the works shall be in writing or e-mail on registered e-mail IDs i.e. the e mail id provided for correspondence in the contract agreement, otherwise email id registered with IREPS and no notice, communication, reference or complaint not in writing or through e-mail, shall be recognized.

5.Service of Notices on Contractors: The Contractor shall furnish to the Engineer 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 Contractor, 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/ e-mail 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 the Contractor to the Engineer.

6.Occupation and Use of Land: No land belonging to or in the possession of the Railway shall be occupied by the Contractor without the permission of the Railway. The Contractor shall not use, or allow to be used the site for any purposes other than that of executing the works. Whenever non-railway bodies/persons are permitted to use railway premises with competent authority's approval, conservancy charges as applicable from time to time may be levied.

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 Chief Engineer, save as provided below. Any breach of this condition shall

entitle the Railway to rescind the contract under Clause 62 of these Conditions and also render the Contractor liable for payment to the Railway in respect of any loss or damage arising or ensuing from such cancellation; provided always that execution of the details of the work by petty Contractor under the direct and personal supervision of the Contractor or his agent shall not be deemed to be sub-letting under this clause.

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

- (a) (i) The Contractor shall not sub- contract the Works comprising more than 40% (forty per cent) of the Contract Price and shall carry out Works for at least 60% (sixty per cent) of the total Contract Price directly under its own supervision and through its own personnel. The Parties expressly agree that for the purposes of computing the value of sub-contracts under this Clause 3.2.1, the Contract Price shall exclude any sub-contract for the procurement of goods and equipment like [rails, sleepers and track fittings, signalling and telecommunication & Power supply equipment]. The Parties agree that all [obligations and liabilities under this Agreement for the entire Railway Project shall at all time remain with the Contractor. {The Parties agree that works equal to at least 30% (thirty per cent) of the Contract Price shall be discharged solely by the Lead Member.} \$. Procurement of material, hire of equipment or engagement of labour by prime contractor or procuring entity will not mean sub-contracting. \$ May be deleted if the Contractor is not a Consortium/Joint Venture

- (ii) The subcontractor shall have successfully completed at least one work similar to work proposed for subcontract in last 5 years, ending date of submission of proposal by Contractor to Railway, costing not less than 35% value of work to be subletted, through a works contract. For fulfilment of above, Work Experience Certificate issued by a Govt. Department/Organisation shall be considered. Further, Work Experience Certificate issued by a Public listed company shall be considered provided the company is having average annual turnover of Rs 500 crore and above in last 3 financial years excluding the current financial year, listed on National Stock Exchange or Bombay Stock Exchange, registered at least 5 years back from the date of submission of proposal by Contractor to Railway and work experience certificate issued by a person authorised by the Public Listed Company to issue such certificates.

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

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

- (iii) There is no banning of business with the sub-contractor in force over IR.
- (b) The Contractor shall provide to the Engineer a copy of the agreement to be entered into by Contractor with subcontractor. No subcontractor shall be permitted without a formal agreement between Contractor and subcontractor. This agreement shall clearly define the scope of work to be carried out by subcontractor and the terms of payment in clear & unambiguous manner.
- (c) On receipt of approval from Chief Engineer, Contractor shall enter into a formal agreement legally enforceable in Court of Law with subcontractor and submit a copy of the same to the Engineer.
- (d) The Contractor shall intimate to the Engineer not less than 7 days in advance, the intended date of commencement of subcontractor's work.

- (e) Once having entered into above arrangement, Contractor shall discontinue such arrangement, if he intends to do so at his own or on the instructions of Railway, with prior intimation to Chief Engineer.
- (f) The Contractor shall indemnify railway against any claim of subcontractor.
- (g) The Contractor shall release payment to the Sub-contractor(s) promptly and shall endeavour to resolve all issues amicably and speedily with the Sub-contractor(s), so that the execution of work is not affected in any manner whatsoever.
- (h) In addition to issuance of work experience certificate to Contractor, the Engineer, when, based on documents, is satisfied that subcontracted work has been carried out by subcontractor, shall issue work experience certificate to the subcontractor also for the portion of work subcontracted and successfully completed by the sub-contractor.
*Note: Work Experience Certificate to the subcontractor shall be issued only when the contractor's work is complete and contractor is entitled for the issuance of Work Experience Certificate. However, in the same contract, when the Chief Engineer, based on documents, is satisfied that the subcontractor has successfully carried out subletted work; without issuance of work experience certificate to subcontractor at this stage, the Chief Engineer can, **only once**, consider the successfully completed subletted work for the fulfilment of eligibility for further subletting of work to the subcontractor in the same contract. When the contractor's work is complete and contractor is entitled for the issuance of work experience certificate, the subcontractor shall be issued one Work Experience Certificate for the total scope of work executed by the subcontractor in the contract.*
- (i) The responsibility of successful completion of work by subcontractor shall lie with Contractor. Subcontracting will in no way relieve the Contractor to execute the work as per terms of the Contract.
- (j) Further, in case Engineer is of the view that subcontractor's performance is not satisfactory, he may instruct the Contractor to remove the subcontractor from the work and Contractor has to comply with the above instructions with due promptness. Contractor shall intimate the actual date of discontinuation of subcontract to Engineer. No claim of Contractor whatsoever on this account shall be entertained by the Railway and this shall be deemed as 'excepted matter' (matter not arbitrable).
- (k) The permitted subcontracting of work by the Contractor shall not establish any contractual relationship between the sub-contractor and the Railway and shall not relieve the Contractor of any responsibility under the Contract.

8. Assistance by Railway for the Stores to be obtained by the Contractor: Owing to difficulty in obtaining certain materials (including Tools & Plant) in the market, the Railway may have agreed without any liability therefore to endeavour 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 material, 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 Railway shall not in any way be liable for the supply of materials or for the non-supply thereof for any reasons whatsoever nor for any loss or damage arising in consequence of such delay or non-supply.

9. Railway Passes: No free railway passes shall be issued by the Railway to the Contractor or any of his employee/worker.

10. Carriage of Materials: No forwarding orders shall be issued by the Railway for the conveyance of Contractor's materials, tools and plant by train which may be required for use in the works and the Contractor shall pay full freight charges at public tariff rates therefor.

11. Use of Ballast Trains: The Railway may agree to allow the Contractor use of the ballast or material trains under such conditions as shall be specially prescribed, provided that the Contractor shall pay for the use thereof charges calculated at public tariff rates on the marked carrying capacity of each vehicle subject to specified minimum charge per day or part of day and provided further that the Contractor shall indemnify the Railway against any claims or damages arising out of the use or misuse thereof and against any liabilities under the Workmen's Compensation Act, 1923 or any statutory amendments thereto.

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 Engineer 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 Railway to rescind the contract under Clause 62 of these Conditions.

13. Relics and Treasures: All gold, silver, oil, other minerals of any description, all precious stones, coins, treasures relics antiquities and other similar things which shall be found in or upon the site shall be the property of the Railway and the Contractor shall duly preserve the same to the satisfaction of the Railway and shall from time to time deliver the same to such person or persons as the Railway may appoint to receive the same.

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, trees, 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 Railway provided that the Contractor may, with the permission of the Engineer, 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.

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

16.(1) Security Deposit: The Security Deposit shall be 5% of the contract value. The Bid Security submitted by the Contractor with his tender will be retained/encashed by the Railways as part of security for the due and faithful fulfillment of the contract by the Contractor. Provided further that, if Contractor submits the Cash or Term Deposit Receipt issued from a Scheduled commercial bank of India or irrevocable Bank Guarantee Bond from a Scheduled commercial bank of India, either towards the Full Security Depositor the Part Security Deposit equal to or more than Bid Security, the Railway shall return the Bid Security, to the Contractor.

Balance of Security Deposit may be deposited by the Contractor in cash or Term Deposit Receipt issued from Scheduled commercial bank of India or irrevocable Bank Guarantee bond issued from Scheduled commercial bank of India, or may be recovered at the rate of 6% of the bill amount till the full Security Deposit is recovered. Provided also that in case of defaulting Contractor, the Railway may retain any amount due for payment to the Contractor on the pending "on account bills" so that the amounts so retained (including amount guaranteed through Performance Guarantee) may not exceed 10% of the total value of the contract.

The Irrevocable Bank Guarantee submitted towards Security deposit shall be initially valid up to the stipulated date of Maintenance period plus 60 days and shall be extended from time to time, depending upon extension of contract granted in terms of Clause 17A and 17B of the Standard General Conditions of Contract.

Note: Security Deposit deposited in cash by the Contractor or recovered from the running bills of a Contractor or submitted by contractor as Term Deposit Receipt(s) can be refunded/returned to the contractor, in lieu of irrevocable Bank Guarantee bond issued from scheduled commercial bank of India, to be submitted by him, for an amount equal to or more than the already available Security Deposit, provided however that, in a contract of value less than Rs. 50 Crore, such refund/ return of the already available Security Deposit is permitted up to two times and in a contract of value equal to or more than Rs. 50 Crore, such refund / return of the already available Security Deposit is permitted up to three times.

16.(2) (i) Refund of Security Deposit: Security Deposit mentioned in sub clause (1) above shall be returned to the Contractor along with or after, the following:

- (a) Final Payment of the Contract as per clause 51.(1) **and**
- (b) Execution of Final Supplementary Agreement or Certification by Engineer that Railway has No Claim on Contractor **and**
- (c) Maintenance Certificate issued, on expiry of the maintenance period as per clause 50.(1), in case applicable.

16. (2) (ii) Forfeiture of Security Deposit: Whenever the contract is rescinded as a whole under clause 62 (1) of these conditions, the Security Deposit already with railways under the contract shall be forfeited. However, in case the contract is rescinded in part or parts under clause 62 (1) of these conditions, the Security Deposit shall not be forfeited.

16.(3) No interest shall be payable upon the Bid Security and Security Deposit or amounts payable to the Contractor under the Contract, but Government Securities deposited in terms of Sub-Clause 16.(4)(b) of this clause will be payable with interest accrued thereon.

16.(4) Performance Guarantee

The procedure for obtaining Performance Guarantee is outlined below:

- (a) The successful bidder shall have to submit a Performance Guarantee (PG) within 21 (Twenty one) days from the date of issue of Letter of Acceptance (LOA). Extension of time for submission of PG beyond 21 (Twenty one) days and upto 60 days from the date of issue of LOA may be given by the Authority who is competent to sign the contract agreement. However, a penal interest of 12% per annum shall be charged for the delay beyond 21(Twenty one) days, i.e. from 22ndday after the date of issue of LOA. Further, if the 60thday happens to be a declared holiday in the concerned office of the Railway, submission of PG can be accepted on the next working day.

In all other cases, if the Contractor fails to submit the requisite PG even after 60 days from the date of issue of LOA, the contract is liable to be terminated. In case contract is terminated railway shall be entitled to forfeit Bid Security and other dues payable to the contractor against that particular contract, subject to maximum of PG amount. In case a tenderer has not submitted Bid Security on the strength of their registration as a Startup recognized by Department of Industrial Policy and Promotion (DIPP) under Ministry of Commerce and Industry, DIPP shall be informed to this effect.

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

- (b) The successful bidder shall submit the Performance Guarantee (PG) amounting to 5% of the original contract value and Additional Performance Guarantee as per clause 16(4)(h) in any of the following forms:

- (i) A deposit of Cash;

- (ii) Irrevocable Bank Guarantee;
- (iii) Insurance Surety Bond as per Annexure-XVII.

Note:

In case of extension of Date of Completion, selected bidder needs to submit extended Insurance Surety Bond/Fresh Insurance Surety Bond/ fresh Performance Security, in any form as given above, before expiry of existing Insurance Surety Bond.

- (iv) Government Securities including State Loan Bonds at 5% below the market value;
 - (v) Pay Orders and Demand Drafts tendered by any Scheduled Commercial Bank of India;
 - (vi) Guarantee Bonds executed or Deposits Receipts tendered by any Scheduled Commercial Bank of India;
 - (vii) Deposit in the Post Office Saving Bank;
 - (viii) Deposit in the National Savings Certificates;
 - (ix) Twelve years National Defence Certificates;
 - (x) Ten years Defence Deposits;
 - (xi) National Defence Bonds and
 - (xii) Unit Trust Certificates at 5% below market value or at the face value whichever is less. Also, FDR in favour of FA&CAO (free from any encumbrance) may be accepted.
- (c) The Performance Guarantee shall be submitted by the successful bidder after the Letter of Acceptance (LOA) has been issued, but before signing of the contract agreement. This P.G. shall be initially valid upto the stipulated date of completion plus 60 days beyond that. In case, the time for completion of work gets extended, the Contractor shall get the validity of P.G. extended to cover such extended time for completion of work plus 60 days.
- (d) The value of PG to be submitted by the Contractor is based on original contract value and shall not change due to subsequent variation(s) in the original contract value.
- (e) The Performance Guarantee (PG) shall be released after physical completion of the work based on 'Completion Certificate' issued by the competent authority stating that the Contractor has completed the work in all respects satisfactorily.
- (f) Whenever the contract is rescinded, the Performance Guarantee already submitted for the contract shall be encashed.
- (g) The Engineer shall not make a claim under the Performance Guarantee except for amounts to which the President of India is entitled under the contract (not withstanding and/or without prejudice to any other provisions in the contract agreement) in the event of:
- (i) Failure by the Contractor to extend the validity of the Performance Guarantee as described herein above, in which event the Engineer may claim the full amount of the Performance Guarantee.
 - (ii) Failure by the Contractor to pay President of India any amount due, either as agreed by the Contractor or determined under any of the Clauses/Conditions of the Agreement, within 30 days of the service of notice to this effect by Engineer.
 - (iii) The Contract being determined or rescinded under clause 62 of these conditions.
- (h) If a tender is accepted on the quoted rates of bidder which is below the advertised tender value, an additional performance security shall be submitted by the bidder as below:

Bid quoted in % of advertised cost	Additional Performance Guarantee (%)
Below: 0 - 5% (inclusive)	Nil
Below 5%	5%

17. Force Majeure Clause: If at any time, during the continuance of this contract, the performance in whole or in part by either party of any obligation under this contract shall be prevented or delayed by reason of any war, hostility, acts of public enemy, civil commotion, sabotage, serious loss or damage by fire, explosions, epidemics/pandemics, strikes, lockouts or acts of God (hereinafter, referred to events) provided, notice of the happening of any such event is given by either party to the other within 30 days from the date of occurrence thereof, neither party shall by reason of such event, be entitled to terminate this contract nor shall either party have any claim for damages against the other in respect of such non-performance or delay in performance, and works under the contract shall be resumed as soon as practicable after such event has come to an end or ceased to exist, and the decision of the Engineer as to whether the works have been so resumed or not shall be final and conclusive, PROVIDED FURTHER that if the performance in whole or in part of any obligation under this contract is prevented or delayed by reason of any such event for a period exceeding 120 days, either party may at its option terminate the contract by giving notice to the other party.

17A Extension of Time in Contracts: 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:

- (i) **Extension due to Modification:** If any modifications have been ordered which in the opinion of the Engineer have materially increased the magnitude of the work, then such extension of the contracted date of completion may be granted as shall appear to the Engineer to be reasonable in the circumstances, provided moreover that the Contractor shall be responsible for requesting such extension of the date as may be considered necessary as soon as the cause thereof shall arise.
- (ii) **Extension for Delay not due to Railway or Contractor:** If in the opinion of the Engineer, the progress of work has any time been delayed by any act or neglect of Railway's employees or by other Contractor employed by the Railway under Sub-Clause (4) of Clause 20 of 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 threatened by or dispute with adjoining or to neighbouring owners or public authority arising otherwise through the Contractor's own default etc. or by the delay authorized by the Engineer pending arbitration or in consequences of the Contractor not having received in due time necessary instructions from the Railway for which he shall have specially applied in writing to the Engineer or his authorized representative then upon happening of any such event causing delay, the Contractor shall immediately give notice thereof in writing to the Engineer within 15 days of such happening, but shall nevertheless make constantly his best endeavours to bring down or make good the delay and shall do all that may be reasonably required of him to the satisfaction of the Engineer to proceed with the works. The Contractor may also indicate the period for which the work is likely to be delayed and shall be bound to ask for necessary extension of time.
- (iii) **Extension for Delay due to Railways:** In the event of any failure or delay by the Railway to hand over the Contractor possession of the lands necessary for the execution of the works or to give the necessary notice to commence the works or to provide the necessary drawings or instructions or any other delay caused by the Railway due to any other cause whatsoever, then such failure or delay shall in no way affect or vitiate the contract or alter the character thereof or entitle the Contractor to damages or compensation therefor, but in any such case, the Railway may grant such extension or extensions of the completion date as may be considered reasonable.

The Contractor shall indicate the period for which the work is likely to be delayed and shall seek extension of time as may be considered necessary under clause 17A(i) or/and 17A(ii) or/ and 17A(iii) above, as soon as the cause thereof shall arise and, in any case, not less than **15 days**

before the expiry of the date fixed for completion of the works. The Engineer shall consider the same and shall grant and communicate such extension of time as in his opinion is reasonable having regard to the nature and period of delay and the type and quantum of work affected thereby. No other compensation shall be payable for works so carried forward to the extended period of time; the same rates, terms and conditions of contract being applicable, as if such extended period of time was originally provided in the original contract itself.

The non-submission of request for extension or submission of request within less than **15 days** before the expiry of the date fixed for completion of the works, shall make him ineligible for extension under these sub clauses, subject to final decision of Engineer.

17B Extension of Time with Liquidated Damages (LD) for delay due to Contractor: The time for the execution of the work or part of the works specified in the contract documents shall be deemed to be the essence of the contract and the works must be completed not later than the date(s) as specified in the contract. If the Contractor fails to complete the works within the time as specified in the contract for the reasons other than the reasons specified in Clause 17 and 17A, the Railway may, if satisfied that the works can be completed by the Contractor within reasonable short time thereafter, allow the Contractor for further extension of time (Proforma at Annexure-VII) as the Engineer may decide. On such extension the Railway will be entitled without prejudice to any other right and remedy available on that behalf, to recover from the Contractor as agreed damages and not by way of penalty for each week or part of the week, a sum calculated at the ***rate of Liquidated Damages as decided by Engineer, between 0.05% to 0.30 % of contract value of the works for each week or part of the week.***

For the purpose of this Clause, the contract value of the works shall be taken as value of work as per contract agreement including any supplementary work order/contract agreement issued. Provided also, that the total amount of liquidated damages under this condition shall not exceed 5% of the contract value or of the total value of the item or groups of items of work for which a separate distinct completion period is specified in the contract.

Provided further, that if the Railway is not satisfied that the works can be completed by the Contractor and in the event of failure on the part of the contractor to complete the work within further extension of time allowed as aforesaid, the Railway shall be entitled without prejudice to any other right or remedy available in that behalf, to appropriate the contractor's Security Deposit and rescind the contract under Clause 62 of these Conditions, whether or not actual damage is caused by such default.

NOTE:

In a contract, where extension(s) of time have been allowed once under clause 17B, further request(s) for extension of time under clause 17A can also be considered under exceptional circumstances. Such extension(s) of time under clause 17A shall be without any Liquidated damages, but the Liquidated damages already recovered during extension(s) of time granted previously under clause 17B shall not be waived. However, Price variation during such extension(s) shall be dealt as applicable for extension(s) of time under clause 17B.

17C Bonus for Early Completion of Work: In open tenders having advertised value more than Rs.50 crore and original period of completion 12 months or more, when there is no reduction in original scope of work by more than 10%, and no extension granted on either railway or Contractor's account, Contractor shall be entitled for a bonus of 1% for each 30 days early completion of work. The period of less than 30 days shall be ignored while working out bonus. The maximum bonus shall be limited to 5% of original contract value. The completion date shall be reckoned as the date of issuance of completion certificate by Engineer.

18.(1) Illegal Gratification:

Procuring authorities as well as bidders contractors and consultants should observe the highest standard

of ethics and should not indulge in the following prohibited practices, either directly or indirectly, at any stage during the procurement process or during execution of resultant contracts:

- i) "Corrupt practice": making offers, solicitation or acceptance of bribe, rewards or gifts or any material benefit, in exchange for an unfair advantage in the procurement process or to otherwise influence the procurement process or contract execution;
- ii) "Fraudulent practice": any omission or misrepresentation that may mislead or attempt to mislead so that financial or other benefits may be obtained or an obligation avoided. This includes making false declaration or providing false information for participation in a tender process or to secure a contract or in execution of the contract;
- iii) "Anti-competitive practice": any collusion, bid rigging or anti-competitive arrangement, or any other practice coming under the purview of The Competition Act, 2002, between two or more bidders with or without the knowledge of the procuring entity, that may impair the transparency, fairness and the progress of the procurement process or to establish bid prices at artificial, non-competitive levels;
- iv) "Coercive practice": any coercion or any threat to impair or harm, directly or indirectly, any party or its property to influence the procurement process or affect the execution of a contract;
- v) "Conflict of interest" (COI): any personal, financial, or business relationship between the bidder and any personnel of the procuring entity who are directly or indirectly related to the procurement or execution process of the contract, which can affect the decision of the procuring entity directly or indirectly;
- vi) "Undue Advantage": improper use of information obtained by the bidder from the procuring entity with an intent to gain an unfair advantage in the procurement process or for personal gain. This also includes if the bidder (or his allied firm) provided services for the need assessment procurement planning of the tender process in which he is participating;
- vii) "Obstructive practice": materially impede the procuring entity's investigation of a procurement process either by deliberately destroying, falsifying, altering; or by concealing of evidence material to the investigation; or by making false statements or by threatening, harassing or intimidating any party to prevent it from disclosing its knowledge of matters relevant to such investigation or from pursuing the investigation; or by impeding the procuring entity's rights of audit or access to information;

18.(2) Punitive Provisions:

Without prejudice to and in addition to the rights of the procuring entity to other penal provisions as per the bid documents or contract, if the procuring entity comes to a conclusion that a (prospective) bidder contractor directly or through an agent has violated this code of integrity in competing for the contract or in executing a contract, the procuring entity may take appropriate measures including one or more of the following:

- i) If his bids are under consideration in any procurement
 - a) Forfeiture or encashment of bid security;
 - b) Calling off of any pre-contract negotiations; and
 - c) rejection and exclusion of the bidder from the procurement process
- ii) If a contract has already been awarded
 - a) Cancellation of the relevant contract and recovery of compensation for loss incurred by the procuring entity;
 - b) Forfeiture or encashment of any other security or bond relating to the procurement;
 - c) Recovery of payments including advance payments, if any, made by the procuring entity along with interest thereon at the prevailing rate;
- iii) Provisions in addition to above:
 - a) Removal from the list of enlisted contractors and banning/ debarment of the bidder from participation in future procurements of the procuring entity for a period not less than one year;
 - b) In case of anti-competitive practices information for further processing may be filed under a

signature of the Joint Secretary level officer, with the Competition Commission of India;

- c) Initiation of suitable disciplinary or criminal proceedings against any individual or staff found responsible.

Any question or dispute as to the commission of any such offence or compensation payable to the Railway under this Clause shall be settled by the General Manager of the Railway, in such a manner as he shall consider fit & sufficient and his decision shall be final & conclusive.

EXECUTION OF WORKS

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.

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 Engineer and shall proceed with the same with due expedition and without delay

19.(3) Accepted Programme of Work: The Contractor who has been awarded the work shall as soon as possible but not later than 30 days after the date of receipt of the acceptance letter in respect of contracts with initial completion period of two years or less or not later than 90 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 organisation (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.

In Contracts for works of New Line/Gauge Conversion/Doubling/Railway Electrification, finalized through Tenders having advertised value more than ~~Rs.50 crores~~ **Rs.100 crores**, the Contractor shall submit a detailed time programme to the Engineer within 30 days after issue of LOA. The program shall include the physical and Financial Progress vis-à-vis program and forecast cash flow adopting Project Management Software such as **Primavera/Sure Track/MS Project etc.** The program must identify the milestones, interface requirements and program reporting elements. The Contractor shall supply, free of cost one set of authorized software to the Engineer and the soft copy of structured program for the project. This shall be updated every month. The Contractor shall also submit a revised programme whenever the previous programme is inconsistent with actual progress. Each programme shall include:

The order in which the Contractor intends to carry out the Works, including the anticipated timing of each stage, Contractor's Documents, procurement, manufacture of Plant, delivery to Site, construction, erection and testing, each of these stages for work by each Subcontractor, if any, the sequence and timing of inspections and tests specified in the Contract, and a supporting report which includes:

a general description of the methods which the Contractor intends to adopt, and of the major stages, in the execution of the Works, and details showing the Contractor's reasonable estimate for the number of each class of Contractor's Personnel & Equipment, required on the Site for each major stage.

Unless the Engineer, within 21 days after receiving a programme, gives notice to the Contractor stating the extent to which it does not comply with the Contract, the Contractor shall proceed in accordance with the programme, subject to his other obligations under the Contract. The Engineer shall be entitled to rely upon the programme when planning their activities.

If, at any time, the Engineer gives notice to the Contractor that a programme fails (to the extent stated) to comply with the Contract or to be consistent with actual progress and the Contractor's stated intentions, the Contractor shall submit a revised programme to the Engineer within 15 days in accordance with this Sub-Clause.

19.(4) Setting out of Works: The Contractor shall be responsible for the correct setting out of all works in relation to original points, lines and levels of reference at his cost. The Contractor shall execute the work true to alignment, grade, levels and dimensions as shown in the drawing and as directed by the Engineer's representative and check these at frequent intervals. The Contractor shall provide all facilities like labour and instruments and shall co-operate with the Engineer's representative for checking of all alignment, grades, levels and dimensions. If, at any time, during the progress of the works any error 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 cost 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. The Contractor shall carefully protect and preserve all bench marks, sight rails, pegs and other things used in setting out the work.

20.(1) Compliance to Engineer's Instructions: The Engineer shall direct the sequence 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.

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 authorised, except under written instructions from the Engineer.

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 option of the Railway.

20.(4) Separate Contracts in Connection with Works: The Railway shall have 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 upon 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 an 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.

21. Instruction 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:

- (a) 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.
- (b) 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.

22.(1) Adherence to Specifications and Drawings: The site and the detailed drawings shall be made available to the contractor commensurate with the accepted programme of work submitted under clause 19(3). The whole of the works shall be executed in perfect conformity with the specifications and drawings of the contract. If 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 ensuing therefrom and shall be responsible for all loss to the Railway.

22.(2) Drawings and Specifications of the Works: 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.

22.(3) Ownership of Drawings and Specifications: All Drawings and Specifications and copies thereof furnished by the Railway to the Contractor are deemed to be the property of the Railway. They shall not be used on other works and with the exception of the signed contract set, shall be returned by the Contractor to the Railway on completion of the work or termination of the Contract.

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, additional instructions by means of drawings or 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.

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 Chief Engineer who shall have the power to correct any errors, omissions, or discrepancies in aforementioned items and whose decision in the matter in dispute or doubt shall be final and conclusive.

23. Working during Night: The Contractor shall not carry out any work between sun-set and sun-rise without the previous permission of the Engineer. However, if the Engineer is satisfied that the work is not likely to be completed in time except by resorting to night work, he may order the same without confirming any right on the Contractor for claiming any extra payment for the same.

24. Damage to Railway Property or Private Life and Property: The Contractor shall be responsible for all risk to the work and for trespass and shall make good at his own expense all loss or damage whether to the works themselves or to any other property of the Railway or the lives, persons or property of others from whatsoever cause in connection with the works until they are taken over by the Railway, although all reasonable and proper precautions may have been taken by the Contractor. In case the Railway 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 Railway may incur in reference thereto, shall be charged to the Contractor. The Railway shall have the power and right to pay or to defend or compromise any claim of threatened legal proceedings or in anticipation of legal proceedings being instituted consequent on the action or default of the Contractor, to take such steps as may be considered necessary or desirable to ward off or mitigate the effect of such proceedings, charging to Contractor, as aforesaid; any sum or sums of money which may be paid and any expenses whether for reinstatement or otherwise which may be incurred and the propriety of any such payment, defence or compromise, and the incurring of any such expenses shall not be called in question by the Contractor.

25. Sheds, Storehouses 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, storehouses and yards a sufficient quantity of materials and plant in stock 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, storehouses 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.

26. Provision of Efficient and Competent Staff at Work Sites by the Contractor:

26.1 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 & proper manner and shall employ only such supervisors, workmen & labourers in or about the execution of any of these works as are careful and skilled in the various trades.

26.2 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.

26.3 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 proper completion of the works within the time prescribed, the Contractor shall forthwith on receiving intimation to this effect deploy the additional number of staff and labour as 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 Railway to rescind the contract under Clause 62 of these conditions.

26A. Deployment of Qualified Engineers at Work Sites by the Contractor:

26A.1 The Contractor shall also employ qualified Graduate Engineer(s) or equivalent, or qualified Diploma Engineer(s), as prescribed in the tender documents.

26A.2 In case the Contractor fails to employ the Engineer, as aforesaid in Para 26A.1, he shall be liable to pay liquidated damages at the rates, as prescribed in the tender documents.

26A.3 No. of qualified Engineers required to be deployed by the Contractor for various activities contained in the works contract shall be specified in the tender documents as 'Special Condition of Contract'.

27.(1) Workmanship and Testing: 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 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 means of such machines, instruments and appliances as the Engineer may direct and wholly at the expense of the Contractor.

27.(2) Removal of Improper Work and Materials: The Engineer or the Engineer's Representative shall be entitled to order from time to time:

(a) 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.

(b) The substitution of proper and suitable materials, and

(c) the removal and proper re-execution, notwithstanding any previous tests thereof or on account payments therefor, 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 Railway shall be entitled to rescind the contract under Clause 62 of these conditions.

(d) The provision of Construction and Demolition Waste Management Rule 2016 issued by Ministry of Environment Forest and Climate Change dated 29.03.2016 and published in the Gazette of India, Part – II, Section -3, Sub-section (ii) are binding upon the Contractor. Contractor shall implement these provisions at worksites, for which no extra payment will be payable.

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, planks, ladders, pumps, appliances and things of every kind required for the purpose and the Engineer and the Engineer's Representative shall at all times have free access to every part of the works and to all places at which materials for the works are stored or being prepared.

29. Examination of Work before Covering Up: The Contractor shall give 7 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 dimensions 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.

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 charges shall be recovered from the Contractor. If temporary huts are provided by the Contractor on the Railway land for labour engaged by him for the execution of works, the Contractor shall arrange for handing over vacant possession of the said land after the work is completed; if the Contractor's labour refuse to vacate, and have to be evicted by the Railway, necessary expenses incurred by the Railway in connection therewith shall be borne by the Contractor.

31.(1) Contractor to Supply Water for Works: Unless otherwise provided in the Contract, the Contractor shall be responsible for the arrangements to obtain supply of water necessary for the works.

31.(2) Water Supply from Railway System: The Railway may supply to the Contractor part or whole of the quantity of the water required for the execution of works from the Railway's existing water supply system at or near the site of works on specified terms and conditions and at such charges as shall be determined by the Railway and payable by the Contractor, provided that the Contractor shall arrange, at his own expense, to effect the connections and lay additional pipelines and accessories on the site and that the Contractor shall not be entitled to any compensation for interruption or failure of the water supply.

31.(3) Water Supply by Railway Transport: In the event of the Railway arranging supply of water to the Contractor at or near the site of works by travelling water tanks or other means, the freight and other charges incurred thereby, including demurrage charges that may be levied, shall be paid by the Contractor in addition to the charges referred to in Sub-Clause (2) of the Clause provided that the Contractor shall not be entitled to any compensation for interruption or failure of the water supply.

31.(4)(a) Contractor to Arrange Supply of Electric Power for Works: Unless otherwise provided in the contract, the Contractor shall be responsible for arrangements to obtain supply of Electric Power for the works.

(b) Electric Supply from the Railway System: The Railway 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 Railway and payable by the Contractor provided the cost of arranging necessary connections to the Railway's Electric Supply systems and laying of underground/overhead conductor, 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.

32. Property in Materials and Plant: The materials and plant brought by the Contractor upon the site or on the land occupied by the Contractor in connection with the works and intended to be used for the execution thereof shall immediately be deemed to be the property of the Railway. Such of them as during the progress of the works are rejected by the Engineer under Clause 25 of these conditions or are declared by him not to be needed for the execution of the works or such as on the grant of the certificate of completion remain unused shall immediately on such rejection, declaration or grant cease to be deemed the property of the Railway and the Contractor may then (but not before) remove them from the site or the said land. This clause shall not in any way diminish the liability of the Contractor nor shall the Railway be in any way answerable for any loss or damage which may happen to or in respect of any such materials or plant either by the same being lost, stolen, injured or destroyed by fire, tempest or otherwise.

33.(1) Tools, Plant and Materials Supplied by Railway: The Contractor shall take all reasonable care of all tools, plant and materials or other property whether of a like description or not belonging to the Railway 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 Contractors shall sign accountable receipts for tools, plants and materials made over to him by the Engineer and on completion of the works shall hand over 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.

33.(2) Hire of Railway's Plant: The Railway may hire to the Contractor such plant as concrete mixers, compressors and portable engines for use during execution of the works on such terms as may be specified in the special conditions or in a separate agreement for Hire of Plant.

34.(1) Precaution During Progress of Works: 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 or loss is caused or likely to be caused to any person or property.

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 unauthorized closure, cutting through, alteration, diversion or obstruction to such roads or water courses by the Contractor or his agent or his staff shall be recoverable from the Contractor's bills/Security Deposit or any other dues of Contractor with the Government of India.

34.(3) Provision of Access to Premises: During progress of work in any street or thoroughfare, the Contractor shall make adequate provision for the passage of traffic, for securing safe access to all premises approached from such street or thoroughfare and for any drainage, water supply or means of lighting which may be interrupted by reasons 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.

34.(4) Safety of Public: The Contractor shall be responsible to take all precautions to ensure the safety of the public whether on public or railway property and shall post such look out men as may, in the opinion of the Engineer, be required to comply with regulations appertaining to the work. Contractor shall ensure placement of barricading / partitions at the place of work to ensure safety of habitants of adjacent area, failing which Engineer may advise stoppage of work as per his discretion.

34.(5) Display Board: The Contractor shall be responsible for displaying the details of works i.e. name of work, approximate cost, expected date of completion, name and address of the Contractor and address of Engineer on a proper steel Board of size not less than 1m x 1m.

35. Use of Explosives: Explosives shall not be used on the works or on the site by the Contractor without the permission of the Engineer and then also only in the manner and to the extent to which such permission is given. Where explosives are required for the works, they 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. 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 in respect thereof.

36.(1) Suspension of Works: The Contractor shall on the order of the 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 weather conditions or by some default on the part of the Contractor, and or
- (c) Necessary for the safety of the works or any part thereof, or
- (d) Necessary for the safety of adjoining public or other property or safety of the public or workmen or those who have to be at the site, or
- (e) Necessary to avoid disruption of traffic and utilities, as also to permit fast repair and restoration of any damaged utilities, or
- (f) Due to instruction of The National Green Tribunal or any other statutory authority due to high level of pollution in the city of worksite.

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 suspension.

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 Railway.

37. Rates for Items of Works:

(i) The rates, entered in the accepted Bill(s) of Quantities of the Contract are intended to provide for works duly and properly completed in accordance with the General and Special (if any) 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 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, patterns, profiles, moulds, fittings, centerings, scaffolding, shoring props, timber, machinery, barracks, tackle, roads, pegs, posts, 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 Railway, the erection, maintenance and removal of all temporary works and buildings, all watching, lighting, bailing, pumping and draining, all prevention of or compensation for trespass, all barriers and 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 Railway, 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.

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

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

38. Demurrage and Wharfage Dues: Demurrage charges calculated in accordance with the scale in force for the time being on the Railway and incurred by the Contractor failing to load or unload any goods or materials within the time allowed by the Railway for loading 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 Railway and shall be deducted from any sums which may become due to him in terms of the contracts.

39.(1) Rates for Extra Item(s) of Works:

(a) Standard Schedule of Rates (SSOR) Items: Any item of work carried out by the Contractor on the instructions of the Engineer which is not included in the accepted Bill(s) of Quantities but figures in the Standard Schedule of Rates (SSOR), shall be executed at the rates set forth in the "Standard Schedule of Rates (SSOR)" modified by the tender percentage as accepted in the contract for that chapter of Standard Schedule of Rates (SSOR).

For item(s) not covered in this sub clause, the rate shall be decided as agreed upon between the Engineer and the Contractor before the execution of such items of work as per sub clause (b).

(b) Other Items: For any item of work to be carried out by the Contractor but not included in the accepted Bill(s) of Quantities and also not covered under sub clause (a) above, the Contractor 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 Bill(s) of Quantities does not include rate or rates for such 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 Railway 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.

The assessment of rates for extra item(s) shall be arrived at based on the prevailing market rates of labour, machinery & materials and by taking guidance from the following documents in order of priority:

- i. Analysis of Rates for "Unified Standard Schedule of Rates of Indian Railways (USSOR)"
- ii. Analysis of Rates for "Delhi Schedule of Rates issued by CPWD (DSR)"
- iii. Market Analysis

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 hereuntofore-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 Chief Engineer within 30 days of getting the decision of the Engineer, supported by analysis of the rates claimed. The Chief Engineer's decision after hearing both the parties in the matter would be final and binding on the Contractor and the Railway.

40.(1) Handing over of Works: The Contractor shall be bound to hand over the works executed under the contract to the Railway complete in all respects 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 shall be bound to observe any such determination of the Engineer.

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 materials, rubbish and temporary works of every kind and leave the 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 works shall be paid, held to be due or shall be made to the, Contractor till, in addition to any other condition necessary for final payment, site clearance shall have been affected by him, and such clearance may be made by the Engineer at the expense of the Contractor in the event of his failure to comply with this provision within 7 days after receiving notice to that effect. Should it become necessary for the Engineer to have the site cleared at the expenses of the Contractor, the Railway 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 fit and convenient to the Engineer.

40A Offloading of Part(s) of Work: At the final stage of completion/ commissioning of work, in case the contractor fails to complete the final part(s) of the work and the value of such part(s) of the work is limited to 5% of the original contract value, the Engineer may allow/decide for offloading of such part(s) of works, either after the Contractor's request in writing to do so or after serving a 14 (Fourteen) days suo-moto notice (as per annexure- VIIA), if the Engineer is of the opinion that :-

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

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

VARIATIONS IN EXTENT OF CONTRACT

41. Modification to Contract to be in Writing: In the event of any of the provisions of the contract required to be modified after the contract documents have been signed, the modifications shall be made in writing and signed by the Railway 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 Railway unless and until the same is incorporated in a formal instrument and signed by the Railway and the Contractor, and till then the Railway shall have the right to repudiate such arrangements.

42.(1) Powers of Modification to Contract: The Engineer on behalf of the Railway 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.

42.(2) (i) Unless otherwise specified in the special conditions of the contract, the accepted variation in quantity of each individual item of the contract would be upto 25% of the quantity originally contracted, except in case of foundation work (in which no variation limit shall apply). However, the rates for the increased quantities shall be as per sub- para (iii) below.

(ii) The Contractor shall be bound to carry out the work at the agreed rates and shall not be entitled to any claim or any compensation whatsoever upto the limit of 25% variation in quantity of individual item of works.

(iii) In case an increase in quantity of an individual item by more than 25% of the agreement quantity is considered unavoidable, then same shall be executed at following rates

- a. Quantities operated in excess of 125% but upto 140% of the agreement quantity of the concerned item, shall be paid at 98% of the rate awarded for that item in that particular tender;
- b. Quantities operated in excess of 140% but upto 150% of the agreement quantity of the concerned item shall be paid at 96% of the rate awarded for that item in that particular tender;

- c. Variation in quantities of individual items beyond 150% will be avoided and would be permitted only in exceptional unavoidable circumstances and shall be paid at 96% of the rate awarded for that item in that particular tender.
- d. Variation to quantities of Minor Value Item:
The limit for varying quantities for minor value items shall be 100% (as against 25% prescribed for other items). A minor value item for this purpose is defined as an item whose original agreement value is less than 1 % of the total original contract value.
 - d.(i) Quantities operated upto and including 100% of the agreement quantity of the concerned minor value item, shall be paid at the rate awarded for that item in that particular tender;
 - d.(ii) Quantities operated in excess of 100% but upto 200% of the agreement quantity of the concerned minor value item, shall be paid at 98% of the rate awarded for that item in that particular tender;
 - d.(iii) Variation in quantities of individual minor value item beyond 200% will be avoided and would be permitted only in exceptional unavoidable circumstances and shall be paid at 96% of the rate awarded for that item in that particular tender.

(iv) In case of earthwork items, the variation limit of 25% shall apply to the gross quantity of earthwork items and variation in the quantities of individual classifications of soil shall not be subject to this limit.

(v) As far as Standard Schedule of Rates (SSOR) items are concerned, the variation limit of 25% would apply to the value of SSOR schedule(s) as a whole and not on individual SSOR items. However, in case of Non Standard Schedule of Rates (SSOR) items, the limit of 25% would apply on the individual items irrespective of the manner of quoting the rate (single percentage rate or individual item rate).

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 therefor shall be calculated in accordance with the accepted Bill(s) of Quantities. Any extra item(s)/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.

CLAIMS

43.(1) Quarterly Statement of Claims: The Contractor shall prepare and furnish to the Engineer once in every quarter commencing from the month following the month of issue of Letter of Acceptance, 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 quarter and no claim for payment for such work will be considered which has not been included in such particulars.

43.(2) Signing of "No Claim" Certificate : The Contractor shall not be entitled to make any claim whatsoever against the Railway under or by virtue of or arising out of this contract, nor shall the Railway entertain or consider any such claim, if made by the Contractor, after he shall have signed a "No Claim" Certificate in favour of the Railway in such form as shall be required by the Railway 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 clearance to arbitration in respect thereof.

MEASUREMENTS, CERTIFICATES AND PAYMENTS

44. Quantities in Bill(s) of Quantities Annexed to Contract: The quantities set out in the accepted Bill(s) of Quantities 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 work to be executed by the Contractor in fulfillment of his obligations under the contract.

45(i). Measurement of Works by Railway: The Contractor shall be paid for the works at the rates in the accepted Bill(s) of Quantities and for extra works at rates determined under Clause 39 of these Conditions on the measurements taken by the Engineer or the Engineer's representative in accordance with the rules prescribed for the purpose by the Railway. The quantities for items the unit of which in the accepted Bill(s) of Quantities is 100 or 1000 shall be calculated to the nearest whole number, any fraction below half being dropped and half and above being taken as one; for items the unit of which in the accepted Bill(s) of Quantities is single, the quantities shall be calculated to two places of decimals. Such measurements will be taken of the work in progress from time to time and at such intervals as in the opinion of the Engineer shall be proper having regard to the progress of works. The date and time on which 'on account' or 'final' measurements are to be made shall be communicated to the Contractor who shall be present at the site and shall sign the results of the measurements (which shall also be signed by the Engineer or the Engineer's representative) recorded in the official measurements book as an acknowledgement of his acceptance of the accuracy of the measurements. Failing the Contractor's attendance, the work may be measured up in his absence and such measurements shall, notwithstanding such absence, be binding upon the Contractor whether or not he shall have signed the measurement books provided always that any objection made by him to measurement shall be duly investigated and considered in the manner set out below:

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

(b) If an objection raised by the Contractor is found by the Engineer to be incorrect the Contractor shall be liable to pay the actual expenses incurred in measurements.

45(ii). Measurement of Works by Contractor's Authorized Representative (in case the contract provides for the same):

(a) The Contractor shall be paid for the works at the rates in the accepted Bill(s) of Quantities and for extra works at rates determined under Clause 39 of these Conditions on the measurements taken by the Contractor's authorized Engineer in accordance with the rules prescribed for the purpose by the Railway. The quantities for items the unit of which in the accepted Bill(s) of Quantities is 100 or 1000 shall be calculated to the nearest whole number, any fraction below half being dropped and half and above being taken as one; for items the unit of which in the accepted Bill(s) of Quantities is single, the quantities shall be calculated to two places of decimals. Such measurements will be taken of the work in progress from time to time. The date and time on which 'on account' or 'final' measurements are to be made shall be communicated to the Engineer.

The date and time of test checks shall be communicated to the Contractor who shall be present at the site and shall witness the test checks, failing the Contractor's attendance the test checks may be conducted in his absence and such test checks shall notwithstanding such absence be binding upon Contractor provided always that any objection made by Contractor to test check shall be duly investigated and considered in the manner set out below:

(i) It shall be open to the Contractor to take specific objection to test checks of any recorded measurement within 7 days of date of such test checks. Any re-test check done by the concerned Railway's authority in the presence of the Contractor or in his absence after due notice given to him in consequent of objection made by the Contractor shall be final and binding on the Contractor and

no claim whatsoever shall thereafter be entertained regarding the accuracy and classification of the measurements.

- (ii) If an objection raised by the Contractor is found by the Engineer to be incorrect the Contractor shall be liable to pay the actual expenses incurred in measurements.

(b) Incorrect measurement, actions to be taken: If in case during test check or otherwise, it is detected by the Engineer that agency has claimed any exaggerated measurement or has claimed any false measurement for the works which have not been executed; amounting to variation of 5% or more of claimed gross bill amount, action shall be taken as following:

- (i) On first occasion of noticing exaggerated/ false measurement, Engineer shall recover liquidated damages equal to 10% of claimed gross bill value.
- (ii) On any next occasion of noticing any exaggerated/false measurement, railway shall recover liquidated damages equal to 15% of claimed gross bill value. In addition, the facility of recording of measurements by Contractor as well as release of provisional payment shall be withdrawn. Once withdrawn, measurements shall be done by railway as per clause 45(i) above.

46.(1) "On-Account " Payments: The Contractor shall be entitled to be paid from time to time by way of "On-Account" payment only for such works as in the opinion of the Engineer he has executed in terms of the contract. All payments due on the Engineer's/Engineer's Representative's certificates of measurements or Engineer's certified "Contractor's authorized Engineer's measurements" shall be subject to any deductions which may be made under these presents and shall further be subject to, unless otherwise required by Clause 16 of these Conditions, a retention of six percent by way of Security Deposits, until the amount of Security Deposit by way of such retentions shall amount to 5% of the total value of the contract provided always that the Engineer may by any certificate make any correction or modification in any previous certificate which shall have been issued by him and that the Engineer may withhold any certificate, if the works or any part thereof are not being carried out to his satisfaction.

46.(2) Rounding off Amounts: The total amount due on each certificate shall be rounded off to the nearest rupee, i.e. sum less than 50 paise shall be omitted and sums of 50 paise and more upto ₹1 will be reckoned as ₹ 1.

46.(3) On Account Payments not Prejudicial to Final Settlement: "On-Account" payments made to the Contractor shall be without prejudice to the final making up of the accounts (except where measurements are specifically noted in the Measurement Book as "Final Measurements" and as such have been signed by the Contractor and Engineer/Engineer's Representative) and shall in no respect be considered or used as evidence of any facts stated in or to be inferred from such accounts nor of any particular quantity of work having been executed nor of the manner of its execution being satisfactory.

46.(4) If payment(s) of Advances are applicable in the contract, as mentioned in the Tender Documents, Railway shall make payment(s) of Interest bearing advances, on the request of contractor. The payment and recovery of such Advances shall be made as under:

(a): Mobilisation Advance –

This shall be limited to 10% of the Contract value and shall be paid in 2 stages :

Stage 1– 5% of Contract Value on signing of the contract agreement.

Stage 2 – 5% on mobilization of site-establishment, setting up offices, bringing in equipment and actual commencement of work.

The stage 1 of advance shall be payable immediately after signing of contract agreement.

The stage 2 of advance shall be payable at the time of mobilisation, only after submission of an utilization certificate by the contractor that the Stage 1 advance has been properly utilized in the contract.

These Advances shall be payable against irrevocable guarantee (Bank Guarantee, FDRs) from a scheduled commercial bank of India of at least 110% of the value of the sanctioned advance amount (covering principal plus interest).

(b): Advance Against Machinery and Equipment –

This advance shall be limited to a maximum of 10% of the contract value against new Machinery & Equipment, involving substantial outlay, brought to site and essentially required for the work. This advance shall not exceed 75% of the purchase price of such Equipment and shall be payable when Equipment is hypothecated to the President of India by a suitable bond or alternatively covered by an irrevocable Bank Guarantee from a scheduled commercial bank of India for full cost of the Plant & Equipment in a form acceptable to Railways. The Plant & Equipment shall be insured for the full value and for the entire period, they are required for the work. This Plant & Equipment shall not be removed from the site of work without prior written permission of the Engineer. No advance should be given against old Plant & Machinery.

The advances under sub clause (a) and (b) above, are subject to the following conditions -

(i) The full amount of Advances shall be recovered from contractor dues. The recovery shall commence when the value of contract executed reaches 15% of original contract value and shall be completed when the value of work executed reaches 85% of the original contract value. The installments on each "on account bill" will be on pro-rata basis.

Interest shall be recovered on the advance outstanding for the period commencing from the date of payment of advance till date of particular on-account bill (through which recovery of principal is effected) and adjusted fully against on-account bill along with pro-rata principal recovery. In the event of any short-fall, the same shall be carried forward to the next on-account bill and shall attract interest.

(ii) The advances shall be used by the Contractor for the purpose of the Contract, and for the purpose for which they are paid. Under no circumstances, shall the advances be diverted for other purposes. Any such diversion shall be construed as a breach of the Contract and the Contractor shall be asked to return the advance at once and pay interest at 15% per annum till the advance is recovered back from him. The Contractor shall return the advance and pay the interest in one go without demur. The Contractor, if required by the Engineer shall provide the details of utilisation of Mobilisation advance.

(iii) If the Contractor is found to have contravened the provision, it will constitute a breach of contract and Railway shall be entitled to terminate the contract and forfeit his Performance Guarantee as well as Security Deposit.

(iv) In cases, where the Contract is rescinded as per clause 62 of the contract or short closed under any other condition(s) of the contract, without making full recovery of advances and accrued interest thereon, by the Railway, such balance of advances and accrued interest thereon shall immediately become due and payable by the Contractor to the Railway. The same shall be recovered from any due of Contractor with the Government of India.

46.(5) Manner of Payment: Unless otherwise specified payments to the Contractor will be transferred electronically to his bank account.

46A. Price Variation Clause (PVC): NOT APPLICABLE IN THIS TENDER

46A.1 Applicability: Price Variation Clause (PVC) shall be applicable only in tender having advertised value above **Rs. 2 Crores**. Provided further that, in a contract where PVC is applicable, following shall be outside the purview of price adjustments (i.e. shall be excluded from the gross value of the work for the purpose of price variation) :

a) Materials supplied by Railway to the Contractors, either free or at fixed rate;

b) Any extra item(s) included in subsequent variation falling outside the purview of the Bill(s) of Quantities of tender, under clause 39. (1)(b) of these Standard General Conditions, unless applicability of PVC and 'Base Month' has been specially agreed, while fixing the rates of such extra item(s).

46A.2 Base Month: The Base Month for 'Price Variation Clause' shall be taken as the one month prior to closing of tender, unless otherwise stated elsewhere. The quarter for applicability of PVC shall commence from the month following the Base month. The Price Variation shall be based on the average Price Index of the quarter under consideration.

46A.3 Validity:

Rates accepted by Railway Administration shall hold good till completion of work and no additional individual claim shall be admissible except:

- (a) Payment/recovery for increase/decrease in GST on works contract or imposition/removal of any tax/cess on Works Contract as per Clause 37,
- (b) Payment/recovery for overall market situation as per Price Variation Clause given hereunder.

46A.4 Components of various items in a contract on which variation in prices be admissible, shall be steel, cement, ferrous material, non-ferrous material, insulators, zinc and other materials, labour, plant & machinery, fuel, explosives, detonators etc. Adjustment for variation in prices of these items shall be determined in the manner prescribed.

46A.5 No price variation shall be admissible for fixed components.

46A.6 The percentages of various components in various type of works shall be as specified for all item (s)/ Bill(s) of Quantities in tender document and the same shall be fixed as per table & classifications given below:

(I). For Civil Engineering Works

S N	Classification		1A, 2 & 3A	4A	5A	6A	7	8A	9A	1B, 3B, 4B, 5B, 6B 8B & 9B	1C, 3C, 4C, 5C, 6C, 8C & 9C	3D, 4D, 5D, 6D, 8D & 9D	3E, 4E, 5E, 6E, 8E & 9E
	Components												
1	Fixed	*	15	15	15	15	15	15	15	15	15	15	15
2	Labour	L _c	20	25	30	20	50	20	20	0	0	10	25
3	Steel	S _c	0	0	0	0	0	0	0	85	0	50	0
4	Cement	C _c	0	0	15	0	0	0	0	0	85	0	0
5	Plant Machinery & Spares	PM _c	30	15	5	20	15	20	30	0	0	10	30
6	Fuel & Lubricants	F _c	25	15	5	15	15	20	15	0	0	10	20
7	Other materials	M _c	10	15	30	30	5	25	20	0	0	5	10
8	Detonators & Explosive	E _c	0	15	0	0	0	0	0	0	0	0	0
Total			100	100	100	100	100	100	100	100	100	100	100

* It shall not be considered for any price variation.

The classification mentioned in the table above represents following type of item(s) in the work(s) –

1 Earthwork in Formation

- 1A All Item(s) excluding 1B or/and 1C
- 1B Item(s) for supply of Steel
- 1C Item(s) for supply of Cement

2 Ballast Supply Works

3 Tunnelling Works (Without Explosives)

- 3A All Item(s) excluding 3B or/and 3C or/and 3D or/and 3E
- 3B Item(s) for supply of Steel
- 3C Item(s) for supply of Cement or/and Grout
- 3D Item(s) for Fabrication & Erection of Structures including supply of Steel
- 3E Item(s) for Fabrication & Erection of Structures excluding supply of Steel.

4 Tunnelling Works (With explosives)

- 4A All Item(s) excluding 4B or/and 4C or/and 4D or/and 4E
- 4B Item(s) for supply of Steel
- 4C Item(s) for supply of Cement or/and Grout
- 4D Item(s) for Fabrication & Erection of Structures including supply of Steel
- 4E Item(s) for Fabrication & Erection of Structures excluding supply of Steel.

5 Building Works

- 5A All Item(s) excluding 5B or/and 5C or/and 5D or/and 5E
- 5B Item(s) for supply of Steel
- 5C Item(s) for supply of Cement
- 5D Item(s) for Fabrication & Erection of Structures including supply of Steel
- 5E Item(s) for Fabrication & Erection of Structures excluding supply of Steel.

6 Bridges & Protection work

- 6A All Item(s) excluding 6B or/and 6C or/and 6D or/and 6E
- 6B Item(s) for supply of Steel
- 6C Item(s) for supply of Cement
- 6D Item(s) for Fabrication, Assembly, Erection & Launching of Girders including supply of Steel
- 6E Item(s) for Fabrication, Assembly, Erection & Launching of Girders excluding supply of Steel

7 Permanent Way linking

8 Platform, Passenger Amenities

- 8A All Item(s) excluding 8B or/and 8C or/and 8D or/and 8E
- 8B Item(s) for supply of Steel item/fittings
- 8C Item(s) for supply of Cement Item
- 8D Item(s) for Fabrication & Erection of Structures including supply of Steel
- 8E Item(s) for Fabrication & Erection of Structures excluding supply of Steel

9 Any Other Works not covered in Classification 1 to 8

- 9A All Item(s) excluding 9B or/and 9C or/and 9D or/and 9E
- 9B Item(s) for supply of Steel

- 9C Item(s) for supply of Cement or/and Grout
 9D Item(s) for Fabrication & Erection of Structures including supply of Steel
 9E Item(s) for Fabrication & Erection of Structures excluding supply of Steel

46A.7 Formulae: The Amount of variation in prices in various components (labour, material etc.) shall be worked out by the following formulae:

- (i)
$$L = \frac{(W \text{ or } \cancel{W_S} \text{ or } \cancel{W_C} \text{ or } W_{SF} \text{ or } W_F \text{ or } \cancel{W_{SFL}} \text{ or } \cancel{W_{FL}}) \times (L_Q - L_B) \times L_C}{L_B \times 100}$$
- (ii)
$$M = \frac{(W \text{ or } W_{SF} \text{ or } W_F \text{ or } \cancel{W_{SFL}} \text{ or } \cancel{W_{FL}}) \times (M_Q - M_B) \times M_C}{M_B \times 100}$$
- (iii)
$$F = \frac{(W \text{ or } \cancel{W_S} \text{ or } \cancel{W_C} \text{ or } W_{SF} \text{ or } W_F \text{ or } \cancel{W_{SFL}} \text{ or } \cancel{W_{FL}}) \times (F_Q - F_B) \times F_C}{F_B \times 100}$$
- (iv)
$$E = \frac{(W \text{ or } \cancel{W_S} \text{ or } \cancel{W_C} \text{ or } \cancel{W_{SF}} \text{ or } \cancel{W_F} \text{ or } \cancel{W_{SFL}} \text{ or } \cancel{W_{FL}}) \times (E_Q - E_B) \times E_C}{E_B \times 100}$$
- (v)
$$PM = \frac{(W \text{ or } \cancel{W_S} \text{ or } \cancel{W_C} \text{ or } W_{SF} \text{ or } W_F \text{ or } \cancel{W_{SFL}} \text{ or } \cancel{W_{FL}}) \times (PM_Q - PM_B) \times PM_C}{PM_B \times 100}$$
- (vi)
$$S = \frac{(W \text{ or } W_S \text{ or } W_{SF}) \times (S_Q - S_B) \times S_C}{S_B \times 100}$$
- (vii)
$$C = \frac{(W \text{ or } W_C) \times (C_Q - C_B) \times C_C}{C_B \times 100}$$

(II) For Railway Electrification Works:

- (viii)
$$T = [0.4136 \times (C_Q - C_B) / C_B] \times 85$$
- (ix)
$$R = [0.94 \times (R_T - R_O) / R_O + 0.06 \times (Z_T - Z_O) / Z_O] \times 85$$
- (x)
$$N = [(P_T - P_O) / P_O] \times 85$$
- (xi)
$$I = [(I_T - I_O) / I_O] \times 85$$
- (xii)
$$G = [(M_Q - M_B) / M_B] \times 85$$
- (xiii)
$$Er = [(L_Q - L_B) / L_B] \times 85$$

Where,

- L Amount of price variation in Labour
 M Amount of price variation in Materials
 F Amount of price variation in Fuel
 E Amount of price variation in Explosives
 PM Amount of price variation in Plant, Machinery and Spares
 S Amount of price variation in Steel Supply Item
 C Amount of price variation in Cement Supply Item
 T Percentage variation payable on the gross value of bill of Concreting (Bill(s) of Quantities for concrete items)

R	Percentage variation payable on the gross value of bill of Ferrous Items (Bill(s) of Quantities for ferrous items)
N	Percentage variation payable on the gross value of bill of Non-Ferrous Items (Bill(s) of Quantities for non-ferrous items)
I	Percentage variation payable on the gross value of bill of Insulator (Bill(s) of Quantities for Insulator items)
G	Percentage variation payable on the gross value of bill of General Works (Bill(s) of Quantities for General items)
Er	Percentage variation payable on the gross value of erection (Bill(s) of Quantities for Erection Item)
L _C	% of Labour Component in the item(s)
M _C	% of Material Component in the item(s)
F _C	% of Fuel Component in the item(s)
E _C	% of Explosive Component in the item(s)
PM _C	% of Plant, Machinery and Spares Component in the item(s)
S _C	% of Steel Supply item Component in the item(s)
C _C	% of Cement Supply item Component in the item(s)
W	Gross value of work done by Contractor as per on-account bill(s) excluding the Gross value of work under W _S or/and W _C or/and W _{SF} or/and W _F or/and W _{SFL} or/and W _{FL} and cost of materials supplied by Railway either free or at fixed rate,
W _S	Gross value of work done by Contractor for item(s) of supply of steel.
W _C	Gross value of work done by Contractor for item(s) of supply of cement and /or supply of grout material.
W _{SF}	Gross value of work done by Contractor for item(s) of Fabrication & Erection of Structures including supply of Steel.
W _F	Gross value of work done by Contractor for Fabrication & Erection of Structures excluding supply of Steel.
W _{SFL}	Gross value of work done by Contractor for item(s) of Fabrication, Assembly, Erection / Launching of Girders including supply of Steel.
W _{FL}	Gross value of work done by Contractor for item(s) of Fabrication, Assembly, Erection / Launching of Girders excluding supply of Steel.
L _B	Consumer Price Index for Industrial Workers - All India: Published in R.B.I. Bulletin for the base period
L _Q	Consumer Price Index for Industrial Workers - All India: Published in R.B.I. Bulletin for the average price index of the 3 months of the quarter under consideration
M _B	Wholesale Price Index: All commodities – as published in the R.B.I. Bulletin for the base period
M _Q	Wholesale Price Index: All commodities – as published in the R.B.I. Bulletin for the average price index of the 3 months of the quarter under consideration

F _B	The average of official prices of Diesel available on the official website of ‘Petroleum Planning and Analysis cell’ under Ministry of Petroleum and Natural Gas for Delhi, Kolkata, Mumbai & Chennai, for the base period
F _Q	The average of official prices of Diesel available on the official website of ‘Petroleum Planning and Analysis cell’ under Ministry of Petroleum and Natural Gas for Delhi, Kolkata, Mumbai & Chennai, for the 3 months of the quarter under consideration
E _B	Index number of Monthly Whole Sale Price Index for the category ‘Explosive’ of (g). Manufacture of other chemical products under (J) MANUFACTURE OF CHEMICALS AND CHEMICAL PRODUCTS, published by Office of Economic Adviser, Govt. of India, Ministry of Commerce & Industry, Department of Industrial Policy & Promotion (DIPP), for the base period.
E _Q	Index number of Monthly Whole Sale Price Index for the category ‘Explosive’ of (g). Manufacture of other chemical products under (J) MANUFACTURE OF CHEMICALS AND CHEMICAL PRODUCTS, published by Office of Economic Adviser, Govt. of India, Govt. of India, Ministry of Commerce & Industry, Department of Industrial Policy & Promotion (DIPP), for the average price index of 3 months of the quarter under consideration.
PM _B	Index Number of Wholesale Prices in India by Groups and Sub Groups (Averages) for ‘Manufacture of machinery for mining, quarrying and construction’– published in RBI (Reserve Bank of India) Bulletin, for the base period.
PM _Q	Index Number of Wholesale Prices in India by Groups and Sub Groups (Averages) for ‘Manufacture of machinery for mining, quarrying and construction’– published in RBI (Reserve Bank of India) Bulletin, for the average price index of 3 months of the quarter under consideration.
S _B	The average rate provided by the Joint Plant Committee for the relevant category of steel item as mentioned in Clause 46A.9; for the base period.
S _Q	The average rate provided by the Joint Plant Committee for the relevant category of steel item as mentioned in Clause 46A.9; for the 3 months of the quarter under consideration.
C _B	Index No. of Wholesale Price Index of sub-group Cement, Lime & Plaster as published in RBI Bulletin for the base period
C _Q	No. of Wholesale Price Index of sub-group Cement, Lime & Plaster as published in RBI Bulletin for the average price index of the 3 months of the quarter under consideration
R _T	IEEMA price index for Steel Blooms (size 150mmx150mm) for the month which is two months prior to date of inspection of material.
R _O	IEEMA price index for Steel Blooms (size 150mmx150mm)for the month which is one month prior to date of opening of tender.
P _T	IEEMA price index for Copper wire rods for the month which is two months prior to date of inspection of material.
P _O	IEEMA price index for Copper wire rods for the month which is one month prior to date of opening of tender.
Z _T	IEEMA price index for Zinc for the month which is two months prior to date of inspection of material
Z _O	IEEMA price index for Zinc for the month which is one month prior to date of opening of tender

- I_T RBI wholesale price index for the sub-group “Insulators” for the month which is two months prior to date of inspection of material
- I_o RBI wholesale price index for the sub-group “Insulators” for the month which is one month prior to date of opening of tender

(III) SIGNALING & TELECOMMUNICATION WORKS:

- (a) The following expressions and meanings are assigned to the value of the work done for signalling and telecommunication works:

SIGWK = Value of signalling works for a stage payment of the item signalling works;

INVSIG = Value of inventory for signalling works for a stage payment of the item inventory for signalling works;

INTGTESTSIG = Value of integrated testing and commission for signalling works of the Railway Project;

COMWK = Value of telecommunication works for a stage payment of the item telecommunication works;

INVCOM = Value of inventory for telecommunication works for a stage payment of the item inventory for telecommunication works; and

INTGTESTCOM = Value of integrated testing and commission for telecommunication works of the Railway Project.

- (b) Price adjustment for changes in cost of signalling works and telecommunication works shall be paid in accordance with the following formula:

- (i) $VSIGWK = 0.85 \text{ SIGWK} \times [\text{PELEX} \times (\text{ELEX}_i - \text{ELEX}_o) / \text{ELEX}_o + \text{POFC} \times (\text{OFC}_i - \text{OFC}_o) / \text{OFC}_o + \text{PLB} \times (\text{LB}_i - \text{LB}_o) / \text{LB}_o + \text{POTH} \times (\text{OTH}_i - \text{OTH}_o) / \text{OTH}_o + \text{S30C} \times (\text{P30C}_i - \text{P30C}_o) / \text{P30C}_o + \text{S24C} \times (\text{P24C}_i - \text{P24C}_o) / \text{P24C}_o + \text{S19C} \times (\text{P19C}_i - \text{P19C}_o) / \text{P19C}_o + \text{S12C} \times (\text{P12C}_i - \text{P12C}_o) / \text{P12C}_o + \text{S9C} \times (\text{P9C}_i - \text{P9C}_o) / \text{P9C}_o + \text{S6C} \times (\text{P6C}_i - \text{P6C}_o) / \text{P6C}_o + \text{S4C} \times (\text{P4C}_i - \text{P4C}_o) / \text{P4C}_o + \text{S2C} \times (\text{P2C}_i - \text{P2C}_o) / \text{P2C}_o + \text{S12C2.5} \times (\text{P12C2.5}_i - \text{P12C2.5}_o) / \text{P12C2.5}_o + \text{S2C2.5} \times (\text{P2C2.5}_i - \text{P2C2.5}_o) / \text{P2C2.5}_o + \text{S2C25} \times (\text{P2C25}_i - \text{P2C25}_o) / \text{P2C25}_o + \text{QC} \times (\text{PQC}_i - \text{PQC}_o) / \text{PQC}_o];$
- (ii) $VINVSIG = 0.85 \text{ SIGWK} \times [\text{PELEX} \times (\text{ELEX}_i - \text{ELEX}_o) / \text{ELEX}_o + \text{POTH} \times (\text{OTH}_i - \text{OTH}_o) / \text{OTH}_o];$
- (iii) $VINTGTESTSIG = 0.85 \text{ INTGTESTSIG} \times [\text{PLB} \times (\text{LB}_i - \text{LB}_o) / \text{LB}_o + \text{POTH} \times (\text{OTH}_i - \text{OTH}_o) / \text{OTH}_o];$
- (iv) $VCOMWK = 0.85 \text{ COMWK} \times [\text{PELEX} \times (\text{ELEX}_i - \text{ELEX}_o) / \text{ELEX}_o + \text{POFC} \times (\text{OFC}_i - \text{OFC}_o) / \text{OFC}_o + \text{PLB} \times (\text{LB}_i - \text{LB}_o) / \text{LB}_o + \text{POTH} \times (\text{OTH}_i - \text{OTH}_o) / \text{OTH}_o + \text{S30C} \times (\text{P30C}_i - \text{P30C}_o) / \text{P30C}_o + \text{S24C} \times (\text{P24C}_i - \text{P24C}_o) / \text{P24C}_o + \text{S19C} \times (\text{P19C}_i - \text{P19C}_o) / \text{P19C}_o + \text{S12C} \times (\text{P12C}_i - \text{P12C}_o) / \text{P12C}_o + \text{S9C} \times (\text{P9C}_i - \text{P9C}_o) / \text{P9C}_o + \text{S6C} \times (\text{P6C}_i - \text{P6C}_o) / \text{P6C}_o + \text{S4C} \times (\text{P4C}_i - \text{P4C}_o) / \text{P4C}_o + \text{S2C} \times (\text{P2C}_i - \text{P2C}_o) / \text{P2C}_o + \text{S12C2.5} \times (\text{P12C2.5}_i - \text{P12C2.5}_o) / \text{P12C2.5}_o + \text{S2C2.5} \times (\text{P2C2.5}_i - \text{P2C2.5}_o) / \text{P2C2.5}_o + \text{S2C25} \times (\text{P2C25}_i - \text{P2C25}_o) / \text{P2C25}_o + \text{QC} \times (\text{PQC}_i - \text{PQC}_o) / \text{PQC}_o + \text{PCEQP} \times (\text{CEQP}_i - \text{CEQP}_o) / \text{CEQP}_o];$
- (v) $VINVCOM = 0.85 \text{ SIGWK} \times [\text{PELEX} \times (\text{ELEX}_i - \text{ELEX}_o) / \text{ELEX}_o + \text{PCEQP} \times (\text{CEQP}_i - \text{CEQP}_o) / \text{CEQP}_o + \text{POTH} \times (\text{OTH}_i - \text{OTH}_o) / \text{OTH}_o];$ and
- (vi) $VINTGTESTCOM = 0.85 \text{ INTGTESTCOM} \times [\text{PLB} \times (\text{LB}_i - \text{LB}_o) / \text{LB}_o + \text{POTH} \times (\text{OTH}_i - \text{OTH}_o) / \text{OTH}_o];$

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Where

VISIGWK = Increase or decrease in the cost of signalling works during the period under consideration due to changes in the rates for relevant components as specified in sub-paragraph (h);

VINVSIG = Increase or decrease in the cost of inventory for signalling during the period under consideration due to changes in the rates for relevant components as specified in sub-paragraph (h);

VINTGTESTSIG = Increase or decrease in the cost of integrated testing and commissioning of signalling works of the Railway Project during the period under consideration due to changes in the rates for relevant components as specified in sub-paragraph (h);

VCOMWK = Increase or decrease in the cost of communication works during the period under consideration due to changes in the rates for relevant components as specified in sub-paragraph (h);

VINVCOM = Increase or decrease in the cost of inventory for telecommunications works during the period under consideration due to changes in the rates for relevant components as specified in sub-paragraph (h);

VINTGTESTCOM = Increase or decrease in the cost of integrated testing and commissioning of telecommunication works of the Railway Project during the period under consideration due to changes in the rates for relevant components as specified in sub-paragraph (h);

PCEQP, PELEX, PIC, PLB, POFC, and POTH are the percentages of communication equipment, electronics, PVC insulated cables, labour, optical fibre cables, and other materials respectively;

CEQP_o = The wholesale price index as published by the Ministry of Commerce and Industry, Government of India (hereinafter called “WPI”) for communication equipment for the month of the Base Month;

CEQP_i = The WPI for communication equipment for the average price index of the 3 months of the quarter under consideration;

ELEX_o = The WPI for electronics for the month of the Base Month;

ELEX_i = The WPI for electronics for the average price index of the 3 months of the quarter under consideration;

P30C_i = Price payable per Km as adjusted in accordance with price variation Clause for size 30C x 1.5 sq mm signalling cable

P30C_o = Price per Km of cable as per purchase order/ Contract agreement.

S30C = Percentage of size 30C x 1.5 sq mm signalling cable shall govern the price adjustment of the contract price for signalling and telecommunication works.

P24C_i = Price payable per Km as adjusted in accordance with price variation Clause for size 24C x 1.5 sq mm signalling cable

P24C_o = Price per Km of cable as per purchase order/ Contract agreement.

S24C = Percentage of size 24C x 1.5 sq mm signalling cable shall govern the price adjustment of the contract price for signalling and telecommunication works.

P19C_i = Price payable per Km as adjusted in accordance with price variation Clause for size 19C x 1.5 sq mm signalling cable

P19C_o = Price per Km of cable as per purchase order/ Contract agreement.

S19C = Percentage of size 19C x 1.5 sq mm signalling cable shall govern the price adjustment of the contract price for signalling and telecommunication works.

P12C_i = Price payable per Km as adjusted in accordance with price variation Clause for size 12C x 1.5 sq mm signalling cable

P12C_o = Price per Km of cable as per purchase order/ Contract agreement.

S12C = Percentage of size 12C x 1.5 sq mm signalling cable shall govern the price adjustment of the contract price for signalling and telecommunication works.

P9C_i = Price payable per Km as adjusted in accordance with price variation Clause for size 9C x 1.5 sq mm signalling cable

P9C_o = Price per Km of cable as per purchase order/ Contract agreement.

S9C = Percentage of size 9C x 1.5 sq mm signalling cable shall govern the price adjustment of the contract price for signalling and telecommunication works.

P6C_i = Price payable per Km as adjusted in accordance with price variation Clause for size 6C x 1.5 sq mm signalling cable

P6C_o = Price per Km of cable as per purchase order/ Contract agreement.

S6C = Percentage of size 6C x 1.5 sq mm signalling cable shall govern the price adjustment of the contract price for signalling and telecommunication works.

P4C_i = Price payable per Km as adjusted in accordance with price variation Clause for size 4C x 1.5 sq mm signalling cable

P4C_o = Price per Km of cable as per purchase order/ Contract agreement.

S4C = Percentage of size 4C x 1.5 sq mm signalling cable shall govern the price adjustment of the contract price for signalling and telecommunication works.

P2C_i = Price payable per Km as adjusted in accordance with price variation Clause for size 2C x 1.5 sq mm signalling cable

P2C_o = Price per Km of cable as per purchase order/ Contract agreement.

S2C = Percentage of size 2C x 1.5 sq mm signalling cable shall govern the price adjustment of the contract price for signalling and telecommunication works.

P12C2.5_i = Price payable per Km as adjusted in accordance with price variation Clause for size 12C x 2.5 sq mm signalling cable

P12C2.5_o = Price per Km of cable as per purchase order/ Contract agreement.

S12C2.5 = Percentage of size 12C x 2.5 sq mm signalling cable shall govern the price adjustment of the contract price for signalling and telecommunication works.

P2C2.5_i = Price payable per Km as adjusted in accordance with price variation Clause for size 2C x 2.5 sq mm signalling cable

P2C2.5_o = Price per Km of cable as per purchase order/ Contract agreement.

S2C2.5 = Percentage of size 2C x 2.5 sq mm signalling cable shall govern the price adjustment of the contract price for signalling and telecommunication works.

P2C25_i = Price payable per Km as adjusted in accordance with price variation Clause for size 2C x 25 sq mm signalling cable

$P2C25_o$ = Price per Km of cable as per purchase order/ Contract agreement.

$S2C25$ = Percentage of size 2C x 25 sq mm signalling cable shall govern the price adjustment of the contract price for signalling and telecommunication works.

PQC_i = Price payable per Km as adjusted in accordance with price variation Clause for size 0.9mm dia, 6 Quad cable.

PQC_o = Price per Km of cable as per purchase order/ Contract agreement.

QC = Percentage of size 0.9mm dia, 6 Quad cable shall govern the price.

LBo = The consumer price index for industrial workers – All India, published by Labour Bureau, Ministry of Labour, Government of India, (hereinafter called “**CPI**”) for the month of the Base Month;

LBi = The CPI for industrial workers – All India for the average price index of the 3 months of the quarter under consideration;

OFC_o = The WPI for fibre cables for the month of the Base Month;

OFC_i = The WPI for fibre cables for the average price index of the 3 months of the quarter under consideration;

OTH_o = The WPI for all commodities for the month of the Base Month; and

OTH_i = The WPI for all commodities for the average price index of the 3 months of the quarter under consideration.

- (b) The following percentages shall govern the price adjustment of the Contract Price for signalling and telecommunication works:

Works Component	Signalling			Telecommunication		
	Signalling Works	Signalling inventory	Integrated testing and Commissioning	Telecommunication Works	Telecomm inventory	Integrated testing and Commissioning
Electronics (PELEX)	***%	***%	—	***%	***%	—
Communication Equipment (PCEQP)	—	—	—	***%	***%	—
Optical Fibre Cable (POFC)	***%	—	—	***%	—	—
30C x 1.5 sq mm signalling cable(S30C)	***%	—	—	***%	—	—
24C x 1.5 sq mm signalling cable (S24C)	***%	—	—	***%	—	—
19Cx 1.5 sq mm signalling cable (S19C)	***%	—	—	***%	—	—

12C x 1.5 sq mm signalling cable (S12C)	***0%	—	—	***0%	—	—
9C x 1.5 sq mm signalling cable (S9C)	***0%	—	—	***0%	—	—
6C x 1.5 sq mm signalling cable (S6C)	***0%	—	—	***0%	—	—
4C x 1.5 sq mm signalling cable (S4C)	***0%	—	—	***0%	—	—
2C x 1.5 sq mm signalling cable (S2C)	***0%	—	—	***0%	—	—
12C x 2.5 sq mm signalling cable (S12C2.5)	***0%	—	—	***0%	—	—
2C x 2.5 sq mm signalling cable (S2C2.5)	***0%	—	—	***0%	—	—
2C x 25 sq mm signalling cable (S2C25)	***0%	—	—	***0%	—	—
0.9 mm dia, 6Quad cable (QC)	***0%	—	—	***0%	—	—
Labour (PLB)	***0%	—	***0%	***0%	***0%	***0%
Other materials	***0%	***0%	***0%	***0%	***0%	***0%
Total	100%	100%	100%	100%	100%	100%

(Note- the percentages may be finalized by tendering authority depending on BOQ)

FORMULAE FOR SIGNALING & TELECOM CABLE

The price payable for signalling cables is variable as per Price Variation Formula given below:

For Signalling Copper Cables:

$$P_i = P_o + CuF (Cu - Cu_o) + CCFCu(CC - CC_o) + FeF (Fe - Fe_o)$$

For Telecom Copper Cables For Jelly Filled, 0.9 mm dia, 6 quad cable

$$P_i = P_o + CuF (Cu - Cu_o) + AlFCu(Al - Al_o) + CCFCu (CC - Cc_o) + FeF (Fe - Fe_o)$$

For Aluminium Power Cables:

$$P_i = P_o + AlF (Al - Al_o) + CCFAI(CC - CC_o) + FeF (Fe - Fe_o)$$

Where,

P_i = Price payable per KM as adjusted in accordance with Price variation clause.

P_o = Price per KM of cable as per Purchase order.

CuF = Variation factor for Copper

Cu_o = Price of copper Rod in Rs. Per MT

$CCFCu$ = Variation factor for PVC Compound for Copper Signalling & Telecom cable

CC_o = Price of PVC Compound in Rs. Per MT

AlF = Variation factor for Aluminium

Alo= Price of EC grade LME Aluminium rods (Properzi rods) in Rs. Per MT.

CCFAI = Variation factor for PVC Compound for Aluminium power cable

FeF= Variation factor for Steel

Feo= Price of Steel for Armour (Flat strip 4 mm. x 0.8mm/ Round 1.4mm dia) in Rs. Per MT

(Prices per MT for Cuo, CCo, Feo, Alo as applicable on the 1st working day of the month, one month prior to the deadline for submission of bids. The above prices and indices are as published by IEEMA vide circular reference no. IEEMA (PVC) /CABLE --/--/-- one month prior to the deadline for submission of bids.)

Cu= Price of Copper Rod in Rs. Per MT.

Cc= Price of PVC Compound in Rs. Per MT.

Fe= Price of Steel for Armouring (Flat strip 4mm x 0.8 mm/ Round 1.4mm dia) in Rs. Per MT.

Al = Price of EC grade LME Aluminium rods (Properzi rods) in Rs. Per MT.

(Prices per MT for Cu, CC, Fe, Al as prevailing on 1st working day of the calendar month covering the date One month prior to the date of inspection call letter will be applicable for the calculation of updated price. The above prices and indices are as published by IEEMA vide circular reference no. IEEMA (PVC) /CABLE --/--/-- one month prior to the date of inspection.)

The value of variation factors for copper, steel and PVC Compound are different for different sizes of signalling cables. Accordingly, the PVC formula for some of the types of signalling cable is as given under:-

Underground Railway Signalling Cable unscreened and armoured copper conductor

- (i) Size 30 C x 1.5 sq.mm.

$$P30C_i = P30C_o + 0.391(Cu - Cuo) + 0.557(CC - CCo) + 0.425(Fe - Feo)$$

For armouring, price of steel flat strip of size 4mmx0.8mm is to be taken into consideration.

- (ii) Size 24C x 1.5 sq.mm

$$P24C_i = P24C_o + 0.313(Cu - Cuo) + 0.481(CC - CCo) + 0.398(Fe - Feo)$$

For armouring, value of steel flat strip of size 4mmx0.8mm is to be taken into consideration.

- (iii) Size 19C x 1.5 sq.mm

$$P19C_i = P19C_o + 0.248(Cu - Cuo) + 0.395(CC - CCo) + 0.343(Fe - Feo)$$

For armouring, value of steel flat strip of size 4mmx0.8mm is to be taken into consideration.

- (iv) Size 12C x 1.5 sq.mm

$$P12C_i = P12C_o + 0.157(Cu - Cuo) + 0.277(CC - CCu) + 0.289(Fe - Feo)$$

For armouring, value of steel wire size 1.4mm dia is to be taken into consideration.

- (v) Size 9C x 1.5 sq.mm

$$P9C_i = P9C_o + 0.117(Cu - Cuo) + 0.241(CC - CCu) + 0.383(Fe - Feo)$$

For armouring, value of steel wire size 1.4mm dia is to be taken into consideration.

- (vi) Size 6Cx 1.5 sq.mm

$$P6C_i = P6C_o + 0.078(Cu-Cu_o) + 0.199(CC-CC_o) + 0.329(Fe-Fe_o)$$

For armouring, value of steel wire size 1.4mm dia is to be taken into consideration.

(vii) Size 4Cx1.5 sq.mm

$$P4C_i = P4C_o + 0.052(Cu-Cu_o) + 0.152(CC-CC_o) + 0.277(Fe-Fe_o)$$

For armouring, value of steel wire size 1.4mm dia is to be taken into consideration.

(viii) Size 2C x 4 sq.mm(multistrand)

$$P2C_i = P2C_o + 0.073(Cu-Cu_o) + 0.156(CC-CC_o) + 0.3(Fe-Fe_o)$$

For armouring, value of steel wire size 1.4mm dia is to be taken into consideration.

(ix) Size 12C x 2.5 sq.mm

$$P12C_{2.5} = P12C_{2.5o} + 0.282(Cu-Cu_o) + 0.371(CC-CC_o) + 0.342(Fe-Fe_o)$$

For armouring, value of steel flat strip of size 4mmx0.8mm is to be taken into consideration.

(x) Size 2C x 2.5 sq.mm

$$P2C_{2.5} = P2C_{2.5o} + 0.047(Cu-Cu_o) + 0.139(CC-CC_o) + 0.277(Fe-Fe_o)$$

For armouring, value of steel wire size 1.4mm dia is to be taken into consideration.

(xi) Size 2C x 25 sq.mm PVC insulated, armoured, Aluminium power cable

$$P2C_{25} = P2C_{25o} + 0.146(Al-Al_o) + 0.303(CC-CC_o) + 0.306(Fe-Fe_o)$$

For armouring, value of steel flat strip of size 4mmx0.8mm is to be taken into consideration.

(xii) For Jelly filled, 0.9mm dia, 6 quad cable

$$PQC_i = PQC_o + 0.135(Al-Al_o) + 0.139(Cu-Cu_o) + 0.515(CC-CC_o) + 0.693(Fe-Fe_o)$$

For PVC Compound Grade CW-22, is to be taken into consideration.

46A.8 The demands for escalation of cost shall be allowed on the basis of provisional indices as mentioned above in Clause 46A.7. Any adjustment needed to be done based on the finally published indices shall be made as and when they become available.

46A.9: (1) Relevant categories of steel for the purpose of operating Price Variation formula as mentioned in this Clause shall be as under:

SL	Classification	Rates to be used for calculating S_Q or S_B
1.	Reinforcement bars and other rounds	Average of per tonne rates of 10mm dia TMT & 25mm dia TMT; confirming IS1786; Fe 500
2.	All types and sizes of angles, channels and joists	Average of per tonne rates of 'Angle 75x75x6mm, Mild Steel Plate 10mm thickness and Channel 150x75mm; confirming IS2062, E250 Gr "A"
3.	All types and sizes of plates	Average of per tonne rates of 'MS Plates 10mm thickness and 25mm thickness; confirming IS2062, E250 Gr "A"
4.	Any other section of steel not covered in the above categories	Average of price for the 3 categories covered under SL 1, 2 & 3 in this table.

(2). Relevant city for referring "JPC (Joint Plant Committee)" rates of steel items (S_Q / S_B) in different Zonal Railways shall be as under :

SL	City	Railway
1.	Delhi	Northern , North Central, North Eastern, North Western

2.	Kolkata	Eastern, East Central, East Coast, Northeast Frontier, South Eastern, Southeast Central
3.	Mumbai	Central, Western, West Central
4.	Chennai	Southern, South Central&South Western

46A.10 Price Variation during Extended Period of Contract

The price adjustment as worked out above, i.e. either increase or decrease shall be applicable upto the stipulated date of completion of work including the extended period of completion where such extension has been granted under Clause 17A of the Standard General Conditions of Contract. However, where extension of time has been granted due to Contractor's failure under Clause 17B of the Standard General Conditions of Contract, price adjustment shall be done as follows:

- a. In case the indices increase above the indices applicable to the last month of original completion period or the extended period under Clause 17A, the price adjustment for the period of extension granted under Clause 17B shall be limited to the amount payable as per the Indices applicable to the last month of the original completion period or the extended period under Clause 17A of the Standard General Conditions of Contract; as the case may be.
- b. In case the indices fall below the indices applicable to the last month of original/ extended period of completion under Clause 17A, as the case may be; then the lower indices shall be adopted for the price adjustment for the period of extension under Clause 17B of the Standard General Conditions of Contract.

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 issue of the certificate of completion by the Engineer or any other 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 condition all and every part of the works 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 shall pay and make good to the Railway or other persons legally entitled thereto whenever required by the Engineer so to do, all losses, damages, costs and expenses they or any of them may incur or be put or be liable to by reasons or in consequence of the operations of the Contractor or of his failure in any respect.

48.(1) Certificate of Completion of Works: As soon as in the opinion of the Engineer, the work has been completed and has satisfactorily passed any final test or tests that may be prescribed, the Engineer shall issue a certificate of completion duly indicating the date of completion in respect of the work and the period of maintenance of the work shall commence from the date of completion mentioned in such certificate. The certificate, inter alia, should mention that the work has been completed in all respects and that all the contractual obligations have been fulfilled by the Contractor and that there is no due from the Contractor to Railways against the contract concerned.

The Engineer may also issue such a certificate indicating date of completion with respect to any part of the work (before the completion of the whole of work), which has been both completed to the satisfaction of the Engineer and occupied or used by the Railway. When any such certificate is given in respect of part of a work, such part shall be considered as completed and the period of maintenance of such part shall commence from the date of completion mentioned in the completion certificate issued for that part of the work.

48.(2) Contractor not Absolved by Completion Certificate: The Certificate of Completion in respect of the works referred to in Sub-Clause (1) of this Clause shall not absolve the Contractor from his liability to make good any defects imperfections, shrinkages or faults which may appear during the period of maintenance specified in the tender arising in the opinion of the Engineer from materials or workmanship not in accordance with the drawings or specifications or instruction of the Engineer, which defects, imperfections, shrinkages or faults shall upon the direction in writing of the Engineer be amended and made good by the Contractor at his own cost; and in case of default on the part of Contractor, the Engineer may employ labour and materials or appoint another Contractor to amend and make good such defects, imperfections, shrinkages and faults and all expenses consequent thereon and incidental thereto shall be borne by the Contractor and shall be recoverable from any moneys due to him under the contract.

48(3) Final Supplementary Agreement: After the work is completed or otherwise concluded by the parties with mutual consent, and taken over by the Railway as per terms and conditions of the contract agreement, and there is unequivocal no claim on either side under the Contract other than as mentioned in item 4 of Annexure XIV, the parties shall execute the Final Supplementary Agreement as per Annexure XIV.

49. Approval only by Maintenance Certificate: No certificate other than Maintenance Certificate, if applicable, referred to in Clause 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.

50.(1) Maintenance Certificate: The Contract shall not be considered as completed until a Maintenance Certificate, if applicable, shall have been signed by the Engineer stating that the works have been completed and maintained to his satisfaction. The Maintenance Certificate shall be given by the Engineer upon the expiration of the period of maintenance or as soon thereafter as any works ordered during such period pursuant to Sub Clause (2) to Clause 48 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 Railway.

The Competent Authority to issue above Maintenance Certificate shall normally be the authority who is competent to sign the contract. If this Competent Authority is of the rank lower than JA Grade, then a JA Grade Officer (concerned with the work) should issue the Certificate. The Certificate, inter alia, should mention that the work has been completed in all respects and that all the contractual obligations have been fulfilled by the Contractor and that there is no due from the Contractor to Railways against the contract concerned

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

50.(3) Unfulfilled Obligations: Notwithstanding the issue of the Maintenance Certificate the Contractor and (subject to Sub-Clause (2) of this Clause) the Railway 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.

51.(1)Final Payment: On the Engineer's certificate of completion in respect of the works, adjustment shall be made and the balance of account based on the Engineer or the Engineer's representative's certified measurements or Engineer's certified "contractor's authorized engineer's measurements" of the total quantity of work executed by the Contractor upto the date of completion and on the rates accepted in Bill(s) of Quantities and for extra works on rates determined under Clause 39 of these Conditions shall be paid to the Contractor subject always to any deduction which may be made under these presents and further subject to the Contractor having signed delivered to the Engineer enclosing either a full account in detail of all

claims he may have on the Railway in respect of the works or having delivered No Claim Certificate and the Engineer having after the receipt of such account given a certificate in writing that such claims are not covered under excepted matter i.e. Clauses 7(j), 8, 18, 22(5), 39.1, 39.2, 40A, 43(2), 45(i)(a), 55, 55-A(5), 57, 57A, 61(1), 61(2) and 62(1), 63(iv) and 63.2.11 of the Standard General Conditions of Contract or in any Clause (stated as excepted matter) of the Special Conditions of the Contract, that the whole of the works to be done under the provisions of the Contracts have been completed, that they have been inspected by him since their completion and found to be in good and substantial order, that all properties, works and things, removed, disturbed or injured in consequence of the works have been properly replaced and made good and all expenses and demands incurred by or made upon the Railway for or in the respect of damage or loss by from or in consequence of the works, have been satisfied agreeably and in conformity with the contract.

51.(2) Post Payment Audit: It is an agreed term of contract that the Railway reserves to itself the right to carry out a post-payment audit and/ or technical examination of the works and the Final Bill including all supporting vouchers, abstracts etc. and to make a claim on the Contractor for the refund of any excess amount paid to him till the release of security deposit or settlement of claims, whichever is later, if as a result of such examination any over-payment to him is discovered to have been made in respect of any works done or alleged to have been done by him under the contract.

51-A. Production of Vouchers etc. by the Contractor:

- (i) For a contract of more than one crore of rupees, the Contractor shall, whenever required, produce or cause to be produced 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 in 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 a sub-contractor or any subsidiary or allied firm or company (as per Clause 7 of the Standard General Conditions of Contract), the Engineer shall have power to secure the books of such sub-contractor or any subsidiary or allied firm or company, through the Contractor, and such books shall be open to his inspection.
- (iii) The obligations imposed by Sub Clause (i) & (ii) above is without prejudice to the obligations of the Contractor under any statute rules or orders binding on the Contractor.

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 Railway 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 Railway shall be entitled to withhold the said cash 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 Railway 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 Railway 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 Railway will be kept withheld or retained as such by the Railways till the claim

arising out of or under the contract is determined by the arbitrator (if the contract governed 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 company, the Railway 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 / company, as the case may be whether in his individual capacity or otherwise.

52-A Lien in Respect of Claims in other Contracts:

- (i) 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 Railway, against any claim of this or any other Railway 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 the Central Government.
- (ii) However, recovery of claims of Railway in regard to terminated contracts may be made from the Final Bill, Security Deposits and Performance Guarantees of other contract or contracts, executed by the Contractor. The Performance Guarantees submitted by the Contractor against other contracts, if required, may be withheld and encashed. In addition, 10% of each subsequent 'on-account bill' may be withheld, if required, for recovery of Railway's dues against the terminated contract.
- (iii) It is an agreed term of the contract that the sum of money so withheld or retained under this Clause by the Railway will be kept withheld or retained as such by the Railway 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 or damages whatsoever on this account or on any other ground in respect of any sum of money withheld or retained under this Clause and duly notified as such to the Contractor.

53. Signature on Receipts for Amounts: Every receipt for money 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 anyone of the partners of a Contractor's firm be a good and sufficient discharge to the Railway 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 anyone 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 Railway may hereafter have against the legal representative of any Contractor partner so dying for or in respect to 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 representatives of any deceased Contractor partners interse.

LABOUR

54. Wages to Labour: The Contractor shall be responsible to ensure compliance with the provision of the Minimum Wages Act, 1948 (hereinafter referred to as the "said Act") and the Rules made thereunder in respect of any employees directly or through petty Contractors or sub-contractors employed by him 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 Railways whether in connection with any work

being executed by the Contractor or otherwise for the purpose of the Railway 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 application made under the said Act be directed to be paid by the Railway, such money shall be deemed to be moneys payable to the Railway by the Contractor and on failure by the Contractor to repay the Railway any moneys paid by it as aforesaid within seven days after the same shall have been demanded, the Railways shall be entitled to recover the same from Contractor's bills/Security Deposit or any other dues of Contractor with the Government of India.

54-A. Apprentices Act: The Contractor shall be responsible to ensure compliance with the provisions of the Apprentices Act, 1961 and the Rules and Orders issued thereunder from time to time in respect of apprentices directly or through petty Contractors or sub-contractors employed by him for the purpose of carrying out the Contract.

If the Contractor directly or through petty Contractors or sub-contractors fails to do so, his failure will be a breach of the contract and the Railway 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.

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 thereunder in respect of all employees employed by him either directly or through petty Contractors or sub-contractors 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 behalf of the Contractor and the Engineer may on failure of the Contractor to repay such money to the Railways deduct the same from any moneys due to the Contractor in terms of the contract. The Railway shall be entitled to recover the same from Contractor's bills/Security Deposit or any other dues of Contractor with the Government of India all moneys paid or payable by the Railway 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.

55-A. Provisions of Contract Labour (Regulation and Abolition) Act, 1970:

55-A.(1) The Contractor shall comply with the provision of the contract labour (Regulation and Abolition) Act, 1970 and the Contract labour (Regulation and Abolition) Central Rules 1971 as modified from time to time, wherever applicable and shall also indemnify the Railway from and against any claims under the aforesaid Act and the Rules.

55-A.(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 the requirement shall attract the penal provision of the Act.

55-A.(3) The Contractor shall pay to the labour employed by him directly or through sub-contractors the wages as per provision 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 works including any engaged by sub-contractors in connection with the said work, as if the labour had been immediately employed by him.

55-A.(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 Rules wherever applicable.

55-A.(5) In every case in which, by virtue of the provisions of the aforesaid Act or the rules, the Railway is obliged to pay any amount of wages to a workman employed by the Contractor or his sub-contractor in execution of the work or to incur any expenditure on account of the contingent, liability of the Railway due to the Contractor's failure to fulfill his statutory obligations under the aforesaid Act or the rules, the Railway 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 Railway under the Section 20, Sub-Section (2) and Section 2, Sub-Section (4) of the aforesaid Act, the Railway shall be at liberty to recover such amount or part thereof from Contractor's bills/Security Deposit or any other dues of Contractor with the Government of India. The Railway 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 Railway full security for all costs for which the Railway might become liable in contesting such claim. The decision of the Chief Engineer regarding the amount actually recoverable from the Contractor as stated above shall be final and binding on the Contractor.

55-B.Provisions of Employees Provident Fund and Miscellaneous Provisions Act, 1952:The Contractor shall comply with the provisions of Para 30 & 36-B of the Employees Provident Fund Scheme, 1952; Para 3 & 4 of Employees' Pension Scheme, 1995; and Para 7 & 8 of Employees Deposit Linked Insurance Scheme, 1976; as modified from time to time through enactment of "Employees Provident Fund & Miscellaneous Provisions Act, 1952", wherever applicable and shall also indemnify the Railway from and against any claims under the aforesaid Act and the Rules.

55-C (i) Contractor is to abide by the provisions of various labour laws in terms of above clause 54, 55, 55-A and 55-B of the Standard General Conditions of Contract. In order to ensure the same, an application has been developed and hosted on website 'www.shramikkalyan.indianrailways.gov.in'. Contractor shall register his firm/company etc. and upload requisite details of labour and their payment in this portal. These details shall be available in public domain. The registration/ updation in Portal shall be done as under:

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

(ii) 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."

55-D. Provisions of “The Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Act, 1996” and “The Building and Other Construction Workers’ Welfare Cess Act, 1996”:

The tenderers, for carrying out any construction work, shall get themselves registered with the Registering 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 by Registering Officer of the concerned State Govt. (Labour Dept.). The Cess shall be deducted from contractor’s bills as per provisions of the Act.

56. Reporting of Accidents: The Contractor shall be responsible for the safety of all employees directly or through petty Contractors or sub-contractor 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 Engineers Representative and shall make every arrangement to render all possible assistance.

57. Provision of Workmen’s Compensation Act: In every case in which by virtue of the provisions of Section 12 Sub-Section (1) of the Workmen's Compensation Act 1923, Railway is obliged to pay compensation to a workman directly or through petty Contractor or sub-contractor employed by the Contractor in executing the work, Railway will recover from the Contractor the amount of the compensation so paid, and, without prejudice to the rights of Railway under Section 12 Sub-section (2) of the said Act, Railway shall be at liberty to recover such amount or any part thereof from Contractor’s bills/Security Deposit or any other dues of Contractor with the Government of India. Railway 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 Railway full security for all costs for which Railway might become liable in consequence of contesting such claim.

57-A. Provision of Mines Act: The Contractor shall observe and perform all the provisions of the Mines Act, 1952 or any statutory modifications or re-enactment thereof for the time being in force and any rules and regulations made thereunder in respect of all the persons directly or through the petty Contractors or sub-contractors employed by him under this contract and shall indemnify the Railway from and against any claims under the Mines Act, or the rules and regulations framed thereunder, by or on behalf of any persons employed by him or otherwise.

58. Railway not to Provide Quarters for Contractors: No quarters shall normally be provided by the Railway for the accommodation of the Contractor or any of his staff employed on the work. In exceptional cases where accommodation is provided to the Contractor at the Railway's discretion, recoveries shall be made at such rates as may be fixed by the Railway for the full rent of the buildings and equipments therein as well as charges for electric current, water supply and conservancy.

59.(1) Labour Camps: 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 workmen, directly or through the petty Contractors or sub-contractors and for temporary creche (Bal-Mandir) where 50 or more women are employed at a time. Suitable sites on Railway 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 Railway. All camp sites shall be maintained in clean and sanitary conditions by the Contractor at his own cost.

59.(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.

59.(3) Preservation of Peace: The Contractor shall take requisite precautions and use his best endeavours to

(i) Prevent any riotous or unlawful behaviour by or amongst his workmen and other employed directly or through the petty Contractors or sub-contractors on the works and for the preservation of peace and protection of the inhabitants and

(ii) Security of property in the neighbourhood of the works. In the event of the Railway requiring the maintenance of a Special Police Force at or in the vicinity of the site during the tenure of works, the expenses thereof shall be borne by the Contractor and if paid by the Railway shall be recoverable from the Contractor.

59.(4) Sanitary Arrangements: The Contractor shall obey all sanitary rules and carry out all sanitary measures that may from time to time be prescribed by the Railway 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 Railway. Should the Contractor fail to make the adequate sanitary arrangements, these will be provided by the Railway and the cost thereof recovered from the Contractor.

59.(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 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 Railway and the cost thereof recovered from the Contractor.

59.(6) Treatment of Contractor's Staff in Railway Hospitals: The Contractor and his staff, other than labourers and their families requiring medical aid from the railway hospital and dispensaries will be treated as private patients and charged accordingly. The Contractors' labourers and their Families will be granted free treatment in railway hospitals and dispensaries where no other hospitals or dispensaries are available provided the Contractor pays the cost of medicines, dressing and diet money according to the normal scale and additional charges for special examinations such as pathological and bacteriological examination, X-Ray, etc. and for surgical operation.

59. (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 Railway Medical Authority in relation to the strength of the Contractor's resident staff and workmen.

59. (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.

59.(9) Restrictions on the Employment of Retired Engineers of Railway Services Within One Year of their Retirement: The Contractor shall not, if he is a retired Government Engineer of Gazetted rank, himself engage in or employ or associate a retired Government Engineer of Gazetted rank, who has not completed one year from the date of retirement, in connection with this 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 and administration will be entitled to terminate the contract and forfeit his Performance Guarantee as well as Security Deposit.

60.(1) Non-Employment of Labourers below the age of 15: 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.

60.(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 the contract unless a medical certificate of fitness in the prescribed form (Proforma at Annexure-VIII) 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 expenses 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.

60.(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, state his reasons in writing for doing so.

60.(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 to 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 persons 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 is fit to work in the capacity stated in the certificate.

EXPLANATIONS:

- (1) Only Qualified Medical Practitioners can be appointed as "Certifying Surgeons" and the term "Qualified Medical Practitioners" means a person holding a qualification granted by an authority specified in the Schedule to the Indian Medical Degrees Act, 1916 (VII to 1916) or in the Schedule to the Indian Medical Council Act, 1933 (XXVII) of 1933.
- (2) The Certifying surgeon may be a medical officer in the service of State or Municipal Corporation.

DETERMINATION OF CONTRACT

61.(1) Right of Railway to Determine the Contract: The Railway shall be entitled to determine and terminate the contract at any time should, in the Railway'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 Railway of such determination and the reasons therefor shall be conclusive evidence thereof.

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 Railways shall admit and consider such claims as are deemed reasonable and are supported by vouchers to the satisfaction of the Engineer. The Railway's decision on the necessity and propriety of such expenditure shall be final and conclusive.

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.

62.(1) Determination of Contract owing to Default of Contractor:

If the Contractor should:

- (i) Becomes bankrupt or insolvent, or
- (ii) Make an arrangement for assignment in favour of his creditors, or agree to carry out the contract under a Committee of Inspection of his creditors, or
- (iii) Being a Company or Corporation, go into liquidation (other than a voluntary liquidation for the purposes of amalgamation or reconstruction), or
- (iv) Have an execution levied on his goods or property on the works, or
- (v) Assign the contract or any part thereof otherwise than as provided in Clause 7 of these Conditions, or
- (vi) Abandon the contract, or
- (vii) Persistently disregard the instructions of the Engineer, or contravene any provision of the contract, or
- (viii) Fail to adhere to the agreed programme of work by a margin of 10% of the stipulated period, or
- (ix) Fail to Execute the contract documents in terms of Para 8 of the Instructions to Tenderers.
- (x) Fail to submit the documents pertaining to identity of JV and PAN in terms of Para 17.11 of Tender Form (Second Sheet) of Annexure I available in the Instructions to Tenderers.
- (xi) Fail to remove materials from the site or to pull down and replace work after receiving from the Engineer notice to the effect that the said materials or works have been condemned or rejected under Clause 25 and 27 of these Conditions, or
- (xii) Fail to take steps to employ competent or additional staff and labour as required under Clause 26 of these Conditions, or
- (xiii) Fail to afford the Engineer or Engineer's representative proper facilities for inspecting the works or any part thereof as required under Clause 28 of these Conditions, or
- (xiv) 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 the Railway or to any person on his or on their behalf in relation to the execution of this or any other contract with this Railway.
- (xv) Fail to adhere to the provisions of Para 16 of Tender Form (Second Sheet) of Annexure I of the Instructions to Tenderers, or provision Clause 59(9) of these Conditions.
- (xvi) Submits copy of fake documents / certificates in support of credentials, submitted by the tenderer

Then and in any of the **said Clause**, the Engineer on behalf of the Railway may serve the Contractor with a notice (Proforma at Annexure-IX) in writing to that effect and if the Contractor does not within seven 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 of the entire satisfaction of the Engineer, the Railway shall be entitled after giving 48 hours' notice (Proforma at Annexure-X or XII, as the case may be) 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 after expiry of 48 hours' notice, a final termination notice (Proforma at Annexure-XI or XIII, as the case may be) should be issued.

Note: Engineer at his discretion may resort to the part termination of contract with notices (Proforma at Annexure- IX, XII and XIII), only in cases where progress of work is more than or equal to 80% of the original scope of work.

62.(2) Right of Railway after Rescission of Contract owing to Default of Contractor: In the event of any or several of the courses, referred to in Sub-Clause (1) of this Clause, 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 work thereto for actually performed under the contract unless and 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) In the contract which has been rescinded as a whole, the Security Deposit already with railways under the contract shall be encashed/ forfeited and the Performance Guarantee already submitted for the contract shall be encashed. The balance work shall be got done independently without risk & cost of the failed Contractor. The failed Contractor shall be debarred from participating in the tender for executing the balance work. If the failed Contractor is a JV or a Partnership firm, then every member/partner of such a firm shall be debarred from participating in the tender for the balance work in his/her individual capacity or as a partner of any other JV /partnership firm.

Further the authorized representative of failed Contractor cannot be accepted as authorized representative in new contract.

(c) In the contract rescinded in part or parts,

(i) The full Performance Guarantee available for the contract shall be recovered. No additional Performance Guarantee shall be required for balance of work being executed through the part terminated contract. The contract value of part terminated contract stands reduced to the balance value of work under the contract.

(ii) The Security Deposit of part terminated contract shall be dealt as per clause 16(2) of these Conditions.

(iii) The defaulting Contractor shall not be issued any completion certificate for the contract.

(iv) The balance work shall be got done independently without risk & cost of the failed Contractor. The failed Contractor shall be debarred from participating in the tender for executing the balance work. If the failed Contractor is a JV or a Partnership firm, then every member/partner of such a firm shall be debarred from participating in the tender for the balance work in his/her individual capacity or as a partner of any other JV /partnership firm.

(v) Further the authorized representative of failed Contractor will not be accepted as authorized representative in new contract.

(d) The Engineer or the Engineer's Representative shall be entitled to take possession of any materials, tools, implements, machinery and buildings on the works or on the property on which these are being or ought to have been executed, and to retain and 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.

(e) The Engineer shall as soon as may be practicable after removal of the Contractor fix and determine ex-parte 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) had at the time of rescission 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 and what was the value of any unused, or partially used materials, any constructional plant 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.

SETTLEMENT OF DISPUTES – INDIAN RAILWAY ARBITRATION AND CONCILIATION RULES

63. Conciliation of Disputes:

(i) This clause is applicable in the tender having advertised value less than or equal to Rs 50 Crore.

(ii) 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 "Chief Engineer" or "Divisional Railway Manager" through "Notice of Dispute" provided that no such notice shall be served later than 30 days after the date of issue of Completion Certificate by the Engineer. Chief Engineer or Divisional Railway Manager shall, within 30 days after receipt of the Contractor's "Notice of Dispute", notify the name of conciliator(s) to the Contractor.

- (iii) The Conciliator(s) shall assist the parties to reach an amicable settlement in an independent and impartial manner within the terms of contract.
- (iv) If the parties reach agreement on a settlement of the dispute, they shall draw up and sign a written settlement agreement duly signed by Engineer In-charge, Contractor and conciliator(s). When the parties sign the settlement agreement, it shall be final and binding on the parties.
- (v) The parties shall not initiate, during the conciliation proceedings, any arbitral or judicial proceedings in respect of a dispute that is the subject matter of the conciliation proceedings.
- (vi) The conciliation proceedings shall be terminated as per Section 76 of 'The Arbitration and Conciliation Act, 1996.

63.1 Matters Finally Determined by the Railway: All disputes and differences of any kind whatsoever arising out of or in connection with the contract, whether during the progress of the work or after its completion and whether before or after the determination of the contract, shall be referred by the Contractor to the GM and the GM shall, within 120 days after receipt of the Contractor's representation, make and notify decisions on all matters referred to by the Contractor in writing provided that matters for which provision has been made in Clauses 7(j), 8, 18, 22(5), 39.1, 39.2, 40A, 43(2), 45(i)(a), 55, 55-A(5), 57, 57A, 61(1), 61(2), 62(1), 63(iv) and 63.2.11 of the Standard General Conditions of Contract or in any Clause (stated as excepted matter) of the Special Conditions of the Contract, shall be deemed as 'excepted matters' (matters not arbitrable) and decisions of the Railway authority, thereon shall be final and binding on the Contractor; provided further that 'excepted matters' shall stand specifically excluded from the purview of the Dispute Adjudication Board (DAB) and Arbitration.

63.2 Dispute Adjudication Board (DAB): This clause is applicable in the tender having advertised value more than Rs 50 Crore.

63.2.1 Any dispute/s if not settled with the Engineer, shall be referred to DAB.

The DAB shall consist of a panel of three Retired Railway Officers, retired not below senior administrative grade (SAG). The DAB shall be formed within 90 days of signing of Contract Agreement. For this purpose, a panel of DAB members shall be maintained in the General Manager's office. The complete panel, which shall not be less than five members, shall be sent by Chief Engineer to the Contractor to nominate one member of the DAB from the panel as Contractor's nominee within two weeks of receipt of the panel. On receipt of Contractor's nominee, the Chief Engineer shall nominate one member from the same panel as Railway nominee for the DAB. Both above nominees shall jointly select presiding member of the DAB from the same panel.

63.2.2 The appointment of DAB shall be effectuated by way of a tri-partite agreement among the Railway, Contractor and the respective DAB members. The terms of the remuneration of each member shall be as fixed by Ministry of Railways from time to time. Each party shall be responsible for paying one-half of this remuneration.

63.2.3 If one or more of the members appointed refuses to act as DAB member, or is unable or unwilling to perform his functions as DAB member for any reason whatsoever or dies or in the opinion of the Chief Engineer fails to act without undue delay, the parties shall terminate the mandate of such DAB member and thereupon new DAB member shall be appointed in the same manner, as the outgoing DAB member had been appointed.

63.2.4 The appointment of any member may be terminated by mutual agreement of both Parties, but not by the Railway or the Contractor acting alone. Unless otherwise agreed by both the Parties, the appointment of the DAB (including each member) shall expire upon expiry of this Contract Agreement.

63.2.5 Before start of DAB proceedings, each DAB member shall give the following certificate to the Railway and the Contractor:

“I have no any past or present relationship in relation to the subject matter in dispute, whether financial, business, professional or other kind. Further, I have no any past or present relationship with or interest in any of the parties whether financial, business, professional or other kind, which is likely to give rise to justifiable doubts as to my independence or impartiality.”

63.2.6 DAB proceedings shall be conducted as decided by the DAB. The DAB shall give its decision within 90 days of a Dispute referred to it by any of the Parties, duly recording the reasons before arriving at the decision. The DAB shall decide the issue within terms and conditions of the contract. This time limit shall be extendable subject to the Parties mutual agreement.

63.2.7 The DAB decision shall not be binding on both the Parties. In case any party is not satisfied by the decision of DAB, then the aggrieved party may approach Arbitral Tribunal for arbitration proceedings.

63.2.8 No dispute shall be referred to Arbitral Tribunal unless the same has been referred to DAB for adjudication. However, in case DAB is not formed due to any reason, the disputes can be directly referred to Arbitral Tribunal to adjudicate the dispute.

63.2.9 In the specific cases of any misconduct by any of the members of the DAB, the parties shall have the right to specifically bring it to the notice of the DAB such conduct, through a statement filed with necessary documents in proof of such misconduct and the DAB, after taking NOTICE of such conduct initiate the replacement of the member concerned, in the same manner the member to be replaced was appointed.

63.2.10 Once the decision is given by DAB, DAB cannot review the decision at its own or on the request of one party, unless both parties agree for review of decision by DAB.

63.2.11 In case DAB decision is not challenged by either party within 180 days of receipt of decision of DAB, the decision shall be considered as final and parties would be barred for referring the same to Arbitral Tribunal for adjudication.

63.2.12 The obligation of the Railway and the Contactor shall not be altered by reasons of issue being or under reference to DAB.

63.2.13 The DAB shall conduct the proceedings at any convenient venue which shall be decided by DAB in consultations with parties.

63.2.14 It is a term of this contract that the Parties shall not approach any Court of Law for settlement of such disputes or differences unless an attempt has first been made by the parties to settle such disputes or differences through DAB and Arbitral Tribunal.

64.(1) : Demand for Arbitration:

64.(1)(i)(a): In the event of any dispute or difference between the parties hereto as to the construction or operation of this contract, or the respective rights and liabilities of the parties on any matter in question, dispute or difference on any account or as to the withholding by the Railway of any certificate to which the Contractor may claim to be entitled to, or if the Railway fails to make a decision within 120 days, then and in any such case, but except in any of the "excepted matters" referred to in Clause 63.1 of these Conditions, the Contractor, after 120 days but within 180 days of his presenting his final claim on disputed matters shall demand in writing that the dispute or difference be referred to arbitration.

64.(1)(i)(b): Arbitration as a method of dispute resolution should not be routinely or automatically included in procurement contacts/tenders, especially in large contracts.

64.(1)(i)(c): As a norm, arbitration as a method of dispute resolution may be restricted to disputes with a value less than Rs. 10 crore. This figure is with reference to the value of the dispute (not the value of the contract, which may be much higher).

64.(1)(i)(d): Inclusion of arbitration clauses covering disputes with a value exceeding Rs. 10 crore, should be based on careful application of mind and recording of reasons and with the approval of an officer not below the rank of Senior Administrative Grade (SAG) or the Accepting Authority of the tender whichever is higher.

64.(1)(ii)(a): The demand for arbitration shall specify the matters which are in question, or subject of the dispute or difference as also the amount of claim item-wise. Only such dispute or difference, in respect of which the demand has been made, together with counter claims or set off, given by the Railway, shall be referred to arbitration and other matters shall not be included in the reference.

64.(1)(ii)(b): The parties may waive off the applicability of Sub-Section 12(5) of Arbitration and Conciliation (Amendment) Act 2015, if they agree for such waiver in writing, after dispute having arisen between them, in the format given under Annexure XV of these conditions.

64.(1)(iii)(a): The Arbitration proceedings shall be assumed to have commenced from the day, a written and valid demand for arbitration is received by the Railway.

64.(1)(iii)(b): The claimant shall submit his claims stating the facts supporting the claims along with all the relevant documents and the relief or remedy sought against each claim within a period of 30 days from the date of appointment of the Arbitral Tribunal.

64.(1)(iii)(c): The Railway shall submit its defence statement and counter claim(s), if any, within a period of 60 days of receipt of copy of claims from Tribunal, unless otherwise extension has been granted by Tribunal.

64.(1)(iii)(d): Place of Arbitration: The place of arbitration would be within the geographical limits of the Division of the Railway where the cause of action arose or the Headquarters of the concerned Railway or any other place with the written consent of both the parties.

64.(1)(iv): No new claim shall be added during proceedings by either party. However, a party may amend or supplement the original claim or defense thereof during the course of arbitration proceedings subject to acceptance by Tribunal having due regard to the delay in making it.

64.(1)(v): If the Contractor(s) does/do not prefer his/their specific and final claims in writing, within a period of 90 days of receiving the intimation from the Railways that the final bill is ready for payment, he/they will

be deemed to have waived his/their claim(s) and the Railway shall be discharged and released of all liabilities under the contract in respect of these claims.

64.(2): Obligation During Pendency of Arbitration: Work under the contract shall, unless otherwise directed by the Engineer, continue during the arbitration proceedings, and no payment due or payable by the Railway shall be withheld on account of such proceedings, provided, however, it shall be open for Arbitral Tribunal to consider and decide whether or not such work should continue during arbitration proceedings.

64.(3) : Appointment of Arbitrator:

64.(3)(a) : The Arbitral Tribunal shall consist of a panel of three arbitrators. General Manager/Additional General Manager will appoint two arbitrators, one railway nominee and other from among the contractor's nominee. Contractor can recommend his nominee either from approved panel of Railways or from approved panel of Indian Council of Arbitration (ICA) within 30 days from the date of dispatch of approval of written and valid acceptance of demand for arbitration by the General Manager/Additional General Manager.

64.(3)(a)(i): If contractor wants to choose his nominee from Railway panel, the Railway will send a panel of at least four (4) names of retired Railway Officers empanelled to work as Arbitrator within 30 days from the day when a written and valid demand for arbitration is received by the General Manager/Additional General Manager. Contractor will be asked to suggest to General Manager/Additional General Manager at least 2 names out of the panel for appointment as Contractor's nominee within 30 days from the date of dispatch of the request by Railway. The General Manager/Additional General Manager shall appoint at least one out of them as the Contractor's nominee within 30 days from the receipt of the names of Contractor's nominees. The railway panel shall be provided free of cost to the contractor.

64.(3)(a)(ii): If contractor wants to choose his nominee from Indian Council of Arbitration panel, Contractor will send at least 2 names of Arbitrators from the ICA panel for appointment as Contractor's nominee within 30 days from the date of dispatch of the request by Railway. The General Manager/Additional General Manager shall appoint at least one out of them as the Contractor's nominee within 30 days from the receipt of the names of Contractor's nominees. Nomination and appointment of arbitrators from ICA panel shall be as per the ICA Rules for Domestic Commercial Arbitration and amended from time to time.

Some general guidelines of ICA Rules for Domestic Commercial Arbitration are as under:-

- i. Contractor may access the ICA's panel of arbitration through ICA's official webpage: <https://icaindia.co.in/pdf/Engineers.pdf>.
- ii. A formal request for nomination shall be submitted to ICA, accompanied by:
 - a. A brief Statement of Claim outlining the nature and quantum of the disputes.
 - b. A copy of the relevant contract and any supporting documents.
 - c. A copy of the notice intimating the other party of the initiation of arbitration proceedings, with proof of delivery (if any).
- iii. Ad-hoc appointment fees for the nomination and appointment of arbitrators shall be as per the ICA Rules for Domestic Commercial Arbitration and revised from time to time and shall be submitted along with the request.

Contractor will be asked to suggest to General Manager at least 2 names out of the panel for appointment as Contractor's nominee within 30 days from the date of dispatch of the request by Railway. The General Manager shall appoint at least one out of them as the Contractor's nominee and will, also simultaneously appoint the balance number of arbitrators either from the panel or from outside the panel, duly indicating the 'presiding arbitrator' from amongst the 3 arbitrators so appointed. General Manager shall complete this exercise of appointing the Arbitral Tribunal within 30 days from the receipt of the names of Contractor's nominees. While nominating the arbitrators, it will be necessary to ensure that one of them is from the Accounts Department. An officer of Selection Grade of the Accounts Department shall be considered of

equal status to the officers in Senior Administrative Grade of other departments of the Railway for the purpose of appointment of arbitrator.

64.3.(a).iii: The serving railway officer working in arbitral tribunal in the ongoing arbitration cases as per clause 64.(3)(a)(i) and clause 64.(3)(a)(ii) above, can continue as arbitrator in the tribunal even after his retirement.

64.(3)(b): Two selected arbitrators are free to select presiding arbitrator (3d arbitrator) within thirty (30) days from the date of their appointment. The presiding arbitrator may be selected from approved panel of Railways or approved panel of Indian Council of Arbitration (as per mutual agreement), which will be approved by General Manager/Additional General Manager. General Manager/Additional General Manager shall complete this exercise of appointing the Arbitral Tribunal within 30 days from the receipt of the names of all the three arbitrators.

64.(3)(c)(i): If one or more of the arbitrators appointed as above refuses to act as arbitrator, withdraws from his office as arbitrator, or vacates his/their office/offices or is/are unable or unwilling to perform his functions as arbitrator for any reason whatsoever or dies or in the opinion of the General Manager/Additional General Manager fails to act without undue delay, the General Manager/Additional General Manager shall appoint new arbitrator/arbitrators to act in his/their place in the same manner in which the earlier arbitrator/arbitrators had been appointed. Such re-constituted Tribunal may, at its discretion, proceed with the reference from the stage at which it was left by the previous arbitrator (s).

64.(3) (c) (ii): (a) The Arbitral Tribunal shall have power to call for such evidence by way of affidavits or otherwise as the Arbitral Tribunal shall think proper, and it shall be the duty of the parties hereto to do or cause to be done all such things as may be necessary to enable the Arbitral Tribunal to make the award without any delay. The proceedings shall normally be conducted on the basis of documents and written statements.

(b) Before proceeding into the merits of any dispute, the Arbitral Tribunal shall first decide and pass its orders over any plea submitted/objections raised by any party, if any, regarding appointment of Arbitral Tribunal, validity of arbitration agreement, jurisdiction and scope of the Tribunal to deal with the dispute (s) submitted to arbitration, applicability of time 'limitation' to any dispute, any violation of agreed procedure regarding conduct of the arbitral proceedings or plea for interim measures of protection and record its orders in day to day proceedings. A copy of the proceedings duly signed by all the members of tribunal should be provided to both the parties.

64.3(c)(iii): (i) Qualification of Railway Empanelled Arbitrator (s):

- (a) Retired Railway Officers not below SA Grade level, one year after his date of retirement.
 - (b) Age of arbitrator at the time of appointment shall be below 70 years.
 - (c) Persons not involved in any current vigilance/CBI cases or against whom disciplinary or prosecution proceedings are not in process.
 - (d) Persons who had not been imposed a major penalty or two or more minor penalties or against whom administrative action has not been taken three times or more or
 - (e) Persons who have not been imposed one minor Penalty and against whom two administrative actions have not been taken as a result of vigilance/CBI action while in service on Railways.
- (ii) An arbitrator may be appointed notwithstanding the total number of arbitration cases in which he has been appointed in the past.
- (iii) While appointing arbitrator(s) under Sub-Clause 64.(3)(a), 64.(3)(a)(i), 64.(3)(a)(ii) & 64.(3)(b) above, due care shall be taken that he/they is/are not the one/those who had an opportunity to deal with the matters to which the contract relates or who in the course of his/their duties as Railway servant(s) expressed views on all or any of the matters under dispute or differences. A certification to this effect as per annexure- XVI shall be taken from Arbitrators also. The proceedings of the Arbitral tribunal or the award made by such

Tribunal will, however, not be invalid merely for the reason that one or more arbitrator had, in the course of his service, opportunity to deal with the matters to which the contract relates or who in the course of his/their duties expressed views on all or any of the matters under dispute.

64.(3)(d)(i): The arbitral award shall state item wise, the sum and reasons upon which it is based. The analysis and reasons shall be detailed enough so that the award could be inferred therefrom.

64.(3)(d)(ii): A party may apply for corrections of any computational errors, any typographical or clerical errors or any other error of similar nature occurring in the award of a Tribunal and interpretation of a specific point of award to Tribunal within 60 days of receipt of the award.

64.(3)(d)(iii): A party may apply to Tribunal within 60 days of receipt of award to make an additional award as to claims presented in the arbitral proceedings but omitted from the arbitral award.

64.(4): Any ruling on award shall be made by a majority of members of Tribunal. In the absence of such a majority, the views of the Presiding Arbitrator shall prevail.

64.(5): Where the arbitral award is for the payment of money, no interest shall be payable on whole or any part of the money for any period till the date on which the award is made.

64. (6): The cost of arbitration shall be borne by the respective parties. If all the three arbitrators are selected from the Railway Panel, the fee of the arbitrators shall be determined as per the rates fixed/revised by Railway Board from time to time and the fee shall be borne equally by both the parties, provided parties sign an agreement in the format given at Annexure XV to these conditions after/ while referring these disputes to Arbitration. However, if any of the three arbitrators is selected from the Panel of Indian Council of Arbitration (ICA), the fee of the arbitrators shall be determined as per the rates fixed/revised by the Indian Council of Arbitration from time to time and the fee shall be borne equally by both the parties, provided parties sign an agreement in the format given at Annexure XV to these conditions after/ while referring these disputes to Arbitration.

64.(7) Subject to the provisions of the aforesaid Arbitration and Conciliation Act 1996 and the rules thereunder and relevant para of the Standard General Conditions of Contract and any statutory modifications thereof shall apply to the appointment of arbitrators and arbitration proceedings under this Clause.

64.(8) In case arbitration award is challenged by a party in the Court of Law, 75% of award amount, pending adjudication by Court of Law, shall be made by party to other party. In case payment is to be made by Railway to Contractor, the terms & conditions as incorporated in the Ministry of Railways letter No. 2016/CE(I)/CT/ARB/3(NITI Aayog)/Pt. dated 08th Mar,2017 as amended from time to time, shall be followed. In case Contractor has to pay to the Railway, then 75% of the award amount shall be deducted by the Railway from the Contractor's bills, Performance Guarantee/ Security Deposit or any other dues of Contractor with the Government of India.

PART-II ANNEXURES

ANNEXURE – VII

Reference Para 17B

Registered Acknowledgement Due

PROFORMA FOR TIME EXTENSION

No. _____ Dated: _____

Sub: (i) _____ (name of work).

(ii) Acceptance letter no. _____

(iii) Understanding/Agreement no. _____

Ref: _____ (Quote specific application of Contractor for extension to the date received) _____

Dear Sir,

1. 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').

2. Expecting that you may be able to complete the work if some more time is given, the competent authority, although not bound to do so, hereby extends the time for completion from _____ to _____.

3. Please note that an amount equal to the liquidated damages for delay in the completion of the work after the expiry of _____ (give here the stipulated date for completion with/without any liquidated damage fixed earlier) will be recovered from you as mentioned in Clause 17B of the Standard General Conditions of Contract for the extended period, notwithstanding the grant of this extension. You may proceed with the work accordingly.

4. 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.

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

6. Please note that in the event of your declining to accept the extension on the above said conditions or in the event of your failure after accepting or acting upto this extension to complete the work by _____ (here mention the extended date), further action will be taken in terms of Clause 62 of the Standard General Conditions of Contract.

Yours faithfully

For and on behalf of the President of India

ANNEXURE – VIIIA
(Reference Clause 40(A))

Registered Acknowledgement Due

PROFORMA OF 14 DAYS NOTICE FOR OFFLOADING OF PART OF CONTRACT WORK

_____ **RAILWAY**

(Without Prejudice)

To

M/s _____

Dear Sir,

Contract Agreement No. _____

In connection with _____

In spite of repeated instructions to you by the subordinate offices as well as by this office through various letters of even no. _____, dated _____; you have failed to show adequate progress of work so as to complete the contract within the original / extended date of completion of contract and part(s) of contract work are yet to be started/ still lagging behind the agreed program of work, listed as under:

(Details of part(s) of work which is delayed and can be executed independently, to be mentioned).

2. Your attention is invited to this office/Chief Engineer's office letter no. _____, dated _____ in reference to your representation, dated _____.

3. As you have failed to abide by the instructions issued to commence the work /to show adequate progress of work, you are hereby given 14 days' notice in accordance with Clause 40A of the Standard General Conditions of Contract to deploy adequate resources i.e. *(the details of resource requirement, to be mentioned)* and commence / to make good the progress for part(s) of works detailed above, failing which action as provided in Clause 40A of the Standard General Conditions of Contract shall be commenced after expiry of 14 days' notice period viz. to offload few/ all part(s) of work mentioned above to any of the existing or new contractor without your participation and at your Risk & Cost, not exceeding the value of Performance Guarantee of this contract, which may please be noted.

Kindly acknowledge receipt.

Yours faithfully

For and on behalf of the President of India

ANNEXURE – VIIB

(Reference Clause 40(A))

Registered Acknowledgement Due

NOTICE FOR PART OF CONTRACT WORK OFFLOADED

_____ **RAILWAY**
(Without Prejudice)

To

M/s _____

Dear Sir,

Contract Agreement No. _____

In connection with _____

1. Fourteen days' notice under Clause 40A of the Standard General Conditions of Contract was given to you under this office letter of even no., dated _____; but you have taken no/inadequate action to deploy adequate resources to commence the part(s) of work/show adequate progress of the part(s) of work, mentioned therein.

As you have failed to abide by the instructions issued to commence the part(s) of work/show adequate progress of the part(s) of work even at the lapse of 14 days' notice period under Clause 40A of the Standard General Conditions of Contract, few part(s) of the work under the contract have been offloaded and being executed by other mode(s) at the cost detailed below:

Or,

1. Please refer your request letter no..... dated, wherein it was requested under clause 40 A of the Standard General Conditions of Contract to offload part(s) of works at your risk & cost. The details of part(s) of the work under the contract which have been offloaded and being executed by other mode(s) at the cost detailed below:

(List of Part(s) of work offloaded, Details of mode of execution of such offloaded work alongwith approximate cost thereof to be mentioned)

2. The final measurement of work(s) already executed for above part(s) of work recorded as per clause 45 (A) or/and 45 (B) of the Standard General Conditions of Contract is enclosed herewith.

3. The Bill(s) of Quantities for Part(s) of work offloaded is enclosed herewith.

4. The additional cost in execution of offloaded work through mode(s) mentioned in para (1) above is determined as Rs. _____, over& above the cost of execution under this contract (including the PVC amount payable as per contract, as on the date of issue of this notice). This additional cost shall be recovered from your next on account bill(s) or any other dues payable to you under contract.

5. The Contract value gets reduced to Rs.....:

6. You are requested to continue with the balance work in the contract subsequent to offloading of above part(s) of work.

Kindly acknowledge receipt.

Yours faithfully

For and on behalf of the President of India

ANNEXURE – VIII

Reference Para 60.(2)

CERTIFICATE OF FITNESS

1. (a) Serial Number _____
(b) Date _____
2. Name of person examined _____
3. Father's Name: son/daughter of _____
Residing at _____
4. Sex _____
5. Residence: _____
6. Physical fitness _____
7. Identification marks _____
8. Date of birth, if available, and/or certified age _____
I certify that I have personally examined (name) _____ who is desirous of being employed in a factory or on a work requiring manual labour and that his/her age as nearly as can be ascertained from my examination, is _____ years.
- I certify that he/she is fit for employment in a factory or on a work requiring manual labour as an adult/child.
9. Reasons for :
 - (a) Refusal to grant certificate, or _____
 - (b) Revoking the certificate _____

Signature or left hand

Thumb impression of the person examined.

Signature of Certifying Surgeon

Note: In case of physical disability, the exact details and cause of the physical disability should be clearly stated.

ANNEXURE – IX

(Reference Clause 62. (1)

Registered Acknowledgement Due

PROFORMA OF 7 DAYS NOTICE FOR WORKS AS A WHOLE/ IN PARTS

(DETAILS OF PART OF WORK TO BE MENTIONED)

_____ **RAILWAY**
(Without Prejudice)

To

M/s _____

Dear Sir,

Contract Agreement No. _____

In connection with _____

In spite of repeated instructions to you by the subordinate offices as well as by this office through various letters of even no. _____, dated _____; you have failed to start work/show adequate progress and/or submit detailed programme for completing the work/ part of work (details of part of work to be mentioned).

2. Your attention is invited to this office/Chief Engineer's office letter no. _____, dated _____ in reference to your representation, dated _____.

3. As you have failed to abide by the instructions issued to commence the work /to show adequate progress of work you are hereby given 7 days' notice in accordance with Clause 62 of the Standard General Conditions of Contract to commence works / to make good the progress, failing which further action as provided in Clause 62 of the Standard General Conditions of Contract viz. to terminate your Contract and complete the balance work without your participation will be taken.

Kindly acknowledge receipt.

Yours faithfully

For and on behalf of the President of India

ANNEXURE – X

Reference Para 62(1)

Registered Acknowledgement Due

PROFORMA OF 48 HRS. NOTICE FOR WHOLE WORK

_____ **RAILWAY**

(Without Prejudice)

To

M/s _____

Dear Sir,

Contract Agreement No. _____

In connection with _____

Seven days' notice under Clause 62 of the Standard General Conditions of Contract was given to you under this office letter of even no., dated _____; but you have taken no action to commence the work/show adequate progress of the work.

2. You are hereby given 48 hours' notice in terms of Clause 62 of the Standard General Conditions of Contract to commence works / to make good the progress of works, failing which and on expiry of this period your above contract will be rescinded and the work under this contract will be carried out independently without your participation and your Security Deposit shall be forfeited and Performance Guarantee shall also be encashed and any other consequences which may please be noted.

Kindly acknowledge receipt.

Yours faithfully

For and on behalf of the President of India

ANNEXURE – XI

Reference Para 62.(1)

Registered Acknowledgement Due /Standard Correspondence through IR-WCMS/Email on registered
IREPS Email

PROFORMA OF TERMINATION NOTICE

_____ **RAILWAY**

(Without Prejudice)

No. _____

Dated _____

To

M/s _____

Dear Sir,

Contract Agreement No. _____

In connection with _____

Forty eight hours (48 hrs.) notice was given to you under this office letter of even no., dated _____; but you have taken no action to commence the work/show adequate progress of the work.

Since the period of 48 hours' notice has already expired, the above contract stands rescinded in terms of Clause 62 of the Standard General Conditions of Contract and the balance work under this contract will be carried out independently without your participation. Your participation as well as participation of every member/partner in any manner as an individual or a partnership firm/JV is hereby debarred from participation in the tender for executing the balance work and your Security Deposit shall be forfeited and Performance Guarantee shall also be encashed.

The Final measurements of work executed by you against the said contract will be taken/started on _____ at _____ hrs. at site. The measurement will be continued till all the measurement are taken. You are advised to be present at site on the above mentioned date and time to witness the measurements, otherwise measurements will be taken ex-parte and thereafter, variation (addendum & corrigendum) & final bill of work executed till date of termination based on ex-parte final measurements shall also be processed ex-parte.

Yours faithfully

For and on behalf of the President of India

ANNEXURE – XII

Reference Para 62.(1)

Registered Acknowledgement Due

PROFORMA OF 48 HRS. NOTICE FOR PART OF THE WORK.....

(DETAILS OF PART OF WORK TO BE MENTIONED)

_____ **RAILWAY**

(Without Prejudice)

To

M/s _____

Dear Sir,

Contract Agreement No. _____

In connection with _____

1. Seven days' notice under Clause 62 of the Standard General Conditions of Contract was given to you under this office letter of even no., dated _____; but you have taken no action to commence the work/show adequate progress of the part of work.....(details of part to be mentioned).

2. You are hereby given 48 hours' notice in terms of Clause 62 of the Standard General Conditions of Contract to commence works / to make good the progress of works, failing which and on expiry of this period your above part of work.....(Details of part to be mentioned) in contract will be rescinded and the work will be carried out independently without your participation.

3. Your full Performance Guarantee for the contract shall be forfeited and you shall not be issued any completion certificate for the contract. However, no additional Performance Guarantee shall be required for balance of work being executed through the part terminated contract.

4. The contract value of part terminated contract shall stands reduced to

Kindly acknowledge receipt.

Yours faithfully

For and on behalf of the President of India

ANNEXURE – XIII

Reference Para 62.(1)

Registered Acknowledgement Due

**PROFORMA OF TERMINATION NOTICE FOR PART OF THE WORK..... (DETAILS
OF PART OF WORK TO BE MENTIONED)**

_____ **RAILWAY**

(Without Prejudice)

No. _____

Dated _____

To

M/s _____

Dear Sir,

Contract Agreement No. _____

In connection with _____

1. Forty eight hours (48 hrs.) notice was given to you under this office letter of even no., dated _____; but you have taken no action to commence the work/show adequate progress of the part of work.....(details of part to be mentioned).
2. Your above part of work in contract(details of part to be mentioned) stands rescinded in terms of Clause 62 of the Standard General Conditions of Contract and the same will be carried out independently without your participation. Your participation as well as participation of every member/partner in any manner as an individual or a partnership firm/JV is hereby debarred from participation in the tender for executing the balance work
3. Your full Performance Guarantee for the contract shall be forfeited and you shall not be issued any completion certificate for the contract. However, no additional Performance Guarantee shall be required for balance of work being executed through the part terminated contract.
4. The contract value of part terminated contract stands reduced to

Kindly acknowledge receipt.

Yours faithfully

For and on behalf of the President of India

ANNEXURE – XIV

Reference Para 48.(3)

FINAL SUPPLEMENTARY AGREEMENT

1. Articles of agreement made this day _____ in the year _____ between the President of India, acting through the _____ Railway Administration having his office at _____ herein after called the Railway of the one part and _____ of the second part.
2. Whereas the party hereto of the second part executed an agreement with the party hereto of the first part being agreement Number _____ dated _____ for the performance _____ herein after called the 'Principal Agreement'.
3. And whereas it was agreed by and between the parties hereto that the works would be completed by the party hereto of the second part on _____ date last extended and whereas the party hereto of the second part has executed the work to the entire satisfaction of the party hereto of the first part.
4. And whereas the party hereto of the first part already made payment to the party hereto of the second part diverse sums from time to time aggregating to ₹ _____ including the Final Bill bearing voucher No. _____ dated _____ of value _____ duly adjusted as per price variation clause, if applicable (the receipt of which is hereby acknowledged by the party hereto of the second part in full and final settlement of all his /its claims under the principal agreement.

And whereas the party hereto of the second part have received sum of ₹ _____ through the Final Bill bearing voucher No. _____ dated _____ duly adjusted as per price variation clause (PVC), if applicable (the receipt of which is hereby acknowledged by the party thereto of the second part) from the party hereto of the first part in full and final settlement of all his/its disputed claims under principal agreement.

Now, it is hereby agreed by and between the parties in the consideration of sums already paid by the party hereto of the first part to the party hereto of the second part against all outstanding dues and claims for all works done under the aforesaid principal agreement excluding the Security Deposit, the party hereto of the second part have no further dues of claims against the party hereto of the first part under the said Principal Agreement. It is further agreed by and between the parties that the party hereto of the second part has accepted the said sums mentioned above in full and final satisfaction of all its dues and claims under the said Principal Agreement.

(Applicable in case Final Supplementary Agreement is signed after release of Final Payment)

Or

And whereas the party hereto of the first part already made payment to the party hereto of the second part diverse sums from time to time aggregating to ₹ _____ through various On Account Bills (the receipt of which is hereby acknowledged by the party hereto of the second part).

And whereas the party hereto of the second part have received sum of ₹ _____ through various On Account Bills (the receipt of which is hereby acknowledged by the party thereto of the second part) from the party hereto of the first part and party hereto of the second part have accepted final measurements recorded on Page No..... to Page No.... of Measurement Book No.....and corresponding Final Bill duly adjusted as per price variation clause (PVC), if applicable, for full and final settlement of all his/its disputed claims under principal agreement.

Now, it is hereby agreed by and between the parties in the consideration of sums already paid through various On Account Bills and sums to be paid through Final Bill duly adjusted as per price variation clause (PVC), if applicable, based on accepted final measurements including the Security Deposit by the party hereto of the first part to the party hereto of the second part against all outstanding dues and claims for all works done under the aforesaid principal agreement, the party hereto of the second part have no further dues of claims against the party hereto of the first part under the said Principal Agreement.

(Applicable in case Final Supplementary Agreement is signed before release of Final Payment)

5. It is further agreed and understood by and between the parties that the arbitration clause contained in the said principal agreement shall cease to have any effect and/or shall be deemed to be non-existent for all purposes.

Signature of the Contractor/s
Witnesses

for and on behalf of the President of India

ADDRESS: _____

ANNEXURE-XV

Reference Para 64.3 & 64.6

Agreement towards Waiver under Section 12(5) and Section 31A (5) of Arbitration and Conciliation (Amendment) Act

I/we..... (Name of agency/Contractor) with reference to agreement no..... raise disputes as to the construction and operation of this contract, or the respective rights and liabilities, withholding of certificate and demand arbitration in respect of following claims :

Brief of claim:

- (i) Claim 1- Detailed at Annexure-
- (ii) Claim 2 –
- (iii) Claim 3 –

I/we..... (post of Engineer) with reference to agreement no..... hereby raise disputes as to the construction and operation of this contract, or the respective rights and liabilities, withholding of certificate and demand arbitration in respect of following claims:

I/we.....do/do not agree to waive off applicability of section 12(5) of Arbitration and Conciliation (Amendment) Act.

Signature of Claimant_____ Signature of Respondent _____

Agreement under Section 31(5)

I/we..... (Name of claimant) with reference to agreement no..... hereby waive off the applicability of sub section 31-A (2) to 31-A (4) of the Arbitration and Conciliation (Amendment Act. We further agree that the cost of arbitration will be shared by the parties as per Clause 64(6) of the Standard General Conditions of Contract.

.

Signature of Claimant_____ Signature of Respondent _____

*Strike out whichever not applicable.

ANNEXURE-XVI

Reference Para 64.(3)

Certification by Arbitrators appointed under Clause 63 & 64 of Indian Railways General Conditions of Contract

1. Name:
2. Contact Details:
3. Prior experience (Including Experience with Arbitrations):
4. **I do not have more than ten on-going Arbitration cases with me.**
5. I hereby certify that I have retired from Railways w.e.f. _____ and empanelled as Railway Arbitrator as per 'The Arbitration and Conciliation Act- 1996'.
6. I have no any past or present relationship in relation to the subject matter in dispute, whether financial, business, professional or other kind.
Or
I have past or present relationship in relation to the subject matter in dispute, whether financial, business, professional or other kind. The list of such interests is as under:
7. I have no any past or present relationship with or interest in any of the parties whether financial, business, professional or other kind, which is likely to give rise to justifiable doubts as to my independence or impartiality in terms of The Arbitration and Conciliation Act-1996.
Or
I have past or present relationship with or interest in any of the parties whether financial, business, professional or other kind, which is likely to give rise to justifiable doubts as to my independence or impartiality in terms of The Arbitration and Conciliation Act-1996. The details of such relationship or interests are as under:
8. There are no concurrent Circumstances which are likely to affect my ability to devote sufficient time to the arbitration and in particular to finish the entire arbitration within twelve months.
Or
There are Circumstances which are likely to affect my ability to devote sufficient time to the arbitration and in particular to finish the entire arbitration within twelve months. The list of such circumstances is as under:

ANNEXURE-XVII

Reference Para 16.(4)

Insurance Surety Bond for Performance Security

Name of the issuer of surety bond:

President of India,
Acting through FA&CAO/CN/SCR/SC,

South Central Railway, 500025

Date:

.....

Surety Bond No:

Issue Date:.....

Amount of Bond:

Expiry Date:.....

WHEREAS, in consideration of the President of India acting through Dy.CSTE/Projects/Tele/SC (Designation & address of contract signing authority), South Central Railway, Secunderabad, 500025 (hereinafter called "The Railway") having accepted the bid of M/S XXXXX hereinafter called the contractor, for the work of XXX", under invitation for bids No XXXX Dated XXXXX, Vide Letter of Acceptance No.....

AND

WHEREAS, the contractor is required to furnish Performance Security for the sum of ₹. XXXX (Rupees XXXX Only), in the form of Surety Bond, being a condition precedent to the signing of the contract agreement.

SB No:

Date:

WHEREAS, we, ----- (Name of insurance company) hereinafter called the Surety, acting through [Designation(s) of the authorised person of the Surety], have, at the request of the M/s. XXXX contractor, agreed to give Bond for performance security/ additional performance security as hereinafter contained:

1. KNOW ALL MEN by these present that I/We, the undersigned [*Insert name(s) of authorized representatives of the Surety*], being fully authorized to sign and incur obligations for and on behalf of the Surety, confirm that the Surety, hereby, unconditionally and irrevocably Bond to pay the Railway the full amount in the sum of XXXX (**Rupees XXXX Only**) as above stated.
2. The Surety undertakes to immediately pay on presentation of demand by the Railway any amount up to and including aforementioned full amount without any demur, reservation or recourse. Any such demand made by the Railway on the Surety shall be final, conclusive and binding, absolute and unequivocal notwithstanding any disputes raised/pending before any Court tribunal, arbitration or any authority or any threatened litigation by the Bidder or Bank.
3. On payment of any amount less than aforementioned full amount, as per demand of the Railway, the Bond shall remain valid for the balance amount i.e. the aforementioned full amount less the payment made to the Railway.
4. The Surety shall pay the amount as demanded immediately on presentation of the demand by Railway without any reference to the contractor and without the Railway being required to show grounds or give reasons for its demand or the amount demanded.
5. The Surety Bond shall be unconditional and irrevocable.
6. The Bond hereinbefore shall not be affected by any change in the constitution of the Surety or in the constitution of the Contractor.
7. The Surety agrees that no change, addition, modifications to the terms of the Contract Agreement or to any documents, which have been or may be made between the Railway and the Contractor, will in any way release us from the liability under this Bond; and the Surety, hereby, waives any requirement for notice of any such change, addition or modification to the Surety.
8. This Bond is valid and effective from the date of its issue, which is [*insert date of issue*]. The Bond and our obligations under it will expire on XXXX (Expiry Date). All demands for payment under the Bond must be received by us on or before that date.
9. The Surety agrees that the Railways right to demand payment of aforementioned full amount in one instance or demand payments in parts totalling up to the aforementioned full amount in several instances will be valid until either the aforementioned full amount is paid to the Railway or the Bond is released by Railway before the Expiry date.
10. The Surety agrees that its obligation to pay any amount demanded by the Railway before the expiry of this Bond will continue until the amount demanded has been paid in full.
11. The expressions Surety and Railway hereinbefore used shall include their respective successors, administrators and assigns.
12. The Surety hereby undertakes not to revoke the Bond during its currency, except with the previous consent in writing of the Railway. This Bond is subject to the Uniform Rules for Demand Bonds, ICC Publication No. 758.

13. We, the Surety Insurer, further agree that the Authority shall be the sole judge to decide as to whether the Bidder is in default of due and faithful fulfilment and compliance with the terms and conditions contained in the Bidding Documents including, inter alia, the failure of the Bidder to keep its Bid open during the Bid validity period set forth in the said Documents, and the decision of the Authority that the Bidder is in default as aforesaid shall be final and binding on us, notwithstanding any differences between the Authority and the Bidder or any dispute pending before any Court, tribunal, arbitrator or any other authority.
14. The Bond shall be in addition to and without prejudice to any other security Bond (s) of the contractor in favour of the Railway available with the Railway. The Surety, under this Bond, shall be deemed as Principal Debtor of the Railway.

Notwithstanding anything to the contrary contained in these presents,

- a. Our liability under this Surety Bond shall not exceed XXXX (Rupees XXXXX only).
- b. This Surety Bond shall be valid up to XXXX (being the date of expiry);
- c. Unless the bank is served a written claim or demand on or before XXXX (date of expiry all rights under this Bond shall be forfeited and the Surety shall be relieved and discharged from all liabilities under this Bond irrespective of whether or not the original Surety bond is returned to the Surety.

Dated the day of 2024

15. The Insurance Surety Bond shall be verified by sending mail to [customer.care@sbigeneral. in].

Place.....

Bank's Seal[and authorized signature(s)
[Name in Block letters]
[Designation with Code No.]
[P/Attorney] No.

Witness

- 1.
- 2.

[Note: All italicized texts are for guidance on how to prepare this Insurance Surety Bond and shall be deleted from the final document.]

End of Tender Document