



**RAILTEL CORPORATION OF INDIA LTD. (A
Govt. of India Enterprise)**

Territory Office

Plot No17, 1st Floor, Raghunath Nagar,
Near Shahpura Police station,
Bhopal MP-462016

Western Region Office

Western Railway Microwave Complex
Senapati Bidder pat Marg, Near Railway Sports
Ground,
Mahalaxmi, Mumbai – 400013

Corporate Office

Plate-A, 6th Floor, Office Tower-2,
NBCC Building, East Kidwai Nagar, New Delhi-110023

Request for Quote

For
“ Design, Supply, Installation, Programming, Testing, and
Commissioning of New Hot Standby Electronic Interlocking
System

Tender Ref :-RCIL WR-BPL0 MKTG (EB)/1/2023/30458 Dtd. 09/02/2023

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NOTICE

Tender Ref./RCILWR-BPL0MKTG(EB)/1/2023/30458 Dt.: 09/02/2023

RailTel Corporation of India Ltd invites Tender's via E-Mail with password protected sealed packets from reputed firms for work mentioned in the Scope of this Tender. The Tender copy is sent along with this Tender Notice. The technical and commercial (price) bids shall be submitted through E-Mail at bpltooffice@railtelindia.com in password protected sealed packets as separate PDF documents up to the end date & time mentioned below.

Sr No	Description	Estimated Cost (Bidder sic Value + Taxes as applicable) INR	Last date & Time for Bid Submission	Date & Time for Bid Open	Completion Period
1	Design, Supply, Installation, Programming, Testing, and Commissioning of New Hot Standby Electronic Interlocking System at Malhargarh, Mandsor, Daluada, Kachnara Road, Dhodar, Jaora, Namli & Dhowas Stations, Alteration in Existing Electronic Interlocking System at HarkiaKhal, Pipliya and Barayla Chaurasi Stations, New IBH at Jamunia Kalan, Matyakheri, Sindapan, Kachnara & Mundalaram along with Supply, Installation, Testing and Commissioning of various Indoor and Outdoor Signalling Systems at Ratlam - Nimach Section in connection of Ratlam - Nimach Doubling Work under Dy CSTE Construction, Ratlam (Western Railway) M.P.	As per Tender No: SnT-C-RTM-100R-2022-23	13-2-2023 10:30 AM	13-2-2023 11:00 AM	As per Tender No: SnT-C-RTM-100R-2022-23
	Type of Bid	'Two Part Bid (Techno commercial and Price Bid) -Two Envelope'			

Note: In case of any discrepancy or ambiguity in any clause/specification pertaining to scope of work area, the Tender no. SnT-C-RTM-100R-2022-23 i.e. "Design, Supply, Installation, Programming, Testing, and Commissioning of New Hot Standby Electronic Interlocking System in subsequent corrigenda, shall supersede and will be considered sacrosanct. **(Copy at annexure–VIII).**

PRICE BID

i.	I/We undertake to execute the work at Rs._____ (in words: _____) the Total estimated cost of work and schedule of work as mentioned in Tender No: SnT-C-RTM-100R-2022-23 and subsequent corrigenda.
ii.	It is certified that I/We have inspected the site of work and acquainted myself or ourselves with local conditions.
iii.	I/We have carefully gone through the specifications, additional special conditions etc. attached with the tender document.
iv.	I/We undertake to keep this offer valid for period indicated in Tender document from the date of opening of Tender and further not to revoke the same before the expiry of such period.
Note for Guidance	[a] Tenderer should quote single rate in row, total estimated cost of work as per Tender No: SnT-C-RTM-100R-2022-23 and subsequent corrigenda.
	b) The single rate should be quoted both in figures and words
	In the event of any discrepancy between the rates in figures and in words, the quote shall be considered Taking into account the one written in words for evaluation purpose. .
	The scope of work will be applicable as per Tender No: SnT-C-RTM-100R-2022-23 and subsequent corrigenda and the lowest accepted LI rate among will be the final rate considered for awarding the work.”

Bidder should quote price for end to end SOW wrt Tender No: SnT-C-RTM-100R-2022-23 and subsequent corrigenda .

Note: In case of any discrepancy or ambiguity in any clause/specification pertaining to scope of work area, the Tender no. SnT-C-RTM-100R-2022-23 i.e. “Empanelment of Service Providers for Provisioning Connectivity Services in subsequent corrigenda, shall supersede and will be considered sacrosanct. **(Copy at annexure–VIII)**

1. The details are as under:

1	Issue date of „Invitation for Tender document“	09-2-2023
2	Last date for submission of Tenders by applicants	13-2-2023 10:30 AM
3	Opening of applicant Tenders	13-2-2023 11:00 AM
4	No. of copies of Tenders to be submitted by applicants	By email (with password protected)
5	Completion Period	As per Tender No: SnT-C-RTM-100R-2022-23 and subsequent corrigenda.
6	Estimated Value of Work	As per Tender No: SnT-C-RTM-100R-2022-23 and subsequent corrigenda.

Tender will be made available through e-mail. Any corrigendum/Addendum will also to be made available through e-mail. Query if any, may be sent on bpltooffice@railtelindia.com only upto 11.02.2023 by 11.00 am.

EMD required # As per Tender No: SnT-C-RTM-100R-2022-23 and subsequent corrigenda.

Note: Tender Notice and Tender Document will be send to you through speed post and PDF copy bye-mail. For bid submission tenderer will have to submit signed and stamped printed copy of the tender document. All future Information viz. corrigendum /addendum/ amendments etc. for this Tender shall be Send by speed post and e-mail.

1. RailTel intends to look for an Empaneled BIDDER who can help us with Bid Submission & have the ability to take up the work on turnkey basis and who has good connect with the customer and local environment The bidder shall bear all costs associated with the preparation, submission / participation in the bid. RailTel in no way will be responsible or liable for these costs regardless of the conduct or outcome of the bidding process.
2. Bidders shall necessarily furnish the details of the valid SD/ PBG/ tender Fee/Tender fee/ fee applicable submitted at time of empanelment for consideration of their offer.
3. Undertaking stating that bidder accept to execute SOW of Tender No: SnT-C-RTM-100R-2022-23 and subsequent corrigenda on fully Back to Back basis.
4. Copy of power of attorney issued in favor of signatory
5. The bidder responding to this Tender shall give an undertaking that, if they are successful, then they will not participate in the Tender No: SnT-C-RTM-100R-2022-23 directly or with other direct bidder
6. A pre bid agreement will be signed with successful bidder on non judicial stamp of adequate value as per final bid value . Format will be shared with successful bidder only

7. Bidder should have cumulative turnover of Rs. 69.00 Crore in last three years i.e. (Yr 19-20 & Yr 20-21, Yr 21-22). Bidder will submit duly audited balance sheet of last three years i.e. (Yr 19-20 & Yr 20-21, Yr 21-22) as proof.

8. The Bidder must provide acceptance (with documents) on the following:

All payments shall be paid on Bidder back to back basis. RailTel shall make payment to selected Business Associate after receiving payment from the end customer for the successful completion portion. In case of any penalty or deduction made by the end customer, the same shall be deducted from the selected BIDDER .

The BIDDER must have the pre-requisite experience for similar type of work (proof of similar works need to submit in form of PO and completion along with Value)

Bidder will submit No deviation certificate. Bidder will submit non black listed certificate.

Partner will be chosen as per the policy guidelines of RailTel Corporation of India Ltd. Further evaluation will be carried out.

Please submit your proposal latest by 13-2-2023
10:30 AM

Prospective bidders are required to direct all communications related to this Invitation for Tender document, through the following Help Desk:

Contact (1)	:	Sri Anand Kumar
Designation	:	Deputy General Manager/
Marketing Email	:	<u>anandnkn@RailTelindia.com</u>
Telephone	:	+91 7552428644
Mobile	:	+91 9004444107

Contact (2)	:	Sri Pavan Kumar Bhargava
Designation	:	Group General Manager/ Territory Manager /Bhopal
Email	:	<u>pavan@RailTelindia.com</u>
Telephone	:	+91 7552428644
Mobile	:	+91 9179005188

	Check List	
Sl No	Document	Remarks
1	Offer Letter	Annexure I
1	Proof of Submission of PBG/SD/Tender Empanelment Fee submitted against Empanelment with RailTel	
2	Copy of LoA/LOI issued by Railtel for confirmation of empanelment.	
3	Undertaking stating that bidder accept to execute SOW of Tender No: SnT-C-RTM-100R-2022-23 and subsequent corrigenda on fully Bidder ck to Bidder ck Bidder sis.	
4	Undertaking that, if they are successful, then they will not participate in the Tender No: SnT-C-RTM-100R-2022-23 directly or with other direct bidders.	
5	Compliance certificate format	Annexure II
6	Price Bid	Annexure III
7	Financial capacity Format	Annexure IV
8	Format for Declaration for acceptance of all Terms & Conditions	Annexure V
9	Non black listed	Annexure VI
10	No deviation certificate	Annexure VII

ANNEXURE-I: OFFER LETTER

**OFFER
LETTER**

(To be on company letter head)

Tender Ref./RCILWR-BPL0MKTG(EB)/1/2023/30458 Dt.: 09/02/2023

To,
The Regional General Manager
Western Railway Microwave Complex
Senapati Bidder pat Marg, Near Railway Sports
Ground, Mahalaxmi, Mumbai – 400013

Dear Sir,
SUB: Participation in the Tender.

Having examined the Invitation Tender document bearing the reference number Tender Ref./RCILWR-BPL0MKTG(EB)/1/2023/30458 DT.: 09/02/2023 released by your esteemed organization, we, undersigned, hereby acknowledge the receipt of the same and offer to participate in conformity with the said Invitation for Tender document.

If our application is accepted, we undertake to abide by all the terms and conditions mentioned in the said Invitation for Tender document.

We hereby declare that all the information and supporting documents furnished as a part of our response to the said Invitation for Tender document, are true to the best of our knowledge. We understand that in case any discrepancy is found in the information submitted by us, our Tender is liable to be rejected.

Date:
seal –

(in the box)

Signature with

Name: _____

Designation: _____

Annexure II: Compliance Certificate

To,
The Regional General Manager
Western Railway Microwave Complex
Senapati Bidder pat Marg, Near Railway Sports
Ground, Mahalaxmi, Mumbai – 400013

Sub: Tender Ref./RCILWR-BPL0MKTG(EB)/1/2023/30458 Dt.: 09/02/2023

Dear Sir,

This is in response to the Invitation for Tender for the “ Design, Supply, Installation, Programming, Testing, and Commissioning of New Hot Standby Electronic Interlocking System in Tender Ref./RCILWR-BPL0MKTG(EB)/1/2023/30458 Dt.: 09/02/2023. We have applied Tender issued by RailTel Corporation of India Ltd. We hereby covenant, warrant and confirm We hereby comply with all the terms and conditions/ stipulations as contained in the Invitation for Tender document including SnT-C-RTM-100R-2022-23 .

Date:

Signature with seal (in the box)



Name:

Designation

:

Annexure-III :**PRICE BID**

Note: 1. The rate and amount (shown below) are rounded off to two decimal places. For calculation purpose actual decimal places will be taken into consideration.	
i.	I/We undertake to execute the work at Rs._____ (in words: _____) the Total estimated cost of work and schedule of work as mentioned in Tender no. SnT-C-RTM-100R-2022-23 and subsequent corrigenda.
ii.	It is certified that I/We have inspected the site of work and acquainted myself or ourselves with local conditions.
iii.	I/We have carefully gone through the specifications, additional special conditions etc. attached with the tender document.
iv.	I/We undertake to keep this offer valid for period indicated in Tender document from the date of opening of Tender and further not to revoke the same before the expiry of such period.
Note for Guidance	[a] Tenderer should quote single rate in row, total estimated cost of work as per Tender no. SnT-C-RTM-100R-2022-23 and subsequent corrigenda.
	b] The single rate should be quoted both in figures and words
	In the event of any discrepancy between the rates in figures and in words, the quote shall be considered Taking into account the one written in words for evaluation purpose.
	The scope of work will be applicable as per Tender no. SnT-C-RTM-100R-2022-23 and subsequent corrigenda and the lowest accepted LI rate among will be the final rate considered for awarding the work.”

Bidder should quote price for end to end SOW as per Tender no. SnT-C-RTM-100R-2022-23 and subsequent corrigenda .

Note: In case of any discrepancy or ambiguity in any clause/specification pertaining to scope of work area, the Tender no. SnT-C-RTM-100R-2022-23 i.e. “ Design, Supply, Installation, Programming, Testing, and Commissioning of New Hot Standby Electronic Interlocking System in subsequent corrigenda, shall supersede and will be considered sacrosanct. **(Copy at annexure –VIII)**

Annexure- IV: Performa for Format for Turnover & Profit & Loss Certificate

(to be issued by practicing Chartered Accountant on its letter head)

TO WHOM IT MAY CONCERN

Tender Ref./RCILWR-BPL0MKTG(EB)/1/2023/30458 DT.: 09/02/2023 This is to certify that
M/s..... having its office at

..... Are in the business
of

..... for Completed years

(considered upto 31st March___) and the date of incorporation is____. Their annual
financial Turnover during the preceding three years or from date of incorporation (in case of
date of incorporation is within three years
of March) are as given below:

Financial Year	Turnover (in Rs Cr)	Profit / Loss (in Rs Cr)
2019-2020		
2020-2021		
2021-2022		
Gross Three years Turnover for these Three Financial Years		

This is further certified that the above Turnover is in line with the Turnover declared by the
Firm in their Income Tax Returns filed under PAN.....

Place.....

.....

Signature.....

.....

Name.....

(Seal)

Annexure- V: Performa for Format for Declaration for acceptance of all Terms & Conditions

Declaration for acceptance of all Terms & Conditions of the

Tender Ref./RCILWR-BPL0MKTG(EB)/1/2023/30458 Dt.: 09/02/2023

1. We M/s () _____

Having registered office at (Address) _____

2. Agree to all the Terms & Conditions of the Tender Ref./RCILWR-BPL0MKTG(EB)/1/2023/30458 DT.: 09/02/2023 issued by RailTel.

3. Our offer will remain valid for 180 days from the date of opening of the Tender.

4. We confirm that we have the necessary resources & capabilities to undertake the work as specified in the schedule of work as per all terms and conditions given in the above Tender. We have also understood the process of submitting bid to RAILTEL and Instructions given in the above Tender. Further, we confirm that we shall execute the work against this price discovery for scope as specified in this Tender.

5. We also agree that RailTel has the right to reject all Tender, in part or in full without assigning any reason whatsoever.

6. This Tender along with other documents as stipulated in Tender together with your written acceptance thereof shall constitute a binding contract between us.

Date:-

Name of the Company :- Signature & Seal:-

Annexure VI

— Regarding Black listing/ Debarring of the firm ||

To,
The Regional General Manager
Western Railway Microwave Complex
Senapati Bidder pat Marg, Near Railway Sports Ground,
Mahalaxmi, Mumbai – 400013

Sub: Undertaking of no deviation from Tender/ RFP terms and condition

Tender Ref./RCILWR-BPL0MKTG(EB)/1/2023/30458 Dt.: 09/02/2023

We hereby undertake and submit the declaration that our firm/company is not debarred / black listed for future business with any Central/ State Government organization /CPSU/SPSU in India.

In case, at any stage if the above declaration is found false or incorrect, the Purchaser shall be free to take any punitive/ legal action against us, as may be deemed fit, which shall be acceptable / binding on us and the consequences shall be to our account.

Date: Name &Signature of Authorized
Representative: Company Seal:
Name of Bidder: Full Address: Telephone No.:

**Annexure-
VII**

Format for Statement of No Deviation from the RFP

To,
The Regional General Manager
Western Railway Microwave Complex
Senapati Bidder pat Marg, Near Railway Sports
Ground, Mahalaxmi, Mumbai – 400013

Date: DD/MM/YYYY

Sub: Undertaking of no deviation from Tender/ RFP terms and condition

Tender Ref./RCILWR-BPL0MKTG(EB)/1/2023/30458 Dt.: 09/02/2023

Dear Sir,

This is to confirm that the proposal/bid submitted by <<Bidder name>>, is in complete agreement with the RFP/ Tender and any of the corrigendum(s) or amendment(s) issued thereon and there is no deviation whatsoever.

Date: Name &Signature of Authorized

Representative: Company Seal:

Name of Bidder:

Full

Address:

Telephone

No.:

ANNEXURE VIII

Tender No: SnT-C-RTM-100R-2022-23

**DYCSTE-C-RTM-S AND T/WESTERN RLY
TENDER DOCUMENT**

Tender No: SnT-C-RTM-100R-2022-23

Closing Date/Time: 13/02/2023 15:00

Dy.CSTE/C/RTM acting for and on behalf of The President of India invites E-Tenders against Tender No **SnT-C-RTM-100R-2022-23** Closing Date/Time 13/02/2023 15:00 Hrs. Bidders will be able to submit their original/revised bids upto closing date and time only. Manual offers are not allowed against this tender, and any such manual offer received shall be ignored.

1. NIT HEADER

Name of Work	Design, Supply, Installation, Programming, Testing, and Commissioning of New Hot Standby Electronic Interlocking System at Malhargarh, Mandisor, Daluada, Kachnara Road, Dhodar, Jaora, Namli & Dhowas Stations, Alteration in Existing Electronic Interlocking System at HarkiaKhal, Pipliya and Barayla Chaurasi Stations, New IBH at Jamunia Kalan, Matyakheri, Sindapan, Kachnara & Mundalaram along with Supply, Installation, Testing and Commissioning of various Indoor and Outdoor Signalling Systems at Ratlam - Nimach Section in connection of Ratlam - Nimach Doubling Work under Dy CSTE Construction, Ratlam (Western Railway) M.P.		
Bidding type	Normal Tender		
Tender Type	Open	Bidding System	Two Packet System
Tender Closing Date Time	13/02/2023 15:00	Date Time Of Uploading Tender	17/01/2023 17:38
Pre-Bid Conference Required	No	Pre-Bid Conference Date Time	Not Applicable
Advertised Value	462988598.00	Tendering Section	SSE SIG C
Bidding Style	Single Rate for Tender	Bidding Unit	Above/Below/Par
Earnest Money (Rs.)	2465000.00	Validity of Offer (Days)	90
Tender Doc. Cost (Rs.)	0.00	Period of Completion	24 Months
Contract Type	Works	Contract Category	Expenditure
Bidding Start Date	30/01/2023	Are Joint Venture (JV) firms allowed to bid	Yes
Ranking Order For Bids	Lowest to Highest	Expenditure Type	Capital (Works)

2. SCHEDULE

S.No.	Item Code	Item Qty	Qty Unit	Unit Rate	Basic Value	Escl.(%)	Amount	Bidding Unit
Schedule A-Supply & Execution of SOR Items							276820259.00	
1	01010000	1777.00	Per Unit	101571.00	180491667.00	AT Par	180491667.00	
	Description:- "Design, manufacture, and supply of Hot Standby Architecture Electronic Interlocking (EI) system complete as per RDSO specification No. RDSO/SPN/192/2019 with the latest amendment, as per technical requirement & tentative approved Signalling Plans & Diagrams. Electronic Interlocking (EI) system mainly consisting of Central Processing Equipment, Interface Equipment/Relays, etc as per requirements, Dual operator Industrial Grade VDU panel (48"" or aboe with 4K LED) with Redundancy (Hot standby dual VDU Normally one system online and another system in standby mode), All Interfacing Relays suitable for EI, interconnecting cables and Jumper wires, Industrial grade maintenance Terminals (32" LED with UPS minimum 1 hr back up), required power supply converters for EI equipment, Housing for EI types of equipment and Relay Racks, fuses, screwless disconnecting type terminals, fixture mounting arrangements and accessories necessary to make the EI system functional as per approved signaling plan. The tenderer should furnish complete details of cards/ modules/ sub-modules connectors etc. for each station. Supply of 10% Essential spares of the EI equipment subject to a minimum one of each type mainly consisting of processor, cards/ module, interface relay, etc. Item-wise detailed break up with unit and quantity is to be provided in the separate annexure. 1. Malhar garh-189 Vital Bits 2. Mandisor-239 Vital Bits 3. Daluada-243 Vital Bits 4. Kachnara Road-180 Vital Bits 5. Dhodar-179 Vital Bits 6. Jaora-224 Vital Bits 7. Namli-212 Vital Bits 8. Dhowas-271 Vital Bits 9. Kachnara IBH- 20 Vital Bits 10. Mundalaram IBH-20 Vital Bits "							
	01010300	10.00	Numbers	50080.00	500800.00	AT Par	500800.00	

**DYCSTE-C-RTM-S AND T/WESTERN RLY
TENDER DOCUMENT**

Tender No: SnT-C-RTM-100R-2022-23

Closing Date/Time: 13/02/2023 15:00

2	Description:- "Supply of documents (Manuals for Installation, Testing, commissioning, and maintenance of the system) (One set consists of 6 sets of the following drawings per Station). (i) Manual for installation, Testing, Commissioning, and maintenance of the system for Technicians / Jr. Engineers. (Installation & Maintenance level) (ii) Functioning and system overview (Higher management level). (iii) Completion documents as per special conditions of contract. (iv) Design & Supply of circuits and plans to suit layout given in the signaling plan for Hot Standby Architecture Electronic Interlocking (EI) system. All plans and wiring diagrams shall be prepared on Auto cad Drawing and supplied with CD. This will include supply of Control cum Indication panel / VDU diagram, Square Sheet, Wiring Diagrams (Application Logic and Interface Circuit), Fuse Analysis, Contact Analysis, Tag Block Analysis, Power Supply Distribution / Power equipment arrangement (with program switch) Diagram, Auto Change over diagram (if supplied by the contractor), and all other relevant drawings. NOTE: The contractor shall initially supply 1 set of documents (Paper Prints) for approval of Railways. He shall ensure that each sheet has a block for the signature of the Railway official as well as a block for the signature of the firm, duly signed by the authorized signatory of the firm. The name of the work as given by Railways shall be written on every sheet under the work column. All the drawings shall be supplied in a good quality folder for each station. After approval of documents by Railways, the contractor will make copies of the approved documents and return the approved document to Railways. The contractor will then make the necessary correction to Application Logic software duly incorporating Railways' alterations/ corrections/ comments if any. After Complete Testing / Commissioning of the station, tracings of completion documents as mentioned above will be submitted to Railways for approval. Along with the Completion of application logic, a difference report (showing addition & deletion in different colors) as compared to earlier approved application logic should also be submitted. After approval of completed application logic by Railways, 5 sets of copies of completion tracings will be submitted to Railways."						
3	01010400	5.00	Station	173975.00	869875.00	AT Par	869875.00
	Description:- "Portable work station for Data input & configuration with necessary software/ programs / Accessories, simulation and functional testing, diagnostics, and troubleshooting and commissioning of EI system. A suitable table and chair of reputed make shall be supplied by the contractor. Note: Portable work station shall be of DELL XPS 15 or superior or other make as approved by Engineer In-Charge. All the required software should be uploaded Licensed CD should be given along with the software."						
4	01010500	8.00	Set	156743.00	1253944.00	AT Par	1253944.00
	Description:- "Instruments and Tool Kits required for Trouble Shooting and repair of hardware and software for EI system should be supplied for stations as per schedule item 1 above. (This includes tools required for EI maintenance sorts of crimping, insertion, removal, general purpose tools like screw drivers, spanners, PCB extractor, temp. controlled soldering iron, wire cutter, nose pliers etc. & measuring instruments with carrying case/ holders/ cabinet for technicians/ J.E. for testing, Maintenance and repair at site). Each set comprises of the following :- * Crimping tool for all types of special cable assembly used in EI system. * Insertion tool for all types of special cable assembly used in EI system. * Removal tool for all types of special cable assembly used in EI system * Digital multimeter (Fluke 111 or better) * Steel cabinet/ Almira, Size: 1980mm height, 915 mm width and 485 mm depth (Godrej Make/Jalaram) of good quality to store tool, spare cards and documents. * Steel Book rack Size: 1850mm height, 900 mm width and 316 mm depth for keeping documents. (Godrej Make/Jalaram) * Clamp Earth Tester. * Clamp Current Meter."						
5	Please see Item Breakup for details.			5896672.00	AT Par	5896672.00	
	Description:- Data logger system for Railway S&T installation As per spec. IRS: S-99 2006 (Amdt-3) or latest. Central Monitoring Unit (Hardware Configuration as per Annexure) with UPS minimum 06 Hrs battery backup and required Software tools. This also includes supply of one no composite computer & printer table (Godrej work station table) for keeping Processor module and one no Godrej make operator chair model PCH7001. The datalogger should have E1 connectivity hardware.						
6	01020300	5.00	Numbers	169281.00	846405.00	AT Par	846405.00
	Description:- Remote Terminal Unit (RTU) with 64 digital input & 16 analog input as per technical specification IRS: S-99 2006 (Amdt-3) or latest. In addition RTU should have dual leased line modem. It should possible to connect RTU up to 12 Kms from main data logger. This includes rack for installation & Battery backup for 06 hrs.						
7	1020500	8.00	Numbers	374170.00	2993360.00	AT Par	2993360.00
	Description:- "Failure Analysis System or Central Monitoring Unit with Printer. As per technical specification IRS:S-992006 (Amdt-3) or latest. The specification of Failure Analysis System should be got approved from the Engineer in charge before supply. Note: The Specification of Failure Analysis System shall be as per technical specification given in contract Agreement or higher version as approved by Engineer In-Charge. (Technical specification shall be provided in tender documents.)"						
8	1020700	8.00	Set	64530.00	516240.00	AT Par	516240.00
	Description:- Failure Analysis & Fault Diagnostic software for data logger of 1024 digital inputs / 4096 digital inputs.						
9	01020800	13.00	Set	39748.00	516724.00	AT Par	516724.00
	Description:- Provision of T-Networking suitable for Networking to the existing Data Logger equipments. This includes supply of all equipment / accessories required for the purpose.						
	01030100	6.00	Numbers	29712.00	178272.00	AT Par	178272.00

**DYASTE-C-RTM-S AND T/WESTERN RLY
TENDER DOCUMENT**

Tender No: SnT-C-RTM-100R-2022-23

Closing Date/Time: 13/02/2023 15:00

10	Description:- "Relay racks assembly complete with scaffolding bus bars, fuse strips, fuses, resistors, capacitors, insulators, grouting bolts, tripods etc. as per Drg. No. CSTE /6028 .[Scaffolding should include 20% extra (with minimum of 2 relay rack positions) as spare for future expansion]. Relay rack shall be Powder Coated. (Quantity of Resistance, capacitor & Other items as Annexure.)"						
	01030200	15.00	Numbers	28336.00	425040.00	AT Par	425040.00
11	Description:- Cable termination racks as per Drg. no. CSTE 5004, 5005, 5006 complete along with fitting arrangements and also with arrangement for fixing four 8-way terminal strips/ Screw less terminals on each row having 16 such rows. Supply of 8 way terminal strips/ Screw less terminals not covered under this item. Cable termination rack shall be Powder Coated.						
	Please see Item Breakup for details.			1078950.00	AT Par	1078950.00	
12	Description:- Disconnect Terminal Block, Screw less type, as per RDSO Spec. No. RDSO/SPN/189/2004. With latest amendments.						
	01031300	150.00	Numbers	57.00	8550.00	AT Par	8550.00
13	Description:- "Indicative type Fuse base/ holder with cap, suitable to G type fuse of capacity 0.63A - 3.0A. (System, Rapid, Malnad, or RBCO make or similar). "						
	01031400	150.00	Numbers	21.00	3150.00	AT Par	3150.00
14	Description:- Indicative type Fuse suitable to G type fuse base/holder of capacity 0.63 A - 3.0 A (System, Rapid, Malnad or RBCO make or similar).						
	01031600	500.00	Numbers	40.00	20000.00	AT Par	20000.00
15	Description:- D type fuse block non indicating type low voltage non deteriorating fuse base suitable for fuse link of capacity 2A/6A/10A as per specification IRS:S-80/92 or latest . Quantituy break up of each type of fuse block will be specified by Engineer in-charge.						
	01031700	500.00	Numbers	42.00	21000.00	AT Par	21000.00
16	Description:- D type fuse link non indicating type low voltage non detonating, capacity 2A/6A/10A as per specification IRS:S-80/92 or latest. Quantity break up of each type of fuse block will be specified by Engineer in-charge.						
	01031800	70.00	Each Module	35840.00	2508800.00	AT Par	2508800.00
17	Description:- Fuse auto changeover system for used in Railway Signaling System as per RDSO/SPN/209/2012 rev.1 with latest amendments. One Automatic changeover Unit comprises 32 nos. of external Non Deteriorating Type or 'G' type fuses from 0.6 Amp to 4 Amp capacities which are in signaling circuits. The system shall have 8 cards with a monitoring arrangement of 4 fuses in one card.						
	01031900	15.00	Each Module	60536.00	908040.00	AT Par	908040.00
18	Description:- Fuse auto changeover system for used in Railway Signaling System as per RDSO/SPN/209/2012 rev.1 with latest amendments. One Automatic changeover Unit comprise 24 nos. of external Non Deteriorating Type or 'G' type fuses from 4 Amp to 10 Amp capacities which are in signaling circuits. System shall have 6 cards with monitoring arrangement of 4 fuses in one card.						
	01041500	120.00	Numbers	9047.00	1085640.00	AT Par	1085640.00
19	Description:- Key Lock Relay working on 24V DC, AC Immunized with different ward combinations (Three ward plates to be supplied with each relay).						
	01050100	700.00	Numbers	5704.00	3992800.00	AT Par	3992800.00
20	Description:- Relay QNA1, AC immunized, 08F/08B, 12F-4B, 24VDC along with plug board, retaining clip and connectors conforming to BRS: 931A, IRS: S60, IRS: S34 & IRS: S24.						
	01050400	50.00	Numbers	6666.00	333300.00	AT Par	333300.00
21	Description:- DC neutral line relay QNA1K (QSA3), AC immune, DC neutral line 24V, 12F/4B contacts, complete with plug board, retaining clip and connectors. Conforming to BRS 930A, (as applicable) IRS:S34 & IRS:S23 or latest.						
	01050500	400.00	Numbers	5042.00	2016800.00	AT Par	2016800.00
22	Description:- Relay QSPA1, 24VDC, Slow to pick up, 8F.4B along with plug board, retaining clip and connectors. Conforming to BRS: 933A, IRS:S60, IRS:S34 & IRS:S23.						
	01050700	60.00	Numbers	6267.00	376020.00	AT Par	376020.00
23	Description:- Track Relay QBAT, AC immunized, 2F-2B contacts, 9 ohms. Complete with plug board, retaining clip & connectors as per RDSO /SPN/84/88 dtd. 16/05/91 or latest.						
	01050800	600.00	Numbers	6645.00	3987000.00	AT Par	3987000.00
24	Description:- Universal AC ECR of Q series, type "QECX61" suitable for AC LED all signal aspect, Front & back contact Metal to Carbon type complete with plug board retaining clip & connectors conforming to Spec STS/E/Relays/AC Lit LED Signal/09/2002, BRS: 941A, IRS:S34 and IRS:S23 (as applicable)						
	01051300	1.00	Kg	217.00	217.00	AT Par	217.00
25	Description:- Sealing wire used for sealing of signaling relays & equipments.						

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26	01051400	1.00	Kg	258.00	258.00	AT Par	258.00	
	Description:- Lead Tablet for sealing wire used for sealing of signaling relays & equipments.							
27	01060100	1.00	Kilometre	185933.00	185933.00	AT Par	185933.00	
	Description:- PVC insulated Railway Signaling multi-core Indoor Cable 1mm x 60mm x 0.6mm dia conforming to IRS:76/89(Amd3) or latest.							
28	01060200	1.00	Kilometre	104870.00	104870.00	AT Par	104870.00	
	Description:- PVC insulated Railway Signaling multi-core Indoor Cable 1 mm x 40 mm x 0.6 mm dia conforming to IRS:76/89(Amd3) or latest.							
29	01060300	1.00	Kilometre	207403.00	207403.00	AT Par	207403.00	
	Description:- PVC insulated Railway Signaling multi-core Indoor Cable 1mm x 24 mm x 1 mm dia conforming to IRS:76/89(Amd3) or latest.							
30	01060600	5.00	Kilometre	6344.00	31720.00	AT Par	31720.00	
	Description:- Single core multi-strand wire 0.5 sq.mm. (16 conductor each dia. 0.2mm), as per IRS 76/89 (Amd3).							
31	01060700	5.00	Kilometre	47877.00	239385.00	AT Par	239385.00	
	Description:- Flexible cable (Power wire), multi-strand copper conductors cross section 1x6 Sq.mm.(85 conductor each diameter 0.30 +/- 0.01) as per IS 694/1990 with insulation thickness of 0.80 mm nominal conductor resistance 3.30 ohms/km and test parameters are as per IRS(S)76/89.							
32	01060800	10.00	Kilometre	154109.00	1541090.00	AT Par	1541090.00	
	Description:- Flexible cable (Power wire), multi-strand copper conductors cross section (1x16Sq.mm).101 Conductors each diameter 0.45 + 0.01 as per IS 694/2010 with insulation thickness of 1.2mm nominal conductor resistance 1.127 Ohms/Km and test parameters as per IRS(S) 76/89.							
33	01071000	1200.00	Numbers	2682.00	3218400.00	AT Par	3218400.00	
	Description:- Low maintenance Lead acid secondary cell 2V/80 AH (Track feed Battery), shelf mounting type conforming to IRS:S- 88/2004 or latest (uncharged)							
34	01072000	13.00	Numbers	12870.00	167310.00	AT Par	167310.00	
	Description:- Transformer 230V/110-130V Single Phase 1 KVA as per Spec. IRS S-72/88 with latest amendments. (For Signal Lighting)							
35	Please see Item Breakup for details.				1284240.00	AT Par	1284240.00	
	Description:- Transformer Rectifier Set as per IRS(S) 91/93 Amendment - 1.							
36	01073800	130.00	Kg	142.00	18460.00	AT Par	18460.00	
	Description:- Rubber Mat for Power Equipment room. (5mm thick)							
37	01074300	13.00	Numbers	62281.00	809653.00	AT Par	809653.00	
	Description:- "Transient Surge Suppressor Electronic Grade Surge protective device (Surge) current Capacity 50 KA as per following Specifications: 1) Connection Type: Parallel, 2) Nominal discharge current: 3KA 3) Response Time : <0.5 nanoseconds, 4) Status Indication: LEDs, Dry Contacts."							
38	01080700	15.00	Numbers	3838.00	57570.00	AT Par	57570.00	
	Description:- Desk type Electronic Magneto Telephone as per spec No IRS/TC-79/2000 or with latest amendments.							
39	01080800	15.00	Numbers	11454.00	171810.00	AT Par	171810.00	
	Description:- Battery Block for magneto telephone, 12 V 7 Ah along with charger 230V AC/12V DC 1 amp. As per RDSO spec. TC 72/97.							
40	01080900	26.00	Numbers	8217.00	213642.00	AT Par	213642.00	
	Description:- Fire Extinguisher CO2 type (capacity 5 kg.)							
41	01081100	30.00	Numbers	172908.00	5187240.00	AT Par	5187240.00	
	Description:- Earth Leakage Detector as per RDSO/SPN/256/2002 with latest amendments. The basic detector unit shall comprise of 8 channels, for use on signaling circuits of 110V AC/DC and/or 60V/24V/12V DC as ordered by purchaser. If the detector is required for less number of channels, dummy plates shall be provided. For additional requirement add on /expendable cabinet may be used. The voltage specified shall be provided with + 25% and - 10% tolerance.							
42	01090100	42.00	Numbers	3001.00	126042.00	AT Par	126042.00	
	Description:- Office Chair makes Godrej CH-7B or similar of reputed brand.							
43	01090200	16.00	Numbers	9333.00	149328.00	AT Par	149328.00	
	Description:- Office Revolving Chair Godrej Make Model No.9u02r Bravo Or Similar of reputed brand.							
44	01090300	21.00	Numbers	17576.00	369096.00	AT Par	369096.00	
	Description:- "Office table with laminated top with three drawers on left hand side and one locker on the right hand side. Olive brown with duplicate keys. Make: Godrej Model T-9 or Similar of reputed brand. "							

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45	01090400	21.00	Numbers	19399.00	407379.00	AT Par	407379.00	
	Description:- "Steel Plain Almirah with 4 adjustable slaves Size: 1980mm height, 915 mm width and 485 mm depth. Make: Godrej Storewel Plain Large or Similar of reputed brand. "							
46	02010100	20.00	Numbers	13387.00	267740.00	AT Par	267740.00	
	Description:- "Colour Light Signal Complete. This includes: - (1). Post Tubular 140 mm Dia, as per IRS: S-6/81 or Latest & RDSO Drg. No. SA-24625 (Advance). (2). CI Base (As per IRS S-10 & RDSO Drg. No. 2011/M with latest assembly). (3). Pinnacle. (4). Ladder Assembly, as per RDSO Drg. No. SA-23156, with Base, Ladder Guards, Platform, Front Maintenance Platform, MS Supporting bracket to Support Ladder. (5). Signal Front Staging Complete Assembly for CLS Unit. (6). Signal back staging as per extent WR Practice Note: Height of the Post shall be 5.5 Long. "							
47	02010900	20.00	Numbers	33546.00	670920.00	AT Par	670920.00	
	Description:- Non Metallic (FRP) colour light signal housing multi unit type for railway signaling suitable for RE area TWO Aspects. Complete without lenses, lamps and signal transformer as per RDSO DRG. No. SA 23003/A/M Adv. Alt- S and as per SPEC. No. RDSO/SPN/194/2006 (Vol. 1.0) or latest and FRP material as per RDSO SPEC. No. RDSO/SPN/151/1997 or latest.							
48	02012300	40.00	Numbers	232.00	9280.00	AT Par	9280.00	
	Description:- Pad locks Godrej make, Hardened Nav -Tal 7 lever, 65mm dia with common key or similar product having same feature & technical data.							
49	02020100	3000.00	Numbers	1180.00	3540000.00	AT Par	3540000.00	
	Description:- Track Lead Junction Boxes as per C.Rly Drg. No.RST 11509 made from fiber glass along with terminal blocks.							
50	02020200	800.00	Numbers	1986.00	1588800.00	AT Par	1588800.00	
	Description:- Choke Coil for Single Rail Track Circuit on 25 KV 50 Hz AC Electrified Section as per Spec No IRS S 65/1983 with latest amendments.							
51	02020300	400.00	Numbers	1035.00	414000.00	AT Par	414000.00	
	Description:- Adjustable Track Feed Resistance disc type 30 ohms as per RDSO Drg. No. SA 20166/M (Adv) with latest amendments (with Phenolic moulded base).							
52	02020400	400.00	Numbers	3862.00	1544800.00	AT Par	1544800.00	
	Description:- Track feed battery chargers, 110V AC input, 2 to 6 V DC Output; as per Specn.No.IRS.S 89/ 2013 with latest amendments. Charger shall be suitable for charging 80 AH battery.							
53	02020500	15000.00	Numbers	7.00	105000.00	AT Par	105000.00	
	Description:- Channel Pins MS (Galvanized) single groove, 7 mm suitable for 4mm dia bonding wire as per spec No IRS S 17 & RDSO Drg No. S-69/M.							
54	02020600	75.00	Kilometre	6501.00	487575.00	AT Par	487575.00	
	Description:- PVC jacketed wire rope for Track Lead connections. PVC jacketed wire rope should be of Galvanized steel wire rope 6 mm dia (6x19 stranded wire with steel core of 6 mm dia) sheathed with PVC 2mm wall thickness, overall thickness being 10 mm. PVC sheath should be made of type 6 compound as per IS 5831 of 1970. Reclaimed or recycled material should not be used.							
55	02020700	12000.00	Kg	80.00	960000.00	AT Par	960000.00	
	Description:- GI wire 8 SWG (4mm dia) suitable for track circuit rail bonding.							
56	02040100	20.00	Numbers	18368.00	367360.00	AT Par	367360.00	
	Description:- "Apparatus Case Single NE Rly Type as per Drg. No.W. Rly/SW/47/68 Alt-A, fitted with two nos of E Type lock (ward No will be specified by Engineer-in Charge) as per RDSO Drg. No. SA 3376/3473 and Key to Drg. No. 3377 Note: This item includes the supply & fixing of 2 Nos E Type Lock fitted on both doors, along with two Keys."							
57	02040200	10.00	Numbers	11718.00	117180.00	AT Par	117180.00	
	Description:- "Apparatus Case half NE Rly Type as per Drg. No. W. Rly/SW/47/68 Alt-A fitted two nos E Type lock of (ward No will be specified by Engineer-in Charge) as per RDSO Drg. No. SA 3376/3473 and Key to Drg. No. 3377. Note: This item includes the supply & fixing of 2 Nos E Type Lock fitted on both doors, along with two Keys "							
58	02040700	10.00	Numbers	12338.00	123380.00	AT Par	123380.00	
	Description:- Phenolic laminated Sheet, grade P3 in standard size of 1220 X 1220 x 20 mm as per spec. No IS 2036 of 1995 or latest. Test report of manufacture to be supplied.							
59	02040900	10.00	Numbers	6057.00	60570.00	AT Par	60570.00	
	Description:- Phenolic laminated Sheet, grade P3 in the standard size of 1220 X 1220 x 10 mm as per spec. No IS 2036 of 1995 or latest. Test report of manufacture to be supplied.							
60	02041100	1000.00	Numbers	86.00	86000.00	AT Par	86000.00	
	Description:- ARA Terminal blocks with links made of PBT Spec No.IRS/75/2006(Rev - 2) with latest amendments and RDSO Drg.No.SA-23741A Alt.4.							

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61	02041200	100.00	Numbers	153.00	15300.00	AT Par	15300.00	
	Description:- Cartridge fuse block made of PBT as per RDSO Drg No SA-23748 Alt 4 & Spec No IRS S 75/2006 with latest amendment. Fuse block shall be suitable for round head type voltage fuses. This also includes supply of equivalent no of ND type Fuses of 2A capacity as per specification IRS S-78/92.							
62	02041300	100.00	Numbers	65.00	6500.00	AT Par	6500.00	
	Description:- Round head type non deteriorating type low voltage cartridge fuse as per Spec No IRS/S/78/92 with latest amendments 2A/4A/6A capacity.							
63	02050100	100.00	Numbers	4190.00	419000.00	AT Par	419000.00	
	Description:- Earth Electrode as per Drg. No. CSTE / 6091.							
64	02050200	120.00	Set	10902.00	1308240.00	AT Par	1308240.00	
	Description:- Maintenance Free Earth Electrode of length 3m, including supply of 3 bags of Earth enhancement material for earthing (20KGs /bag) for each electrode & other accessories as per Drg. No. SDO / RDSO/ E&B/001 and RDSO Spec No. RDSO / SPN/197/2008.							
65	02060100	120.00	Running Metre	707.00	84840.00	AT Par	84840.00	
	Description:- Medium Class G.I. Pipes to IS : 1239 (Pt.I)-2004 or latest ; 100mm dia. (int. dia) 3.65 mm+/- 10% thick with coupling. G.I. pipes shall have ISI mark on it and contractor should submit manufacturer's test certificate of G.I. pipes.							
66	02060200	70.00	Numbers	2229.00	156030.00	AT Par	156030.00	
	Description:- "Double Walled Corrugated (DWC) HDPE Pipe with associated collars etc. as per RDSO Specification No. RDSO/SPN/204/2011 or latest anti-rodent & anti-oxidant and non flame propagating type in 6 meters straight length and of size 120 mm outer dia, & 103.5 mm inner dia. (The manufacturers, suppliers must produce valid IS license and should be certified under ISO 9000 and shall submit copy of certificate). One of the following coupling arrangements should also be supplied with each pipe as per the site requirement. 1) Suitable snap fit coupler with rubber 'O-Ring 2) Spacers 3) Tees 4) Bend, 5) End-cap (The total quantity of above items is equal to no. of pipes supplied.) DWC pipe shall be marked at every 1 mtr length in such a way that manufacturer's name, vender name and year of manufacture can be easily identified. "							
67	03010100	150.00	Per Route	1748.00	262200.00	AT Par	262200.00	
	Description:- "Phase II-Design of circuits' alteration and plans to suit layout given in the signaling plan of the Hot Standby Architecture Electronic Interlocking (EI) system. All plans and wiring diagram shall be prepared on Auto cad Drawing and supplied with CD. This will include supply of Control cum Indication panel diagram, square sheet, wiring diagrams, Fuse analysis, contact analysis, Power panel diagram, IPS wiring diagram, Auto change over diagram, Power equipment arrangement with program switch, Block circuit wiring diagram, Digital Axle counter wiring diagram and all other relevant drawings. NOTE: The contractor shall initially supply 2 sets of documents (Paper Prints) for approval of Railways duly highlighting the altered portion in red color. Railway will return one set to the contractor duly approved with alterations/corrections, if any. The contractor shall incorporate Railways' alterations/ corrections/ comments, if any, in the tracing & CD without any deviation and submit all the tracings and Final CD complete with all respect for Approval of Railways. After Approval of Railways on the tracings, the contractor shall submit 3 sets of final approved diagrams to the Railways within 15 days. He shall ensure the each sheet has a block for signature of railway official as well as a block for signature of firm, duly signed by the authorized signatory of the firm. The name of the work as given by Railways shall be written on every sheet under the work column. All the drawing shall be supplied in a good quality folder for each station"							
68	03010300	3.00	Lot	15876.00	47628.00	AT Par	47628.00	
	Description:- "Design of circuits and plans to suit layout given in the signalling plan of IBS/ABS/LC GATE. All plans and wiring diagram shall be prepared on Auto cad Drawing and supplied with CD. This will include supply of Control cum Indication panel diagram, Route section plan, square sheet, wiring diagrams, Relay rack/Relay arrangements, Bus bar details, Fuse analysis, contact analysis, Relay room tag block analysis, panel tag block analysis, Power panel diagram, IPS wiring diagram, Auto change over diagram, Power equipment arrangement with program switch, Block circuit wiring diagram, Digital Axle counter wiring diagram and all other relevant drawings NOTE: The contractor shall initially supply 2 sets of documents (Paper Prints) for approval of Railways. Railway will return one set to the contractor duly approved with alterations/corrections, if any. The contractor shall incorporate Railways' alterations/ corrections/ comments, if any, in the tracing & CD without any deviation and submit all the tracings and Final CD complete with all respect for Approval of Railways. After Approval of Railways on the tracings, the contractor shall submit 3 sets of final approved diagrams to the Railways within 15 days. He shall ensure the each sheet has a block for signature of railway official as well as a block for signature of firm, duly signed by the authorized signatory of the firm. The name of the work as given by Railways shall be written on every sheet under the work column. All the drawing shall be supplied in a good quality folder for each IBS/ABS/LC Gate. "							
	03010500	350.00	Per Route	1600.00	560000.00	AT Par	560000.00	

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69	Description:- Preparation of following completion plan on standard 75 micron polyester film all drawing will be prepared on CAD & one DVD/CD will be provided for the finally corrected version of drawing & documents after it is checked & approved by Rlys. Completion documents will also supplied for ST/LT, WD etc. 6 copies will also be provided for each of the documents mention below cable Route plan including depth of cable , cable core chart, location details, plan for all location and 20 copies of SWR plans, SWR literature and other literature required for commissioning.						
	03020100	10.00	Job	656100.00	6561000.00	AT Par	6561000.00
70	Description:- "Phase I - Installation, wiring, programming, testing and commissioning of EI equipment supplied as per supply item in schedule 'A' including transportation from Consignee's depot to site. The works and materials for installation, wiring, testing and commissioning, grouting, cutting of floors, walls, refilling of the same, re-plastering, required CC/ masonry works, fixing/ placing/ laying of insulated ladders/ casing-capping/ cable trays/ RCC/GI pipes / Cables, termination of cables with lugs/ connectors, painting,/ lettering are to be provided/ done by the contractor for the equipments supplied vide Item of Schedule ""A"" of this contractThis also covers the networking of built in EI Data loggers of all the stations to monitor the system to any other places where desired by Engineer-in-charge. Note: Installation shall be comply to RDSO Technical advisory note no. STS/E/TAN/3012 Ver 3.0 dated 28.06.2021 or latest.policy/letter to RDSO Installation, wiring, programming, testing and commissioning of Operator VDU in Hot stand-by with Redundancy. Any Equipments/cards/Modules required for Hot stand-by with Redundancy shall be supplied & Installed by the Contractor Note:- This also includes supply of Two nos. of composite computer & printer table (Godrej work station table) for keeping VDU and one no Godrej make operator chair model PCH7001. Termination of indoor/ PIJF cables in relay room on relays, tag blocks, CT racks as per approved wiring diagram including alterations/ modifications as required at site. Soldering to be done at all required termination. Dressing/ lacing of wiring shall be done neatly with help of dressing thread / plastic self lock strip of suitable size. The tools/ equipments/ materials/ simulation boards required for testing shall be supplied / fabricated by contractor. this included replacement of modules/ cards/ LEDs/ equipments going defective during testing. Necessary power supply boards with required capacity plugs, sockets, surge & lightning protection boxes shall be supplied and installed by the contractor. 230V supply shall be arranged by Railways. In case supplies are required to be extended, from Power room / relay room then same shall be extended by the contractor with his own materials such as 1X16 sq mm wires, cables, lugs, RCC/GI pipes, insulated ladders etc After ST/LT testing, Factory Acceptance Tests (FAT) & Square Sheet testing system should be fault free while submitting to Railways, otherwise suitable necessary action can be taken by Engineer-in-charge."						
	03020300	160.00	Man-Days	1518.00	242880.00	AT Par	242880.00
71	Description:- "Training of Technician/ Jr. Engineer for installation, Commissioning, Testing, Repairs & Troubleshooting of EI system. (Hard copies of training material/ course modules to be given to each participant). "						
	03020400	40.00	Man-Days	1330.00	53200.00	AT Par	53200.00
72	Description:- "Training of Officers for installation, Commissioning, Testing, Repairs & Troubleshooting of EI system. (Hard copies of training material/ course modules to be given to each participant). "						
	03020500	10.00	Job	152899.00	1528990.00	AT Par	1528990.00
73	Description:- "Earthing of EI equipment, relay racks and Power equipment etc to be done along with the supply of all requisite materials. Earthing shall be in the form of Ring Earth conforming to RDSO specification No. RDSO/SPN/197/2008 (with a min. of 6 maintenance free earth electrodes) & RDSO Drawing issued under Railway Board letter No. 2010/Sig./SGF/EI (Ansaldo) Dated 22.06.11, made using copper rings with earth resistance less than 1 ohm. The earthing shall be maintenance free & earth enhancement compound should be used. The ring earth shall be connected to copper flat of size 25x3 mm in the relay room and IPS room. This copper flat shall be fixed on the wall to the entire breadth of the Relay room and IPS room as an earth bus bar and all earth connections shall be taken from it. A, B, C, & D class protection shall be provided for all EI equipment Note:- This will also cover the earthing & necessary protection of EI equipment as per details given in the scope of work of Special Condition of Contract and other requirement given in Chapter 5 & Pre-commissioning check list of EI system."						
	03030300	6.00	Numbers	10924.00	65544.00	AT Par	65544.00
74	Description:- Installation of Relay Rack Assembly including IDF pillars if any complete with wall supports, scaffolding, ladders, runway for cables, fixing of Relay / Relay group base plates, fixing of Tag blocks etc. The work shall be done as per approved plan, extant practice on WR & the instructions of Rly engineer at site.						
	03030400	15.00	Numbers	10501.00	157515.00	AT Par	157515.00
75	Description:- Installation of Cable Termination Racks Assembly complete including wall supports, scaffolding, 8 way/ARA terminals /Screw less connectors, Tag blocks & other necessary accessories etc. The work shall be done as per approved plan, extant practice on WR & the instruction of Rly engineer at site.						
	03030700	85.00	Each Module	1051.00	89335.00	AT Par	89335.00
76	Description:- Installation wiring testing and commissioning of Fuse change over system (FACS). This includes provision of common Buzzer & indication at ASM Room & ESM Duty Room and painting of fuse details. This also includes fabrication of frame for installation of FACS at Station/ LC gate where installation of relay racks not feasible.						
	03030800	8.00	Numbers	13129.00	105032.00	AT Par	105032.00
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	Description:- Supply & installation of Test board (LED, Pin tool type) for relay Room as per as per Drg No RST/C/105 A & B						
	03031100	600.00	Per Unit	15.00	9000.00	AT Par	9000.00
78	Description:- Circuit wiring/jumpering as per circuit diagrams in the relay racks/IDF rack tag blocks. This includes preparation of Jumper sheets by wire man duly checked by firm's site supervisor & wire to wire testing as per circuit diagram. Any wrong jumper done by wireman will not be paid & correction shall be done free of cost. Jumper wires will be issued by Railways. Good quality solder resin core to be supplied by contractor for soldering of Jumper wires. Soldering of jumper wires to be done after completion of testing by Railways.						
	03040100	8.00	Set	25526.00	204208.00	AT Par	204208.00
79	Description:- "Installation, wiring, testing and commissioning of Data logger complete along with accessories using Contractors own wiring & fixing materials as per following configuration. (It includes loading of NETWORKING software, networking of data logger, installation of FEP & Fault diagnosis system). The requisite communication cable/channel for networking will be arranged by Railway. 1024 digital & 32 analog inputs / 4096 digital & 32 analog inputs"						
	03040200	5.00	Set	8927.00	44635.00	AT Par	44635.00
80	Description:- "Installations, wiring, testing and commissioning of Remote Terminal Unit complete along with accessories using Contractor's own wiring & fixing materials. (It includes loading of NETWORKING software and networking with data logger The requisite communication cable/channel for networking will be arranged by Railway."						
	03050100	17.00	Lot	24688.00	419696.00	AT Par	419696.00
81	Description:- Installation of LT Power Panel/ Power distribution panel/ Auto Changeover Panel, power supply equipments such as Rectifiers Transformers, Battery chargers etc including mounting on wooden planks/Hylem Sheet and complete wiring for automatic change over arrangement, mounting of Program switches on Bakelite sheet of size 300 mm x 300 mm x 8 mm fitted to MS angle (size 25mm x 25mm x 5mm) brackets, wiring as per requirements. Necessary wires to be supplied by Rlys, lugs & glands to be supplied by Contractor.						
	Please see Item Breakup for details.			1211873.00	AT Par	1211873.00	
82	Description:- "Installation, Wiring and testing of Integrated Power Supply System. This includes power distribution connection to bus bars and relay racks in the room with contractor's own wiring materials and fabrication and fixing of AC/DC power distribution board made on 10mm thick Phenolic hylam sheets or any standard make with connections suitable for 32 A. Wiring to be done considering site requirement, depending upon the load with suitable wires, lugs & glands as per instructions of Engineer-in-charge. The work includes installation of Thermo flasher relay, ELD's, fixing & wiring of change over switch (program switch) for selection of DG set supply (DG1 & DG2) and wiring of change over switch (program switch) for selection of mains or DG supply. This item also includes supply & fixing of ladder along the wall for carrying power supply wires/cables from IPS room to Relay room/power room etc. Any masonry work required will be carried out by contactors own material."						
	Please see Item Breakup for details.			523200.00	AT Par	523200.00	
83	Description:- Charging of Lead Acid Batteries with contractors own battery grade sulphuric acid and distilled water with minimum two charge - discharge cycles, installation of charged batteries in groups & their connection & wiring. The work shall be done as per extant practice of W.Rly & instruction of Engineer-in-charge. Detailed measurements of initial charging shall be recorded jointly by contractor & Rly's site-in-charge.						
	03050900	13.00	Numbers	341.00	4433.00	AT Par	4433.00
84	Description:- Installation and commissioning of various classes of lightening cum surge protection device as decided by site engineer. This include supply and fixing of any other material required to complete the installation & commissioning of lightening cum surge protection device.						
	03060300	15.00	Per Telephone	116.00	1740.00	AT Par	1740.00
85	Description:- Wiring, installing of Magneto / DTMF telephone in ASM office, at locations, Relay Room, Point locations on both directions and siding Point Control locations as per instructions of Engineer-In-Charge for traffic purpose.						
	03060700	5.00	Set	116897.00	584485.00	AT Par	584485.00
86	Description:- Installation, Testing & commissioning of Block proving by Axle Counter (BPAC) including UFSBI equipment as per standard practice & directive on 1:3:6 CC foundations as per drawing No CSTE 6095.						
	04010100	5.00	Lot	23927.00	119635.00	AT Par	119635.00
87							

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	Description:- Preparation of cable route plan, cable coreage plan, location particulars, Cable termination rack particulars, cable meggering report, earth resistance particulars, Traction bonding diagram, 1/2 wire count sheet and any other drawing in AutoCAD in A3/A4 size. The contractor shall initially supply 3 sets of circuits complete for approval of Railways. Railways will return one set to the contractor duly approved with alterations/corrections, if any. The contractor shall incorporate Railway's alterations/corrections in the tracings without any deviation and submit all tracings complete in all respects to the Railways along with CD & 4 sets of final approved drawings. This includes submission of final cable route plan as per laid cable duly measured at every 30m clearly indicating distance of laid cable from fixed point of reference & indicating all track crossings and tail cables. This also includes designing of cable coreage plan based upon I.P in consultation with engineer-in-charge For small/medium yards						
88	04020100	20.00	Numbers	8814.00	176280.00	AT Par	176280.00
	Description:- Excavation and Casting of foundation for main signal post as per CSTE/3122 (WR) with contractor's own materials including cement and anchor bolts of standard size. The required scaffolding Ferma etc for Casting of foundation will have to be brought by the contractor at his own cost.						
89	Please see Item Breakup for details.			52140.00	AT Par	52140.00	
	Description:- Erection of CLS Post with base and signal unit on top or on OFF set Bracket, fixing of front and back staging, ladder and guards, signal name plates / boards if any with contractor's own brackets and fixing materials. This also includes erection of auxiliary signals like calling on, shunt signal if any. The work shall be done as per instructions of Rly engineer at site. It also includes provision & fixing of maintenance platform as per design given by Engineer -In-Charge at site. The Item includes cutting of Signal post if required by Site In charge.						
90	04020800	20.00	Numbers	2793.00	55860.00	AT Par	55860.00
	Description:- Fixing of Calling-on Signal/A-Sign/AG-Sign unit on signal post. The item includes fixing of Co- On signal /'A' sign/ 'AG' sign unit on signal post with bracket, hood etc. Item includes supply bracket & fixing materials etc. by the contractor. The item also includes termination of cables & wiring inside Co- On signal /'A' sign/ 'AG' sign unit as per standard practice.						
91	04020900	20.00	Numbers	6885.00	137700.00	AT Par	137700.00
	Description:- Supply & Fixing of Stop Board, Block section limit Board, goods warning board with contractors own material. The work shall be done as per instruction of Rly. Engineer at site.						
92	04021100	30.00	Numbers	1479.00	44370.00	AT Par	44370.00
	Description:- Fabrication and fixing of Signal Number Plate(CSTE Drg No CSTE/6186) , 'A' Marker (Drg No. CSTE/6180), 'AG' Marker (Drg No. CSTE/6181), 'P' Marker (Drg No. CSTE/6182), Arrow Marker (Drg No. CSTE/6183), 'G' Marker (Drg No. CSTE/6184), 'C' Marker (Drg No. CSTE/6185). marker disk on signals as per standard practice All material required for this work shall be supplied by Contractor.						
93	04030100	400.00	Numbers	8149.00	3259600.00	AT Par	3259600.00
	Description:- "Installation of DC track circuits covering points zones also. The item includes provision of continuity bonds of seven strand PVC jacketed wire/ GI wire 8 SWG on rail joints after drilling bond-hole of 7.0/7.1/7.2mm dia (double bond with sleeves and rail clips are to be provided at each rail joint), insertion of insulated block joint, fixing of Track lead Junction box on MS angle two numbers of size 40X40X5 mm 1200 mm length for track feed/ jumper / track relay ends of track CCTs (as per double TLJB arrangements) and also for fixing jumper cables as per insulation diagram WR Drg No. CSTE/6055 and standard practice, making rail connections through suitable insulated sleeves from Track lead Junction box at TF, jumper & TR end with seven strand PVC jacketed wire /GI wire 8 SWG , rail clips for fixing bond wire on the TLJB as per standard practice, termination of tail cables on bootleg terminals etc TF/TR wiring shall be fixed on the suitable arrangement on PRC sleepers with the help of Hooks. Hooks shall be provided on PRC sleepers with the help of suitable steel bracket. This item also includes fixing & supply of channel pins etc. The item also includes supply of MS angles / trestles, GI wire 8 SWG / seven strand PVC jacketed wire, hooks, rail clips etc. (Supply of insulation material for block joint & Boot leg is covered in Schedule separately or will be supplied by Railways). "						
94	04030200	400.00	Each Track	7566.00	3026400.00	AT Par	3026400.00
	Description:- "Fixing and wiring of DC track circuit equipments i.e. track feed charger, resistance, track relay, battery, etc., in the Apparatus Case and battery box as per standard practice. Termination of tail cable on M 6 / Screw less terminals WAGO or FINOLEX or similar approved make teminals/ fuse blocks / HRC fuse. Item includes testing /commissioning of track circuit. Complete wiring material will be supplied by contractor (Supply of Track feed battery charger, track feed battery, resistances & 'B' type choke & Track relays will be supplied by Railways / covered in Schedule separately)."						
95	04030300	150.00	Numbers	1635.00	245250.00	AT Par	245250.00
	Description:- "Erection, Fitting and Rail connection of Track Lead Junction Box on two supports (M.S.angle) with contractor's fixing material and PVC jacketed wire for track lead connection including angles of size 40 x 40 x 5 mm 1200 mm length This will include drilling of holes for track lead/side connections on rail. The work shall be done as per Drg. No. S&T/Const./JHS/T 115 & instructions of Rly engineer at site"						
96	04030400	250.00	Numbers	211.00	52750.00	AT Par	52750.00
	Description:- Provision of bonding with GI wire 4mm dia (8 SWG) for track jumper & fish plate joints bonds. This will include drilling of 7.0/7.1/7.2 mm dia holes in rails (4 Nos.) and provision of two jumpers for each bond, clipping of bonds etc. with contractors own tools as per instruction of Rly. Engineer at site.						

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97	04031000	5.00	Set	23080.00	115400.00	AT Par	115400.00	
	Description:- Installation testing & commissioning of Single Section digital axle counter single section type system complete with track devices and other associated accessories. This include fixing of device, relays, wiring, lacing /dressing, cable termination with lug eyelet, drilling holes in rails, Installation of track devices and make it functional along with existing UFSBI. Material required other then supply item of schedule A shall be arrange by contactor to make it functional.							
98	Please see Item Breakup for details.			227940.00	AT Par	227940.00		
	Description:- Excavation and Casting of Apparatus Case foundation with contractor's own materials including cement and anchor bolts of standard size. The required scaffolding Ferma etc for Casting of foundation will have to be brought by the contractor at his own cost.							
99	Please see Item Breakup for details.			32480.00	AT Par	32480.00		
	Description:- Installation of Apparatus Cases with miniature 'E' type lock on CC foundation. This includes filling of location foundations with river bed sand and plastering on top of the sand. 'E' Type lock will be provided by Railway.							
100	Please see Item Breakup for details.			67210.00	AT Par	67210.00		
	Description:- Fabrication and fixing of phenolic laminated sheet of size 10mm thick in location box by providing all fixtures as per Railway Drawing including fixing of PVC coated string rods at the back side for cable support with contractor's own materials. The work shall be done as per drg and arrangement similar to SK 783-1/2. with latest alterations & as per instructions of Rly engineer at site.							
101	04050800	1000.00	Numbers	15.00	15000.00	AT Par	15000.00	
	Description:- Fixing of ARA Terminals /Screw less connectors and fuse blocks on phenolic laminated sheets and fixing by stainless steel/brass nuts & bolts. This includes provision of two additional holes on the board on either side for cable conductor entry.							
102	04050900	2000.00	Per Conductor	3.00	6000.00	AT Par	6000.00	
	Description:- Termination of cable cores on ARA terminal/fuse blocks, 8 way terminals block/ Screw less connectors in the apparatus Cases/ cable termination rack. This includes all associated works of pulling out the cable from underground. The work shall be done as per location plans and instructions of Railway Engineer at site. This item includes dressing of Cable, making wiring tree etc.							
103	04051100	20.00	Numbers	430.00	8600.00	AT Par	8600.00	
	Description:- Fixing & wiring of QNA1 / QNA1K relays for GPR Circuit in apparatus case as per Standard practice. Fixing and wiring material shall be supplied by the contactor.							
104	04060100	32000.00	cum	323.00	10336000.00	AT Par	10336000.00	
	Description:- Excavation of cable trench as per cable route plan,1 Mtr. deep and of 0.3 Mtr. to 0.6 Mtrs wide advised by Engineer-in-charge alongside the track in normal (all type) soil/strata, conforming to distances as per cable route plan and refilling. This work includes clearing of route from bushes etc, covering of cable laid in trench by loose soil for a layer of 50mm thickness approximately before covering by bricks. The work shall be done as per the extant practice on Western Railway and instructions of Railway Engineer at site. In case 1m depth of trench is not achievable due to site conditions, specific approval of JA grade officer will be required for each site where trench depth of 1m is not possible. Without the approval of JA Grade officer, no payment for trenching will be made for trench depth less than 1m.							
105	04060200	1000.00	cum	351.00	351000.00	AT Par	351000.00	
	Description:- Digging of trench 1.2 M deep from rail flange/ road level and, 0.3 Mtrs to 0.6 Mtrs wide and back filling after placing of DWC/ RCC/GI pipe. (Placing of DWC/RCC/GI pipe covered separately).The ballast disturbed be screened and dressed as required by Engineer-in-charge or his representatives and road tarred immediately. For track crossing, Drg. No.CSTE/3644 Pg.7 of 11 and for Road Crossing, Drg. No. CSTE/3644 Pg. 5 of 11 are to be followed.							
106	04060400	4000.00	Metre	1427.00	5708000.00	AT Par	5708000.00	
	Description:- "Horizontal direction drilling/boring without damage of surface road using Auger Machine. The bore shall be 150 mm dia & shall be done at the depth of minimum 1200 mm from the ground level. The ground level shall be considered ignoring the bank height of the bank of the road. The length of the bore shall be minimum 4 Mtrs long. this include insertion of different dia DWC pipe/ GI pipes coupling etc. as per direction of Engineer In charge. Note:- Pipe will be supplied by railway. Contactor shall provide all material required for boring and adequate nos. of labours for proper laying of cables into the bore. Cable shall be laid cautiously so that it should not get damage due to rough handling & pressure on cable"							
107	04060800	420.00	Running Metre	36.00	15120.00	AT Par	15120.00	
	Description:- Placing of DWC/RCC/GI pipes along with collars in trenches at places of track and road crossings, platform cuttings etc.							
108	04061000	120.00	Running Metre	235.00	28200.00	AT Par	28200.00	

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		Description:- Fixing of GI pipes for crossing the culverts, bridges etc. and concreting of ends with brick masonry at both ends as per the instruction of Rly engineer at site.						
	04061400	80000.00	Running Metre	11.00	880000.00	AT Par	880000.00	
109	Description:- Laying of S&T Cables of various cores/ pairs/ quads in trenches/ GI pipes/ RCC pipes/ DWC pipes/ Trunking. This also includes laying of cables in track crossings & road crossings. Item includes provision of labels of coloured plastic adhesive tapes or any other identifiable material on each cable to give the cable number at each G.P.(Cables will be maggered before and after its laying by contractor under supervision of Railway Representative and he will submit the maggering report of each testing). Length of the cable laid includes the length of the cable coiled for termination purposes.							
	04061800	2000.00	Numbers	492.00	984000.00	AT Par	984000.00	
110	Description:- Supply and installation of RCC cable route marker engraved and painted on both side along the route every 50mm and route diversion as per Drg. No 4014/00/CC4 or latest/ Stone marker.							
	04062900	500.00	cum	175.00	87500.00	AT Par	87500.00	
111	Description:- Earthwork in filling in embankment, guide bunds, around buried type abutments, bridge gaps, trolley refuges, rain bunds if provided, platforms etc. with earth excavated from outside railway boundary entirely arranged by the contractor at his own cost as per RDSO's latest guidelines and specifications and special condition of contract including all leads, royalty, lifts, ascents, descents, crossing of nallahs or any other obstructions. The rates shall include all dressing of bank to final profile, demarcation and setting out of profile, site clearance, removing of shrubs, roots of vegetations growth, heavy grass, benching of existing slope of old bank, all handling/re-handling. Taxes, Octroi and royalty etc. as a complete job. Cut trees shall be property of railways and to be deposited in the railway godown unless specified otherwise in the Special conditions of contract							
	Please see Item Breakup for details.				252520.00	AT Par	252520.00	
112	Description:- "Painting of two coats of synthetic enamel paint over one coat of primer on the following after scraping & cleaning surface wherever necessary with contractor's own supply of paints. Wherever required contractor shall apply coating of epoxy paint also as per instructions of site-in-charge. Epoxy paint will be supplied by Railways. NOTE:- The paint and primer should be from Asian Paints/ Nerolac / Dulux / Berger. The primer / enamel paints (Aluminum synthetic, black enamel, brilliant white and yellow) will be as per (IS 5660 of 1970) / (IS 2932 of 1974)."							
	Please see Item Breakup for details.				4140.00	AT Par	4140.00	
113	Description:- Lettering / Numbering Termination particulars, equipments names etc., legibly and neatly inside location boxes. This includes supply of paints of Asian Paints/ Nerolac / Dulux / Berger make.							
	04100300	120.00	Numbers	1683.00	201960.00	AT Par	201960.00	
114	Description:- Installation of Maintenance free Earth Electrode for Maintenance free earth spec of RDSO/SPN/197/2008							

S.No.	Item Code	Item Qty	Qty Unit	Unit Rate	Basic Value	Escl.(%)	Amount	Bidding Unit
Schedule B-Supply & Execution of Non-SOR Items							186168339.00	
	NS1	5.00	Numbers	1041533.00	5207665.00	AT Par	5207665.00	
1	Description:- "SMPS based Integrated Power Supply System for IBS & LC Gate in RE-Section as per RDSO Spec. No RDSO/SPN/165/2012 vesion -3 or latest and Drg. No. CSTE/6155/ 2 of 7. This includes transportation, installation and Commissioning of Integrated Power Supply System."							
	NS2	8.00	Numbers	1516001.00	12128008.00	AT Par	12128008.00	
2	Description:- "SMPS based Integrated Power Supply System for PI with Q series relays up to 4 Line, as per RDSO/SPN/165/2012 version -3 or latest and Drg No. CSTE/6155/ 7 of 7. This includes transportation, installation and Commissioning of Integrated Power Supply System."							
	NS3	10.00	Set	1185900.00	11859000.00	AT Par	11859000.00	

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3	Description:- "Supply, Installation, Testing and Commsioning of Block proving with digital Axle counter using UFSBI complete set for Double line operation. as per IRS:S-105/2012Ver.0 with latest amendment & Manufacturing specification. NOTE: One set will include equipments required for one complete double line Block Section except DAC. Each Set consisting of following: 1-Universal fail safe block interface for double line as per RDSO Spec.no. IRS:S. 105/2012 with latest version and amdt. it shall have auto changeover facility for quad and E1 Channel, necessary interface for quad and E1 channel to be supplied along with auto changeover arrangement. Quantity of this item -02 no in one set. 2- Block panel complete with all accessories as per RDSO/S/3/2017 with latest amdt QTY-02 no. 3- Relay rack with double locking and sealing arrangement as per RDSO drg no. RDSO/S/3/2018 including relays for each Relay rack (QN1-19 no., QNA1-07no, QL1-02 and Timers-1 no). Quantity of this item -02no in one set. 4-Block telephone with accessories as per RDSO spec.no. RDSO/SPN /191/2000 (the block phone should work without any interruption after auto changeover). quantity - 2no. 5- Supply of reliability improvement kit suitable to work with UFSBI as per RDSO/SPN/147/2005 or latest. It comprises (a) automatic media changeover of modem working on redundant channel for data transmission on OFC/ quad/ micro wave radio (any two media)-1pair (b) secondary modem for UFSBI for use with secondary media OFC/quad/voice channel=1pair (c) power & data SPD: type c & d: power line vf 24 AC/DC-2no, V20C/3PH 150v-2no) & data line SPD(MDP 4D/5T- 2no). (d) Power monitor and soft start unit PMSS - 1 Pair. Make/Brand: Self."						
4	NS4	16.00	Set	864940.00	13839040.00	AT Par	13839040.00
	Description:- Supply, Installation, Testing and Commsioning of High Availability Single section digital axle counters with Dual sensor system as per RDSO/SPN/177/2012 version 3 or latest. This includes The supply of High frequency web mounting type Tx coil/Rx coil, VR/PR Box duly wired, Vital relays, PR Relays, Clamp with deflector plates & hardware, Dual display reset box with auto resetting facility, Surge voltage protection devices and filter card to be mounted on din rail etc as per OEM for complete installation & testing & commissioning of (HASSDAC) system NOTE: One set of HASSDAC system will include equipment required to monitor One Up line or One Dn line of a full Block Section between two stations.						
5	NS5	6.00	Set	944000.00	5664000.00	AT Par	5664000.00
	Description:- "Supply, Installation, Testing and Commsioning of Universal Fail Safe Block Interface for Double Line IBS operation as per Spec. IRS S-104/2012 Ver - 0 suitable to work on OFC channel and Quad Cable. This also includes supply and installation of modem and media chnageover. The installation activity will be only considered complete only after IBS has been made functional t the satisfaction of Engineer In charge. his includes supply of relays and related accessories complete and One pair equals to 2 nos. Note-Installation testing and commissioning shall be done by RDSO approved eqpt manufacturer and pre commissioning checklist should be signe djointly by representative of RDSO approved equipmet manufacturer & railways."						
6	NS6	22.00	Set	2000100.00	44002200.00	AT Par	44002200.00
	Description:- "Supply, Installation, Testing and Commsioning of High Frequency Digital axle counter Single Section type , equipped for 4 detection points, monitoring 3 track sections, suitable for working with straight line and suitable for intermediate block system as per RDSO/SPN/177/2012 version 3 or latest. This includes The supply of High frequency web mounting type Tx coil/Rx coil, VR/PR Box duly wired, Vital relays, PR Relays, Clamp with deflector plates & hardware, Dual display reset box with auto resetting facility, Surge voltage protection devices and filter card to be mounted on din rail etc as per OEM for complete installation & testing & commissioning of system. Note - This item includes Installation, wiring & testing / commissioning of Digital Axle Counter's Central Unit/Evaluator/Processor for the section /at station including its associated all indoor equipments, indication panel, monitoring console/interface computer and wiring the same to integrate with the relay circuits including supply of required power cable of multi -strand 10 Sq mm or more from power room to Central Evaluator, 2 core shielded cable of required size copper conductor as per IRS (S) 76/89(Amd.3) or IS 694/2010 with latest amendment as applicable with other accessories as per the instructions of Railway Engineer at site and earthing as per OEM's technical requirement and specifications. This also includes laying & termination of cable if any form Panel Room to Axle Counter room /Relay room in DWC pipe with contractor's material / existing ladder. Also supervisory track circuit to be provided by for which relays will be provided by Railway"						
7	Please see Item Breakup for details.			11140333.00	AT Par	11140333.00	
	Description:- "Modification, Alteration, Augmentation, Design, Manufacture, Supply, Installation, Testing & Commissioning of Existing Centralised Electronic Interlocking System of ANSALDO Make at HARKIYA KHAL & BARAYLA CHAURASI Stations as per RDSO specification No. RDSO/SPN/192/2019 with the latest amendment. This includes all items as per attached Annexure-1 which includes a) Re-Design of EI system - Preparation of TOC, application & interfacing circuits to suite approved Signalling Plan & installation, testing and commissioning of aforesaid station b) Factory Acceptance Test (FAT) @ in house in Bangalore office by HITACHI RAIL STS Engineers & the CSTE Representative to suite approved Signalling plan & Site Acceptance Test (SAT) shall be jointly carried out @ aforesaid station c) Supervision of Installation, Testing and Commissioning support d) Submission of "AS MADE" document in CD as soft copy with one set of Interfacing & application Logics Circuits in regular "A3" size shall be supplied e) Wiring pertaining to modification in existing data logger along with material required. Note: All relays as per annexure will be supplied by Railway. This schedule item also covers all the above mentioed acitivities if any phasing of yard in relation to doubling is to be done at these 2 stations "						
	Please see Item Breakup for details.			6751879.00	AT Par	6751879.00	

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8	Description:- "Modification, Alteration, Augmentation, Design, Manufacture, Supply, Installation, Testing & Commissioning of Existing Centralised Electronic Interlocking System of KYOSAN Make at PIPLIYA MANDI Station as per RDSO specification No. RDSO/SPN/192/2019 with the latest amendment. This includes all items as per attached Annexure-2 which includes a) Supply of Electronic Interlocking equipment. (Break up given in Annexure) b) Design, Preparation of TOC, FAT and Submission of As Planned and as build interface drawing, application logic & equivalent circuits in connection with alteration work. c) Alteration in existing relay room. This include supply of wiring materials required for alteration,. Alteration in indoor wiring including datalogger, SAT and commissioning in connection with alteration work d) Wiring pertaining to modification in existing data logger along with material required. Note: All relays as per annexure will be supplied by Railway.This schedule item also covers all the above mentioned activities if any phasing of yard in relation to doubling is to be done at this station"						
9	NS9	5.00	Job	312384.00	1561920.00	AT Par	1561920.00
	Description:- "Phase II - Installation, wiring, programming, testing and commissioning of EI equipment supplied as per supply item in schedule 'A' including transportation from Consignee's depot to site. The works and materials for installation, wiring, testing and commissioning, grouting, cutting of floors, walls, refilling of the same, re-plastering, required CC/ masonry works, fixing/ placing/ laying of insulated ladders/ casing-capping/ cable trays/ RCC/GI pipes / Cables, termination of cables with lugs/ connectors, painting,/ lettering are to be provided/ done by the contractor for the equipments supplied vide Item of Schedule ""A"" of this contractThis also covers the networking of built in EI Data loggers of all the stations to monitor the system to any other places where desired by Engineer-in-charge. Note: Installation shall be comply to RDSO Technical advisory note no. STS/E/TAN/3012 Ver 3.0 dated 28.06.2021 or latest. policy/letter to RDSO Installation, wiring, programming, testing and commissioning of Operator VDU in Hot stand-by with Redundancy. Any Equipments/cards/Modules required for Hot stand-by with Redundancy shall be supplied & Installed by the Contractor Note:- This also includes supply of Two nos. of composite computer & printer table (Godrej work station table) for keeping VDU and one no Godrej make operator chair model PCH7001. Termination of indoor/ PIJF cables in relay room on relays, tag blocks, CT racks as per approved wiring diagram including alterations/ modifications as required at site. Soldering to be done at all required termination. Dressing/ lacing of wiring shall be done neatly with help of dressing thread / plastic self lock strip of suitable size. The tools/ equipments/ materials/ simulation boards required for testing shall be supplied / fabricated by contractor. this included replacement of modules/ cards/ LEDs/ equipments going defective during testing. Necessary power supply boards with required capacity plugs, sockets, surge & lightning protection boxes shall be supplied and installed by the contractor. 230V supply shall be arranged by Railways. In case supplies are required to be extended, from Power room / relay room then same shall be extended by the contractor with his own materials such as 1X16 sq mm wires, cables, lugs, RCC/GI pipes, insulated ladders etc After ST/LT testing, Factory Acceptance Tests (FAT) & Square Sheet testing system should be fault free while submitting to Railways, otherwise suitable necessary action can be taken by Engineer-in-charge."						
10	NS10	150.00	Per Route	395.00	59250.00	AT Par	59250.00
	Description:- Additional Functional testing (SAT) of PI/RR/IBS/Autosignal /EI etc. as per Selection table, control table etc. Contractor shall depute one Engineer, one Supervisor & wiremen technically qualified to carryout functional testing as per approved design. Technical knowledge of contractor's staff will be judged by Railways Engineer incharge before permitting them to do the testing. Contractor has to note down all the discrepancies found in testing noted during functional test in a separate design register and to be countersigned by Railways representative. Rectification of circuit discrepancies to be done after taking approval of changes in circuit diagrams by Railways. Mistakes found to be rectified free of cost by contractor. Omission in testing or wrong testing found after functional test will be penalised @ 5% pf rate per route.						
11	NS11	100.00	Numbers	306.00	30600.00	AT Par	30600.00
	Description:- Fixing and wiring of Relays of all types as per the instructions of Engineer-in-charge. (Note-Relays and required wires will be provided by Railways)						
12	NS12	500.00	Numbers	352.00	176000.00	AT Par	176000.00
	Description:- Relay Contact break test of indoor relay wiring. Contractor shall depute Engineer, Supervisor & wiremen technically qualified to carryout contact break testing as per approved circuit diagrams. Firm Engineer to sign circuit diagrams for break testing after carrying out the test in presence of Railway's site supervisor/Engineer. (No to be count as per A3 Size Sheet)						
13	NS13	3.00	Station	18768.00	56304.00	AT Par	56304.00
	Description:- "Detailed testing of wiring as per approved wiring diagram (W.D.) at stations, including one and two wire check, functional testing, section table & locking table testing with simulation panel including making panel through, In the presence of railway officials. A copy of tested selection table, locking table and cross sheet duly signed by contractor to be submitted to field office for record. This item includes wiring of simulation panel for testing as per standard practice, with contractors own materials. Contractor will put sufficient staff to carry out the testing round the clock and will ensure that any alternations which may become necessary during testing are carried out and testing is repeated wherever required. This includes supply of lamps for simulation panel for testing. This also including extending various supplies up to bus bars in relay room, and up to battery room, providing manual by pass arrangement for automatic change over arrangement and stabilizers, provision of Test Board for monitoring supplies as per instruction of Engg. In-charge. All materials like nuts, bolts, fixtures etc required shall be supplied by Contractor."						
	NS14	350.00	Numbers	5633.00	1971550.00	AT Par	1971550.00

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14	Description:- Track relay QTA2, AC immunized, 9 Ohm, 2F/1B, along with plug board, retaining clip and connectors conforming to BRS:939A, BRS:966, IRS:S34 & IRS:S23.						
15	NS15	200.00	Numbers	320.00	64000.00	AT Par	64000.00
15	Description:- Supply of 4 connection points single potential through screw less terminal block for 6 Sqmm-35 Sqmm , 4 connection points 284-621/624 or superior, suitable for power cable connection.						
16	NS16	15.00	Set	68142.00	1022130.00	AT Par	1022130.00
16	Description:- Distribution Cum Auto-changeover Box between two DC supplies of Reliance Make,GAEC or similar with capacity 70A consisting of suitable Contractors of Siemens /L&T make Or Programmable Solid state type Distribution Cum Auto-changeover Box. LED Lamps, Push Button, MCB,Wago Terminals etc. Terminals & Wires should be for appropriate ratings & accessories like Lugs for wire terminations to be provided.(To be got approved from Engineer in Charge before supply).						
17	NS17	45.00	Set	55316.00	2489220.00	AT Par	2489220.00
17	Description:- Distribution Cum Auto-changeover Box between two AC supplies of Reliance Make,GAEC or similar with capacity 38A consisting of suitable Contractors of Siemens /L&T make Or Programmable Solid state type Distribution Cum Auto-changeover Box. LED Lamps, Push Button, MCB,Wago Terminals etc. Terminals & Wires should be for appropriate ratings & accessories like Lugs for wire terminations to be provided.(To be got approved from Engineer in Charge before supply).						
18	NS18	90.00	Set	62732.00	5645880.00	AT Par	5645880.00
18	Description:- Distribution Cum Auto-changeover Box between two DC supplies of Reliance Make ,GAEC or similar, with capacity 32A consisting of suitable Contractors of Siemens /L&T make Or Programmable Solid state type Distribution Cum Auto-changeover Box. LED Lamps, Push Button, MCB,Wago Terminals etc. Terminals & Wires should be for appropriate ratings & accessories like Lugs for wire terminations to be provided.(To be got approved from Engineer in Charge before supply).						
19	NS19	150.00	Set	11105.00	1665750.00	AT Par	1665750.00
19	Description:- Installation, Testing and Commissioning of Distribution cum autochangeover system including wiring material (Excluding Cable)						
20	NS20	17.00	Numbers	40410.00	686970.00	AT Par	686970.00
20	Description:- Supply of Battery Charger self regulating floor mounting type with 230V AC single phase input and output 24 V DC, 20A to specn. IRS-S- 86/2000 with latest amendment for Axle counter application. (Amd. 4)						
21	NS21	17.00	Numbers	76038.00	1292646.00	AT Par	1292646.00
21	Description:- Supply of Battery Charger self regulating floor mounting type with 230V AC single phase input and output 24 V DC, 30A to specn. IRS-S- 86/2000 with latest amendment						
22	NS22	10.00	Numbers	25370.00	253700.00	AT Par	253700.00
22	Description:- Supply of Power Supply Distribution Box with MCB/Fuse as per specification and requirement given by Site Engineer, Make 3M, SNATEL, ABB						
23	NS23	8.00	Numbers	1099036.00	8792288.00	AT Par	8792288.00
23	Description:- Pyrotech Workspace make New Modular Control Desk size 4102x2576 mm for provision of 02 Nos. Monitors made in "XLAT" system. 1. Table Top: The material of the working surface shall be made of thermally treated Aluminium - Trihydrate and acrylic resin material supported on minimum 25 mm thick MDF base. 2. Structure: Powder Coated Aluminum Sturdy Structure and extreme side Aesthetic Legs. The structure shall be rigid enough to withstand BIFMA X5.5: 2014 (Latest Edition). 3. Monitor Arm:- UL certified monitor arm assembly shall have auto lock, push & remove feature for quick release of VESA mounts and modular arm extensions for ease in maintenance and fixing of monitor by one technician within 30 seconds without using any tools. 4. Shutters & Side Legs: - Front and back shutters shall be of 18 mm Laminated MDF Board with premium finish. Side leg shall be of 25mm of the same finish. Entire console must be Greenguard Gold certified. 5. Slat Wall shall be made of approx. 2mm thick Extruded Aluminium (HE9WP aluminium alloy) and designed in such a way that no joints or gaps are visible in the entire width of the console.(To be got approved from Engineer In Charge before supply).						
24	NS24	20.00	Numbers	74340.00	1486800.00	AT Par	1486800.00
24	Description:- Supply of Rack for Housing of Various S&T equipments like KLCR, Reset Box, IPS Indication Panel, CAVA Unit for FACS, SPAU for Point Reversal, Crank Handle, Quad Cable Earth Sensing Unit along with Fixing of KLCR (KLCR will be provided by Railway) as per instruction of Site Engineer, Make : RITTAL, SANTEL, APC Schneider or similar reputed make						
25	NS25	20.00	Numbers	2985.00	59700.00	AT Par	59700.00
25	Description:- Supply, installation, fixing, wiring, testing and commissioning of Common Audio-Visual Alarm Unit (CAVA) -for Fuse Auto Changeover system as per RDSO specification RDSO/SPN/209/2012 Rev. 2.0 or latest.						
26	NS26	15.00	Numbers	47800.00	717000.00	AT Par	717000.00
26	Description:- Supply, installation, fixing, wiring, testing and commissioning of Safety Point Alarm/Reversal indication Unit						
27	NS27	30.00	Numbers	82600.00	2478000.00	AT Par	2478000.00

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	Description:- Supply of Microcontroller based Quad Cable Conductor's Earth Resistance Sensing Unit, for 24 nos. conductors with metering facility for one conductor at a time						
28	NS28	30.00	Numbers	8850.00	265500.00	AT Par	265500.00
	Description:- Installation of Microcontroller based Quad Cable Conductor's Earth Resistance Sensing Unit, for 24 nos. conductors with metering facility for one conductor at a time						
29	NS29	12.00	Set	8999.00	107988.00	AT Par	107988.00
	Description:- Supply and installation of 2-wire Talk Back System consisting of one Master and One Slave Unit suitable for IBS, and Working on 110V AC as per instruction of site incharge						
30	NS30	5.00	Station	8187.00	40935.00	AT Par	40935.00
	Description:- Installation, wiring & testing / commissioning of Axle Counter's Reset Box of all types in Cabin/Panel room and wiring the same to integrate with the Axle counter as per the instructions of Railway Engineer at site. This includes laying & termination of cable if any form Panel Room/Axle Counter room /Relay room to Reset Box in DWC pipe / existing ladder.(When reset box is shifted from existing building to new bulding)						
31	NS31	30.00	Set	1621.00	48630.00	AT Par	48630.00
	Description:- Supplying & fixing of key box made of ms sheet/ wood with a glass front and padlocking and sealing arrangements per std practice. Pad lock to be supplied by the contractor. All material i.e. wood, handle, hinges, glass sheet of 3 mm thick to be supplied by the contractor. Box to be powder coated/polished and description/size to be as per instructions of Engineer in - charge.						
32	NS32	13.00	Numbers	9365.00	121745.00	AT Par	121745.00
	Description:- Supply, Installation, Testing and Commissioning of Control Module to address sounder cum strobe as per RDSO spec. No.RDSO/SPN/217/2018 version 2 or latest						
33	NS33	13.00	Numbers	9365.00	121745.00	AT Par	121745.00
	Description:- Supply, Installation, Testing and Commissioning of Relay module to connect the Data logger to the panel as per RDSO spec. No.RDSO/SPN/217/2018 version 2 or latest						
34	NS34	13.00	Numbers	5789.00	75257.00	AT Par	75257.00
	Description:- Supply, Installation, Testing and Commissioning of Zone Interface module as per RDSO spec. No.RDSO/SPN/217/2018 version 2 or latest						
35	NS35	8.00	Numbers	330464.00	2643712.00	AT Par	2643712.00
	Description:- Supply, Installation, Testing and Commissioning of aspirating type (air sampling) for relay room with inbuilt fault isolator as per RDSO spec. No.RDSO/SPN/217/2018 version 2 or latest						
36	NS36	13.00	Numbers	137022.00	1781286.00	AT Par	1781286.00
	Description:- "Supply, Installation, Testing and Commissioning of UL/FM/VDS/LPCB approved Microprocessor based networkable analogue Addressable and modular type of Fire Alarm Control Panel with display, in built charging facilities and provision of GSM module suitable to send SMS to configured mobile no. The panel should be equipped with sufficient nos. of loops and provision of expandability as per RDSO specification no.RDSO/SPN/217/2018 ver 2.0 or latest. The Control panel shall be the central processing unit of the system, receiving and analyzing signals from probe type bimetallic heat detectors, UV&IR flame detectors, heat and smoke multi sensors, LHS/LHSD interface and manual call points, providing audible and visual information to the user. The panel shall have provision of connectivity of TCP-IP suitable for programming and remote monitoring. The panel shall have dedicated RS 232 serial port for direct PC or MODEM connection, for interfacing with existing data logger, optional remote printer. (As per RDSO specification no. RDSO/SPN/217/2018 ver 2.0 or latest) "						
37	NS37	200.00	Numbers	6131.00	1226200.00	AT Par	1226200.00
	Description:- Supply, Installation, Testing and Commissioning of resettable, addressable multisensor (heat and smoke) which is fully compatible with analogue addressable protocol, electronically addressed as per RDSO Specification RDSO/SPN/217/2018/Ver.2) or latest (15 No/Stn)						
38	NS38	26.00	Numbers	6187.00	160862.00	AT Par	160862.00
	Description:- Supply, Installation, Testing and Commissioning of Addressable Analogue Addressable, resettable Manual Call point with inbuilt integral short circuit isolator having status LED for alarming & standby mode, Electronically addressed as per RDSO/SPN/217/2018 ver 2.0 or Latest amendment). (2 No/Stn)						
39	NS39	2600.00	Metre	1177.00	3060200.00	AT Par	3060200.00
	Description:- Supply, Installation, Testing and Commissioning of analogue type Linear heat sensing (LHS) Cable as per RDSO Specification RDSO/SPN/217/2018 /(ver.2) or latest (200m/Stn)						
40	NS40	13.00	Numbers	114764.00	1491932.00	AT Par	1491932.00
	Description:- Supply, Installation, Testing and Commissioning of Liner heat sensing (LHS) interface module to be integrated on main fire alarm panel as per RDSO specification RDSO/SPN/217/2018/(ver.2) or latest (1 No/Stn)						
41	NS41	26.00	Numbers	9515.00	247390.00	AT Par	247390.00
	Description:- Supply, Installation, Testing and Commissioning of Addressable loop powdered sounder cum Strobe with inbuilt fault isolator as per RDSO/SPN/217/2018 ver 2.0 or Latest amendment). (2 No)						
	NS42	13.00	Lot	20264.00	263432.00	AT Par	263432.00

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42	Description:- Supply, Installation, Testing and Commissioning of fire survival circuit integrity cable i.e. armored cable & power cable with all accessories for connection of all fire alarm devices 2 core 1.5 Sqmm as per RDSO Specification RDSO/SPN/217/2018 (ver.2) or latest (250Mtr)						
43	NS43	50.00	Kilometre	7599.00	379950.00	AT Par	379950.00
43	Description:- Transportation and laying of 6 Quad/PIJF cable in trenches/ Gi pipe/rcc pipe/dwc pipe, trunking, as per approved cable route plan.						
44	NS44	50.00	Kilometre	24700.00	1235000.00	AT Par	1235000.00
44	Description:- Supply of HDPE Ducts 40/33 mm dia as per RDSO/SPN/TC/45/2013/Rev 2.0 with latest ammendments as available. Each km of HDPE duct should have 2 no End Plugs, 2 no Cable sealing plugs, 2 no plastic couplers slip fit/push fit type.						
45	NS45	50.00	Kilometre	19361.00	968050.00	AT Par	968050.00
45	Description:- Transportation and Laying of HDPE pipe as per approved cable route plan in the excavated trench, taking due care while transporting and laying the same in the trenches or other protective works. Both the end of duct should be sealed with end plugs before laying.						
46	NS46	50.00	Kilometre	14015.00	700750.00	AT Par	700750.00
46	Description:- Blowing of OFC through HDPE duct & protective work (elicited in above item) already provided. Where it is not feasible to blow OFC due to curves, road/track crossings, bridges or for any other reason, OFC shall be drawn /laid manually as per standard procedure. All the equipments and machinery required shall be arranged by the contractor at his own cost. In case OFC is to be laid adopting 'Direct in trench' method then this item shall be paid as per accepted rate of item of this schedule. OFC and HDPE pipe shall be supplied by the railway.						
47	NS47	10.00	Numbers	19329.00	193290.00	AT Par	193290.00
47	Description:- Final End to end testing and commissioning of fibers of the OFC laid under above items between stations/cable huts/OC for complete section.						
48	NS48	60000.00	Metre	352.00	21120000.00	AT Par	21120000.00
48	Description:- Supply of SPLIT DWC pipe conforming to RDSO/SPN/204/2011 Ver. 1.1 or latest RDSO specification, Non metallic, corrugated, multiwalled, normal duty, pliable, without protection against chemical attack and Non flame propagating in 2 meter length of size 200 mm outer dia & 175 mm inner dia. (Permitted tolerance in dia = +/-2mm) (TWO half round pipe constitute one split pipe)						
49	NS49	60000.00	Running Metre	40.00	2400000.00	AT Par	2400000.00
49	Description:- Placing of DWC/RCC/GI pipes/ PVC channel along with collars in trenches at places of track and road crossings, platform cuttings etc. also for straight cable laying. (Cable laying is covered seperately.)						
50	NS50	1000.00	Metre	1139.00	1139000.00	AT Par	1139000.00
50	Description:- Manual / Machine horizontal auger boring/drilling of 100mm dia Horizontal Bore across the Railway Track/ Across Road at LC gates by Boring method at a depth of 1.65mm from the ground level/ ground level to be considered ignoring the bank height of the bank/road and insertion of HDPE/DWC/GI pipes etc., as per the instructions of Engineer in charge at site as per drg no. RAILTEL/SR/OFC/2008/10.						
51	NS51	100.00	Numbers	5905.00	590500.00	AT Par	590500.00
51	Description:- Installation of earth electrode Earth Electrode including MS flat for clamp etc. and connection to signalling equipments, lever frames, apparatus cases, signal, relay rack, block instrument, etc as per technical specification given. This item includes digging of pit in earth 3 m deep & fixing earth electrode pipe, casting of cement concrete enclosure & cover as per RDSO/SPN/197/2016. Soil treatment to be done as per std. practice. This item includes provision of MS Flat, Earth lead wires and Soldering of lead wires. The other end of the wire is to be connected to block equipment, power equipment, cable sheath, signals etc. as per site requirements. 7strand GI wire shall be used as earth lead wire.						
52	NS52	10.00	Numbers	3595.00	35950.00	AT Par	35950.00
52	Description:- Supply of self supported aluminium flat step ladder (conforming to ISI) 5 ft. height. Ladder should be self supported and it should be made up of rust proof Alluminium of Min 16 SWG. No plastic hinges/Step support should be used.						
53	NS53	10.00	Numbers	21169.00	211690.00	AT Par	211690.00
53	Description:- Digital low current clamp meter to measure current leaks (parastic drawa down to 1 mA) and electric loads from 1mA to 100 Amp AC/DC , Voltages from 0 to 600V AC/DC , small jaw size to measure current in signalling circuit , 4 digit display . Make -Fluke, GTC/KEW , Scope or superior with better specfication as mentioned with all accessories like test lead, batteries and carrying case, sample may be got approved from consignee before supply.						
54	NS54	4.00	Numbers	18526.00	74104.00	AT Par	74104.00

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	Description:- "Insulation Resistance Tester to check insulation resistance of electrical and telecom equipment . Test Voltages 100V for insulation resistance upto 5Gigaohms. AC Voltage 30V-750V. Display Count 2000. Built in LCD Display, CAT III 600V Safety rating. Supply includes batteries, leads & user manual. Brand : STAN ONE or similar reputed make"						
55	NS55	4.00	Numbers	18526.00	74104.00	AT Par	74104.00
	Description:- "Insulation Resistance Tester to check insulation resistance of electrical and telecom equipment . Test Voltages 500V for insulation resistance upto 5Gigaohms. AC Voltage 30V-750V. Display Count 2000. Built in LCD Display, CAT III 600V Safety rating. Supply includes batteries, leads & user manual. Brand : STAN ONE or similar reputed make"						
56	NS56	20.00	Numbers	21482.00	429640.00	AT Par	429640.00
	Description:- Supply of Point Motor for 110V DC with 400v AC immunity as per IRS S:37/82						
57	NS57	48.00	Month	57406.00	2755488.00	AT Par	2755488.00
	Description:- "Hiring of non-AC SUV/MUV vehicle for Officer(up to 2500 kms) Innova/Hexa or similar type of vehicle including maintenance, major minor repairs, cost of lubrication, fuel, drivers and all other ancillary costa etc. complete. (2 nos vehicle for 24 Months) "						
58	NS58	24.00	Month	45924.00	1102176.00	AT Par	1102176.00
	Description:- "Hiring of one non-AC pick up vehicle for Supervisors(up to 2000 kms per month) Tata/Mahindra or similar type of vehicle including maintenance, major minor repairs, cost of lubrication, fuel, drivers and all other ancillary cost etc. complete"						

3. ITEM BREAKUP

Schedule	Schedule A-Supply & Execution of SOR Items					
Item- 5	Data logger system for Railway S&T installation As per spec. IRS: S-99 2006 (Amdt-3) or latest. Central Monitoring Unit (Hardware Configuration as per Annexure) with UPS minimum 06 Hrs battery backup and required Software tools.This also includes supply of one no composite computer & printer table (Godrej work station table) for keeping Processor module and one no Godrej make operator chair model PCH7001. The datalogger should have E1 connectivity hardware.					
S No.	Item No	Description of Item	Unit	Qty	Rate	Amount
1	01020100	1024 digital and 32 analog inputs.	Numbers	8.00	737084.00	5896672.00
					Total	5896672.00
Item- 12	Disconnect Terminal Block, Screw less type, as per RDSO Spec. No. RDSO/SPN/189/2004. With latest amendments.					
S No.	Item No	Description of Item	Unit	Qty	Rate	Amount
1	01030800	Disconnect Terminal Block, Screw less type, 4-wire front entry (Two in-put & Two out-put) The colour will be decided by Engineer - in - Charge. (Preferably In Blue, Red & Grey Colors in the ratio of 1:2:3)	Numbers	15000.00	68.00	1020000.00
2	01030900	Supply of End plate for above item (I) 2.5mm/0.091 in thick as per site requirement.	Numbers	1500.00	13.00	19500.00
3	01031000	Supply of End Stopper for above item (I) 10mm/0.0394 in width as per site requirement.	Numbers	1500.00	13.00	19500.00
4	01031100	Supply of Carrier Rails for above 35mm x 7.5mm, 1mm/0.039 in thickness un-slotted type as per site requirement.	Metre	150.00	133.00	19950.00
					Total	1078950.00
Item- 35	Transformer Rectifier Set as per IRS(S) 91/93 Amendment - 1.					
S No.	Item No	Description of Item	Unit	Qty	Rate	Amount
1	01072300	For point operation 230V A.C./ 120V DC/40 A.	Numbers	8.00	160530.00	1284240.00
					Total	1284240.00
Item- 82	"Installation, Wiring and testing of Integrated Power Supply System. This includes power distribution connection to bus bars and relay racks in the room with contractor's own wiring materials and fabrication and fixing of AC/DC power distribution board made on 10mm thick Phenolic hylam sheets or any standard make with connections suitable for 32 A. Wiring to be done considering site requirement, depending upon the load with suitable wires, lugs & glands as per instructions of Engineer-in-charge. The work includes installation of Thermo flasher relay, ELD's, fixing & wiring of change over switch (program switch) for selection of DG set supply (DG1 & DG2) and wiring of change over switch (program switch) for selection of mains or DG supply. This item also includes supply & fixing of ladder along the wall for carrying power supply wires/cables from IPS room to Relay room/power room etc. Any masonry work required will be carried out by contactors own material."					

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S No.	Item No	Description of Item	Unit	Qty	Rate	Amount
1	03050200	For Station	Numbers	8.00	124021.00	992168.00
2	03050300	For LC gate/IBS/OC	Numbers	5.00	43941.00	219705.00
					Total	1211873.00
Item- 83	Charging of Lead Acid Batteries with contractors own battery grade sulphuric acid and distilled water with minimum two charge - discharge cycles, installation of charged batteries in groups & their connection & wiring. The work shall be done as per extant practice of W.Rly & instruction of Engineer-in-charge. Detailed measurements of initial charging shall be recorded jointly by contractor & Rly's site-in-charge.					
S No.	Item No	Description of Item	Unit	Qty	Rate	Amount
1	03050500	2V 80AH	Numbers	1200.00	436.00	523200.00
					Total	523200.00
Item- 89	Erection of CLS Post with base and signal unit on top or on OFF set Bracket, fixing of front and back staging, ladder and guards, signal name plates / boards if any with contractor's own brackets and fixing materials. This also includes erection of auxiliary signals like calling on, shunt signal if any. The work shall be done as per instructions of Rly engineer at site. It also includes provision & fixing of maintenance platform as per design given by Engineer -In-Charge at site. The Item includes cutting of Signal post if required by Site In charge.					
S No.	Item No	Description of Item	Unit	Qty	Rate	Amount
1	04020300	2/3/4 aspect signal unit mounted mounted directly on signal post	Numbers	20.00	2607.00	52140.00
					Total	52140.00
Item- 98	Excavation and Casting of Apparatus Case foundation with contractor's own materials including cement and anchor bolts of standard size. The required scaffolding Ferma etc for Casting of foundation will have to be brought by the contractor at his own cost.					
S No.	Item No	Description of Item	Unit	Qty	Rate	Amount
1	04050100	Single Case as per Drg No SK 748 or CSTE/5074	Numbers	20.00	8250.00	165000.00
2	04050200	Half Case as per Drg No SK 747or CSTE/5074 or SS Location	Numbers	10.00	6294.00	62940.00
					Total	227940.00
Item- 99	Installation of Apparatus Cases with miniature 'E' type lock on CC foundation. This includes filling of location foundations with river bed sand and plastering on top of the sand. 'E' Type lock will be provided by Railway.					
S No.	Item No	Description of Item	Unit	Qty	Rate	Amount
1	04050300	Single Case	Numbers	20.00	1245.00	24900.00
2	04050400	Half Case	Numbers	10.00	758.00	7580.00
					Total	32480.00
Item- 100	Fabrication and fixing of phenolic laminated sheet of size 10mm thick in location box by providing all fixtures as per Railway Drawing including fixing of PVC coated string rods at the back side for cable support with contractor's own materials. The work shall be done as per drg and arrangement similar to SK 783-1/2. with latest alterations & as per instructions of Rly engineer at site.					
S No.	Item No	Description of Item	Unit	Qty	Rate	Amount
1	04050600	Single Case	Numbers	20.00	2903.00	58060.00
2	04050700	Half Case	Numbers	10.00	915.00	9150.00
					Total	67210.00
Item- 112	"Painting of two coats of synthetic enamel paint over one coat of primer on the following after scraping & cleaning surface wherever necessary with contractor's own supply of paints. Wherever required contractor shall apply coating of epoxy paint also as per instructions of site-in-charge. Epoxy paint will be supplied by Railways. NOTE:- The paint and primer should be from Asian Paints/ Nerolac / Dulux / Berger. The primer / enamel paints (Aluminum synthetic, black enamel, brilliant white and yellow) will be as per (IS 5660 of 1970) / (IS 2932 of 1974)."					
S No.	Item No	Description of Item	Unit	Qty	Rate	Amount
1	04080100	Apparatus Case Full Size. (Outside & inside)	Numbers	20.00	327.00	6540.00
2	04080200	Apparatus case Half Size. (Outside & inside)	Numbers	10.00	296.00	2960.00
3	04080400	Main Signal Post with Signal Units, Surface base and complete fittings as per Western Railways standard practice.	Numbers	20.00	451.00	9020.00
4	04080600	Track Lead Junction Box. (Black enamel outside only)	Numbers	3000.00	78.00	234000.00
					Total	252520.00

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Item- 113	Lettering / Numbering Termination particulars, equipments names etc., legibly and neatly inside location boxes. This includes supply of paints of Asian Paints/ Nerolac / Dulux / Berger make.					
S No.	Item No	Description of Item	Unit	Qty	Rate	Amount
1	04081200	Full Case.	Numbers	20.00	154.00	3080.00
2	04081300	Half Case	Numbers	10.00	106.00	1060.00
					Total	4140.00
Schedule	Schedule B-Supply & Execution of Non-SOR Items					
Item- 7	"Modification, Alteration, Augmentation, Design, Manufacture, Supply, Installation, Testing & Commissioning of Existing Centralised Electronic Interlocking System of ANSALDO Make at HARKIYA KHAL & BARAYLA CHAURASI Stations as per RDSO specification No. RDSO/SPN/192/2019 with the latest amendment. This includes all items as per attached Annexure-1 which includes a) Re-Design of EI system - Preparation of TOC, application & interfacing circuits to suite approved Signalling Plan & installation, testing and commissioning of aforesaid station b) Factory Acceptance Test (FAT) @ in house in Bangalore office by HITACHI RAIL STS Engineers & the CSTE Representative to suite approved Signalling plan & Site Acceptance Test (SAT) shall be jointly carried out @ aforesaid station c) Supervision of Installation, Testing and Commissioning support d) Submission of "AS MADE" document in CD as soft copy with one set of Interfacing & application Logics Circuits in regular "A3" size shall be supplied e) Wiring pertaining to modification in existing data logger along with material required. Note: All relays as per annexure will be supplied by Railway. This schedule item also covers all the above mentioned activities if any phasing of yard in relation to doubling is to be done at these 2 stations "					
S No.	Item No	Description of Item	Unit	Qty	Rate	Amount
1	1	MLKII Vital Input PCB 24VDC	Numbers	12.00	210040.00	2520480.00
2	2	MLKII Vital Output PCB 24VDC	Numbers	6.00	198240.00	1189440.00
3	3	Address Select PCB - 48 Pin	Numbers	18.00	14160.00	254880.00
4	4	PCB Keying Plug	Numbers	108.00	1770.00	191160.00
5	5	48-Pin connector housing assembly	Numbers	18.00	2006.00	36108.00
6	6	48-Pin connector guide element	Numbers	18.00	1062.00	19116.00
7	7	48-Pin female connector	Numbers	18.00	1121.00	20178.00
8	8	48-Pin female crimp contact	Numbers	492.00	64.90	31931.00
9	9	Communication Materials for New System Configuration	Lot	2.00	472000.00	944000.00
10	10	Interconnecting cables, wires, fuses, terminals and Pre-Wiring	Lot	2.00	472000.00	944000.00
11	11	Relay rack with fuse, capacitor and resistor etc.	Numbers	2.00	101480.00	202960.00
12	12	"DC/DC Converter for MLKII Cardfile / Vital I/O Supply / Non-Vital I/O Supply / Isolator Supply /"	Numbers	6.00	42480.00	254880.00
13	13	Re-Design of EI Systems with related application logic & Interface Circuit	Station	2.00	649000.00	1298000.00
14	14	Factory Acceptance Test / site acceptance test (FAT/SAT) - for an aforesaid station	Station	2.00	649000.00	1298000.00
15	15	"Supervision of Installation of Modified Program @ aforesaid station & removal of few wires, connectors, terminals & installation of few wires, connectors & terminals on account of aforesaid / proposed changes as per approved Signalling Plan"	Station	2.00	826000.00	1652000.00
16	16	As Made" Document for said station ""AS MADE" document in CD as soft copy with one set of Interfacing & application Logics Circuits in regular "A3" size shall be supplied - HAKIA KHAL & BARAYLA CHAURASI station. Note - 1) All Relays will be supplied by Railway. 2) Data Logger wiring work in connection of alteration will be done by agency along with all required materials	Set	2.00	141600.00	283200.00
					Total	11140333.00

**DYASTE-C-RTM-S AND T/WESTERN RLY
TENDER DOCUMENT**

Tender No: SnT-C-RTM-100R-2022-23

Closing Date/Time: 13/02/2023 15:00

Item- 8	"Modification, Alteration, Augmentation, Design, Manufacture, Supply, Installation, Testing & Commissioning of Existing Centralised Electronic Interlocking System of KYOSAN Make at PIPLIYA MANDI Station as per RDSO specification No. RDSO/SPN/192/2019 with the latest amendment. This includes all items as per attached Annexure-2 which includes a) Supply of Electronic Interlocking equipment. (Break up given in Annexure) b) Design, Preparation of TOC, FAT and Submission of As Planned and as build interface drawing, application logic & equivalent circuits in connection with alteration work. c) Alteration in existing relay room. This include supply of wiring materials required for alteration,. Alteration in indoor wiring including datalogger, SAT and commissioning in connection with alteration work d) Wiring pertaining to modification in existing data logger along with material required. Note: All relays as per annexure will be supplied by Railway.This schedule item also covers all the above mentioed acitivities if any phasing of yard in relation to doubling is to be done at this station"					
S No.	Item No	Description of Item	Unit	Qty	Rate	Amount
1	1	E-P5A SUBRACK WITH MOTHER BOARD	Numbers	1.00	649515.00	649515.00
2	2	IF CARD, LINE2B	Numbers	2.00	227846.00	455692.00
3	3	I/O card, PIO3C(PIO2-LOG)	Numbers	1.00	588132.00	588132.00
4	4	DC DC converters	Numbers	8.00	53242.00	425936.00
5	5	EI MAIN RACK	Numbers	1.00	779289.00	779289.00
6	6	Design, FAT and Submission of As Planned and as build interface drawing, application logic & equivalent circuits in connection with alteration work	Station	1.00	2347459.00	2347459.00
7	7	Alteration in existing relay room. this include supply of wiring materials required for alteration, alteration in indoor wiring including datalogger, SAT and commissioning in connection with alteration work. Note - 1) All Relays will be supplied by Railway. 2) Data Logger wiring work in connection of alteration will be done by agency alongwith all required materials	Station	1.00	1505856.00	1505856.00
					Total	6751879.00

4. ELIGIBILITY CONDITIONS

Important : All documents uploaded and remarks / confirmation entered by the bidders against any eligibility condition shall be opened as part of technical bid only

Special Technical Criteria

S.No.	Description	Confirmation Required	Remarks Allowed	Documents Uploading
1	The bid capacity is required to be submitted/uploaded with tender/bid when tender value is more than Rs.20.0 Crores. The tender/technical bid will be evaluated based on bid capacity formula detailed in Annexure-VI of IRSGCC- 2022 (with all correction slips issued till date of invitation of tender). The tenderer/bidder shall have to submit/upload requisite information in a proforma (tabular form) as per Annexure-XI, XII & XIII of tender document with all supporting documents	No	No	Allowed (Mandatory)

Special Technical Criteria

S.No.	Description	Confirmation Required	Remarks Allowed	Documents Uploading
1	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. Definition Of Similar Work : - Any RI or EI or CLS or ABS or IBS work involving Indoor & Outdoor work (Cable Laying & Termination)	No	No	Allowed (Mandatory)

Submission of Document Verification Certificate

S.No.	Description	Confirmation Required	Remarks Allowed	Documents Uploading
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**DYCSTE-C-RTM-S AND T/WESTERN RLY
TENDER DOCUMENT**

Tender No: SnT-C-RTM-100R-2022-23

Closing Date/Time: 13/02/2023 15:00

1	Please submit a certificate in the prescribed format (please download the format from the link given below) for verification / confirmation of the documents submitted for compliance of eligibility / qualifying criteria. Non submission of the certificate, or submission of certificate either not properly filled in, or in a format other than the prescribed format shall lead to summary rejection of your offer. (Click here to download the Format of Self Certification)	No	No	Allowed (Mandatory)
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Standard Financial Criteria

S.No.	Description	Confirmation Required	Remarks Allowed	Documents Uploading
1	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 Crore 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.	No	No	Allowed (Mandatory)

Standard Technical Criteria

S.No.	Description	Confirmation Required	Remarks Allowed	Documents Uploading
1	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.	No	No	Allowed (Mandatory)
1.1	Defination of Similar Work :- Any RI or EI or CLS or ABS or IBS work involving Indoor & Outdoor work (Cable Laying & Termination)	No	No	Not Allowed

5. COMPLIANCE

Important : All documents uploaded and remarks / confirmation entered by the bidders against any compliance condition shall be opened as part of technical bid only.

Commercial-Compliance

S.No.	Description	Confirmation Required	Remarks Allowed	Documents Uploading
1	Please enter the percentage of local content in the material being offered. Please enter 0 for fully imported items, and 100 for fully indigenous items. The definition and calculation of local content shall be in accordance with the Make in India policy as incorporated in the tender conditions.	No	Yes	Allowed (Optional)

6. Documents attached with tender

S.No.	Document Name	Document Description
1	STRTM100RTenderDocument16.01.23.pdf	TENDER DOCUMENT

This tender complies with Public Procurement Policy (Make in India) Order 2017, dated 15/06/2017, issued by Department of Industrial Promotion and Policy, Ministry of Commerce, circulated vide Railway Board letter no. 2015/RS(G)/779/5 dated 03/08/2017 and 27/12/2017 and amendments/ revisions thereof.

As a Tender Inviting Authority, the undersigned has ensured that the issue of this tender does not violate provisions of GFR regarding procurement through GeM.

**DYCSTE-C-RTM-S AND T/WESTERN RLY
TENDER DOCUMENT**

Tender No: SnT-C-RTM-100R-2022-23

Closing Date/Time: 13/02/2023 15:00

Signed By: HEMANT MAHAWAR

Designation : Dy.CSTE CONST. RTM

GOVERNMENT OF INDIA

WESTERN RAILWAY



TENDER DOCUMENT

TENDER NOTICE NO. S&T-C-RTM-100-R-2022-23 (Two Packet System)

Name of Work - Design, Supply, Installation, Programming, Testing and Commissioning of New Hot Standby Electronic Interlocking System at Malhargarh, Mandsaur, Dalauda, Kachnara Road, Dhodar, Jaora, Namli & Dhoswas Stations, Alteration in Existing Electronic Interlocking System at HarkiyaKhal, Piplia and Barayla Chaurasi Stations, New IBH at JamuniyaKalan, Matyakheri, Sindapan, Kachnara & Mundalaram along with Supply, Installation, Testing and Commissioning of various Indoor and Outdoor Signaling Systems in Ratlam-Nimach Section in connection of Ratlam-Nimach Doubling Work under Dy. CSTE Construction, Ratlam (Western Railway) M.P.

Signature Not
Verified

Digitally signed by
HEMANT KUMAR
MAHAWAR
Date: 2022.01.17
16:37:28 IST
Reason: IREPS-CRTS
Location: New Delhi

Signature of Tenderer/Contractor(s)

CHAPTER-1

INSTRUCTIONS TO TENDERERS

**Western Railway
Construction**

Tender No. SnT-C-RTM-100-R-2022-23

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**Western Railway
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**Western Railway
Construction**

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**Western Railway
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List of Annexure of Indian Railway Standard General Condition of Contract, April 2022.

The following annexure of Indian Railway Standard General Condition of Contract, April 2022 (IRSGCC-2022) with all correction slips issued till date of invitation of tender, shall also be part of this tender document

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DISCLAIMER

The information contained in this tender document or subsequently provided to the tenderer, whether verbally or in documentary form by or on behalf of the Western Railway, their employees, is provided to the tenderer on the terms and conditions set out in the tender document and all other terms and conditions subjected to which such information is provided.

The purpose of the tender document is to provide the tenderer with information to assist in the formulation of their Proposal. The tender document does not purport to contain all the information for all the persons, and it is not possible for Western Railway, their employees to consider the business/investment objectives, financial situation and particular needs of each tenderer who reads or uses this tender document. Each tenderer should conduct its own investigations, inspection and analysis, and should check the accuracy, reliability and completeness of the information in the tender document and wherever necessary obtain independent advice from appropriate sources. Western Railway, their employees make no representation or warranty and shall incur no liability under any law, statute, rule or regulation as to the accuracy, reliability or completeness of the tender document.

TENDER DOCUMENT

The tender document consists of “Standard Tender Document”, “IRSGCC-2022 Part-II (with all correction slips issued till date of invitation of tender)”, “Technical Specifications of Items (USSOR & Non-Schedule)”, “Special Condition of Contract” and all other documents uploaded along with Tender Notice on e-Tender Portal www.ireps.gov.in.

1. MEANING OF TERMS

- (A) **Applicability:** These Conditions of Contract shall be applicable for all the tenders and Contracts of Railways for execution of Works as defined in GFR 2017.
- (B) **Order of Precedence of Documents:** In a tender/contract, in case of any difference, contradiction, discrepancy, with regard to Conditions of tender/contract, Specifications, Drawings, Bill of quantities etc., forming part of the tender/contract, the following shall be the order of precedence:
- Letter of Award/Acceptance(LOA)
 - Bill(s) of Quantities
 - Special Conditions of Contract
 - Technical Specifications as given in tender documents
 - Drawings
 - 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.
 - 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.
 - 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.
 - Indian Railways Unified Standard Specifications (Works and Material) 2010 & 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.
 - IR Specifications/Guidelines updated with correction slips issued up to date of inviting tender or as otherwise specified in the tender documents.
 - 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 Regulations for Tenders and Contracts shall be read in conjunction with the Indian Railway General Conditions of Contract (IRSGCC-2022) with all correction slips issued till date of invitation of tender 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 Regulations for Tenders and Contracts 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 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 Zonal Railway/Production Units 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 the Principal Chief Engineer & nominated Chief Engineer by Principal Chief 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 the Zonal Railway and shall mean and include the Divisional Railway Manager of the Successor Railway.
 - e. **“Engineer” (or Engineer-in-charge)** shall mean the Senior Divisional Engineer or Divisional Engineer or Executive Engineer in executive charge of the works and shall include the superior officers of Open Line on the Railway of the Engineering and shall mean & include the Engineers of the Successors Railway.
 - f. **“Tenderer”** shall mean the person / the 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 personal 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 schedules 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 Principal Chief Engineer or as amplified, added to or superseded by special specifications if any, appended to the Tender Forms.

- k. **“Schedule of Rates of the Railway”** shall mean the Schedule of Rates issued under the authority of the Principal Chief Engineer or Chief Engineer (Works) from time to time.
 - 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 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 e-Tender Portal www.ireps.gov.in 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. **Singular and Plural:** Words importing the singular number shall also include the plural and vice versa where the context requires.

2. TENDER FOR WORKS

2.1. e-Publishing

- 2.1.1. Tender notice and Tender Documents for open Tenders are being published on internet e-Tender Portal www.ireps.gov.in general information purpose.
- 2.1.2. Offer for the Tender is to be submitted online through e-Tender Portal www.ireps.gov.in and details are to be entered by the tenderer online. It is advisable to download and study the tender document before submitting their offers. Submission of Physical copy of the offers or tender document is prohibited.
- 2.1.3. This tender is required to be submitted as per the tender conditions in through online e-Tender Portal www.ireps.gov.in before the date and time stipulated in the tender document. The tender details are available on e-Tender Portal www.ireps.gov.in and the same can be used while submitting the offer. Tenderer will require a valid Class III Digital Signature certificate to register and submit their offer through e-Tender mode.
- 2.1.4. Tenderer is advised to register their agency well in advance on e-Tender Portal www.ireps.gov.in and submit their offer through e-Tender before the stipulated time. It is responsibility of the tenderer to check any correction or any modifications published subsequently in Website and the same shall be taken into account while submitting the tender online.
- 2.1.5. Tenderer is free to download tender document at their own risk and cost, for the purpose of perusal and accustomed themselves regarding instructions, scope and location of work, Technical and Non-technical special conditions, etc. stipulated in the tender document. After award of work, an agreement will be prepared based on the documents uploaded on e-Tender Portal www.ireps.gov.in.

2.2. Amendment of Tender Document

Before the bidding process, Railway may modify the 'Tender Document' by issuing Addendum/ Corrigendum. It is the responsibility of the tenderer to check any correction or any modifications (Addendum/Corrigendum) published subsequently in newspapers as well as on website and same shall be taken in to account while submitting the tender offer.

Railway may also extend date of closing of tender, for which system generated SMS/email to be sent to all tenderer who have submitted their bid. During the extended period, tenderer may modify their offer. **Railway will not be responsible for any network error or internet connection as there would be sufficient time to submit the tender through e-tendering.**

2.3. Completion Period

As per publishing tender notice on e-Tender Portal www.ireps.gov.in

2.4. Validity of Tender Offer

As per publishing tender notice on e-Tender Portal www.ireps.gov.in

2.5. Price Variation Clause Price:

NOT APPLICABLE as per CSTE office letter no SG/32/0/C dated 12.07.2016

2.6. Scope of Work and Drawings

The scope of work & general features of work, site specific requirement, drawing, safety precaution, general feature of tender etc. is mentioned in Special Condition of Contract attached with tender document

2.7. Tender Form

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.

2.8. Tender Form - 2 (General information of the Tenderer)

The tenderer shall upload details mentioned in **Annexure-II** on e-Tender Portal www.ireps.gov.in.

2.9. Tender Form - 3 (Power of Attorney)

The power of attorney for authorized signatory (if any) shall be as per **Annexure-III** and shall be executed on Non-Judicial Stamp Paper of the appropriate value in accordance with Stamp Duty Act. The stamp paper should be in the name of the Firm/ Company who is issuing the Power of Attorney in favour of Authorized Signatory. The tenderer shall upload power of attorney complete in all respect on e-Tender Portal

www.ireps.gov.in. The original Power of Attorney shall have to be submitted by successful tender to Railway after award of the tender.

2.10. Tender Form - 4(A) - Technical Eligibility

The tenderer shall upload the details of works completed during last 07 (seven) years (ending last day of month previous to the one in which tender is invited) as per **Annexure-V** with all relevant documents as per **Para 3.4.1** and Completion Certificate.

2.11. Tender Form- 4(B) - Financial Eligibility

The tenderer shall upload the details of payment received in previous three financial years & the current financial year up to the date of inviting of tender as per **Annexure-VIB** with all relevant documents as per **Para 3.4.2**

2.12. Bid Capacity Eligibility: The bid capacity is required to be submitted/uploaded with tender/bid when tender value is more than Rs.20.0 Crores. The tender/technical bid will be evaluated based on bid capacity formula detailed in Annexure-VI of IRSGCC- 2022 (with all correction slips issued till date of invitation of tender). The tenderer/bidder shall have to submit/upload requisite information in a proforma (tabular form) as per Annexure-XI, XII & XIII with all supporting documents

3. INSTRUCTION TO TENDERER AND CONDITION OF TENDER

3.1. CARE IN SUBMISSION OF TENDER

3.1.1. 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 IRSGCC Part-II (with all correction slips issued till date of invitation of tender)**' for the completion of works to the entire satisfaction of the Engineer.

3.1.2. Tenderer 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. Tenderer will ensure that full benefit of Input Tax Credit (ITC) likely to be availed by them is duly considered while quoting rates.

3.1.3. 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.

- 3.1.4. 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.
- 3.1.5. 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.
- 3.1.6. 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.
- 3.1.7. 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 of IRSGCC-2022 (Annexure XXIV of Tender Document). In addition to Annexure-V of IRSGCC-2022 (Annexure XXIV of Tender Document) in case of other than Company/Proprietary firm, Annexure -V(A) of IRSGCC-2022 (Annexure XXIV-A of Tender Document) shall also be submitted by the each member of a Partnership Firm / Joint Venture (JV) / Hindu Undivided Family (HUF) / Limited Liability Partnership (LLP) etc. as the case may be. Non submission of above certificate(s) by the bidder shall result in summarily rejection of his/their bid. It shall be mandatorily incumbent upon the tenderer to identify, state and submit the supporting documents duly self attested/digitally signed by which they/he is qualifying the Qualifying Criteria mentioned in the Tender Document.

3.1.8. Tenderer Constitution and Requirement of Authorize Signatory

The tenderer/s who are constituents of Proprietary Firm/ Partnerships Firm/ Company, Joint Venture(JV) Association or Society etc. must forward attested copies of the constitution of their concern, partnership deed and power of attorney with their tender as per Tender Form 3 (**Para 2.8**) of tender document. 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, JV association or society as the case may be). The Railway will not be bound by any power of attorney granted by the tenderer/s or by changes in the composition of the firm made subsequent to the award of the contract. **Para1(iv) of Annexure-VIII** specifies the action to be taken in such matters. The cost of such action, including legal advice will be chargeable to the Tenderer/ contractor.

The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executants(s) and when it is so required the same should be under common seal affixed

in accordance with the required procedure (Please refer **Para 3.6** and **Annexure-III** also).

3.2. Cost of Tender Document

As per publishing tender notice on e-Tender Portal www.ireps.gov.in. The cost of Tender documents will be as per latest guidelines of Railway Board and shall be paid by the tenderer one-Tender Portal www.ireps.gov.in. The cost of Tender document is not refundable.

3.3. 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 works estimated to cost up to ₹ 1 crore	2% of the estimated cost of the work
For works estimated to cost more than ₹ 1 crore	₹ 2 lakh plus ½% (half percent) of the excess of the estimated cost of work beyond ₹ 1 crore subject to a maximum of ₹ 1 crore

Note:

- (i) The Bid Security shall be rounded off to the nearest ₹100. This Bid Security shall be applicable for all modes of tendering.
 - (ii) Any firm recognized by Department of Industrial Policy and Promotion (DIPP) as 'Startups' shall be exempted from payment of Bid Security detailed above.
 - (iii) Labour Cooperative Societies shall submit only 50% of above Bid Security detailed above.
- (b) It shall be understood that the tender documents have been issued to the tenderer and the tenderer is permitted to tender in consideration of stipulation on his part, that after submitting his tender he will not resile from his offer or modify the terms and conditions thereof in a manner not acceptable to the Engineer. Should the tenderer fail to observe or comply with the said stipulation, the aforesaid amount shall be liable to be forfeited to the Railway.
- (c) If his tender is accepted, this Bid Security mentioned in sub para (a) above will be retained as part security for the due and faithful 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 90 days 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 within 5 working days before closing date for 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.

3.4. Eligibility Criteria

The Tenderer will be required to meet the following eligibility criteria for which credentials to be uploaded by the tenderer, along with bid (**Applicable only for Works costing more than Rs.50.0 lakhs**). No Technical and Financial credentials are required for Works tenders having value up to Rs 50 lakh.

3.4.1 Technical Eligibility Criteria

The **Tenderer** will be required to meet the following eligibility criteria for which credentials to be uploaded by the tenderer, along with bid

- (a) The tenderer must have successfully completed or substantially completed anyone 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:

Work of Similar Nature would mean “Any RI or EI or CLS or ABS or IBS involving Indoor & Outdoor works (Cable laying & Termination).”

- (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 3.4.1:

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.

3.4.2 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.

3.4.3 Bid Capacity: The tender/technical bid will be evaluated based on bid capacity

formuladetailed as Annexure-VI IRSGCC- 2022 (with all correction slips issued till date of invitation of tender). The tenderer/bidder shall have to submit/upload requisite information in a proforma (tabular form) as per Annexure-XI, XII & XIII with all supporting documents.

3.4.4 No Technical and Financial credentials are required for tenders having advertised value up toRs 50 lakh.

3.4.5 Credentials if submitted with bid in foreign currency shall be converted into Indiancurrency i.e., Indian Rupee asunder

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 3.4 of the Tender Form (Second Sheet) including Para 3.4.1 to 3.4.5 - EligibilityCriteria:

- 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 ongoingcontract 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 consideredfor 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 fulfillmentof 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 3.4.1 Para 3.4 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 0.3×0.2 * value of the work done in the previous entity. For this purpose, the tenderer shall submit along with his bid all the relevant documents which include 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 proprietary firm "P" or partner in some other partnership firm "AX", credentials of A in proprietary 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.]*

3.5. Documents for Eligibility in case of constitution of firm by the Proprietary firm/Partnership firm/JV/Society/Companies /HUF etc.to be submitted/uploaded 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 3.4 of the Tender Form 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 3.4 of the Tender Form above.

(c) Partnership Firm:

- (i) All documents as mentioned in Annexure VIII of the Tender Form.
 - (d) **Joint Venture (JV):** All documents as mentioned in para 3.6 of the Tender Form.
 - (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 3.4 of the Tender Form 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 3.4 of the Tender Form.
 - (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 3.4 of the Tender Form 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

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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.

3.5.1 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 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.

- ii. 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.

- 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 then 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.

- 3.5.2 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 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.

3.6. Joint Venture (JV)

The JV firm is allowed to participate only in the tenders of value more than Rs.10.0 Crores. Guidelines regarding for Participation of Joint Venture Firms in Works Tender are as detailed below:

- 3.6.1 Separate identity/name shall be given to the Joint Venture.
- 3.6.2 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%.
- 3.6.3 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.
- 3.6.4 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.

- 3.6.5 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.
- 3.6.6 A 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.
- 3.6.7 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.
- 3.6.8 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.
- 3.6.9 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.
- 3.6.10 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.
- 3.6.11 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 along with 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:

- 3.6.11.1 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.
- 3.6.11.2 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.
- 3.6.11.3 Governing Laws - The Registered Entity shall in all respect be governed by and interpreted in accordance with Indian Laws
- 3.6.12 Authorized Member - Joint Venture members in the JV MoU shall authorize Lead member on behalf of the Joint Venture to deal with the tender, sign the agreement or enter into contract in respect of the said tender, to receive payment, to witness joint measurement of work done, to sign measurement books and similar such action in respect of the said tender/contract. All notices/correspondences with respect to the contract would be sent only to this authorized member of the JV.
- 3.6.13 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.
- 3.6.14 Documents to be enclosed by the JV along with the tender:
- 3.6.14.1. 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.
- 3.6.14.2. 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.

3.6.14.3. 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

3.6.14.4. 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.

3.6.14.5. 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.

3.6.14.6. All other documents in terms of Para 3.4 of the Tender Form above.

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

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

- (a) For Works without composite components
The technical eligibility for the work as per para 3.4.1. 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 3.4.1. 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 3.4.1. 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 3.4.1 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 3.4.1. above, shall have technical capacity of minimum 10% of the cost of any component of work mentioned in technical eligibility criteria i.e each other (non-lead) member of must have satisfactorily completed or substantially completed during the last 07 (seven) years ending last day of month previous to the one in which tender is invited, one similar single work for a minimum 10% of cost of any component of work mentioned in technical eligibility criteria.

Note for Para 3.6.15.1. (Para 17.15.1 of GCC):

- a) The Major component of the work/or 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.*

3.6.16.1. Financial Eligibility Criteria

The JV shall satisfy the requirement of “Financial Eligibility” mentioned at para 3.4.2. above. The “financial capacity” of the lead member of JV shall not be less than 51% of the financial eligibility criteria mentioned at para 3.4.2. 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.

3.6.16.2. Bid Capacity

The JV shall satisfy the requirement of “Bid Capacity” requirement mentioned at para 3.4.2. above. The arithmetic sum of individual “Bid capacity” of all the members shall be taken as JV’s “Bid capacity” to satisfy this requirement.

3.7. Employment/ Partnership etc. of Retired Railway Employee (a) Should a tenderer

- (i) be a retired Engineer of the Gazetted rank or any other Gazetted officer working before**

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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 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

- a) 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 of IRSGCC-2022 Part-II (with all correction slips issued till date of invitation of tender).

- 3.7.1. The tenderer shall upload a 'Certificate of Information Regarding Employment/Partnership etc. of Retired Railway Employees with the Tenderer' as per [Annexure-XV](#).
- 3.7.2. The tenderer shall also upload a "Certificate of No Relative being an Employee of Western Railway as per Annexure-XVI.

3.8. Conflict of Interest

- 3.8.1. Railway Administration considers “**Conflict of Interest**”; to be a situation in which party has interests that could improperly influence the tendering process or that party’s Performance of official duties or Responsibilities, Contractual Obligations or Compliance of applicable laws and regulations. Any Tenderer(s), which in the opinion of Railway Administration has or may have the likelihood of a conflict of interest, **shall be disqualified**. Without limiting the generality of the above, a Tenderer shall be considered to have a conflict of interest that affects the tendering process, if;
- 3.8.1.1. Such tenderer, its Member (In case of Partnership firm) or any of its Constituents and any other Tenderer for the same work, its Member or any of its constituents have cross ownership interest; provided that this disqualification shall not apply in case the direct or indirect ownership/Shareholding (of paid up and subscribed shares) of a Tenderer, its Member or any of its constituent in the other Tenderer, its Member or any of its constituent is less than 10% (Ten percent); or
- 3.8.1.2. Such Tenderer or a Member of such Tenderer is also a member of another Tenderer for the same work; or
- 3.8.1.3. Such Tenderer has the same authorized Signatory/ representative for a tender as any other Tenderer for the same work; or
- 3.8.1.4. Such Tenderer, its Member or any of its Constituent has participated as consultant to Railway in the preparation of any document, design or technical specifications for the same work; or
- 3.8.1.5. If legal, financial or technical advisor of Railway for the same work is or has been engaged by Tenderer, its Member or any of its Constituent in any manner for matters related to or incidental to the same work during or prior to the Tendering process up to the signing of Agreement; or
- 3.8.1.6. Such Tenderer, its Member or any of its Constituent and the consultant of Railway for the same work, its Member or any of its Constituent have cross ownership interest; provided that this disqualification shall not apply in cases the direct or indirect ownership/ shareholding (of its paid up and subscribed shares) of a tenderer, its Member or any of its Constituents in the consultant of Railway for this work, its Member or any of its Constituent, or vice versa, is less than 10% (ten percent); or
- 3.8.1.7. Such Tenderer, its Member or any Constituent thereof received or has received any direct or indirect subsidy, grant, concessional loan or subordinated debt from any other Tenderer for the same work, its Member or Constituent, or has provided any such subsidy, grant concessional loan or subordinated debt to any other Tenderer for the same work, its Member or any Constituent thereof; or
- 3.8.1.8. Such Tenderer, or any Constituent thereof, has a relationship with any other Tenderer for the same work, or any Constituent thereof, directly or through common third party/parties, that puts either or both of them in a position to have access to each other’s’ information about, or to influence the Tender of either or each other for the same work.

- 3.8.2. Disqualification specified under **Sub para 3.8.1.1 to 3.8.1.8** shall not apply to the Tenderer or its Member of both Public and Private unless and until such Tenderer or its Member is a Constituent of another Tenderer or its Member or Railway Consultant for the same work.
- (i) Tenderer/ Each Member of the firm shall submit the following documents on the basis of which it has arrived at the conclusion that it does not have any Conflict of interest:
 - (ii) List of Constituents along with their shareholding and registered office address;
 - (iii) The details of each of shareholders holding more than 10% in the firm, each of its members and their Constituents;
 - (iv) A chart showing the relationship of the Tenderer/Members of the firm with their respective constituents.
 - (v) Notwithstanding anything contained herein above, Railway may, after opening of Tender, seek a reconfirmation that there is no conflict of interest among the Tenderer, Members and / or Constituents of the Tenderer/ Members of the firm, within a period to be stipulated by Railway. Railway will also seek reconfirmation from its legal, financial or technical advisors that there is no conflict of interest with the tenderer.

3.9. Fraud & Corrupt Practice

- 3.9.1. The Tenderer and their representative officers, employee, agents and advisors shall observe the highest standard of ethics during the tendering process and subsequent to the issue of the LOA during the substance of the Agreement. Notwithstanding anything to contrary contained herein or in the LOA or the Agreement, Railway shall reject the Tender, Withdraw the LOA, or Terminate the Agreement, as the case may be, without being liable in any manner whatsoever to the selected Tenderer, if it determines that the selected Tenderer, as the case may be has directly or indirectly or through agent, engaged in corrupt practice, fraudulent practice, Coercive practice, undesirable practice or restrictive practice in the Tendering process. In such an event, in addition to exercise of its right of Termination, Railway shall forfeit and appropriate the contract security or Performance Guarantee as the case may be, as mutually agreed genuine pre- estimation compensation and damage payable to Railway towards, inter alia, time, cost and effort of Railway, without prejudice to any other right or remedy that may be available to Railway hereunder or otherwise.
- 3.9.2. Without prejudice to the right of Railway hereinabove and the rights and remedies which Railway may have under the LOA or the Agreement, if the Tenderer/Contractor, as the case may be, is found by Railway to have directly or indirectly or through an agent, engaged or indulged in any corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice during the tendering process, or after the issue of LOA or the execution of Agreement, **such Tenderer, Members and Contractor shall not be eligible to participate in any Tender issued by Western Railway during a period of 02 (Two) years from the date such** Tenderer, Member or Contractor, as the case may be, is found by Railway to have directly or indirectly or through an agent, engaged or indulged in any corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice, as the case maybe.
- 3.9.3. For the purposes of this clause, the following terms shall have the meanings hereinafter respectively assigned to them;

“Corrupt Practice” means the offering, giving, receiving or soliciting, directly or indirectly of anything of value to influence the action of any person connecting with the

Tendering process(for avoidance of doubt, offering employment to or employing or engaging in any manner whatsoever, directly or indirectly, any official of Railway who is or has been associated in any manner, directly or indirectly with the Tendering process or the LOA or has dealt with matters concerning the Agreement or arising there from, before or after the execution thereof, at any time prior to the expiry of one year from date such official resigns or retires from or otherwise ceases to be in the service of Railway, shall be deemed to constitute influencing the actions of a person connected with the Tendering process),or

Engaging in any manner whatsoever, whether during Tendering process or after the issue of the LOA or after execution of Agreement, as the case may be, any person in respect of in respect of any matters relating to the work or the LOA or the Agreement, who at any time has been or is a legal, financial or technical advisor of Railway in relation to any matter concerning to work.

- (i) **“Fraudulent practice”** means a misrepresentation or Omission of facts or suppression of facts or disclosure of incomplete facts, in order to influence the Tendering process;
- (ii) **“Coercive Practice”** means impairing or harming, or threatening to impair or harm, directly or indirectly, any person or property to influence any person’s participation or action in the Tendering process;
- (iii) **“Undesirable Practice”** means establishing contract with any person connected with or employed or engaged by Railway and/ or the Ministry of Railways and / or any Ministry or Department, Authority or body whether statutory or non- statutory that may be concerned or connected, in any manner whatsoever, with this work, with the objective of canvassing, lobbying, seeking intervention in or in any manner influencing or attempting to influence the Tendering process; or having a conflicted of interest; and
- (iv) **“Restrictive Practice”** means forming a cartel or arriving at any understanding or arrangement among Tenderer with the objective of restricting or manipulating a full and fair completion in the tendering process.

3.10. Confidentiality

Information relating to the examination, clarification, evolution and recommendation for the tenderer shall not be disclosed to any person, who is not officially concerned with the process or is not retained Professional Advisor advising Railway, in relation to, or matter arising out of, or concerning the tendering process. Railway will treat all information submitted/uploaded as part of the tender, in confidence and will require all those who have access to such material to treat the same in confidence. Railway may not divulge any such information unless it is directed to do so by a Court of Law and/or any statutory entity that has the power under Law to require its disclosure.

3.11. Miscellaneous

The Tendering process shall be governed by and construed in accordance with the Laws of India and the **Courts at Madhya Pradesh for Ratlam Division** shall have exclusive jurisdiction over all disputes arising under pursuant to and/ or in connection with the Tendering process.

Railway in its sole discretion and without incurring any obligation or liability reserves the right at any time to;

- i) Suspend or cancel the Tendering process and /or amend and/ or Supplement the Tendering process or modify the dates or other terms & condition relating thereto;
- ii) Consult with any Tenderer in order to receive clarifications or further information;
- iii) Retain any information and /or evidence submitted to Railway by, on behalf of, and/ or in relation to any Tenderer, and /or.
- iv) Independently verify, disqualify, reject and/ or accept any and all submission or other information and/ or evidence submitted by or on behalf of any tenderer.

3.11.1. No assignment, Sale, Transfer, Conveyance of the work shall be permitted except as otherwise expressly provided in the tender documents. Any breach of this condition shall lead to rejection of the Tender and /or termination of Agreement.

3.11.2. For the sake of clarity, the Tenderer (s) may note that in case there are any obligation(s) or condition(s) imposed on them under a particular clause of any part of the Tender Documents, which includes the forms, and on a similar issue some additional conditions are mentioned under another clause of any other part of the Tender Documents, which includes the forms, then all the conditions and/ or obligations should be read in conjunction with each other and all of them have to be fulfilled.

3.11.3. It shall be deemed that by submitting the Tender, the tenderer agrees and releases Railway, its employees, agents, consultants and advisers, irrevocably, unconditionally, fully and finally from any and all liability for claims, losses, damages, costs, expenses or liabilities in any way related to or arising from the exercise of any rights and/ or performance of any obligations hereunder, pursuant hereto and/ or in connection herewith and waives any and all right and/ or claims it may have in their respect, whether actual or contingent, whether present or future. No claim of any nature and to any extent whatsoever shall be made by any Tenderer against Railway, its employees, agents, consultants and advisers.

3.11.4. The Tender Documents including all attached documents are and shall remain the property of Railway and are transmitted to the Tenderer solely for the purpose of preparation and submission of the Tender in accordance herewith. Tenderer are to treat all information as strictly confidential and shall not use it for any purpose other than for the preparation and submission of their Tenders. Railway will not return any Tender or any information provided to it by the tenderer.

3.12. Preparation & Submission of Document

The Tenderer will be deemed to visit the site and inspected the same to acquaint itself about all the existing site conditions, Laws and regulations before submitting his/their Tender. Once the tender is submitted, no tenderer will be permitted to withdraw his/their tender on the ground of any alleged defect in the site or its conditions.

3.13. Tenderer's Credentials

Documents testifying tenderer's previous experience and financial status should be uploaded along with the tender. Tenderer(s) shall upload 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) Certificates which may be an attested Certificate from the client, 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 (Annexure-XVII). Similarly list of Plant & Machinery available on hand and proposed to be inducted and hired for the tendered work (Annexure- XVIII). The statement of works being executed/in hand by the contractor/s (Annexure-XIX).

All these annexure duly filled & signed shall be uploaded by the tenderer on e-Tender Portal www.ireps.gov.in.

- (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 of IRSGCC-2022 (Annexure XXIV of Tender Document). In addition to Annexure-V, in case of other than Company/Proprietary firm, Annexure -V(A) of IRSGCC-2022 (Annexure XXIV-A of Tender Document) 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) Railway reserved the right to verify all statements, information and documents submitted/uploaded by tenderer/bidder in each 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 obligation and liabilities hereunder nor will it affect any rights of the railway thereunder.
- (vi) (a) *In case of any information submitted by tenderer is found to be false forged or incorrect at any time during process of evaluation of tenders, it shall lead to forfeiture of the tender Earnest Money Deposit or action as Bid Security Declaration besides banning of business for a period of up to five years.*
(b) In case of any information submitted by tenderer with tender/bid is found to be false forged or incorrect after the award of contract, the contract shall be terminated. Bid security (EMD), Performance Guarantee and Security Deposit available with railway shall be forfeited. In addition, other dues of contractor, if any under this contract shall be forfeited and agency shall be banned for doing business for a period of up to **five years**.
Note: Non-compliance any of the conditions set forth therein above is liable to result in the tender to be rejected.

4. CONSIDERATION OF TENDERS

*Similar Nature of Work physically completed within qualifying period as given in **Para 3.4.1** of this tender document (even though the work might have been commenced before the qualifying period) should only be considered in evaluating the eligibility criteria.*

4.1. Right of Railway to Deal with Tender

Notwithstanding anything contained in tender document, Railway Administration reserves the right to accept or reject any tender and to annul the tendering process, and reject all

Tenders at any time during Tendering process, without thereby any liability to the affected Tenderer(s) or any obligation to inform the affected Tenderer(s) for Railway action. In the event Railway reject or annuls all the tender(s), it may at its discretion to invite fresh Tender.

- 4.1.1. 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.
- 4.1.2. 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.
- 4.1.3. 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.

4.2. System of Tendering

System of tendering for tender is as per publishing tender notice on e-Tender Portal www.ireps.gov.in.

- 4.2.1. **Single Packet System of Tendering:** Technical & Financial bid shall be opened at a time. In case of tenders costing less than Rs.10 Crore single packet tender system will be followed and technical & financial offer of the tenderer/s shall be opened and evaluated at the same time.
- 4.2.2. **Two Packets System of Tendering:** 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.
- 4.2.3. **Two Packets with e-Reverse Auction System of Tendering:** This system of tendering shall be adopted for the tenders of value more than Rs.50.0 Crores.

4.3. Opening of Tender

The e-tender is opened after closing date and time of submission online bids on Tender Portal www.ireps.gov.in through Digital Signature Certificate/Encryption Certificate of concern Authorized Officer of Railways on specified date and time. However, if date of tender opening is declared as Holiday, the tender will be opened at the same time on next working day.

4.4. Conditional offer and Alternative proposal by Tenderer

The tenderer/bidder shall submit offers that fully comply with the requirements of the Tender Documents including the Conditions of Contract, Design and Specification requirements if any. *Conditional offer or alternative offers will not be considered intender evaluation and will be **SUMMARILY REJECTED**.* The tenderer/bidder shall have no claims in this regard whatsoever.

4.5. Withdrawal of Offer

No Tender offer can be withdrawn in the interval between the after due date & time of submission and expiration of the Tender validity period. Withdrawal of offer during this period shall result in forfeiture of Tenderer Earnest Money.

4.6. Omission, Discrepancies & Clarification

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 tenderer. It shall be understood that every endeavor 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.

4.7. Evaluation of Tender/ Bids

The tender offers will be evaluated by Railway to check whether he/they meet the Eligibility Criteria as laid down in **Para 3.4** above. Thereafter declaration about not having conflict of interest, that Tender does not contain any condition and other relevant documents attached with Tender Document may be verified by Railway. To facilitate evaluation Railway may at its sole discretion, seek clarifications in writing from any Tenderer on the attached documents in the format as considered appropriate by Railway. Notwithstanding anything to the contrary contained in the Tender Documents. Railway may, at its sole discretion, waive any minor infirmity, non- conformity or irregularity in a Tender Document that does not constitute a material deviation and that does not prejudice or affect the relative position of any Tenderer, provided it confirms to all the terms, condition of Tender Documents without any material deviation, objection, conditionality or reservations.

“No post tender correspondence for submission of additional documents shall be entertained after opening of the Technical & Commercial offers. Even suo- moto post tender letters of the tenders shall be treated as NULL&VOID.”

5. CONTRACT DOCUMENT

5.1. Execution of Contract Document

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)..

5.2. 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 22nd day after the date of issue of LOA. Further, if the 60th day happens to be a declared holiday in the concerned office of the Railway, submission of PG can be accepted on the next working day.

In all other cases, if the Contractor fails to submit the requisite PG even after 60 days from the date of issue of LOA, the contract is liable to be terminated. 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) in any of the following forms, amounting to 3% of the original contract value:-
- (i) A deposit of Cash;
 - (ii) Irrevocable Bank Guarantee;
 - (iii) Government Securities including State Loan Bonds at 5% below the market value;
 - (iv) Pay Orders and Demand Drafts tendered by any Scheduled Commercial Bank of India;
 - (v) Guarantee Bonds executed or Deposits Receipts tendered by any Scheduled Commercial Bank of India;
 - (vi) Deposit in the Post Office Saving Bank;
 - (vii) Deposit in the National Savings Certificates;
 - (viii) Twelve years National Defence Certificates;
 - (ix) Ten years Defence Deposits;
 - (x) National Defence Bonds and
 - (xi) 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.

5.3. 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.

- 5.3.1 For Zone Contracts, awarded on the basis of the percentage above or below the applicable Schedule of Rates 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 of IRSGCC-2022**. During the currency of the Zone Contract, work orders as per specimen form **Annexure-III of IRSGCC-2022**, for works not exceeding ₹.5,00,000 each, shall be issued by the Divisional Railway Manager / Executive Engineer under the agreement for Zone Contract.

- 5.3.2 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 of IRSGCC-2022**.

5.4. Security Deposit

The successful tenderer shall have to submit Security Deposit as per **Clause 16 of IRSGCC-2022 Part-II (with all correction slips issued till date of invitation of tender)**.

5.5. Applicable Charges/Recoveries etc.

5.5.1 Income Tax

Railway will deduct 2% of income tax on the Net Amount (i.e Gross Amount minus GST) and surcharge on income tax of each bill as prescribed by Government from time to time or rate of income tax specified by Income Tax Department in favour of the contractor.

5.5.2 Deployment of Technical Supervisor

5.5.2.1 As per special condition of contract enclosed along with tender document. The necessary deduction for non-deployment of qualified technical personnel shall be as per special condition of contract.

5.5.3 Tools and Plants

The hire charges of tools and plants shall be as per prevailing rules of Railway.

5.5.4 Price Variation Clause

NOT APPLICABLE as per CSTE office letter no SG/32/0/C dated 12.07.2016

5.5.5 Others Taxes & Royalty

The Contractor shall bear in full, all taxes and royalties levied by the State Government and/or Central Government from time to time. This would be entirely a matter between the Contractor and State Government/or Central Government. Railway will recover the taxes and royalties through final bills if the contractor fails to pay the taxes and royalties to the Government.

5.5.6 Disaster Management

All the available vehicles and equipment's of the contractor can be drafted by the Railway Administration in case of accidents/natural calamities involving human lives. The payment for such drafting shall be made 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 Principal Chief Engineer or nominated 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.

5.5.7 Emergency Work

In the event of any accident or failure occurring in the execution of work/arising out of it which in the opinion of the Engineer requires immediate attention, the Railway may bring its own workmen or other agency/agencies to execute or partly execute the necessary work or carry out repairs if the Engineer-in-charge considers that the contractor(s) is/are not in a position to do so in time without giving any notice and charge the cost thereof, to be determined by the Engineer-in-charge, to the contractor.

5.5.8 Damage by Accident/ Flood/ Tides or Natural Calamities

The Contractor shall take all precautions against damages from accidents, floods tides or other natural occurrences. He shall not be entitled to any compensation for his tools, plants, materials, machines and other equipment lost or damaged by any cause whatsoever.

The Contractor shall be liable to make good the damage to any structure or part of a structure, plant or material of every description belonging to the Railway covered under the Contract, lost or damaged by him due to any cause during the course of execution of work. The Railway Administration will not be liable to pay the contractor any charge for rectification or repair to any damage which may have occurred from any cause what so ever.

5.5.9 Conservancy Cess Charges

Conservancy Cess Charges shall be deducted from each bill as per extant instruction of Railway Board. (Latest instruction for deduction of Conservancy Cess Charges is as per Railway Board's.

6. Applicability of PART-II of IRSGCC-2022

All standard general condition of contract for use in connection with works contract will strictly be **applied** as per **Part-II of Indian Railway Standard Conditions of contract (IRSGCC-2022)** with all correction slips issued till date of invitation of tender i.e., Clause 1 to 64(7) along with Annexure.

7. As per Railway Board's letter No. 2018/CE-I/CT/30 dt. 01-08-2022: the condition of Implementation of 'Contractor's e-MB' for Measurement and Billing is applicable of this tender. (As amended up-to-date)

CHAPTER-2

**INSTRUCTIONS TO TENDERERS
REGARDING TENDER FORMS**

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 withand 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: _____

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Construction**

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(1) _____

Signature of Tenderer(s)

(2) _____

Date _____

Address of the Tenderer(s)

Signature of Tenderer/Contractor(s)

Dy CSTE C RTM

**Western Railway
Construction**

Tender No. SnT-C-RTM-100-R-2022-23

ANNEXURE – II

TENDER FORM – 2: GENERAL INFORMATION OF THE TENDERER

SN	Item Description	Item Details
A	General Information	
1	Name of the Tenderer	
2	Constitution of Tenderer ¹ (Tick as applicable)	Sole Proprietor /Partnership Firm/ Pvt. Ltd Co./ Public Ltd. Co./ JV/ Society/ (any other)
3	Act under which Tenderer is Registered	Company Act, Firm & Societies Act, Co-operative Societies Act, Income- Tax Act,/ (any other)etc.
4	Registration details ²	
5	PAN No. ²	
6	GSTIN No. ²	
7	Registered Address	
8	Communication Address along with Telephone, Fax and Email address	
9	In case of Joint Venture (JV), MOU and other details ³	
10	Details of Bank account on which payment shall be released	
B	Bank details	
1	Beneficiary Name	
2	Beneficiary Address	
3	Bank Name	
4	Branch Address	
5	IFSC Code	
6	MICR Code	
7	Account Type	
8	Account Number	
9	Partners of account in the Bank ⁴	
10	Signature of Beneficiary	

Superscript Notes:

1. Please submit/upload the supporting documents demonstrating the status of

Signature of Tenderer/Contractor(s)

Dy CSTE C RTM

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Applicant / Tenderer as legal person corresponding to its constitution like certificate of incorporation along with Memorandum and Article of Association in case of Pvt./Public Ltd. Co., copy of partnership deed, Affidavit in case of sole proprietor etc.as the case maybe.

2. Please submit/upload the copy of the registration certificate as applicable, PAN card, GSTIN certificate should also been up loaded.
3. In case of Joint Venture, details as per **Annexure-VI** need to be submitted with tender/bid. JV firms are not allowed to participate in the works costing less than or equal to Rs.10.0 Crores. (Railway Board letter no: 2002/CE-I/CT/37 JV Pt.VIII Dated: 14.12.2012).
4. Details of all the partners of the subject bank account need to be disclosed by the Tenderer on its letter head under the signature of person who is authorized to operate the subject bank account.

Signature

Name & Designation

(In Capital)

Address

.....

.....

.....

Date.....

TENDER FORM –3: POWER OF ATTORNEY FORMAT FOR AUTHORISED
SIGNATORY

(To be executed on non-judicial stamp paper of the appropriate value in accordance with Stamp Duty Act. The stamp paper should be in the name of the Firm / Company who is issuing the Power of Attorney in favour of Authorized Signatory).

POWER OF ATTORNEY

Know all men by these present, wedo o hereby
constitute, appoint and
authorize

Mr./Ms who is presently employed with us and holding
the position of

..... as our attorney, to do in our name and on our behalf, all such acts, deeds and
things necessary in connection with or incidental to our bid for the work of

..... including signing and submission of all
documents and providing information/ responses to Western Railway representing us in
all matters, dealing with Western Railway in all matters in connection with our Tender for the
said work.

We hereby agree to ratify all acts, deeds and things lawfully done by our said attorney
pursuant to this Power of Attorney and that all acts, deeds and things done by our aforesaid
attorney shall and shall always be deemed to have been done by us.

Dated this. day of 202...

Place:

(Signature

.....

Name & Designation in Block letters of Person authorized to sign Power of Attorney for
and on behalf of the Applicant Tenderer)

Common Seal of Company I accept.

(Signature of Authorized Signatory) Name and Designation of AS

Notes:

- (a) The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executants(s) and when it is so required the same should be under common seal affixed in accordance with the required procedure.
- (b) Please refer to **Para 3.6** for requirement of the Documents to be submitted in different cases

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of tenderer being Sole Proprietor, Partnership, Private / Public Limited Company etc.

(c) The obligations to Railway will not be affected by changes in the composition of the firm magrant of Revised Power of Attorney, if any, by the tenderer.

- (d) However, changes in composition of the Firm and / or Revised POA should be promptly advised in writing to the Tender Issuing Authority / Contract Signing Authority as the case maybe.

Signature

Name & Designation

(In Capital)

Address

.....

.....

Date.....

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Annexure - IV

DETAILS OF ALL THE WORKS COMPLETED IN LAST 7 YEARS INCLUDING CURRENT YEAR

(All figures in Rs Lakhs)

SN	Name of the Work	Name of Organization	Contract Agreement No and Date	Original Value of Contract Agreement	Final cost of Completed work	Actual Date of Completion	Nature of the Firm	Completion Certificate ³ uploaded at Page	%age of the Tenderer	Amount for Technical eligibility	Brief details about Nature and Scope of work
	1	2	3	4	5	6	7	8	9	10(=9x5)	11
1											
2											
3											
Total											

Superscript Notes:

- The tenderer should clearly mention Name & Nature of the Firm (as per guideline mentioned in **Para 3.6**). Letter of Acceptance issued by Competent Authority in favour of Name of the firm who had executed the work duly stating Name & cost of the Work, Original Date of Completion etc., against which the **Completion/Experience Certificates** have been claimed by the tenderer, shall also be uploaded. In column 7 type & Nature of organization is to be mentioned viz. Central/ State Governments /Public Sector Undertaking/ Public Funded Institutions/Municipal Bodies / Railways Siding owners /Concessionaire/ Public listed company.
- Please go through the **Annexure-VI**. If Work was executed jointly with other Firms, amount for credentials will be considered as per applicable percentage (%age).
- All Documents must be submitted/uploaded along with tender/bid, failing which the claimed credentials as above will not be considered at the time of evaluation of Tender.
No printed Document like annual report etc. should be attached with Tender Document

Signature of Tenderer/Contractor(s)

Dy CSTE C RTM

ANNEXURE –V

**DETAILS OF COMPLETED SIMILAR WORKS IN SUPPORT OF FULFILLING
TECHNICAL ELIGIBILITY CRITERIA AS PER TENDER CLAUSE**

**Tenderer shall List out the Similar works of Similar Nature and Size in support of
fulfilling the Technical Eligibility Criteria**

S No	Item	1 st Work	2 nd Work	3 rd Work
1	Name of the Work			
2	Name of Organisation/ Employer			
3	Contract Agreement No and Date			
4	Original Value of Contract Agreement			
5	Final cost of Completed work			
a)	Upto date Bill amount received (excluding PVC)			
b)	Bill amount paid towards PVC			
6	Original date of Completion			
7	Actual Date of Completion			
8	Scope of work			
9	If partner in a JV or subcontractor specify participation in total contracamount Percent of Total: Amount: INR			
10	Description of the similarity in accordance with Technical Eligibility Criteria and as mentioned in Completion certificate			
11	Completion Certificate Uploaded with tender at Page no.			

Signature of Tenderer

Name & Designation

Date:

Note:

- The tenderer must have successfully completed any of the following during *last 07(seven) years, ending last day of month previous to the one in which tender is invited.*
Three similar works costing not less than the amount equal to 30% of advertised value of each component of tender, or
Two similar works costing not less than the amount equal to 40% of advertised value of each component of tender, or
One similar work costing not less than the amount equal to 60% of advertised value of each component of tender.

2. The Tenderer shall attach a copy of the Completion Certificate(s) issued by the employer in support of the information being furnished, failing which the claim of the tenderer for fulfilling Technical Eligibility Criteria shall be liable to be rejected.
3. **Completion Certificate issued by the Government Organization or Private (Refer detailed guidelines in Para 3.4.1) in favour of Name of the firm who had executed the work duly stating following must be attached.(As per Annexure-VI)**
 - a. **Name of work**
 - b. **Name of Firm Executing the work** (If partner in a JV or subcontractor, specify participation in total contract amount)
 - c. **Completion cost of the Work,**
 - d. **Original Date of Completion,**
 - e. **Status of Work (Physically Completed or In Progress)**
 - f. **Status of Final Bill.**
 - g. **Actual Date of Completion,**
 - h. **Scope of work clearly defining the Similarity of work**
 - i. **Employer's Name, Current Address and Current Telephone/Fax Number, E-mail**
4. In Case more than one work is Proposed in support of Technical Eligibility Criteria, Same Proforma shall be submitted for multiple works .
5. In case of Composite nature of works, same Proforma shall be submitted for multiple works for all components of works in case of Composite works.
6. In case of JV, each member of JV shall submit the details of works in this proforma in support of claim of the tenderer for fulfilling Technical Eligibility Criteria.
7. All Documents must be submitted/uploaded along with tender/bid, failing which the claimed credentials as above will not be considered at the time of evaluation of Tender.
8. No printed Document like annual report etc. should be attached with Tender Document

ANNEXURE-VI

Completion Certificate of Similar Nature of Works

(On Letter head of Issuing Organization with full Particulars)

SN	Item	Details
1	Name of the Work Physically Completed	
2	Date of Award of Contract	
3	Contract Agreement No and Date	
4	Particulars of Firm Executed the work	
(i)	Name of Firm with Address	
(ii)	PAN No of Firm	
(iii)	In case of JV, Name and % Share of Individual Firms	
5	Original Value of Contract Agreement	
6	Original Date of Completion	
7	Actual date of Completion	
8	Has the Work been Physically Completed (Yes / No)	
9	Final Value of Contract as Completed in Rs. (if Final Bill paid)	
10	Total Payment made in above Contract till Date of Opening of Present Tender including PVC (Rs .)	
11	In case of Composite/Combined Work involving Civil / Electrical / S&T Works: [see note(v) below] – Payment made for relevant distinct Component of Work out of Total Payment made under SN-10 above.	
12	Scope of Completed Work	
13	Whether Work includes activities as per "Similar Nature of Work" (& Payment made for relevant distinct Component of Work) i.e. as per technical eligibility criteria	
14	Performance of Contractor (Satisfactory/Unsatisfactory)	
15	Any other Relevant Information	

I hereby certify that above mentioned work has been physically completed in all respect as per contract agreement. Performance of the contractor while executing the work had been satisfactory.

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

NOTE:-

- (i) Completion Certificates should be submitted for each Work listed in Annexure V (as applicable).
- (ii) Submission of false Completion Certificates of Similar Nature of Works shall lead to forfeiture of EMD and other action including penal action.

- (iii) Copy of Completion Certificate of Similar Nature of Works duly self-attested by Tenderer shall be submitted along with tender document.
- (iv) Payment made as indicated in above certificate (SN 9,10 & 11) will be considered as value of completed work for the purpose of eligibility under Technical Eligibility Criteria.
- (v) Only those works will be treated as composite works which consist of more than one distinct component of work such as Civil Engg. Works, S&T work, Electrical work, OHE work etc.
- (vi) Format given above is for guidance only. Any certificate, containing information in other format asked for, shall be considered.

(Bid Security)

Bank Guarantee Bond from any scheduled commercial bank of India
(On non-judicial stamp paper, which should be in the name of the Executing Bank).

Name of the Bank: -----

President of India,

Acting through,

..... Railway,

Beneficiary: Railway

Date:.....

Bank Guarantee Bond No.:

Date:-----

In consideration of the President of India acting through----- (***Designation & address of Contract Signing Authority***), Railway,, (hereinafter called "The Railway") having invited the bid for_____through Notice inviting tender (NIT) No.,_____, We have been informed that ***[Insert name of the Bidder]***..... (***hereinafter called "the Bidder"***) intends to submit its bid (hereinafter called "the Bid").

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

AND

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

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

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way absolve the Bank from the liability under this guarantee; and the Bank, hereby, waives any requirement for notice of any such change, addition or modification made by Railway at any time.

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

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

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

Date

Place.....

.....

Bank's Seal and authorized signature(s)

[Name in Block letters]

[Designation with Code No.]

[P/Attorney] No.

Witness:

1 Signature, Name & Address & Seal

2 Signature, Name& address & Seal

Bank's Seal

[P/Attorney]No.

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

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)

GUIDELINES FOR SUBMITTING TENDERS BY PARTNERSHIP FIRMS

1. Participation of Partnership Firms in works tenders:

- (i) The Partnership Firms participating in the tender should be legally valid under the provisions of the Indian Partnership Act.
- (ii) 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.
- (iii) 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.
- (iv) 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.

- (v) 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.
- (vi) 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.

- (vii) 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
- (viii) 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.
- (ix) 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.
 - (x) 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 3.4 of the Tender Form (Second Sheet) above.
 - (xi) Evaluation of eligibility of a partnership firm:

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Technical and financial eligibility of the firm shall be adjudged based on satisfactory fulfillment of the eligibility criteria laid down in Para 3.4 of the Tender Form above.

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ANNEXURE – XI

PROFORMA OF BID CAPACITY: VALUE OF EXISTING COMMITMENTS

(Mandatory and applicable for tenders valuing more than Rs 20 Cr to calculate Bid Capacity of tenderer- For value of “B”-**Value of existing commitments**)

Bidders and each partner of the JV should provide information on their current commitments on all contract that have been awarded, or Letter of Acceptance has been received **up to the date of inviting of tender on the website [www. ireps.gov.in](http://www.ireps.gov.in) to the tenderer**, but for which an unqualified full completion certificate is yet to be issued. **Contract Commitments (for calculating “B” as per the Bid Capacity formula).**

SN	Description of work	Contact No. & date	Name & Address of Employer/ Tel./ Fax/ email	Value of Contract in Rs.	Date of Award of Contract	Date of Completion of Contract
1	2	3	4	5	6	7
1						
2						

Table continued...

Stipulated Period of Completion in Years = (7-6)/365	Date of Opening of this tender (Present Tender)	Balance period for Completion of the Work (In years) = (7-9)/365	Existing commitments and Balance amount of ongoing Work and also works which are awarded to tenderer but not yet started up to the date of inviting of tender (Total for calculation of ‘B’ value of work) In Rs.	Proportionate Amount of contract to be executed in “N” Years** (For calculation of ‘B’ Value) Refer Note below. In Rs.
8	9	10	11	12

Total of all works under Column ‘12’ = ‘B’

Value (Total of Column ‘12’) =

“Certified that current commitments on all the contracts that have been awarded or for which a letter of intent or acceptance has been received or for the works in progress or the works approaching completion, value of outstanding work has been indicated in the above table correctly”.

Certified by Chartered Accountant
Name:
Signature with Seal:

Signed by Tenderer/s
Name:
Signature with Seal

Note (1) for Column ‘(12)’:

1. In case the balance period for completion of the work (assessed at “**Column 10**”) is less than the period of completion of the present tender, full value of balance work as contained in “**Column 11**” shall be taken in “**Column 12**”.
2. In case the balance period for completion of the work (assessed at “**Column 10**”) is more than the period of completion of the present tender, the proportionate amount to be filled in “**Column 12**” shall be calculated as:

$$\frac{\text{Value of balance work as on date of closing (Value in “Column 11”)} \times N}{\text{Balance period for completion value of (Value in “Column 10”)}}$$

3. N = Number of Years prescribed for completion of works for tender under consideration.

Other Notes: -

- (i) This statement should be submitted with tender/bid/uploaded duly certified/issued by Chartered Accountant and duly signed by the tenderer failing which, the document will be considered as incomplete and offer will be **SUMMARILY REJECTED**.
- (ii) In case of no work in hand, a ‘NIL’ statement should be furnished duly certified/issued by Chartered Accountant and signed by the tenderer.
- (iii) in case of JV firm, the details of works with each member of JV is required to be submitted duly issued by Chartered Accountant and signed by each member of JV.
- (iv) In case, the tenderer failed to submit the above statement along with tender/bid, his offer shall be considered as incomplete and will be rejected summarily.
- (v) ‘N’ for **Column 12**: Number of years prescribed for completion of work for which bid has been invited.
- (vi) ‘B’ is the value of existing commitments and balance amount of ongoing work with the tenderer to be completed in next ‘N’ years.
- (vii) Value of 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 the JV for the purpose of satisfying his/her compliance to the above-mentioned technical eligibility criteria in the tender under consideration.
- (viii) The arithmetic sum of individual “Bid’s Capacity” of all the members shall be taken as in JV’s “Bid Capacity”.
- (ix) 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**.
- (x) **The available Bid Capacity of tenderer shall be assessed based on the details submitted with tender/bid by the tenderer/bidder. 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.**

PROFORMA OF BID CAPACITY: CONSTRUCTION TURNOVER
(Mandatory and applicable for tenders valuing more than Rs 20 Cr to calculate Bid Capacity of
tenderer- For value of "A"- **Construction Turnover**)
(ON THE LETTER HEAD OF CHARTERED ACCOUNTANT)

To
Chief Administrative
Officer(C), Western Railway,
CCG.

Sub: -Construction works executed and payment received

It is to certify that construction works executed and payment received through construction works of M/s (Name of firm) during the previous three financial years and the current financial year (up to date of inviting tender), as extracted from, Balance sheet/ certificate issued by the employer/ client, Form 16, Form 26AS etc. are as under

Sr. No.	Financial year	Work executed And Payment received through Only construction works	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
1.	Current year (Say A-0)		A
2.	A-1		
3.	A-2		
4.	A-3		

Yours sincerely,

Date: ...

(Name & Sign. Of Authorized Signatory)

Seal of firm Registration No /E-Mail/ Fax

Note :

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- (a) In case of JV firm details of construction works executed by each member of JV is required to be submitted

In case, the tenderer/s failed to submit the above statement (for tenders valuing more than 20 Cr) along with offer, their/his offer shall be considered as incomplete and will be rejected summarily.

PROFORMA OF BID CAPACITY CALCULATION BASED ON ANNEXURE XI & XII

Tenderer should Fill up details of “A” (As per annexure XII), “B” (As per annexure XI) and “N” (As per NIT) and establish the Bid requirement

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.)	<i>Fill up Amount “A” certified by Chartered Accountant in Annexure XII</i>
N (Number of years prescribed for completion of work for which bids has been invited)	<i>Fill up Completion Period As per NIT.</i>
B (Existing commitments and Balance amount of ongoing Works with the tenderer as per the prescribed proforma of Railway for statement of all works in progress and also works which are awarded to tenderer but yet not started up to the date of inviting of tender.)	<i>Fill up Amount “B” certified by Chartered Accountant in Annexure-XI.</i>
Available Bid Capacity = $[A \times N \times 2] - 0.33 \times N \times B$*	<i>Fill up calculated amount as per formula $[A \times N \times 2] - 0.33 \times N \times B$</i>

**Bid Capacity eligibility criteria will be qualified only if the available bid capacity of tenderer is equal to or more than the total bid value of the present tender.*

SEAL AND SIGNATURE OF THE TENDERER

Dated:

Note: The contents in Italics are only for guidance purpose where the Amount is to filled up. Details as appropriate are to be filled in suitably by tenderer.

PROFORMA

MEMORANDUM OF UNDERSTANDING FOR JOINT VENTURE AGREEMENT

(In case of joint venture firms, the “Memorandum of Understanding for Joint Venture Agreement” as per proforma below on non-judicial stamp of Rs.100/- should be uploaded)

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

AND/OR

M/sa partnership firm constituted under the Indian Partnership Act 1932, having its registered office at represented through its Partner ShriAuthorized Representative Shri(hereinafter referred to aswhich expression shall unless repugnant to the context thereof includes its successors of the **FIRST PART**.

AND/OR

M/sa proprietary concerned having its registered office at represented through its Sole proprietor Shri (hereinafter referred to as which expression shall unless repugnant to the context thereof includes its successors of **FIRST PART**.

Whereas, the party of the first part i.e. M/s.....details to be supplied of the expertise in their field.

Whereas, the party of the **second part** M/s.....details to be supplied of the expertise in their field.

Whereas, the party of the **Third part** M/s.....details to be supplied of the expertise in their field.

AND whereas parties to this MOU, have agreed to co-operate with each other to associate jointly and to form a joint Venture Firm to participate in the Tender No.

..... of **Western Railway** of Indian Railways.

Now, therefore, in consideration of the promises and mutual promises and of the undertaking contained herein, it is hereby agreed between the parties of this MOU as follows:

The purpose of MOU/M/s... .. and agree to co-operate with each other for the purpose of joint participation in the Tender No.of Western Railway of Indian Railways and in the event, the contract is awarded, to jointly execute the contract. The Broad interfaces and scope of work of each party is set forth below:

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.....
.....
.....
2. The name of the Joint Venture firm shall be

3. The parties, hereto, represent that:

- a. They are in possession of all approvals and valid authorization for the purpose of execution of this MOU
- b. They have not entered into any agreement/MOU of equal or similar nature with any third party for the Tender No.....of Western Railway of Indian Railways.
- c. That each of the parties of JV, agrees and undertake to place at the disposal of the JV, benefits of its individual experience, technical knowledge and skill and shall in all respects bear its share of the responsibility, including the provision of information advice and other assistance required in connection with the works. The share and the participation of the partners in the JV shall broadly be follows:

SN	Name of constitution of JV	Share of interest in the JV (%)
1		
2		
3		

- d. "That M/s shall be the lead member of JV firm who shall have a majority (at least 51%) share of interest in the JV firm. The other members shall have a share of not less than 20% each in case of 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% (strikes out which is not applicable) and all right, interest, liabilities, obligations, work experience and risks (net profits or net losses) arising out of the contract shall be shared or borne by the
 - e. 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/alterd/terminated during the validity of the tender including extension and maintenance period except when modification becomes inevitable due to succession laws etc., but no case the minimum eligibility criteria would be vitiated.
 - (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 in no case the minimum eligibility criteria would be vitiated".
 - (c) That with respect of the WR Tender neither party, nor any subsidiary company of either Party, nor any joint venture company or any other entity, in which the party/parties, is or are in any way interest, shall complete together with or through any third party, nor shall be parties advise, consult for, engage in or otherwise assist in any way person or entity or any affiliate thereof in respect of any orders or contracts related to this tender.
 - (d) That none of the members of joint ventures is black listed and/or debarred by the Railways or and other ministry or department of Govt. of India/State Govt. from participation in

contract/under in the past either in individual capacity or the JV Firm or partnership firm in which they were/are members/partners.

5. Joint & Several Liability: In respect of the WR Tender, all commercial terms shall comply each part on back-to basis specifications of the WR 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 execution of the project in accordance with the contract. The Parties hereto also undertake to be liable jointly and severally for the loss, damages caused to the Indian Railways in course of execution or due to non-execution of the contract or part thereof arising out of the contract.
6. Shri..... be authorized partner/person on behalf of the Joint Venture to deal with tender, to sign the agreement or enter into contract in respect of the said tender, to receive payment, to witness joint measurement of work done, to sign measurement books, and similar such action in respect of WR tender/Contract. All notices/ correspondence with respect to the contracts would be sent only to this authorized partner/person of the JV Firm.
7. Notwithstanding anything herein, in respect of the WR Tender, with regard to the internal relationship, the inter se liabilities between the parties shall be in proportion to their respective scope of work and shall be subject to the provisions of this MOU.
8. Responsibility: Each Party shall assume and accept full responsibility for its Scope of Work and the obligations imposed in the Contract and in this MOU as if it was, with regard to this Scope of Work, an independent partner contracting individually with the Customer. In the event of any defect and damage or any claim arising from the Customer under the Contract or any third party in relation to or as a consequence of any failure to meet the performance specification the Party, within whose Scope of Work the claim arises, shall be entirely responsible for the claim and shall indemnify and hold harmless the other Party from any liability, demand, claim burden cost, expense attorney's fees and costs arising from thereof.
9. 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.
10. 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 execution of the work, the Party/Parties having the control over the said machinery, instrument, labour force etc. without having any regard to their share of profit and loss agreed to between the Parties in Joint Venture Agreement shall hand over the same at the disposal of the other party who is actually executing the work for the purpose of execution of the contract without any hindrances and obstacle.
11. Duration of MOU: It shall be valid during entire currency of contract including the period of extension, if any and also till the maintenance period is over or till all the contractual liabilities including warranty/guarantee obligations are discharged completely.
12. Applicable Law: The MOU and any arrangement/agreements regarding the performance shall be construed and interpreted in accordance with and governed by the Laws of India and shall be subject

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to the exclusive jurisdiction of the courts at the place where MOU is executed/ signed between the parties.

13. Settlement of Disputes: In the event of disputes arising from this MOU, the Parties to the MOU undertakes to endeavor 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/ any statutory modifications made thereafter.
14. All communications or notices provided for herein shall be in the English language and be delivered, mailed, or tele-faxed to the Parties addresses as indicated below:-

M/s

M/s

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

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

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

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

Signature:

Shriof

M/s

Witness

Name: Address:

Signature:

Shriof

M/s.....

Witness.....

Name: Address

Signature:

Shriof

M/s

Witness

Name: Address

Certificate of Information Regarding Employment/Partnership etc. of Retired Railway Employees with the Tenderer

TABLE - A

SN	Information Sought	Whether 'Yes'/'No'
1	Is any retired Railway Engineer/Gazetted Officer Associated with firm as detailed in Para 8.1 above	

Note: If the answer is "Yes" above, provide the information as per Table-B given below as per **Para 8.1** above and **Clause 59 (9) of IRSGCC-2022 Part-II (with all correction slips issued till date of invitation of tender)**. If the space is left blank in Table-"A" it will presumed as "No" by Default.

TABLE - B

SN	Name	Type of association with the tenderer	Date of Retirement from the service	Post held at the time of retirement	Particular of permissions taken form the association with the tenderer	Any other information linked with Para 3.10 (a),(b) and Clause 59 (9) of IRSGCC-2022 Part-II (with all correction slips issued till date of invitation of tender)

Note: If answer is 'Yes' in Table 'A', details at Table 'B' is not entered, the tender offer shall be **SUMMARILY REJECTED**.

Signature

Name & Designation
(In Capital)

Address

Date

Certificate of No Relative being an Employee of Western Railway

I/We , the Under Signed hereby solemnly declare and certify that I/We do not have any of our Relative/ Relatives Employed in In the Western Railway (Engineering Department) except the names mentioned Herein Under:

SN	Name of Relative employed in Western Railway	Designation	Name of Office	Headquarter where relative is posted

Note: Names, Designation, Name of Office, headquarter of the tenderer's relative in **Western Railway** (Engineering Department) to be mentioned by the tenderer as per abovetable.

Signature

Name & Designation

(In Capital)

Address

Date

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ANNEXURE – XVII

**LIST OF ENGINEERS/PERSONNEL ALREADY AVAILABLE/ PROPOSED TO
BE EMPLOYED FOR DEPLOYMENT ON THIS WORK**

SN	Name & Designation	Qualification	Professional experience	Organization with whom working	Date by which personnel will be available for this work.
	1	2	3	4	5
1					
2					

Signature

Name & Designation

(In Capital)

Address

Date

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ANNEXURE – XVIII

DETAILS OF PLANT AND MACHINERY ALREADY AVAILABLE WITH THE FIRM

SN	Particulars of equipment	No. of Unit.	Kind & make	Capacity	Date by which the plant would be available for use on this work	Age & condition	Work on which it is being used.	Proposed purchased	to be
								Date of placing order	Likely date of receipt
	1	2	3	4	5	6	7	8	9
1									
2									

Note:

1. Indicate clearly, whether (i) Owned by firm, or (ii) To be purchased by firm giving date of placing order and likely date of receipt.
2. Optimum Plants and Machineries required to be deployed during execution of work.
3. Earthwork in formation of New Line / Doubling/ Gauge Conversion Project: Poclain, JCB, Vibratory Roller, Grader, Dumpers, Tractors, Water tank etc.
4. Concreting work for bridge work: Concrete pump, Transit mixer as per requirement, Batching plant of suitable capacity, JCB, Needle vibrator 60/40mm etc.

Signature

Name & Designation

(In Capital)

Address

Date

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ANNEXURE – XIX

**STATEMENT OF WORKS BEING EXECUTED BY CONTRACTOR/WORK IN HAND
OR/TENDER QUOTED FOR BUT NOT AWARDED**

SN	Name and place of work	Authority/agency for whom the work is being carried out	Date of award & Agreement No. & Date	Date of completion (Original/ actual)
	1	2	3	4
1				
2				

Table continued.

Agreement cost of work /likely cost	Payment taken till.	Value Of Balance work	Anticipated date of Completion	relevant Certificate/ Documents are attached
5	6	7		8

Signature

Name & Designation

(In Capital)

Address

Date

PROFORMA OF PERFORMANCE GUARANTEE BOND

Name of the Bank

President of India

Acting through Dy. FA&CAO(C), RATLAM Western Railway

Bank Guarantee Bond No.:

In consideration of the President of India acting through(Designation & address of Contract signing Authority). Western Railway,.....(hereinafter called “The Government”) having agreed under the terms and conditions of agreement/Contract Acceptance letter Nodated: made between(Designation & address of Contract Signing Authority) and (here in after called “the said contractor(s)” for the work here in after called “the said agreement”) having agreed for submission of an irrevocable Bank Guarantee Bond for Rs..... (Rs.....only) as a performance security Guarantee Bond from the contractor (s) for compliance of his obligations in accordance of his obligations in accordance with the terms & conditions in the said agreement.

- 1) We.....(indicate the name of the Bank) hereinafter referred to as the Bank, undertake to pay the Government an amount not exceeding Rs..... (Rsonly) on demand by the Government.
- 2) We.....(indicate the name of the bank, further agree that (and promise) to pay the amounts due and payable under this guarantee without any demur merely on a demand from the Government through the_____ **Western Railway**, stating that the amount claimed is due by way of loss or damage caused to or would be caused or suffered by the Government by reason of any breach by the said contractor of any of the terms of conditions contained in the said agreement or by reason of the contractor failure to perform the said agreement. Any such demand made on the Bank shall be conclusive as regards the amount due and payable by the Bank under this guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding Rs.....(Rs.....Only).
- 3) (a) We.....(indicate the name of Bank) further undertake to pay to the Government any money so demanded notwithstanding any dispute or dispute raised by the contractor(s) in any suite or proceeding pending before any court or Tribunal relating to liability under this present being absolute and unequivocal.
(b) The payment so made by us under this bond shall be valid discharge of our liability for payment there under and the contractor(s), shall have no claim against us for making such payment.
- 4) We.....(indicate the name of bank) to further agree that the guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of the said agreement and that it shall continue to be enforceable till all the dues of the Government under or by virtue of the said agreement have been fully paid and its claims

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satisfied or discharged by(Designation & Address of contract signing authority) on behalf of the Government. Certify that the terms and conditions of the said agreement have been fully and property carried out by the said contractor(s) and accordingly discharges this guarantee.

5) **(a)** Notwithstanding anything to the contrary contained herein the liability of the bank under this guarantee will remain in force and effect until such time as this guarantee is discharged in writing by the Government or until (date of validity/ extended validity) whichever is earlier and no claim shall be valid under this guarantee unless notice in writing thereof is given by the Government within validity/extended period of validity of guarantee for the date aforesaid

(b) Provided always that we (indicate the name of the bank) unconditionally undertakes to renew this guarantee on to extend the period of guarantee form year to year before the expiry of the period or the extended period of the guarantee, as the case may be on being called upon to do so by the Government. If the guarantee is not renewed or the period extended on demand, we (Indicate the name of the bank) shall pay the Government the full amount of guarantee on demand and without demur.

6) We,(indicate the name of Bank) further agree with the Government that the Government shall have the fullest liberty without our consent and without effecting in any manner out of obligations hereunder to vary any of the terms and conditions of the said contract from time to time or to postpone for any time or from time to time any to the powers exercisable by the Government against the said contract (s) and to forbear or enforce any of the terms and conditions of the said agreement and we shall not be relieved from our liability by reason of any such variation, or extension being granted to the said contractor(s) or for any bearance act or omission on the part of the Government or any indulgence by the Government to the said contractor(s) or by any such matter or thing whatsoever which under the law relating to sureties for the said reservation would relive us from the liability.

7) This guarantee will not be discharged by any change in the constitution of the Bank or the Contractor(s).

8) We (Indicate the name of the Bank) lastly undertake not to revoke this guarantee except with the previous consent of the Government in writing.

9) This guarantee shall be valid upto.....(Date of Completion plus 60 days). Unless extended on demand by Government. Notwithstanding anything to the contrary contained hereinbefore, our liability under this guarantee is restricted to Rs..... (Rs only) unless a demand under this guarantee is made on us in writing on or before , we shall be discharged from our liabilities under this guarantee thereafter.

Dated: the day of for

(indicate the Name of Bank)

Signature of Banks Authorized Official
(Name)

Designation with Code No
Full Address

Witness 1: Signature

Witness 1: Signature

**Western Railway
Construction**

Tender No. SnT-C-RTM-100-R-2022-23

Name

(In Capital)

Address

Signature

Name & Designation

(In Capital)

Address

Date

Name

(In Capital)

Address

Signature of Tenderer/Contractor(s)

Dy CSTE C RTM

**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,
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 or incorrect at any time during process for evaluation of tenders, it shall lead to forfeiture of the Bid Security besides banning of business for a period of upto five 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 or incorrect 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 any other action provided in the contract including banning of business for a period of upto five 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,

**Western Railway
Construction**

Tender No. SnT-C-RTM-100-R-2022-23

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-XXIV (A)
(ANNEXURE –VA of IRGCC-April 2022)

Reference -Para 3.1.7 of ITT

(This certificate is to be given by attorney /authorized signatory/each member of Partnership firm/Joint venture (Jv) / Hindu undivided Family HUD / 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 backlisted 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:

Date:

ANNEXURE - XXV

CHECKLIST FOR TENDERER

- 1) Uploading of Tender Form – 1 (Cover Letter) as per **Annexure-I**.
- 2) Uploading of Tender Form – 2 (General information of the Tenderer) as per **Annexure-II**.
- 3) Uploading of Tender Form – 3 (Power of Attorney) as per **Annexure-III**.
- 4) Uploading of Tender Form – 4(A) – Similar nature work in support of Technical Eligibility as per **Annexure-V**.
- 5) Uploading of Completion certificates of all Similar nature work as per **Annexure-VI**.
- 6) Uploading of Tender Form – 4(B) – Contractual Turnover in support of Financial Eligibility as per **Annexure-VIB**.
- 7) Uploading of Bid Capacity Supporting Documents (when tender value is more than Rs.20 Crore) (i) Proforma Of Bid Capacity-Value Of Existing Commitments as per **Annexure-XI**, **(ii)** Proforma Of Bid Capacity (Construction Turnover) **as per Annexure XII & (iii)** Proforma Of Bid Capacity Calculation **as per Annexure XIII**
- 8) Uploading of Documents for Eligibility in case of constitution of firm by the Sole Proprietor Firm/ Partnership firm/ JV/ Society/ Companies / HUF etc. as prescribed in **Para 3.6** above. (if applicable).
- 9) Uploading of MOU for Joint Venture Agreement as per **Annexure-XIV**.
- 10) Uploading of Certificate for Regarding Employment/Partnership etc. of Retired Railway Employees with the Tenderer as per **Annexure-XV**.
- 11) Uploading of Certificate of No Relative being an Employee of Western Railway as per **Annexure-XVI**.
- 12) Uploading of List of Engineers/Personal as per **Annexure-XVII**.
- 13) Uploading of Details of Plant & Machinery already available as per **Annexure-XVIII**.
- 14) Uploading of Statement of works being executed and in hand as per **Annexure-XIX**.
- 15) Uploading of Certificate as per **Annexure-V of IRSGCC-2022 as per Annexure-XXIV**
- 16) Uploading of Certificate as per **Annexure-V(A) of IRSGCC-2022 as per Annexure-XXIV-A**
- 17) Any other documents related to tendered work

Note: In addition to above, any other documents required as per Tender Document (all documents uploaded with tender notice) shall also be submitted/uploaded by the tenderer/bidder.

**Details of Checklist of JV, Partnership Firm, Proprietorship Firm etc. if applicable -
Mandatory**

CHECKLIST FOR JOINT VENTURE

SN	Item	Remarks
1	Whether Separate identity/name is given to the Joint Venture or not	
2	Whether tender form is purchased by Joint Venture or not	
3	Who has submitted the tender offer on behalf of Joint Venture	
4	Whether Power of Attorney to any member/person for submission of tender offer on behalf of Joint Venture is submitted or not	
5	How many are members of Joint Venture. (Number of members in a JV shall not be more than 3).	
6	Who is the lead member of JV with 51% share of interest in the Joint Venture? {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}	
7	Whether all members are having 20% or more share of interest in Joint Venture or not (Other members shall have a share of not less than 20% each in case of JV with up to three members)	
8	Whether any member is foreign firm or not {In case of JV with foreign member(s), the Lead Member has to be an Indian Firm/company with a minimum share of 51%}	
9	Whether MOU on stamp paper as per proforma attached is submitted or not {copy of Memorandum of Understanding (MoU) duly executed by the JV members on Stamp Paper, shall be submitted by the JV along with the tender}	
10	Whether all members having capacity of 10% of the cost of work or not	
11	Whether lead member having 51% share is fulfilling 51% financial capacity or not.	

CHECKLIST FOR JOINT VENTURE

SN	Item	Remarks
1	Documents to be enclosed by the JV along with the tender:	
A	<i>In case one or more of the members of the JV is/are Partnership firm(s), following documents shall be submitted:</i>	
(i)	A notarized copy of the Partnership Deed,	
(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	
B	<i>In case one or more members is/are HUF, the following documents shall be enclosed:</i>	
(i)	A copy of notarized affidavit on Stamp Paper declaring that 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	<i>In case one or more members of the JV is/are Companies, the following documents shall be submitted:</i>	
(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	
D	<i>All the Members of JV shall certify that they are not blacklisted or debarred by Railways or any other Ministry / Department of the Govt. of India from participation in tenders/contract on the date of opening of bids either in their individual capacity or as a member of the JV in which they were/are members.</i>	

CHECKLIST FOR SOLE PROPRIETOR FIRM

SN	Item	Remarks
1	Whether sole proprietary firm in mentioned in Annexure-II (General Information of Tender) or not	
2	Whether an undertaking that he is not blacklisted or debarred by Railways or any other Ministry / Department of Govt. of India from participation in tender on the date of opening of bids, either in individual capacity or as a member of the partnership firm or JV in which he was / is a partner/member is submitted or not	

CHECKLIST FOR PARTNERSHIP FIRM

SN	Item	Remarks
1	Whether Partnership Firms participating in the tender is legally valid under the provisions of the Indian Partnership Act or not	
2	Whether Partnership firm is either registered with the Registrar or the partnership deed is notarized prior to date of tender opening as per the Indian Partnership Act.	
3	Whether Separate identity/name is given to the partnership firm or not (in case of new partnership firm) Note: 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.	
4	Whether power attorney to any member/person for submission of tender offer on behalf of Partnership is submitted or not. Note: Such "Power of Attorney" shall be notarized / registered and submitted along with the tender.	
5	Whether any partner of the Partnership firm is participated either in his individual capacity or as a partner of any other firm in the tender or not	
6	Whether EMD submitted by Partnership firm or not. Note: EMD submitted in the name of any individual partner or in the name of authorized partner (s) shall not be considered.	

CHECKLIST FOR COMPANY

SN	Item	Remarks
1	Whether copies of MOA (Memorandum of Association) / AOA (Articles of Association) of the company is submitted with tender offer or not	
2	Whether a copy of Certificate of Incorporation is submitted or not	
3	Whether 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 is submitted or not.	
4	Whether an undertaking that the Company is not blacklisted or debarred by Railways or any other Ministry / Department of Govt. of India from participation in tender on the date of opening of bids, either in individual capacity or as a member of the partnership firm or JV in which the Company was / is a partner/member is submitted or not	

DOCUMENTS REQUIRED AS PER NIT

SN	Item		Reference Page No.
1.	I	Tender Form – 1 (Cover Letter) -	
2.	II	Tender Form – 2 (General information of the Tenderer) --	
3.	III	Tender Form – 3 (Power of Attorney)	
4.	IV	Details Of All The Works Completed In Last 7 Years Including Current Year	
5.	V	Tender Form 4(A): Details Of Completed Similar Works In Support Of Fulfilling Technical Eligibility Criteria As Per Tender Clause	
6.	VI	Completion Certificate of Similar Nature of Works	
7.	VI -A	Bid Security	
8.	VI-B	The tenderer shall submit requisite information along with copies of Audited Balance Sheet duly certified by the Chartered Accountant/ Certificate from CA duly supplied by ABS.	
9.	VIII	Guidelines for submitting tender by Partnership Firm	
10.	XI	Proforma Of Bid Capacity-Value Of Existing Commitments duly certified by the Chartered Accountant	
11.	XII	Proforma Of Bid Capacity (Construction Turnover) duly certified by the Chartered Accountant	
12.	XIII	Proforma Of Bid Capacity Calculation	
13.	XIV	Memorandum of Understanding for Joint Venture Agreement	
14.	XV	Certificate of Information Regarding Employment/ Partnership etc. of Retired Railway Employees with the Tenderer	
15.	XVI	Certificate of No Relative being an Employee of Western Railway	
16.	XVII	List of Engineers/Personal Note: Only list is to be submitted along with offer.	
17.	XVIII	Details of Plant & Machinery already available with the firm Note : Only list is to be submitted along with offer.	
18.	XIX	Statement of works being executed in hand by contractor	
19.	XX	Proforma of Performance Guarantee Bond	

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20.	XXIV	Format For Certificate To Be Submitted / Uploaded ByTendererAlong With The Tender Documents	
21.	XXIV(A)	ANNEXURE-XXIV (A)	
22.	XXV	Checklist for Tenderer	
23.	XXVI	Details of checklist of JV, Partnership Firm, Proprietorship firmetc.	
24.	XXVII	Requisition-Cum-Receipt For The Material	
25.	XXVIII	Indemnity Bond	
26.	XXIX	Statement Of Deviations	
27.	XXX	Railway Board letter No. 2018/CE-I/CT/30 dt. 01-08-2022 – For implantation of ‘Contractor’s e-MB’ for Measurement and Billing	

REQUISITION-CUM-RECEIPT FOR THE MATERIAL

Requisition-cum-receipt for the material

Sr.No. _____

Date:

(A) Please arrange to supply the bearer _____

Description of materials required

Qty	Nos.	in words	in figures

at (place of supply) _____ Station _____

for sub-section between Km. _____ to Km. _____

against Contract no. _____

Signature of the
Contractor/Contractors

(Specimen signature)

(B) Received the above material Qty. _____

(fig) _____ as mentioned above.

On _____ received in good condition and I/We undertake the responsibility for replacement / payment of/ for the same as shall be deemed fit by the Railway in terms of Special Conditions

Station:

Signature of the Contractor(s)

Date

TENDER NO.

INDEMNITY BOND

Indemnity Bond for safe custody of Railway material to be supplied to
M/s. _____ under _____ Tender
no. _____

We, M/s. _____ (hereinafter called the Contractor)
do hereby undertake that we shall hold in our custody for and on behalf of the President of India
acting in the premises through the General Manager, Western Railway or for him all Railway
materials which have been handed over to us against the contract for Tender no.
_____ date. _____ for the work of
“ _____ ” by the Railway for the
purpose of execution of the said contract until such time the materials are duly installed and/or
erected or otherwise handed over to the Railway.

We shall be entirely responsible for the safe custody and protection of the said materials against all
risk till they are duly delivered as installed and/or erected equipment to the Railway or as directed
otherwise and shall indemnify the Railway against any loss, damage or deterioration whatsoever in
respect of the said materials. Any Officer authorized by the General Manager, Western Railway or
his nominee shall at all time open the said materials to Inspection.

Should any loss, damage or deterioration of materials occur or surplus materials disposed off and a
refund becomes due, the Railway shall be entitled to recover from us the full cost and compensation
determined in terms of the contract for such loss or damage, if any, along with the amount to be
refunded without prejudice to any other remedies available to him by deduction from any sum due
or any sum which at any time thereafter becomes due to us under the said or any other contract.

In the event of any loss or damage as aforesaid the assessment of such loss or damage and the
assessment of the compensation there for would be made by the President of India acting through
the General Manager, Western Railway or his authorized nominee shall be final and bind upon us.

Signed at _____

on this day of _____

Signature of Witness: _____

for& on behalf of _____

M/s. _____

Name of Witness in

BLOCK LETTERS

ADDRESS:

STATEMENT OF DEVIATIONS
PROFORMA FOR STATEMENT OF DEVIATIONS

Sr. No.	Chapter	Para No.	Railway Clause	Proposed Clause	Reason / Remarks for deviation

Note Where there is no deviation, the statement should be returned duly Signed with an endorsement indicating NIL deviations.

Signature of Tenderer(s)

Western Railway
Construction

Tender No. SnT-C-RTM-100-R-2022-23

Annexure-XXXIV



भारत सरकार Government of India
रेल मंत्रालय Ministry of Railways
(रेलवे बोर्ड Railway Board)



No.2018/CE-I/CT/30

New Delhi, Dated 01.08.2022

The General Manager,
All Zonal Railways

Sub: Implementation of 'Contractor's e-MB' for Measurement and Billing of Works Contracts in IR-WCMS on Zonal Railways

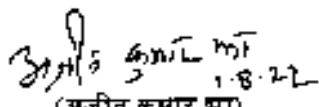
Ref: (i) Railway Board's letters No 2018/CE-I/CT/30 dated 29.11.2019, 21.04.2020, 12.06.2022 & 24.06.2022
(ii) Railway Board's letter No 2018/CE-I/CT/30 dated 30.06.2022

The IT Application of Works Contract Management System (IR-WCMS) has been implemented on Zonal Railways with the approval of Board vide letters under reference (i) above.

2. Railway Board vide letter of even no. dated 30.06.2022 has issued instructions for the implementation of Contractor's e-MB for Measurement and Billing of Works Contracts in IR-WCMS on the five Construction units of IR as pilot project. None of these Construction units have reported any problems/suggestions on use of 'Contractor's e-MB' on IR-WCMS.
3. In continuation of Railway Board's letter of even no. dated 30.06.2022, it has now been decided by the Board (MI, MF and CRB & CEO) to launch 'Contractor's e-MB' for Measurement and Billing of Works Contracts in IR-WCMS, as per contractual provision, on Zonal Railways w.e.f. 01.08.2022.
4. Zonal Railways are advised to use the above portal of 'Contractor's e-MB' with all the conditions as mentioned in Railway Board's letters of even no. referred at (i) above.
5. For any assistance in operation of IR-WCMS, officers may kindly contact the following officials:
 - i. Shri S P Ojha, Sr Project Engineer/CRIS M 8130797596
 - ii. Shri Atul Singh, GM/CEP-II/CRIS M 8810491785
 - iii. Shri Anisur Rehman CE/TMS/N.Rly M 9717630221

Please acknowledge receipt.

Copy: MD/CRIS for information and necessary action


(अजीत कुमार झा)
कार्यपालक निदेशक/सिविल इंजी.(जी)/रेलवे बोर्ड
[Phone: 030-44803; Rly: 011-23383379:MTNL]
e-mail address : edceg2022@gmail.com

No.2018/CE-I/CT/30

New Delhi, Dated 01.08.2022

Copy forwarded for information to:

1. The PFAs, All Indian Railways
2. Dy. Comptroller and Auditor General of India (Railways), Room No 224, Rail Bhawan.

Signature of Tenderer/Contractor(s)

Dy CSTE C RTM

CHAPTER-3

STANDARD GENERAL CONDITIONS OF CONTRACT

**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 there to, 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) Total value of work to be assigned to sub-contractor(s) shall not be more than 50% of total contract value.

(i) 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.

- (ii) 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 22nd day after the date of issue of LOA. Further, if the 60th day happens to be a declared holiday in the concerned office of the Railway, submission of PG can be accepted on the next working day.

In all other cases, if the Contractor fails to submit the requisite PG even after 60 days from the date of issue of LOA, the contract is liable to be terminated. 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) in any of the following forms, amounting to 3% of the original contract value:-
- (i) A deposit of Cash;
 - (ii) Irrevocable Bank Guarantee;
 - (iii) Government Securities including State Loan Bonds at 5% below the market value;
 - (iv) Pay Orders and Demand Drafts tendered by any Scheduled Commercial Bank of India;
 - (v) Guarantee Bonds executed or Deposits Receipts tendered by any Scheduled Commercial Bank of India;
 - (vi) Deposit in the Post Office Saving Bank;
 - (vii) Deposit in the National Savings Certificates;
 - (viii) Twelve years National Defence Certificates;
 - (ix) Ten years Defence Deposits;
 - (x) National Defence Bonds and
 - (xi) 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.

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: Any bribe, commission, gift or advantage given, promised or offered by or on behalf of the Contractor or his partner or agent or servant or anyone on his behalf, to any officer or employee of the Railway or to any person on his behalf in relation to obtaining or execution of this or any other contract with the Railway shall, in addition to any criminal liability which he may incur, subject Contractor to the rescission of the contract and all other contracts with the Railway and to the payment of any loss or damage resulting from such decision and the Railway shall be entitled to deduct the amounts so payable from the Contractor's bills/Security Deposit or any other dues of Contractor with the Government of India.

18.(2) The Contractor shall not lend or borrow from or have or enter into any monetary dealings or transactions either directly or indirectly with any employee of the Railway and if he shall do so, the Railway shall be entitled forthwith to rescind the contract and all other contracts with the Railway. 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. In the event of rescission of the contract under this Clause, the Contractor will not be paid any compensation whatsoever except payments for the work done upto the date of rescission.

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. 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) Not Applicable

(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 as per CSTE office letter no SG/32/0/C dated 12.07.2016

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-contract 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): 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)(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 alongwith 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) : Appointment of Arbitrator where applicability of section 12 (5) of Arbitration and Conciliation Act has been waived off:

64.(3)(a)(i): In cases where the total value of all claims in question added together does not exceed ₹ 1,00,00,000/- (Rupees One Crore), the Arbitral Tribunal shall consist of a Sole Arbitrator who shall be a Gazetted Officer of Railway not below Junior Administrative Grade, nominated by the General Manager. The sole arbitrator shall be appointed within 60 days from the day when a written and valid demand for arbitration is received by General Manager.

64.(3)(a)(ii): In cases not covered by the Clause 64(3)(a)(i), the Arbitral Tribunal shall consist of a panel of three Gazetted Railway Officers not below Junior Administrative Grade or 2 Railway Gazetted Officers not below Junior Administrative Grade and a retired Railway Officer, retired not below the rank of Senior Administrative Grade Officer, as the arbitrators. For this purpose, the Railway will send a panel of at least four (4) names of Gazetted Railway Officers of one or more departments of the Railway which may also include the name(s) of retired Railway Officer(s) empanelled to work as Railway Arbitrator to the Contractor within 60 days from the day when a written and valid demand for arbitration is received by the General Manager.

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): Appointment of Arbitrator where applicability of Section 12 (5) of Arbitration and Conciliation Act has not been waived off:

(i) In cases where the total value of all claims in question added together does not exceed ₹ 50,00,000/- (Rupees Fifty Lakh), the Arbitral Tribunal shall consist of a Retired Railway Officer, retired not below the rank of Senior Administrative Grade Officer, as the arbitrator. For this purpose, the Railway will send a panel of at least four (4) names of retired Railway Officer(s) empanelled to work as Railway Arbitrator duly indicating their retirement dates to the Contractor within 60 days from the day when a written and valid demand for arbitration is received by the General Manager.

Contractor will be asked to suggest to General Manager at least 2 names out of the panel for appointment as arbitrator 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 arbitrator within 30 days from the receipt of the names of Contractor's nominees.

(ii) In cases where the total value of all claims in question added together exceed ₹ 50,00,000/- (Rupees Fifty Lakh), the Arbitral Tribunal shall consist of a Panel of three (3) retired Railway Officer, retired not below the rank of Senior Administrative Grade Officer, as the arbitrators. For this purpose, the Railway will send a panel of at least four (4) names of retired Railway Officer(s) empanelled to work as Railway Arbitrator duly indicating their retirement date to the Contractor within 60 days from the day when a written and valid demand for arbitration is received by the General Manager.

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 has served in the Accounts Department.

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 fails to act without undue delay, the 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 Arbitrator (s):

(a) Serving Gazetted Railway Officers of not below JA Grade level.

(b) Retired Railway Officers not below SA Grade level, one year after his date of retirement.

(c) Age of arbitrator at the time of appointment shall be below 70 years.

(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)(i), 64.(3)(a)(ii), 64.(3)(b)(i) & 64.(3)(b)(ii) 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): In case of the Tribunal, comprising of three members, 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. The cost shall inter-alia include fee of the arbitrator(s), as per the rates fixed 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. Further, the fee payable to the arbitrator(s) would be governed by the instructions issued on the subject by Railway Board from time to time irrespective of the fact whether the arbitrator(s) is/are appointed by the Railway Administration or by the court of law unless specifically directed by Hon'ble court otherwise on the matter.

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.

CHAPTER- 4
INSTRUCTIONS TO TENDERERS

4.1	GENERAL INSTRUCTIONS:
4.1.1	For and on behalf of the President of India, Design, Supply, Installation, Programming, Testing and Commissioning of New Hot Standby Electronic Interlocking System at Malhargarh, Mandisor, Daluada, Kachnara Road, Dhodar, Jaora, Namli & Dhowas Stations, Alteration in Existing Electronic Interlocking System at HarkiaKhal, Pipliya and Barayla Chaurasi Stations, New IBH at Jamunia Kalan, Matyakheri, Sindapan, Kachnara & Mundalaram along with Supply, Installation, Testing and Commissioning of various Indoor and Outdoor Signaling Systems in Ratlam-Nimach Section in connection of Ratlam-Nimach Doubling Work under Dy. CSTE Construction, Ratlam (Western Railway) M.P.
4.1.2	The materials and installation required, tendering procedure and terms & conditions are prescribed in the Tender Documents. The Tender Document includes “Tender Notice & Tender Form”, “Instructions to Tenderers (I.T.T.)” “General Conditions of Contract in addition to and/or in part supersession up to latest correction slips” (GCC), “Special Conditions of Contract (SCC)”, “Technical Specifications & Requirements”, “Schedule of Work & Supplies” and all Annexure & forms together with any addendum and corrigendum thereto prior to the tender opening.
4.1.3	All offers are required to be submitted as per details indicated in the Tender Notice. All the information in the offer must be in English. Information in any other language shall be accompanied by its authenticated translation in English. Failure to comply with this may render the offer liable to be rejected. In the event of any discrepancy between the offer in a language other than English and its English translation, the English translation will prevail.
4.1.4	Any additional information regarding the tender, if required by any tenderer may be obtained from the office of Dy. Chief Signal & Telecom Engineer, Construction, Ratlam, Western Railway, DRM Office Campus, Do Batti, Ratlam-457001 (M.P),
4.2	NAME OF WORK:
	Design, Supply, Installation, Programming, Testing and Commissioning of New Hot Standby Electronic Interlocking System at Malhargarh, Mandisor, Daluada, Kachnara Road, Dhodar, Jaora, Namli & Dhowas Stations, Alteration in Existing Electronic Interlocking System at HarkiaKhal, Pipliya and Barayla Chaurasi Stations, New IBH at Jamunia Kalan, Matyakheri, Sindapan, Kachnara & Mundalaram along with Supply, Installation, Testing and Commissioning of various Indoor and Outdoor Signaling Systems in Ratlam-Nimach Section in connection of Ratlam-Nimach Doubling Work under Dy. CSTE Construction, Ratlam (Western Railway) M.P.
4.3	SYSTEM OF TENDERING:
	Tender Document/Schedule can be seen/submitted up to as per tender notice on E-tender portal www.ireps.gov.in . The Tender Document Cost (non-refundable & non-transferable), in respect of e-tendering, shall be paid through net banking or payment gateway only facility provided on IREPS website. The tender will be opened on as per tender notice on website www.ireps.gov.in .
	Tender must be applied online, manual offers are not allowed against this tender, and any such manual offer received shall be ignored.
	Non-Compliance with any of the conditions set here forth in above is liable to result in the tender being rejected.
4.4	DOWNLOADING OF TENDER DOCUMENT AND INSTRUCTIONS THEREON

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A	Offer for the Tender is to be submitted online through E-Tender Portal www.ireps.gov.in and details are to be entered by the tenderer online. It is advisable to download and study the tender document before submitting their offers. Submission of Physical copy of the offers or tender document is prohibited.
B	This tender is required to be submitted as per the tender conditions in through online portal www.ireps.gov.in before the date and time stipulated in the tender document. The tender details are available on E-Tender portal www.ireps.gov.in and the same can be used while submitting the offer. Tenderers will require a valid Class III Digital Signature certificate to register and submit their offer through E – Tender mode. The cost of tender document as indicated on the website www.ireps.gov.in will have to be deposited by the tenderer. Tender not accompanied with the relevant documents proving submission of cost of tender document and Earnest Money Deposit will be summarily rejected.
C	Tenderers are advised to register their agency well in advance on E-Tender portal of www.ireps.gov.in and submit their offer through E-Tender before the stipulated time. It is responsibility of the tenderer to check any correction or any modifications published subsequently in Website and the same shall be taken into account while submitting the tender online. Tenderer shall download corrigendum (if any), print it out, sign and upload it with the main tender document. Tender document not accompanied by published corrigendum/s is liable to be rejected. The Railway will not be responsible for any delay in submitting through online portal www.ireps.gov.in
D	Tenderer/s are free to download tender document at their own risk and cost, for the purpose of perusal and accustom themselves regarding instructions, scope and location of work, Technical and Non-Technical special conditions, etc. stipulated in the tender document. After award of work, an agreement will be prepared based on the master copy of tender document available in the office.
E	If any change/addition/deletion is made by the Tenderer/Contractor and the same is detected at any stage even after the award of the tender, full earnest money deposit will be forfeited and the contract will be terminated at his/their all dues. The tenderer is also liable to be banned from doing business with Railways and/or prosecuted.
F	The tenderers will be considered to have agreed the following declaration while submitting their offer: a) I/We have submitted the tender form on the Internet site www.ireps.gov.in . In case, any discrepancy is found, I/We understand that my/our tender will be summarily rejected and full earnest money deposit will be forfeited and I/We am/are liable to be banned from doing business with Railways and/or prosecuted.
4.5	STUDY OF LOCAL CONDITIONS
4.5.1	The intending tenderer is advised to study the Tender Document carefully. Any submission of an offer by the tenderer shall be deemed to have been done after a careful study and examination of this tender document with full understanding of the implication thereof. It will be understood that the tenderer has/have got himself / themselves clarified on all the points and interpretation by proper authorities of the Railway Administration. These conditions and specifications shall be deemed to have been accepted unless otherwise, specifically commented upon by the Tenderer in his offer. Failure to adhere to anyone or all these instructions may render his offer liable to be ignored without any reference.
4.5.2	The scope of work to be executed by the contractor has been specified in Special Conditions of Contract and Schedule of Works & Supplies which may be studied. It will be imperative

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	for the tenderer to fully acquaint himself with all the local conditions, telecom practices adopted and other factors which would have any effect on the performance of the contract and cost of the stores. No request for the change of rate, or time schedule of delivery of stores / Execution of work shall be entertained after the offer is accepted by the Railway on account of any local condition or factors. No claim shall be entertained for the contractor(s) making his/their own arrangements for approaches/approach road and contractor(s) will bear entire expenses such as road taxes, payment for right of way, etc. to outsiders and for Construction of approaches/approach roads, etc.
4.5.3	The tenderer may undertake study/survey of telecom systems/practices used in Western Railway and make his own assessment of the work. Any equipment/design/component needed to make the entire system successful/functional shall be supplied by the tenderer without any extra cost. Tenderer(s), if desire may undertake inspection of proposed site of work to acquaint himself/themselves. In the event of the tenderer desiring to have a field visit before furnishing his offer, he may apply to Dy Chief Signal & Telecom Engineer, Construction, Ratlam, Western Railway, DRM Office Campus, Do Batti, Ratlam-457001 (M.P) for permission in this regard. Such permission shall be granted by the Railway but the expenses in this regard shall be borne by the tenderer completely.
4.6	RULES & GENERAL INFORMATION TO TENDERER
(i)	Every Tenderer shall state in the Tender his postal address fully and clearly. Any communication sent in time to the Tenderer by post at the said address shall be deemed to have reached the Tenderer duly and in time. He shall also give telephone and fax number for communication. Important documents shall be sent by Registered post.
(ii)	Incomplete and Conditional tenders will generally not be considered and are liable to be rejected. The Railway also reserves the right to reject any special conditions stipulated by the Tenderer as considered unacceptable to the Railway. If any deviations from the General conditions / special conditions / Technical specifications & Requirements/Schedule of works & supplies are proposed by the tenderer, they should be mentioned on "Statement of Deviation" as per Form enclosed(Form-4) and not elsewhere in the tender document.
(iii)	Tender without requisite earnest money in prescribed form will be summarily rejected.
(iv)	All the relevant documents shall be attached along with tender form as per terms and condition of tender.
(v)	All offers shall be either type written / printed or written neatly in indelible ink in English. Each page of the offer must be numbered consecutively, should bear the tender number and each page of the tender document including technical brochures, manuals etc. should be signed by the Tenderer & should bear the seal of the firm. A reference to the total no. of pages comprising the offer must be made at the top right hand corner of the first page. Photocopies of all the certificates etc. submitted by Tenderer should be attested by tenderer as true copies, unless required to be attested by Notary public by other conditions of tender. No scribbling is permissible in the tender documents. Tender containing erasures and alterations in the tender documents are liable to be rejected. Any correction made by the tenderer / tenderers in his/their entries must be attested by him/them.
4.7	SUBMISSION OF OFFERS

4.7.1	(a) The e-tender shall be submitted online at IREPS website under Two packet system.
4.7.2	(b) Along with all bids, the tenderer will upload the scanned copies of documents (in PDF) as per tender document while submitting their offer.
4.7.3	(c) Any corrigendum to the NIT/tender document will be done only during the advertising period as an exception only and the same will be posted on the IREPS website also. No corrigendum is permitted during the offer submission period. If any corrigendum is required during the offer submission period the work shall be retendered. Hence, accordingly the Tender NIT period is split as under: (d) Advertisement period: - Time during which all information pertaining to tender shall be available but offers cannot be submitted. (e) Offer submission period: - Fifteen days prior to opening of tender, during which tenderers can submit their offer. (f) It will be the responsibility of tenderers to check corrigendum about tender between Advertisement period and Offer submission period if any and submit their offer accordingly
4.7.4	The payment of Earnest Money Deposit (BID SECURITY) & Tender Document Cost (non-refundable & non-transferable), in respect of e-tendering, shall be paid through net banking or payment gateway facility provided on IREPS only.
4.7.5	Tenderer(s) must give their postal address of correspondence correctly with PIN of the place. Railway shall not be responsible for any failure of dispatch of letter by the Postal Department. In case of incomplete address given by the tenderer where Postal Department is not accepting such address or not accepting postage packet at the given address, the offer submitted by the tenderer shall be treated as invalid and Railway reserves the right to reject the tender.
4.8	Tender offer
	The Tenderer (s) shall invariably be accompanied with the following documents, failing which the offer can be treated as incomplete and liable to be rejected without any correspondence with the firm. Hence, the Tenderers are advised to ensure that these documents are submitted, duly signed at all pages, with their offer. The tender document shall be submitted with the following: (a) Offer letter complete, relevant paper/documents must be uploaded at the time of participating in e-Tendering. Schedule of Works & Supplies with quoted rates at the percentage above / below /at par the Railways estimated grand total on IREPS. (b) The required cost of tender document fee & Earnest Money (BID SECURITY) in prescribed and acceptable form of prescribed amount as instructed on www.ireps.gov.in must be submitted along with the Bid documents. (c) All documents as mentioned in List of annexures as per index, chapter 1 and chapter-2. (d) The tenderer shall also enclose in his offer that they accept all the terms and conditions of Railways. The tenderer shall indicate paragraph by paragraph for each section and each clause and sub-clause of the entire tender document that either his tender complies in every respect with the requirements of each clause and sub-clause or if not, precisely how they differ from the requirements of the (e) The Time schedule of work including BAR/PERT charts.

	(f) Any other information desired to be submitted by the tenderer.
4.9	TECHNICAL COMPLIANCE AND DEVIATIONS, IF ANY
	(a) Tenderer should note that the S&T work offered should be complete and compatible with the existing equipment installed / operating on Ratlam division of Western Railway. Any equipment/work required to make the interface equipments match with indoor equipment is the responsibility of the Tenderer. Railway shall not bear any extra cost on account of changes/addition required for ensuring compatibility of interface devices with existing S&T equipments. (b) The tenderer shall certify that the system being offered by him fully meets RDSO Specifications with latest amendments and technical requirement mentioned in chapter 7 of tender document & it's Annexure 1 & 2. The compliance statement should be unambiguous. The clauses which are being compiled by the tenderer should be written as 'complied'. (c) The Railway reserves the right to accept or reject these deviations and Railway's decision thereon shall be final. The deviation quoted by the tenderer shall become part of contract agreement only to the extent to which they are specifically mentioned and as accepted in letter of acceptance.
4.10	Rates:
4.10.1	Rates of materials and works are to be quoted according to the pro forma and "Schedule of Work and Supplies "(Chapter 7). Rates in the offer should be in Indian rupees only. The tenderer should quote rates in figures in the prescribed offer form. Offer received for only part of schedule will not be considered and shall be rejected.
4.10.2	The entire work is to be done as per "Schedule of Material & Work" and "Technical Specification & Requirements". (a) The entire work is divided into the following 2 schedules:- (i) Schedule "A " – SOR Items. (ii) Schedule "B" – Non SOR Items. (b) Against each item of Schedules, the estimated rates of Railways are mentioned and total is drawn for each schedule A & B. The Estimated grand total for Schedule A and B together is drawn. Tenderer are requested to quote the percentage above / below/ at-par the Railways estimated for each Schedule at which he offers to do the work covered under all two schedules together. Rate quoted should be rounded off to one Rupee.
4.10.3	<u>Tenderers while quoting may specifically note the following:-</u> (i) The rates quoted in the offer by the tenderer shall be inclusive of basic cost, customs duty, GST, interstate tax, if any, works contract tax, transport, loading, unloading charge, Octroi etc., wherever leviable. (ii) Octroi exemption certificates and any other statutory duties shall be issued by the Railway in the name of contractor only, subject to this being permissible under prevailing relevant rules. However no additional payment is admissible in case Octroi exemption certificate or forms for concessional taxes and duties are not honoured by concerned authorities.

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	(iii) Concession forms for statutory taxes shall be supplied by Railways on demand if applicable. (iv) Railways will affect recovery of GST on work contract at source at the rate prevailing as per Government GST Tax in force, where the work is being executed. (v) Railways shall affect recovery of income tax at source at the rates in vogue as per statutory provisions & Income Tax deduction certificate will be issued to the contractor.
4.11	VALIDITY OF OFFER
4.11.1	The tenderer shall keep the offer open for a minimum period as per NIT header/Tender Notice from the date of opening of tender. Within that period, the tenderer cannot withdraw his offer subject to the period being extended further if required by mutual agreement from time to time. Any contravention of the above condition will make the tenderer liable for forfeiture of his Earnest Money Deposit.
4.11.2	It is understood that the tender document has been sold/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 Western Railway. Should the Tenderer fail to observe or comply with the foregoing stipulation, the amount deposited, as Earnest Money for the due performance of the above stipulation shall be forfeited by the Railways.
4.12	OPENING OF TENDERS:
	Opening of tender by Railway:- The tender shall be opened on the day as described in NIT Header or corrigendum at IREPS portal in the presence of account official. In the event of the specified date of Bid opening being declared a holiday for the Railway, the Bids shall be opened at the same time and location on the next working day.
4.13	RIGHTS OF RAILWAYS TO DEAL WITH TENDERS
	(a) The authority for the acceptance of the tenderer will rest with the Railway administration for and on behalf of President of India, who shall not be bound to accept the lowest or any tender or to assign any reason for declining to consider, non-acceptance or rejection of a tender. The Railway administration reserves the right to accept any tender in respect of the whole or any portion of the work specified in the tender document or to reduce the work or to accept any tender for less than the tendered quantities without assigning any reason whatsoever. (b) Railway administration also reserves the right to cancel any or all tenders at any stage. Cost of tender document will not be refunded in such case. (c) The Railway reserves the right to accept or reject the deviations proposed by the tenderer and Railway's decision thereon shall be final. The deviations quoted by the tenderer will become part of Contract Agreement only to the extent to which they are specifically mentioned as accepted in Letter of Acceptance.
4.14	RATES DURING NEGOTIATION
	The Tenderer/s shall not increase his/their quoted rates in case the Railway Administration decide to negotiate for reduction of rates. Such a negotiation shall not amount to cancellation

	or withdrawal of the original offer and the rates originally quoted will be binding on the Tenderer/s.
4.15	ACCEPTANCE OF TENDER
	A letter of acceptance (LoA) of the offer will be issued by the Railway Administration to the successful Tenderer that his offer has been accepted, on receipt of which he shall submit a Performance Bank Guarantee (PBG) bond of 3% of cost of work within 21 days of receipt of LoA as described in Chapter 1 and shall execute a formal Contract Agreement with the President of India acting through the Dy Chief Signal & Telecom Engineer, Construction, Ratlam, Western Railway, DRM Office Campus, Do Batti, Ratlam-457001 (M.P) or his authorized representative for carrying out the work according to terms and conditions of the tender including "General Conditions of Contract" of Western Railway and Special Conditions / Specifications of this tender. Upon issuing of LOA, the contract for the work shall deemed to have been awarded to the tenderer and accordingly the completion period will be reckoned from the date of issue of LOA irrespective of the date of signing of contract agreement subsequently.
4.16	SIGNING OF AGREEMENT
	(a) The tenderer whose offer is accepted will be required to present himself or his duly authorized representative at the Office of Dy. Chief Signal & Telecom Engineer, Construction, Ratlam, Western Railway, DRM Office Campus, Do Batti, Ratlam-457001 (M.P), to execute the contract document within seven days of receipt of notice that the contract documents are ready. (b) Failure to do so shall constitute breach of the agreement affected by the acceptance of the tender in which case the earnest money accompanying the tender shall be forfeited as liquidated damages for such default, without prejudice to any other right or remedies open to the Railway.
4.17	COMMENCEMENT OF WORK:
	The successful tenderer upon receipt of LOA shall commence the work by way of submitting a detailed time schedule in terms of Clause No. 5.19 of Chapter - 5, Special Conditions of Contract, for completion of work within the stipulated completion period.
4.18	BUILDING AND OTHER CONSTRUCTION WORKERS ACT, 1996
	Contractor should take necessary action regarding registration as per Building and Other Construction Workers Act, 1996 as mentioned in Para 5.1(vi) of Special Condition of Contract.

CHAPTER – 5
SPECIAL CONDITIONS OF CONTRACT

5.1	GENERAL (i) These Special Conditions of Contract (SCC), "Schedule of Material & Works" and Technical Requirement & Specification and provision of tender document shall govern the works to be executed under this contract in addition to and/or in part supersession of the General Conditions of Contract (GCC) with latest amendment / Correction Slips and Standard Specifications as laid down in the Western Railway Works Hand Book, Part III as amended up to latest correction slips. (ii) Where there is any conflict between these Special Conditions of Contract on one hand and Standard Specifications and General Conditions of Contract of Western Railway on the other hand, the former (SCC) shall prevail. (iii) Any deviations from these Special Conditions of Contract, Technical Requirement & Specifications, Schedule of Material & Supplies and/or any condition of tender document, if any, stated by the tenderer in his tender or subsequently introduced by the Railway shall be a part of the Contract only to such extent as have been explicitly accepted by the Railway and incorporated in the contract. (iv) These specifications/documents describe the material to be supplied, work to be performed and the method of construction for the complete installation in strict accordance with the drawings and specifications mentioned herein and such instructions as may from time to time be given by the Railway. The contractor shall quote for work giving all information after close scrutiny of the plans and site survey. (v) Unless specifically provided otherwise in the tender, any and all exception, which the tenderer may have to any of the clauses of the special conditions of contract or, technical requirement & specification as included in the tender shall be clearly stated. Such exceptions shall be listed in “Statement of Deviation” (Annexure XXXIII). If the tenderer has no exceptions, the annexure shall be submitted with a “<u>Nil</u>” statement. If the tenderer does not include the annexure with the tender, it shall be conclusive evidence that the special conditions of contract and technical requirement & specification and all conditions of contract are entirely acceptable to the Tenderer. Any deviations from these special conditions of contract, technical requirement & specifications if any, stated by the tenderer in his tender or subsequently introduced by the Railway shall be a part of the Contract only to such extent as have been explicitly accepted by the Railway and incorporated in the contract.
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	(vi) “The tenderer for carrying out any construction work in _____ (name of the State) must get themselves registered from the Registering Officer under Section – 7 of the Building and Other Construction Workers Act, 1996 and rules made thereto by the _____ (Name of the State) Govt. and submit certificate of Registration issued from the Registering Officer of the _____ (Name of the State) Govt. (Labour Deptt.). For enactment of this Act, the tenderer shall be required to pay cess @ 1% of cost of construction work to be deducted from each bill. Cost of material shall be outside the purview of cess, when supplied under a separate schedule item.”
5.2	Name of Work: Design, Supply, Installation, Programming, Testing and Commissioning of New Hot Standby Electronic Interlocking System at Malhargarh, Mandor, Daluada, Kachnara Road, Dhodar, Jaora, Namli & Dhowas Stations, Alteration in Existing Electronic Interlocking System at HarkiaKhal, Pipliya and Barayla Chaurasi Stations, New IBH at Jamunia Kalan, Matyakheri, Sindapan, Kachnara & Mundalaram along with Supply, Installation, Testing and Commissioning of various Indoor and Outdoor Signaling Systems in Ratlam-Nimach Section in connection of Ratlam-Nimach Doubling Work under Dy. CSTE Construction, Ratlam (Western Railway) M.P.
5.3	Scope of Work: -Details of scope of works has been given in Annexure B of Chapter 8 . Para wise compliance on Annexure B of Chapter 8 need to be submitted along with offer, failing which tender may like to be rejected . No deviation shall be accepted in Annexure B of Chapter 8.
5.3.1	Nimach-Ratlam Section is 132.92 Km long RE Single Line (BG) section of Ratlam Division under Western Railway. Under this project, double line working with all modern techniques will be provided at 13 existing stations along with provision of 05 no New IBS. Existing S&T systems: At present there are 13 stations in RTM-NMH section which are working with MACS signaling. In this section, 04 stations (NMH, HKL, PIP, BRLA) are provided with Electronic Interlocking System, whereas 09 stations (MLG, MDS,DLD,KCNR,DOD,JAO,NAM,DHWS& RTM) are provided with Route setting type Panel interlocking/RRI. All Stations have BPAC with UFSBI, SSDAC, & DC Track Circuiting. Existing power supply consists of IPS arrangement.
5.3.2	The tenderer(s) shall inspect the proposed site of work and acquaint himself/themselves with the site conditions, distances of gears, compatibility / interfacing, voltages / currents requirements of various existing gears and of equipment to be installed with their system and any other specific requirements etc. The tenderer shall undertake study / survey of signaling systems / practices used in Western Railway /Division and make his own arrangement of the interlocking work involved in integration of the indoor equipments with existing indoor & outdoor equipments to be installed so as to make the entire system successful / functional.
5.3.3	The tenderer(s) shall inspect the proposed site of work and acquaint himself/themselves with the site conditions, working hours, layout of land, station building, trees and shrubs

	that he/they will have to cut, type of strata likely to be met within the borrow pits, stacking space for materials, approach roads, path ways available etc. and all relevant items connected with the execution of the work. No claim shall be entertained for the contractor(s) making his/their own arrangements for approaches/approach road from outside railway land and contractor(s) will bear entire expenses such as road taxes, payment for right of way, etc. to outsiders and for Construction of approaches/approach roads, etc.
5.3.4	During testing and commissioning of the installation, the contractor's engineers will be available at site for testing and commissioning and also for doing any wiring alterations which will be required during testing and commissioning.
5.3.5	Supply of technical documentation & drawings as per Para 5.6 of SCC.
5.3.6	Scope of work is detailed in "Schedule of Materials and Works" and as per "Technical requirement & specification". Work is to be carried out in strict compliance to the tender conditions and specifications. Work will be carried out in accordance with the technical Specification & Requirements of the Tender Document. Wherever Specifications are not indicated, work will be carried out as per standard practice on this Railway and instructions of Engineer in charge.
5.4	WORKS REQUIRED TO BE DONE BY THE CONTRACTOR The brief scope of works to be undertaken by contractor under this tender has been given in para 5.3 of SCC. In addition to this contractor has to also carry out following works: (i) Supply of material as per schedule of works & other miscellaneous items required for completion of work. (ii) Supply of technical documentation & drawing as per Para 5.6 of SCC. (iii) Warranty period will be One year from date of commissioning. Any defect noticed during this period will have to be rectified by contractor promptly at his own cost. (iv) The cost of transit insurance required as per rules will be borne by the contractor. (v) The contractor shall do no work that may interfere with train traffic until adequate protection has been arranged as per the instruction of the Engineer in charge. (vi) All the tools & Measuring Instruments, required for installation & Testing will have to be brought by the contractor at his own cost. (vii) Installation Practices of all Telecom gears should be as per the Telecom Engineering Manual and to suit the latest correction slips, Western Railway and OEM's practices in vogue. (viii) Prompt repair/replacement /design change in various system/sub system/modules/cards during the warranty period.

	(ix) To ensure long term availability of system/sub system/ modules/cards of the equipment supplied as per stipulation in tender document and as per life cycle span of the system. (x) Order/procurement of Materials to be placed only after getting the approval from Railway Competent authority for deciding the make & model of the materials/machines/axle counters, etc to solve the problems of compatibility with existing railway’s equipments/systems. (xi) All the items to be supplied and / or installed shall be conforming to the relevant RDSO Specification with latest amendment or unless otherwise stated in this chapter. Generally, RDSO specification material should be procured from the RDSO approved firm only. (xii) Technical Specification(s) for the relevant supply item(s) are as per the tender schedule/tender document. The Railway system is required to work for 365 X 7 X 24 Hrs. & hence all hardware, accessories & software should withstand for such a continue working. (xiii) Contractor/firm shall provide the sufficient men power and logistic facilities at site/section for CRS inspection to make it successful as well as to complete the work. (xiv) Cable shifting, transfer & termination of cable during block/disconnection in night hours will be done when required, so sufficient emergency lighting and skilled man power to be deployed by contractor. (xv) Due to space constraints and avoiding existing cable cut during execution, HDD boring method for cable trench is planned apart from normal method. NOTE: Any other work not indicated in “Works to be done by Railways” heading as per statement given above shall be carried out by the contractor himself for which no extra payment will be made, so as to achieve the final objective of commissioning of the system as per technical specifications and as per tender requirement.									
5.4.1	Supply of Material: Materials are required to be supplied as per work progress at site. Looking to the requirements of the materials at site, only necessary Materials to be supplied as following timelines: <table><tr><td>Sr. No.</td><td>Duration from Date of issuing of LOA</td><td>Quantity of such materials to be supplied which are required at site</td></tr><tr><td>1.</td><td>First twelve months</td><td>50 % of materials</td></tr><tr><td>2.</td><td>From 13th to 20th Months</td><td>Remaining 50% of materials</td></tr></table> Above schedule for material supply may change as per site requirement as advised by competent authority. Before supplying any materials, prior approval of Competent authority is required to be taken by contractor. Materials for which prior approval of competent authority have not been taken by contractor such materials will not be accepted by consignee	Sr. No.	Duration from Date of issuing of LOA	Quantity of such materials to be supplied which are required at site	1.	First twelve months	50 % of materials	2.	From 13th to 20th Months	Remaining 50% of materials
Sr. No.	Duration from Date of issuing of LOA	Quantity of such materials to be supplied which are required at site								
1.	First twelve months	50 % of materials								
2.	From 13th to 20th Months	Remaining 50% of materials								

5.5	WORK TO BE DONE BY THE RAILWAYS FOLLOWING SHALL BE DONE BY RAILWAYS (i) Provision of single phase 230V AC un-stabilized Power Supply, as per railway's extant rules. (ii) Provision of suitable space for installation of equipment. (iii) Statutory Testing of installation/equipment (as per Signal and Telecom manual) shall be done under supervision of Railway officials or by Railway officials themselves, once contractor offers installation is ready commissioning in all respect. The electric supply for this purpose will be provided by the Railways. However, for any installation activities like drilling, soldering etc., contractor if so desires, to use tools / machines, electric power supply (230V) can be arranged by Railways as per extant procedure. (iv) Supply of Cables, Point Machines, LEDs & other materials which are expressively mentioned in tender documents to be supplied by Railways for execution of works will be supplied by Railways. (v) Provision of communication channel on existing communication network.
5.6	TECHNICAL DOCUMENTS TO BE PROVIDED: A. Six sets of documents for each station containing system details, site installation details / drawings, maintenance manual, operation procedure etc. in bound book and in soft copy as per practice of railways. In this case, cable Route plan to be prepared if given in schedule. Note: The original tracings are to be prepared by the contractor on reproduction film and required prints are to be taken. Diagrams including tracings will be handed over to Railways. One set of drawings in soft copy on Auto Cad format may be given in a CD. All drawings will be approved by Railway, wiring diagram, and other standard diagrams as per WR practice as prevalent in the Railway where work is to be executed and other connected indoor/outdoor work details shall be prepared by contractor and submitted to Railways for approval. After execution of the work, six (6) sets of all such plans/Drawings shall be prepared by the Contractor and given duly bound along with CDs with required supporting software as per Para above. The diagrams in soft copy should be in required format as per Western Railway drawing office practice. All the drawings shall be supplied in a good quality folder for each station. During installation, a folder containing all the drawings, testing procedures, commissioning procedure shall be kept at the stations..
5.7	COMPLETION PERIOD

	The entire work shall be completed within completion period as mentioned in NIT header/Notice on the progressive basis from the date of issue of Letter of Acceptance The tenderer shall submit along with his tender document a tentative scheme as to how the tendered work will be executed by him in the time frame. Time for the execution of the work is the essence of the contract. With a view to complete the work within completion period of entire section/stations, the contractor is required to observe the timely supply of indoor & outdoor materials and submit detailed schedule (along with PERT/Bar chart etc) within a month from date of issue of LOA. This has to be approved by Dy.CSTE/C/RTM in charge of work. The progress shall be monitored periodically by Engineer In-charge and Consignee. The materials shall be supplied in phased manner as work progresses. Contractor is required to ensure that work progresses as per submitted time schedule at entire section/stations at a time. The contractor should depute skilled technicians, supervisors and engineers as per provisions of this tender document.
5.8	CONSIGNEE (a) The Consignee for the work will be Senior Section Engineer (Signal)/ Const. / Ratlam (b) Or as per decided by competent authority.
5.9	TRAINING: The contractor shall arrange training programme for Railway Engineer/Supervisor in different aspects of the various systems, equipments, its functioning, field installation, testing, commissioning, maintenance and repairs etc. at Manufacturer's/ RDSO approved manufacturer's premises and at Field/Divisional/ Zonal Head Quarter, where required. (a) The training should be comprehensive for transfer of complete know- how, so as to impart full knowledge and confidence to independently and successfully execute the installation, testing, commissioning, maintenance and repairs of the complete system and equipments. (b) Training should be comprehensive in all aspects of software and hardware, its architecture, equipment design, functioning, field installation, testing, commissioning, operation maintenance and repair covering both hardware and software. (c) The venue of the training shall be finalized in consultation with Engineer-In charge. (d) Expenses on travel and other incidental expenditure on training of Railway personnel, deputed for training will be borne by the Railways. (e) To impart training, the contractor shall make arrangements for appropriate venue of training (in case it is not Railway premises). He has to also arrange Projector, Slides, Equipments /instruments, training materials /documents at his own cost.

	(f) The detailed training, programme indicating the topics to be covered, practical / demonstrations to be conducted during training shall be approved by the Engineer-In charge prior to commencement of training. (g) Engineer In-charge will take adequate measure to ensure that Railway Officials are trained properly. To judge the same, he may conduct necessary training feedback from trainees for adequacy of training. (h) In addition, contractor shall impart onsite training to Railway staff associated with work for installation and maintenance of system. (i) Set of documents related to training in adequate quantity shall be provided.
5.10	SPARES: The Tenderer shall include in his tender the details of essential spares, their quantity as per schedule of requirements. Details are to be given in confirm that quantity of spares for each station as per requirement of this clause. The tenderer shall give a detailed list of processors, cards/modules, interface relay, plug in units, connectors, fuses etc of each type.
5.11	LONG TERM AVAILABILITY OF SPARES AND SYSTEM SUPPORT (a) The Contractor / manufacturer shall ensure the availability of all components/ sub-systems, if required by the Railways from time-to-time on mutually agreed terms and conditions after warranty is over. (b) The manufacture shall guarantee that spare parts for the system shall be available for a minimum of ten years after expiry of the warranty period and thereafter at least two years notice shall be given to the Railways before any equipment or components are discontinued or phased out from the manufacturing plans. This will enable the Railways to assess the lifetime requirement of spares needed and order in sufficient quantity prior to stoppage of the manufacture. (c) The successful tenderer shall further guarantee that if OEM goes out of production, he shall supply the specifications of materials at no cost to the purchaser, if and when required in connection with the equipment to enable the purchaser to fabricate or procure from other sources. (d) The contractor shall undertake to supply on payment of all maintenance spares and tools required for the equipment during lifetime. He shall also undertake to supply additional equipment required for replacement or expansion of the network; that may become necessary due to additional traffic requirements. The price variation formula adopted in pricing such maintenance spares and additional supply that may be ordered in future shall be provided by mutual discussion.
5.12	ROYALTIES AND PATENTS RIGHTS: i. The Contractor is forbidden to use any patents or registered drawings, processes or patterns in fulfilling his contract without the previous consent in writing of the owner of such patents drawings, patterns or trademarks, except where these are specified by

	the purchaser himself. Royalties where payable for the use of such patented processes, registered drawings or patterns shall be borne exclusively by the Contractor. The Contractor shall advise the purchaser of any proprietary rights that may exist on such processes, drawings or patterns which he may use of his own accord. ii. The contractor shall defray the cost of all Royalties fees and other payment in respect of patents, patent rights and licenses which may be payable to patentee, licensor or other person or corporation and shall obtain all necessary licenses. In case of any breach (whether willfully or inadvertently) by the contractor on this provision, the contractor shall indemnify the Railway and their officers, servant and representative against all claims, proceeding, damages, cost charges, expenses , loss and liability which they or any of them may sustain, incur or be put to, by reason or in consequence, directly or indirectly of any such breach and against payment of any royalties, damages or other moneys, which the Railway may have to make, to any person or holder entitled to patent rights in respect of the users of any machine, instruments, process, article, matter or thing, constructed, manufacturing supplied or delivered by the contractor or to his order under this contract. The tenderer is deemed to have accepted this clause, in regard to indemnifying the railway as stated above, when his tender has been submitted to the Railway. iii. In the case of patents taken out by the Contractor of the drawings or patterns registered by him, or of those patents, drawings or patterns for which he holds a license, the signing of the contract automatically gives the Purchaser the right to repair by himself the purchased articles covered by the patent or any person or body chosen by him and to obtain from any sources he desires the component parts required by him for carrying out the repair work. In the event of infringement of any patent rights due to above action of the purchaser, he shall be entitled to claim damages from the contractor on the grounds of any loss of any nature which he may suffer.
5.13	FOREIGN EXCHANGE AND IMPORT LICENSE: Any foreign exchange or Import License, if required, for supply of goods and service under the contract will have to be arranged by the contractor at his cost. Railway shall make all payment due, under the contract, in Indian Rupees only.
5.14	CHANGE IN ADDRESS Any change in the address of the contractor shall be forthwith intimated in writing to the Railway. The Railway will not be responsible for any loss/ inconvenience suffered by the Contractor on account of his failure to comply with this.
5.15	SECURITY DEPOSIT 1. 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. 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: (d) Final Payment of the Contract as per clause 51. (1) and (e) Execution of Final Supplementary Agreement or Certification by Engineer that Railway has No Claim on Contractor and (f) Maintenance Certificate issued, on expiry of the maintenance period as per clause 50. (1), in case applicable. (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. (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. .
5.16	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 up to 60 days from the date of issue of LOA may be given by the Authority who is competent to sign the contract

agreement. However, a penal interest of 12% per annum shall be charged for the delay beyond 21(Twenty-one) days, i.e. from 22nd day after the date of issue of LOA. Further, if the 60th day happens to be a declared holiday in the concerned office of the Railway, submission of PG can be accepted on the next working day.

In all other cases, if the Contractor fails to submit the requisite PG even after 60 days from the date of issue of LOA, the contract is liable to be terminated. 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) in any of the following forms, amounting to 3% of the original contract value: -

- (i) A deposit of Cash;
- (ii) Irrevocable Bank Guarantee;
- (iii) Government Securities including State Loan Bonds at 5% below the market value;
- (iv) Pay Orders and Demand Drafts tendered by any Scheduled Commercial Bank of India;
- (v) Guarantee Bonds executed or Deposits Receipts tendered by any Scheduled Commercial Bank of India;
- (vi) Deposit in the Post Office Saving Bank;
- (vii) Deposit in the National Savings Certificates;
- (viii) Twelve years National Defence Certificates;
- (ix) Ten years Defence Deposits;
- (x) National Defence Bonds and
- (xi) 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
5.17	FORCE MAJEURE CLAUSE & illegal gratification – Please Refer Para17-18 of GCC April-2022
5.18	PARTNERSHIP DEEDS, POWER OF ATTORNEY Railway will not be bound by Power of Attorney granted by the tenderer or by the changes in the composition of the firm made subsequent to the execution of the contract. It may, however, recognize such powers of attorney and changes after obtaining proper legal advice, the cost of which will be chargeable to the contractor. These charges have been fixed at Rs. 100 /- payable by the tenderer at the time of submitting the power of attorney for scrutiny and legal advice. No power of attorney in favour of any individual person will be acceptable if it is irrevocable except when it is in favour of bank. In case where the power of attorney/partnership deed has not been executed in Hindi or English, the true and authenticated copies of the translation of the same by advocate, authorized translators of Courts and Licensed petition writers should be supplied by the contractor (s) while tendering for the work.
5.19	EXECUTION OF WORKS: Please refer para 19(1) to 21 of GCC April-2022
5.20	INSPECTION OF MATERIAL
	(i) The Inspecting authority of the equipment / materials to be supplied against this work will be RDSO /RITES. If due to any reason, inspections of contracted items are not undertaken by RDSO / RITES, then inspection will be carried out by Railway representative to be <u>specifically nominated by respective Engineer-in-Charges</u>. No material shall be dispatched from manufacturer's premises/assembling unit prior to inspection/ approval by the Railways. (ii) The material which to be inspected by consignee/specifically nominated Railway representative, the make/model/source shall be first approved by DyCSTE/RTM before the supply of material.

	(iii) The Railway may also inspect the material again at the Consignee depot. The Railway shall also have the right for stage inspection of material to satisfy himself that the materials are in accordance with the specification and approved drawings/design. (iv) 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 at the place of manufacture. (v) Whenever materials are inspected by Authorized Representatives of the Railways / Consignee, the Contractor will be required to furnish manufacturers/supplier's Guarantee Certificate (along with test report) and performance guarantee for such items. The contractor has to also furnish proof of purchase / dispatch from manufacturer. (vi) The Railway shall have full power to reject any material that it may consider to be defective or inferior in quality, workmanship, or otherwise not in accordance with the Specification and the Railway's decision shall be final, even though they might have been inspected by RDSO/RITES. The Tenderer shall remove forthwith any such material rejected and replace them promptly at his own cost. (vii) Standard RDSO Drawing referred to in this schedule & technical specification may be collected on payment from RDSO, Lucknow by tenderer if required. (viii) The original invoices of material should be obtained to ensure traceability & usage for each and every material component (including steel, cement), for correlation at later stage. Details such as agency, name of project, site location shall be noted on the invoices. The invoices should be signed by Railway Officials, SSE/JE, to confirm their acceptance. Proper attention/care should be taken, if any fake invoices are submitted by any agencies. The original invoices of cement/steel/other material etc. with details such as agency, name of project, site location etc. by executives must be ensured before passing bills. Consolidated record of the invoices in the work shall be meticulously maintained. INSPECTION CHARGES: The inspection charges for the inspection service rendered to the S&T contractors executing signaling works shall be borne by the Railway.
5.21	MATERIALS AND WORKMANSHIP (i) The Electrical/Electronic Telecom materials, to be supplied by the Tenderer as per RDSO's Specification / Drawing will have to be procured from RDSO approved firms only. (ii) Materials/ Equipments for which RDSO approved sources exist should be taken from RDSO approved Part-I sources only. The Equipment / Materials from Part-II RDSO approved sources should be taken only if there are no Part-I sources approved for the same. Any relaxation with respect to procurement / inspection

	shall be with the prior approval of the competent authority. The Railways' decision shall be final and binding on the contractor. (iii) Material should not be procured from any sources banned for business dealing with Railways under any circumstances. (iv) All the IRS / RDSO approved items shall be procured from RDSO approved firms to IRS/RDSO specifications and shall be inspected by RDSO. In case the total value of a particular item is less than Rs. 5(Five)Lakhs, the same shall be inspected by RITES/Consignee, subject to supplies being from sources approved by RDSO. (v) Material shall be in accordance with specifications and drawings specified or approved by the Railway with latest amendments. (vi) Further items which do not have RDSO specification for which RDSO has not approved any suppliers, inspection shall be carried out by RITES/authorized Railway representatives (In this case material shall be accepted against firm's guarantee certificate). (vii) Material for which no detailed specification/ drawing is given in tender document should be procured from reputed manufacturer / authorized agents and proof of purchase/dispatch shall be furnished to consignee. (viii) Material should be in properly packed condition and the consignee reserves the right to reject the material even though it was passed by RDSO. (ix) All the materials and workmanship used in this work shall be of extremely good quality and high class in every respect and is expected to give trouble free service. (x) The personnel deputed for soldering should have adequate soldering skills and competency certificate issued by ITIs / reputed institutions. (xi) Railway Board's Letter No. 2006/Tele/TC/1 dated - 17/04/2006 and dated - 09/01/2008 stipulates following guidelines for inspection of Telecommunication items: - i. The materials, which are procured from RDSO approved firms with RDSO specification and if the cost of the material is over Rs. 5 lakhs, the inspection shall be carried out by RDSO. ii. All the materials with TEC/BSNL specification and procured from TEC/BSNL approved firms (approved for bulk supply and not as interface approval) shall also be inspected by RDSO provided the cost of the material is more than Rs 5 lakhs. iii. All the materials with TEC/BSNL specification and procured from sources not approved by TEC/BSNL (including firms having only interface approval) shall also be inspected by RDSO provided the cost of the material is over Rs. 5 lakhs. However, in such cases RDSO shall carry out prototype approval before taking up regular inspection.
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	iv. Sophisticated telecom items as an exception can also be taken up for inspection by RDSO as per Railway's specification. The approved acceptance test format shall have to be supplied by Railways duly approved by the concerned CSTE. v. RDSO shall not inspect "Test and Measuring "equipments, electronic exchanges / intercom, auto telephones and spare parts of all telecom equipments. The same may be inspected by Railway's representative as nominated by zonal railways. vi Guideline for inspection of SDH equipments will be as under: - a) The acceptance testing of such equipments may be done by RDSO for which tender /contract specific approval has been accorded by TEC /BSNL till the generic approval of TEC/BSNL or prototype approval by RDSO is given. b) If TEC/BSNL continues to issue only tender/contract specific approvals and no generic approvals are given to any firm in future, then RDSO may undertake prototype approval as per TEC specification and in list the firms in the RDSO approved list to avoid problem of supply SDH equipments to Railways.
5.22	STORES - RECEIPT & ACCOUNTAL (i) Exchange of proper requisition and receipt shall be done on a suitable Proforma between the Contractor and the Railway's authorized representative. (ii) The Contractor shall issue a receipt along with the demand slip for material he requires for the work and obtain receipt when any material is returned to stores. These transactions shall be done with the consignee. (iii) All stores drawn by the contractor shall be accounted for either as installed as per site measurements recorded or as per surplus stores returned to the respective Consignee (stores).
5.23	LOADING / UNLOADING & TRANSPORTATION OF MATERIAL The material shall be delivered by the Contractor at the Depot of Consignee. Material supplied by Railways for execution of the work and the material delivered by the Contractor will be transported from the Stores of the nominated Consignee as given in Para 4.8 above to site by the Contractor with his own Labour and transport. This includes loading and unloading of materials at consignee depot and at site at by contractor at his own cost. Alternatively, if the site of work is ready and work is in progress, physically, the materials can be brought to the site directly and supplied with prior approval of Engineer in-charge <i>after appropriate accountal by consignee.</i> Materials required to carry out this work if supplied by the Railways will be issued at the nominated Depots. The contractor will have to load, Transport these materials to the site of work and unload at his own cost. Empty cable drums and balance materials after completion of work, if any should be returned back at the nominated Depot of the nominated Senior Section Engineer (Telecom) by contractor at his own cost.

	The Contractor will have to furnish an Indemnity Bond for the Security of the Railway material issued to him. Indemnity Bond will be released after commissioning of work and when all balance material is returned by contractor. The security of the material brought to the site of work will remain with the Contractor, till commissioning of the complete structure and same is handed over to Railway's nominated representative of Engineer-in-charge. The cost of transit insurance if required will be borne by the contractor.
5.24	SECURITY OF MATERIAL Once the material is handed over to the contractor, the contractor shall be responsible for the security of material irrespective of the fact that the material is kept in Railway premises. The contractor shall make adequate arrangements at site as deemed necessary for guarding the same from the thefts or damage of any sort. In the event of any loss the contractor shall be responsible to that effect and shall execute an indemnity bond for the materials, which has been supplied by the Railway and will remain in his custody. The cost of stores lost / damaged shall be realized by the Railway out of any payments due to the contractor in this contract or from any other contract executed by Govt. of India. The material issued to the contractor if found defective / unserviceable after transporting at site, the same shall be transported & handed over to the Consignee Depot by the contractor without any extra cost.
5.25	RETURN OF SURPLUS STORES The Contractor with his own staff shall return the stores found to be surplus to Consignee. The contractor shall account for all material that is issued to him. A register shall be maintained at site, which shall be signed by the Contractor as a token of receipt of material. All the issued material shall either be used in the installation or returned to Consignee.
5.26	RETURN OF RELEASED STORES Released equipments shall be returned and deposited to Consignee in systematic manner. Proper care should be taken while releasing & transporting the stores.
5.27	PACKING AND FORWARDING (i) The contractor shall pack at his own cost the stores sufficiently and properly for transit by rail/road, air and/or sea as provided in the contract so as to ensure their being free from loss or damage on arrival at their destination.

	(ii) All containers (including packing cases, boxes, tins drums and wrappings) in which the stores are supplied by the contractor shall be considered as non-returnable and their cost as deemed to have been included in the contractor price. (iii) Each packing delivered under the contract shall be marked by the contractor at his own expenses. Such marking shall be distinct (all previous irrelevant marking being carefully obliterated and shall clearly indicate the description and quantity of stores, the name and address of the Contractor with a distinctive number of mark sufficient for the purpose of identification. All marking shall be carried out with such material as may be found satisfactory by the inspecting officer as regard quickness of drying, fastness and indelibility. Materials and Equipment meant for each station shall be separately packed in separate boxes and marked with name of station, consignee and railway.
5.28	FREIGHT AND INSURANCE: The freight and insurance cost for the material to site of work shall be borne by the contractor.
5.29	CONSIGNEE'S RIGHT OF REJECTION: (i) Notwithstanding any approval which the Inspecting Officer may have given in respect of the stores or any materials or the work or workmanship involved in the performance of the contract (whether with or without any test carried out by the Contractor or the Inspecting Officer) and notwithstanding delivery of the stores where so provided to the interim consignee, it shall be lawful for the consignee, on behalf of the purchaser, to reject the stores or any part, portion of consignment thereof within a reasonable time after actual delivery thereof to him at the place or destination specified in the contract if such stores or part, portion of consignment thereof is not in all respects in conformity with the terms and conditions of the contract whether on account of any loss, deterioration or damage before dispatch or delivery or during transit or otherwise howsoever. (ii) The Railway shall have full right to reject any material that the Railway may consider to be defective or inferior in quality of material, workmanship, and design or otherwise, not in accordance with the specifications and drawings specified by the Railway and the Railway's decision shall be final, even though they might have been inspected by RDSO/RITES. The contractor shall remove forthwith any such material rejected and replace them promptly at his own cost.
5.30	CONSEQUENCES OF REJECTION (Rejected stores). When any stores delivery at the consignee's depots is rejected, the contractor shall remove this within 15 days from the date of rejection. Such rejected stores shall lie at the contractor's risk from the date of rejection. If the Contractor does not remove the stores

	within this period, the Railway or his nominee shall have the right to dispose of such stores, as though fit, at the contractor's risk and account. The Railway shall also be entitled to recover from the contractor, handling and ground rent / demurrage and any other charges for the period during the rejected stores are not removed after the period aforementioned.
5.31	WORK SPECIFICATIONS, DRAWINGS: Please refer para 22(1) to 22(5) of GCC. Installation shall comply with the requirements to the following manuals/ books and Western Railway practices in vogue- Indian Railways Signal Engineering Manual (latest edition). Telecom Mannual Indian Railways Engineering code Indian Railways P-Way manual. Indian Railways Works Manual Indian Railways AC traction Manual General & Subsidiary Rules with latest correction slip. Schedule of dimensions. These books are available in the office of Dy.Chief Signal & Telecom Engineer, Construction, Ratlam, Western Railway. Also SIPs and drawings may be seen by contractor in the above office.
5.32	SUPERVISION & LABOUR (i) Tenderer shall keep sufficient and competent staff as per G.C.C. Clause no.26 at the work site. The work shall be carried out as per Railway's extant practice. (ii) During the execution of the works, the contractor or his representative shall not leave the site where the works are being carried out. At the site of work, the contractor shall always make available one representative who shall be approved by the Railway Administration and who shall be invested with adequate powers by the Contractor so that orders or instruction given to the said representative by the Railway Administration in writing could be considered as duly given or conveyed to the Contractor himself. Representative of the Railway will check up the work from time to time. Supervision and Erection of indoor work will be done by the contractors with their own labour, till completion and testing of the work. (iii) The field Supervisor shall receive instructions from the Engineer-in-charge of the work or his representative at site and comply with the instructions. The Contractor shall be responsible for the compliance of such instructions. (iv) If the supervisor acting on behalf of the Contractor disregards the instructions of the Railway's supervisor / representative and does not execute the work to the satisfaction of this Railway supervisor, the Railway's Engineer, in consultation with superior will have the authority to order stoppage of work and/or ask for the replacement of the supervisor, which it shall be binding on the contractor.

(v) The contractor shall make his own arrangement for accommodation, for his staff during installation, testing & commissioning. Water for drinking purpose if available at the station location will be given. However, Railways take no guarantee for this facility.

(vi) Compliance of Labourers:

(a) Contractor shall abide by the Rules and Regulations of the Contract Labour (Regulation & Abolition) Act 1970 with Contract Labour (Regulation & Abolition) Central Rules 1975 as amended from time –to-time up-to-date. Contractor should obtain a proper a valid license for the concern work from the concerned Assistant Labour Commissioner or Licensing Officer of the area and the photo copy of the Labour license may be submitted to Railway for records. Failure to do so will attract legal action against the tenderer.

(b) All the provisions of relevant Labour laws shall be strictly observed by the contractor. Non-observance of any such provisions or denial of rights and benefits to which they are normally entitled shall be viewed seriously and action shall be taken against defaulting contractor. Contractor shall not undertake or execute any work through contract Labour except undertake and in accordance with the license issued under the said Act in that behalf by authorized licensing officer.

(c) After approval of LOA by Engineer, contractor shall fill the salient details of contract labors engaged in the contract and ensure updating of each wage payment to them on Shramikkalyan portal on monthly basis.

Labour employment & their medical fitness: Please refer GCC para 60(1) to 60(4)

Compliance of Labour Laws:

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.

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

	(a) Contractor shall apply for onetime registration of his company/firm etc. in the Shramikkalyan portal with requisite details subsequent to issue of Letter of Acceptance. Engineer shall approve the contractor's registration 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 LOAs issued in his favour. (c) The contractor once registered on the portal, shall provide details of his Letter of Acceptances (LOA) / Contract Agreements on Shramikkalyan portal within 15 days of issue of any LOA 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." 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 from the Registering Officer of the concerned State Govt. (Labour Dept.). The Cess shall be deducted from contractor's bills as per provisions of the Act.
5.33	SAFETY OF WORK, TRAINS & PERSONNEL (i) The contractor should abide by all the Railway regulations and also ensure that the same are followed by his representatives, agents, servants or workmen. He is therefore bound under these clauses to give notice to them about the provision of this clause and the consequent liability of the contractor under the agreement. The contractor shall conform to all the Railway Rules relating to safety of personnel

	and operation of signals and points. In the A.C. electrified areas the special precautions as laid down in R.E. Manual shall be followed.
(ii)	No petroleum spirit within the meaning of the Indian Petroleum Act shall be stored at site or adjacent land until the approval of the Railway and necessary license under the Act has been obtained by the contractor. The tenderer shall also ensure that approval of the Engineer has been obtained for storing any other inflammable material well in advance.
(iii)	The contractor's employees and workers shall not for any reason operate any appliances or installations of the Railway concerning the safety of train movements, but they should whenever necessary notify the qualified Railway staff who will then take necessary steps. The contractor shall also be responsible for any damage that may cause due to the carelessness of his workmen and will bear the consequences in this regard.
(iv)	The work must be carried out most carefully in such a way that they do not hinder the Railway operation except as agreed to by the Railway. The Contractor shall do no work that may interfere with traffic until protection has been provided by the Railway and under supervision of Railway's representative. When the work is required to be carried out on the track itself or as close to the track as may pose a hazard to rail traffic, the work shall be carried out under the supervision of an authorized Railway representative Junior Engineer/Senior Engineer/ Senior Section Engineer (JE/SSE). Whenever track side work are undertaken by the contractors, areas for unloading of bulk materials should be clearly demarcated and barricades provided, if necessary, with the consent of the (JE/SSE) Signal/Telecom, in-charge of the work. Suitable steps shall also be taken to prevent transport vehicles and such other machinery gaining access so near the track as to threaten the safety of running trains. That, whenever it becomes inescapable to allow transport vehicles or mobile machinery to operate in close proximity to the running lines the maximum moving dimensions for the said lines shall be adequately protected by fencing or such other suitable measures. No vehicle will normally be permitted to ply adjacent to the running lines. The contractor will be responsible for the safety of hired trucks and men etc. Working at the site. He will also be responsible for any damage caused to the Railway property, staff and passengers travelling on the line on account of his truck/vehicles having been allowed to ply on the bank.
(v)	The contractor shall take all precautionary measures in order to ensure protection of his own personnel moving about or working on the Railway premises and shall have to conform to the Rules and Regulations of the Railway.
(vi)	Suitable ladders for climbing the post and slings for supporting men on the post shall be used. Ropes as required shall be used for erection of the poles. The size

	of the rope shall be adequate. The contractor shall take necessary precaution for working near the power lines. If at any time the Railway finds the safety arrangements are inadequate or insufficient, the contractor shall take immediate corrective action as directed by the Railway's representative at site. However, it is not obligatory on the part of the Railway's to give such directions. The issue or non-issue of any direction in the matter by the Railway shall in no way absolve the contractor of his sole responsibility to adopt safe working methods. The stone-breakers, if employed shall be provided with protective goggles and protective clothing and seated at sufficiently safe intervals. Necessary personal safety equipment as considered adequate by the Engineer-in -Charge should be kept available by the contractor for the use of the persons employed on the site and maintained in condition suitable for immediate use and the contractor should take adequate steps, to ensure proper use of equipment by these concerned. When not in use, electrical apparatus shall be switched off. No paint containing lead or lead products shall be used except in the form of paste or ready mixed paints. Suitable face masks should be supplied by the contractor for use by the workers when paint is applied in the form of spray. (vii) Within the station premises and especially on passenger platforms, the contractor shall ensure sufficient free space for movement of passenger traffic. He must cover and protect the excavations carried out in such areas with a view to avoid any accidents. (viii) In case of an accident of any nature, the contractor will indemnify the Railway for any losses caused by him as a result of the accident. (ix) The contractor will not be entitled to any compensation for any damage or loss sustained by him during execution of the work, for any idle labour our transport or any loss or deterioration of the material or tools. (x) During testing and commissioning signal aspects shall be displayed or changed and slot given to adjoining cabin/ground frame only as authorized by Railway. During testing and commissioning, point setting shall be changed only as authorized by the Railway. The contractor shall do no work that may interfere with traffic until protections has been provided by the Railway and under the supervision of Railway's representative. While testing and commissioning of the Panel, the contractor shall not work without authorization from the Railways' Engineer in-charge of the work. (xi) The contractor shall also be responsible for any damage that he may cause due to the carelessness of his workmen and will bear the consequences in this regard.
5.34	PLYING OF ROAD VEHICLES IN RAILWAY LAND ADJOINING TO RUNNING LINES The Contractor shall not allow any road vehicle belonging to him or his suppliers etc. to ply in railway land next to the running line. If for execution of certain works viz. earthwork for parallel railway line and supply of ballast for new or existing rail line, gauge conversion etc., road vehicles are necessary to be used in railway land next to the railway

	line, the contractor shall apply to the site-in-charge for permission giving the type and no. of individual vehicles, names and license particulars of the drivers, location, duration and timings for such work/movement. The site-in-charge or his authorized representative will personally counsel examine and certify, the road vehicle drivers, Contractor's flagmen and supervisor to be deployed on the work, location, period and timing of the work. This permission will be subject to the following obligatory conditions: i) The road vehicles will apply only between sunrise and sunset. ii) Nominated vehicles and drivers will be utilized for work in the presence of at least one flagman and one supervisor certified for such work. iii) The vehicles shall ply 6m clear of track. Any movement/work at less than 6m and up to minimum 3.5m clear of track centre shall be done only in the presence of Railway employee authorized by the Engineer-in-charge. No part of the road vehicle will be allowed at less than 3.5m from track centre. Cost of such Railway employee shall be borne by the Railway. iv) The Contractor shall remain fully responsible for ensuring safety and in case of any accident, shall bear, cost of all damages to his equipment and men and also damages to railway and its passengers. v) The vehicles and equipments of contractors can be drafted by Railway administration in case of accidents / natural calamities involving human lives. Engineer-in-charge may impose any other condition necessary for a particular work or site.
5.35	EMERGENCY WORKS In the event of any accident or failure occurring in or about the work or arising out of or in connection with the construction, completion or maintenance of the works which in the opinion of the Engineer requires immediate attention, the Railway may bring its own workmen or other agency to execute or partly execute the necessary work or carry out repairs if the Engineer considers that the contractor/s is/are not in a position to do so in time and charge the cost thereof to the contractor, as to be determined by the Dy.Chief Signal & Telecommunication Engineer.
5.36	NIGHT WORKS The Contractor shall carry out any work between sun-set and sun-rise with the prior permission of the Engineer/Consignee. The contractor at his own cost shall make all adequate lighting arrangements and shall take precautions to avoid any mishap during night.
5.37	MAINS POWER SUPPLY

	Testing of installation / equipments shall be done under supervision of Railway officials or by Railway officials themselves, from the electric supply to be provided by the Railways. However, for any installation activity, like drilling, soldering etc., contractor, if so desires, to use tools / machines for prolonged duration, electric power supply (230V), if available, can be arranged by the Railways on usual payment, as per extant procedure. Non-availability of Mains Power will not be a reason for the slow progress of work. If Electric Supply is not available, the contractor shall make his own arrangement for Gen set / electric power.
5.38	OBLIGATION TO CARRY OUT ENGINEER'S INSTRUCTIONS The contractor shall also satisfy the Engineer that adequate provision has been made: - To carry out his instructions fully and with promptitude. To ensure that parts required to be inspected before use are not used before inspections; and To prevent rejected parts being used in error. Where, parts rejected by the inspector have been rectified or altered, such parts shall be segregated for separate inspection and approval before being used in the work.
5.39	INSPECTION OF WORKS (i) The Engineer or his representative may inspect and test the various portions of the work and shall have full power to reject all or any portion of the work that he may consider to be defective or inferior in quality of materials workmanship of design in comparison to what is called for in the specification. In the event of rejection of any work already executed and not in accordance with specification as in this tender and/or as determined by the Engineer or which the Contractor has been apprised, the Contractor shall carry out alterations/replacements to such works to the satisfaction of the Engineer for which no additional expenses will be borne by the Railway. (ii) The responsibility of providing facilities for inspection lies with the contractor. He shall be responsible for providing required facilities i.e., tools, equipments for inspection at the place of work, for which no additional payments shall be made. (iii) The completed installation at all stages shall be subjected to checks and test as decided by Railways and the contractor shall be liable to remedy such defects as discovered during these checks and test and make good all deficiencies brought out. However, complete installation will be taken over finally on completion of the full system. It will be the responsibility of the contractor to rectify any discrepancy noticed within a reasonable period from the date the complete system is taken over. For the purpose of taking over, joint inspection will be carried out by DSTE / ADSTE and Section Engineer/Jr. Engineer (S&T). The contractor should make himself or his

	representative available at the time of joint inspection. The decision of the Engineer – in Charge shall be final in the matter. (iv) The contractor will be called upon to pay all the expenses incurred by the Railway in respect of any work found to be defective or of inferior quality, adulterated or otherwise unacceptable. (v) During the execution of the contract, samples may be taken for the purpose of test and/or analysis under the conditions laid down in specification, such samples to be prepared for testing and forwarded free of all cost to the Railway. (vi) SITE ORDER BOOK An Inspection Register/ Site Order book shall be maintained at the site of work by the contractor, wherein the Engineer in-charge of the work or his executive subordinate shall record instructions regarding the working etc. It is expected that the Contractor or his representative at the site shall note such instructions whenever asked upon to do so and take action accordingly. His non-noting the logbook entries shall not be considered sufficient grounds for non-compliance of the instructions. This register shall have entry on day-to-day basis regarding the progress of work. Record should also be kept with joint signature of Railways & firms' representative for all release wiring (if any) too. This should be produced during the inspection & check of Railway engineer in-charge along with drawing showing new installation locations. (vii) QUALITY AUDIT OF INSTALLATION The Contractor shall arrange for a quality audit of installation for Electronic Equipments & will certify that the installation has been done as per OEM's specification & standard practices and pre-commissioning check list / guidelines, if any, issued by RDSO from time to time.
5.40	MODIFICATIONS The contractor shall be responsible for and supply any additional equipment without extra cost for any alterations of the works due to any discrepancies, errors or omissions in the drawings or other particulars supplied by him, whether such drawings or particulars have been approved by the Railway or not due to inaccurate information or particulars furnished to the Contractor on behalf of the Railway. If any dimensions/figures upon the drawings or plans differ from those obtained by scaling the drawings or plans shall be taken as correct. Any minor modifications required during the course of work shall be done without extra charges and the Railway's decision as to whether the modifications are minor or not shall be final. Where modifications are not minor and the Railway is satisfied that the modifications are essential, they shall be carried out at extra charges to be approved by the Railway.
5.41	APPROVAL & MEASUREMENT OF WORK

	(a) The contractor will obtain written approval of the supervisor / engineer-in-charge after completion of the various sub-items of each work mentioned in the Schedule. (b) The contractor should ensure that measurement has been made for such work, which is not possible to measure subsequently and shall remain hidden. For example: after trenching is done after RCC trunking/PVC duct/channel is placed in trench and properly aligned. after the above is laid properly after the earth is filled after brick/slab/capping is laid (c) The contractor shall sign the measurement as a token of acceptance of the measurement entered by the supervisor in-charge of the work (wherever applicable). (d) MEANING AND INTERPRETATION BY RAILWAY TO BE FINAL All measurements, method of measurement, meaning and intent of specifications and interpretation of Special Conditions of Contract, given and made by the Purchaser or by the Purchaser's Engineer shall be final and binding and shall be considered "excepted matter" in terms of conditions laid down in the General Conditions of Contract. (e) RIGHT OF RAILWAYS TO KEEP BACK FORM THE CONTRACT ANY PORTION OF WORK The successful tenderer will however, have no claim or right in the execution of work which in the opinion of the of the Engineer should be carried out departmentally or otherwise and the Railway Reserves the right to keep back from the contract and carry out the work or any portion of work through any other agency, it may think without assigning any reason, any time after the acceptance of the tender. No claim for compensation/loss or whatsoever on this account will be entertained by the Railway.
5.42	CLEARANCE OF SITE Contractor at his own expenses clean the site, set out all works and provide all necessary labours, pets, string, steel to enable the Railways or any of his representatives to check al setting out and the contractor will correct all errors at his own expenses. At the end of the work in each section the contractor shall as a part of his contractual obligation leave the area completely cleared of rubbish and obstruction of all kinds according to the instructions of the Railway's representatives. Besides, he shall take execution of work to avoid the presence of loose earth and ballast on platforms, in drains, on the track formation and pathways, in the vicinity. If within fortnight of completion of the particular item of site work, the refuge is not cleared, the Railway, will arrange to get them removed at the cost of the contractor. However, before the Railway actually gets the site cleared, intimation in writing shall be given to the Contractor.

5.43	MAINTENANCE OF WORKS (a) The contractor shall be responsible at all times during the progress, continuance of the works till commencement of the warranty period as specified in the tender document. (b) He should maintain the system effectively in sound and perfect condition. The contractor shall be responsible and liable to compensate all losses, damages, costs and expenses that may incur by reason or in consequence of the operations of the contractor or his failure in any respect. (c) The contractor has to depute sufficient (Technical and Non-Technical staff) for maintaining the entire system till commencement of the warranty period. (d) During the maintenance period If contractor fails to rectify the failure of system, penalty will be applicable as per warranty clause.
5.44	WARRANTY (i) This warranty shall be for 12 months from the date of commissioning of stations/section and brief details of Warranty are given in annexure-A attached. Any defect noticed during this period will have to be rectified by contractor promptly at his own cost. (ii) During the Warranty period the contractor should make availability of qualified service engineer. No separate charges shall be paid for visit of engineers for attending to faults and repairs or towards the supply of spare parts. (iii) The contractor shall inform names of qualified Service Engineers deputed at the location approved by Railway's Engineer and their contact numbers, so that they can be contacted during failure. The failure is to be attended and rectified within least possible time from the time of reporting of failure. (iv) The contractor shall warrant that everything to be furnished here under shall be free from all defects and faults in material, workmanship and manufacture and shall be the highest grade and consistent with the established and generally accepted standards for materials of the type ordered in full conformity with the contract specifications, drawings, or samples, if any and shall if operable, operate properly. (v) The Contractor shall, if required, replace or repair the goods or such portion thereof as is rejected by the Railway free of cost at the ultimate destination or at the option of the Railway and contractor shall pay to the Railway value thereof at the contract price and such other expenditure and damages as may arise by reasons of the breach of the condition herein, specified. (vi) All replacement and repairs that Railway shall call upon the contractor to deliver or perform under this warranty shall be delivered and performed by the contractor promptly and satisfactorily, if the contractor so desires the replaced parts can be taken over by him, or his representative in India for disposal as he deems fit within a period of three months from the date of replacement of goods / parts. At the expiry of this period, no claim whatsoever shall lie on the Railway.

	If the replacement or renewals are of such a character as may affect the efficiency of the system, the purchaser shall have the right to give the contractor within one month from such replacement or renewal notice in writing that test on completion will be carried out at his cost. Should such tests show that the plant sustains the guarantee in the contract; the cost of the tests shall be borne by the purchaser. Should the guarantees not be sustained, the cost of the tests shall be borne by the contractor. Until the final certificate shall have been issued, the contractor shall have the right to entry with permission of Railways, at his own risk and representatives, whose names shall have previously been communicated, in writing, to the purchaser at all reasonable working hours upon all necessary parts of the works for the purpose of inspecting the working and the records of the plant and taking notes there from and if he desires at his own risk and expense, making any tests, subject to the approval of the purchaser which shall not be unreasonably withheld. (vii) The decision of the Dy Chief Signal & Telecom Engineer, Construction, Western Railway, Ratlam in regard to Contractor's liability and the amount, if any payable under this warranty shall be final and conclusive.
5.45	ANNUAL MAINTENANCE CONTRACT PERIOD - Not applicable
5.46	MODIFICATION TO CONTRACT QUANTITIES & CLAIMS - Please Refer Para 41-42.(3) of GCC April-2022
5.47	Extension of Time in contracts (A): 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 this conditions of this contract) by the date entered in the contact 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 contact but on which Contractors performance necessarily depends or by reason of proceeding taken or threatened by or dispute with adjoining or to neighboring owners or

public authority arising otherwise through the Contractor's own default etc. or by the delay authorized by the Engineer pending arbitration or in consequences of the contractor not having received in due time necessary instructions from the 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 endeavors to bring down or make good the delay and shall do all that may be reasonably required of him to the satisfaction of the Engineer to proceed with the works. The Contractor may also indicate the period for which the work is likely to be delayed and shall be bound to ask for necessary extension of time.

(iii) Extension for Delay due to Railway: 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 therefore, 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 5.47A(i) or/and 5.47A(ii) or and 5.47A(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.

Extension of Time with Liquidated Damages (LD) for delay due to Contractor (B): 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 5.47 and 5.47 A, 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 5.47 B, further request(s) for extension of time under clause 5.47 A can also be considered under exceptional circumstances. Such extension(s) of time under clause 5.47A shall be without any Liquidated damages, but the Liquidated damages already recovered during extension(s) of time granted previously under clause 5.47 B shall not be waived' However, Price variation during such extension(s) shall be dealt as applicable for extension(s) of time under clause 5.47 B
5.48	DETERMINATION OF CONTRACT The Contractor shall execute the work with due diligence and expedition, keeping to the approved time schedule. Should he refuse or neglect to comply with any reasonable order given to him in writing by the Purchaser's Engineers in connection with the work lags persistently behind the time schedule due to his neglect, the Railway shall at liberty to give seven days' notice in writing to the Contractor requiring him to make good the neglect or contravention complained of and should the contractor fail to comply with the requisitions made in the notice within seven days from the receipt thereof, it shall be lawful for the purchaser to take action as per clause 62 of GCC and to take the work wholly or in part out of the Contractor's hands without any further reference and get the work or

	any part thereof, as the case may be, completed by other agencies at the expense of the contractor without prejudice to any other right or remedy of the Purchaser.
5.49	LOSS SUSTAINED DUE TO DEFAULT AND DELAY In the event of any loss to the Railways on account of execution and/or delay in completion of the work or any part thereof by agencies other than the contractor, the contractor shall be liable to reimburse the loss to Railways without prejudice to the other rights and remedies of the purchaser, and the reimbursement in full or in part as the case may be, shall be met, at the option of the Railways from out of all or any of the following sources via: i) Any amount due and payable to the contractor by the purchaser on any account whatsoever; ii) The Contractor's security deposit in hands of the purchaser as far as available, and any other assets whatsoever of the contractor; In the event of re-imbursement from out of sources (i) and/or (ii) above mentioned, the Railway shall have the right of appropriation Suo moto.
5.50	CONTRACTORS LIABILITIES FOR COSTS AND DAMAGES
5.50.1	WITHHOLDING AND LIEN IN RESPECT OF SUMS CLAIMED (a) Whenever any claim or claims for payment of a sum of money arises out of under the contract against the contractor, the Purchaser shall be entitled to withhold and also have 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 purchaser shall be entitled to withhold the said cash security deposit or the security, if any, furnished as the case may be and also have lien over the sum pending finalization or adjudication of any such claim. (b) 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 purchaser shall be entitled to withhold and have lien to retain to the extent of such claim amount or amounts referred to spura, 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 department of the Central Government pending finalization or adjudication of any such claims. (c) It is an agreed term of the contract that sum of money or moneys so withheld or retained under the lien referred to by the purchaser till the claim arising out of or under the contract is determined by the Arbitrator. (If the contract is 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 of damages whatsoever on any account in respect of such withholding or retention under the lien referred to spura and duly noted as such to the Contractor.

	(d) For the purpose of this clause, where contractor is a partnership firm or a limited company, the purchaser shall be entitled to withhold and also have a lien to retain towards such claimed amount or amounts in whole or in part from any sum found payable to any partner/limited company, as the case may be, whether in his individual company or otherwise.
5.50.2	LIEN IN RESPECT OF OTHER CONTRACTS (iv) 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. (v) However, recovery of claims of Railway in regard to terminated contracts may be made from the Final Bills, 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. (vi) 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.
5.51	PAYMENT TERMS Subject to any deduction which the Railway will be authorised to make under the terms of contract that may be applicable while accepting the tender, the contractor shall be entitled for payment as follows: A) For Supply Items b) 80% of the accepted cost of the supply items of the Schedule [duly inspected by the nominated Inspection Authority] will be paid on receipt of the equipment by the Consignee. b) 10% of the accepted cost of supply (in addition to the 80% released above) shall be paid after installation/erection of that particular equipment. c) The balance 10% of will be paid after commissioning. d) 100 % will be paid for spares & for items, which are not required to be erected by the contractor on receipt of the equipment and no loss certificate by consignee.

Note (1): The balance payment may be released against Bank Guarantee of an equal amount and valid for completion period plus warranty period on the discretion of the competent authority.

B). For Execution Items

- a) 90% on account payment will be made on the basis of measurements recorded.
- b) The balance 10% for each station will be paid after commissioning of each block section/station.

Note (2):

(a) The balance payment may be released against Bank Guarantee of an equal amount on the discretion of the competent authority, if commissioning is held up on Railway's account for a period of more than three months after the installation is tested by the contractor to the full satisfaction of Railways and kept ready for commissioning.

(b) Payment of on Account Bill / Final Bill for the contract work will be arranged by Dy. CSTE / Const. / Ratlam through associate Accounts officer.

Procedure for payment of Contractual bill, is as under-

1. On Indian Railways presently 'work executed by contractor' is recorded in measurement books by railway, duly accepted by contractor. Railway prepares 'on account/final contract certificate' for the payable amount based on the work executed and the rates quoted by the contractor duly deducting various statutory taxes like-work contract tax/service tax/royalties/income tax etc., as per applicable rates. Further, railways deposit the statutory deductions themselves to the concerned authorities.
2. With GST act in force, it will be the responsibilities of service providers (i.e. contractors) to submit the invoice (bill) segregating the GST component from the Gross amount of work executed.
3. Railways are therefore advised to follow the procedure as mentioned below while dealing with contractor's payment, once GST is applicable:
 - (A)(i) All works contracts are to be provided with goods/service code based on the type of contract. In case contract consist of both goods &service, then interpretation regarding nature of contract shall be done as per clause 8, Chapter III of CGST Act,2017. The goods/service code is notified by Ministry of Finance and can be downloaded from the website www.cbec.gov.in.

	(ii) The 'on account/final contract certificate' shall be prepared by the Railway on the basis of quantity of work executed and agree mental rates, duly segregating the GST component as detailed in para (iii)below: (iii) Since the agree mental rates of contracts are inclusive of all taxes as per clause 37 of GCC 2022, the calculation of 'Gross amount of work executed' 'Amount of work executed excluding GST amount' and 'GST amount' in the 'on account/final contract certificate' shall be done as under: Let Z = Gross amount of work executed on the basis of quantum of work executed and agree mental rates. X = Amount of work executed excluding GST amount Y = GST amount as per applicable GST rate for that Goods/service code. R = Percentage rate of GST for that goods/service code. Then, $Z = X + Y$, $Y = X * R / 100$ (iv) Percentage rate of GST for various types of goods/service as finalized by GST council can be downloaded from the website www.cbec.gov.in. (B) (i) Once the 'on account/ /final contract certificate 'is prepared by the Railway and communicated to contractor, the contractor shall submit invoice (bill) on his Letter head duly segregating the 'Amount of work executed excluding GST amount' and 'GST amount' (i.e., "X" & "Y" as mentioned in para 3 (A)(iii) above) along with Invoice No. (bill No.) and all other details required under GST act. The sample GST compliant invoice is annexed herewith. (ii) In case contractor is liable to be registered under GST Act, Railway shall pay to the Contractor 'Gross Amount of work executed' (i.e., "Z" as mentioned in para3A(iii) above) duly deducting all other leviabale taxes like I/Tax, labourcess, royalty etc., as applicable. Contractor shall be liable to pay 'GST amount' to respective authority himself. Whereas, railway shall deposit all other taxes deducted to concerned authority as is being done presently. (iii) In case contractor is not liable to be registered under GST Act, Contractor shall be paid 'Amount of work executed excluding GST amount' (i.e. "X" as mentioned in para 3A(iii) above) duly deducting all other leviabale taxes like I/Tax, labourcess, royalty etc., as applicable. Railway shall deposit 'GST amount' as well as all other taxes deducted to concerned authority. (iv) In case any need arises to modify the Invoice (Bill) due to any reason, contractor shall submit amended fresh invoice for processing the payment. 1.Supplier Name 2.Supplier GSTIN 3. Invoice No. 4.Invoice Issue Date 5.Total Value
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	6.Taxable Value 7.Goods A/c HSN Service Accounting Code 8 Goods and Services Description 9. Unit Qty. Code 10.Quantity 11.Rate 12.Whether eligible for ITC- Partial/Full/NIL 13.IGST Rate 14.IGST Charged Amount 15.CGST Rate 16.CGST Charged Amount 17.SGST / UGST Rate 18.SGST Charged Amount 19.Cess Rate 20.Cess Charged Amount 21.Name/Recipient of Service/Goods 22. Place of Supply 23.Recipient GSTIN 24.Tax payable on Reverse Charge Basis (Y/N) 25.TDS
5.52.1	Letter of Credit (LC) - As Per Railway Board letter 2018/CE-I/CT/9 dated 04.06.2018. There is an option for the contractor to take payment from Railways through a letter of credit (LC) arrangement.
5.52.2	The condition for same are as follows: - i. For all the tenders having advertised cost of Rs 10 lakh or above, the contractor shall have the option to take payment from Railways through a letter of credit (LC) arrangement. ii. This option of taking payment through LC arrangement has to be exercised in IREPS (Indian Railway Electronic Procurement System the e-application on which tenders are called by Railways) by the tenderer at the time of bidding itself, and the tenderer shall affirm having read over and agreed to the terms and conditions of the LC option. iii. The option so exercised, shall be an integral part of the bidder's offer. iv. The above option of taking payment through LC arrangement, once exercised by tenderer at the time of bidding, shall be final and no change shall be permitted, thereafter, during execution of contract. v. <i>In case tenderer opts for payment through LC, following shall be the procedure to deal release of payment through LC.</i> a) The LC shall be a sight LC b) The contractor shall select his Advising/Negotiating bank for LC. The incidental cont. towards issue of LC and its operation thereof shall be borne by the contractor. c) SBI, New Delhi, Main Branch will be the nodal branch for issue of LCs

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	based on online requests received from Railway Accounts Units for tenders opened in financial year 2018-19. SBI branches where the respective Railway Accounts Office has its Account (local SBI branch) will be the issuance/reimbursing branch for LC issued under this arrangement. The Bank shall remain same for this tender till completion of contract. The incidental cost @ 0.15 % per annum of LC value, towards issue of LC and operation thereof shall be borne by the contractor and shall be recovered from his bills. d) The LC shall be opened initially for duration of 180 to 365 days in consultation with contractor. The LC shall be extended time to time as per the progress of the contract, on the request of the contractor. The value of LC to be opened initially as well as extended thereafter shall be finalized by the engineer in consultation with the contractor on the basis of expected progress of work. e) The LC terms and conditions shall inter-alia indemnify and save harmless the Railway from and against all losses, claims and demands of every nature and description brought or recovered against the Railways by reason of any act or omission of the contractor, his agents or employees, in relation to the Letter of Credit (LC). All sums payable borne by Railways on this account shall be considered as reasonable compensation and paid by contractor. f) The LC terms and conditions shall inter-alia provide that Railways will issue a Document of Authorization (format enclosed as Annexure-2) after passing the bill for completed work, to enable contractor to claim the authorized amount from their bank. g) The acceptable, agreed upon document for payments to be released under the LC shall be the Document of Authorization. h) The Document of Authorization shall be issued by Railway Accounts Office against each bill passed by Railway. i) On issuance of Document of Authorization, a copy of Document of Authorization shall be posted on IREPS for download by the contractor. A digitally signed copy of Document of Authorization shall also be sent by Railway Accounts Office to Railway's bank (Local SBI Branch). j) The contractor shall take print out of the Document of Authorization available on IREPS and present his claim to his bank (advising Bank) for necessary payments as per LC terms and conditions. The claim shall comprise of copy of Document of Authorization, bill of exchange and Bill. k) The payment against LC shall be subject to verification from Railways Bank (Local SBI Branch) l) The Contractor's bank (advising bank) shall submit the documents to the Railways Bank (Local SBI Branch) m) The Railway bank (issuing bank) shall, after verifying the claim so received w.r.t. the digital signed document of Authorization received from Railway Account Office, release the payment to contractor's bank (advising bank) for crediting the same to contractor's account. n) Any number of bills can be dealt within one LC provided the sum total of
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	payments to contractor is within the amount for which LC has been opened. o) The LC shall be closed after the release of final payment including PVC amount, if any to the contractor. p) The release of performance guarantee or security deposit shall be dealt directly by railway with the contractor i.e. not through LC.
5.53	COMPLETION CERTIFICATE (a) The work shall not be considered to have been completed in accordance with the terms of contract until the engineer in-charge shall have issued certificate in writing to this effect. No approvals of material or workmanship or approval of part of the work during the programme of execution shall bind the engineer in-charge of in any way prevent him from even rejecting the work which is claimed to be completed and to suspend the issue of his certificate of completion until such alterations and modifications of reconstruction have been affected at the cost of the contractors as shall enable him to certified that the work has been completed to his satisfaction. After the work is completed, the contractors shall give notice of such completion to the engineer in-charge and within 30 days of receipt of such notice the engineer in-charge/ site-engineer nominated by engineer-in-charge shall inspect the work and if there is no defect in the works shall furnish the contractor with a certificate indicating the date of completion. However, if there are any defects which are the opinion of engineer in-charge are rectifiable he shall inform the contractors the defects noticed. The contractor after rectification of such defects shall notify the engineer in-charge and then the engineer in-charge shall inspect the work and issue the necessary completion certificate within three days, with the approval of CSTE/C/CCG, if the defects are rectified to his satisfaction and if not be shall inform the contractor indicating defects yet to be rectified. The time cycle as above shall continue. FINAL ACCEPTANCE (i) The final acceptance of the entire equipment installed at the station shall take effect from the date of expiry of the Annual Maintenance Contract (AMC) period & after testing and certification of the engineer in charge. (ii) The contract shall not be considered as completed until the issue of Final Acceptance Certificate by the Railways. (iii) The Railways shall not be liable to the contractor for any matter arising out of or in connection with the contract or execution of the work unless the Contractor shall have made a claim in writing in respect thereof before the issue of Final Acceptance Certificate under this clause. (iv) Notwithstanding the issue of Final Acceptance Certificate, the contractor and the Railways (subject to sub clause as above) shall remain liable for fulfillment of any obligation incurred under the provision of the contract prior to the issue of Final Acceptance Certificate which remains unperformed at the time such certificate is

	issued and for determining the nature and extent of such obligation the contract shall be deemed to remain in force between the parties here to.
5.54	DEDUCTION FROM ON ACCOUNT BILLS All costs, damages or expenses, which Railways may have paid or incurred, which under the provisions of contract are Contractor's obligations will be deducted by Railways from progressive payment Bills/Invoice of Contractor, as and when it is understood that such expenses has been incurred or paid for. All such claims of Railways shall, however, be duly supported by appropriate and Certified vouchers, receipts or explanations as are available to enable the Contractor to identify such claims.
5.55	DEDUCTION OF TAXES Railways will deduct Sales Tax, Income Tax, surcharge on Income Tax, education cess and commercial tax as per rates applicable at the time of making payments. Wherever the law makes it statutory for the purchaser to deduct any amount towards sales tax on works contract, the same will be deducted and remitted to the concerned authority. The Contractor and all personnel employed by him shall pay such taxes like Income Tax as are payable under statutory laws of India and the Railways will not accept any liability for the same. In terms of provisions of finance act and income tax act enforce deduction of income tax, surcharge & cess at source shall be made from the contractor / sub-contractor and the amount so deducted may be credited to the central government. All other statutory deductions, such as labour, GST, works contract tax etc., at the rates as applicable at the time of payment, shall be made both from on account bills as well as final bills as per rules in force. Deduction of cess as per provisions of Building and Other Construction Workers Act, 1996 as given in Para 4.1(vi) of Special Condition of Contract as applicable. GST will be implemented as per Railway Board letter No. 2017/AC-II/1/6/GST/Main/ Vol III dated 05.07.2022
5.56	INSURANCE OF MATERIALS & INSTALLATIONS: The contractor shall take out and keep in force a policy or policies of Insurance for all materials including Railway supply materials equipment irrespective of whether used up in the portion of work already done or kept for the use in the balance portion of the work until such works are provisionally handed over to the Railways. The Contractor shall not be liable for losses/damages to the materials either used up in the portion of work done or his material kept for use at site, in consequence of mutiny, or other similar causes over which the Contractor has no control and which cannot be insured. Such losses or damages shall be the liability of the Purchaser and if required by the Purchaser, be made good by the contractor, at the cost of the Purchaser.

	The Contractor should, however, ensure the stores brought to site, against risks in consequence of war and invasion, as required under the Emergency Risk (Goods) Insurance Act in force from time to time. It may be noted that the beneficiary of the insurance policy should be Railways or the policies should be pledged in favour of Railway. The contractor shall keep the policy/policies current till the installations are provisionally handed over to the Purchaser. It may also be noted that in the event of contractor's failure to keep the policy current and alive, renewal of the policy will be done by the purchaser for which the cost of the premium plus 20% of premium shall be recovered from the contractor. For purpose of enabling the contractor to take the insurance cover in connection with this contract, the purchaser's engineer will advise the approximate price of all the Railway supply materials to the contractor.
5.57	IMPLICATION OF MODVAT RULES: The liability of the purchaser to reimburse excise duty is limited to such sum as may be found legally due and payable in respect of contract goods after availing the full credit on all the inputs used in the manufacture of the finished products irrespective of whether the contractor has in fact availed of the said credit or not”.
5.58	EXCEPTED MATTERS: All measurements, method of measurement, meaning and intent of specifications and interpretation of special conditions of contract, given and also made by the Railway or by the Engineer on behalf of the Railway shall be final and binding and shall be considered “Excepted Matters” in terms of condition No.63 of the General Conditions of Contract and will Strictly stay outside purview of any arbitrations limit and will not be arbitral.
5.59	SETTLEMENT OF DISPUTES: Please refer para 63 to 64(7) of GCC.
5.59.1	JURISDICTION OF COURTS The court of the place from where the Letter of Acceptance has been issued shall have the jurisdiction in respect of this contract. For this tender the Jurisdiction of court will be Ratlam.
5.60	ENGAGEMENT OF QUALIFIED ENGINEER: please refer para 26 to 26A(3)
5.61	PRICE VARIATION CLAUSE: NOT APPLICABLE as per CSTE office letter no SG/32/0/C dated 12.07.2016
5.62	Advances to Contractor – NOT APPLICABLE
5.63	Mobilisation Advance- Not Applicable

5.64	(i) SSE/Signal/Construction/ Ratlam or any other Supervisor nominated by Dy.CSTE C RTM Western Railways will be the consignee of Work. (ii) ADSTE/C/RTM or any other officer nominated by Dy.CSTE C RTM Western Railways will be the Engineer in-charge of the work for Measurement (MB) test check. (iii) Decision of Engineer-in-Charge will be final, in order to Improve Quality and Safety of work for incorporating Policy Circulars of HQ & Railway Board, Signal Engineering Manual and Telecom Engineering Manual of Indian Railway. (iv) Dy. FA & CAO/C/RTM will be Associated Accounts Officer for Bill Paying. (v) Engineer in-charge of the work will nominate the field officer (site Engineer/ supervisor for the work. (vi) The custodian of contract shall be Dy.CSTE/C/RTM, regarding completion of work for and obtain necessary approval from competent authority prior to release of Performance Guarantee & Security Deposit. (vii) Dy.CSTE/C/RTM shall issue final completion certificate to contractor with the approval of CSTE/C-II/CCG.
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CHAPTER – 6
GENERAL GUIDELINES AND TECHNICAL SPECIFICATIONS

NOTE: - These specifications are General in nature and do not anyway supersede RDSO guidelines or specifications. In case of any discrepancy given in this chapter with respect to RDSO guidelines/specifications and /or description in schedule items, later will prevail and will be decided by the Engineer in charge.

1. Tenderers are requested to *inspect the site* before quoting the rates.
2. For Drawings & RDSO specifications refer to the latest issue.
3. The cost of supply of minor materials and accessories other than specification & condition but
4. Necessary for Installation, should be included while quoting the rates.
5. Rate quoted by the Tender should include all Taxes/GST& duties.
6. If any deviation noticed in the certificate endorsed below, Railway decision shall be final.
7. Railway reserves the right to accept or alter/delete the quantity under schedule items.
8. The tenderer should submit certified copies of documents along with Tender in support of his credential, so as to ascertain the ability to carry out the work.
9. Inspection authority will be RDSO/RITES/Consignee or authorized railway representative.

Detailed Technical Specification are as per attached Annexure-A.

Annexure-A: General Guidelines & Technical Specifications

PART - I (Indoor items)

6.1	6.1.1	General Requirements for Circuit Designing
	A	The circuit shall be designed as per the approved Signaling Plan, Table of Control.
	B	The contractor shall also submit one copy of the square sheet. All the aspects covered in G&SR; SEM of Indian Railways shall be taken care off while designing the circuit. Contractor shall ask from the Railways about the design practice to be followed (i.e., Siemens practice or British practice). Whether EI or Relay Interlocking, the circuit shall be designed as per the practice of Route setting type interlocking.
	C	While designing the circuit it shall be kept in mind until and otherwise advised by the Railways engineer in charge, one front contact of each and every relay shall be kept spare for data logger purposes.
	D	For EI system the circuit shall be designed considering the interfacing relays in mind.
	6.1.2	Technical Specifications for Circuit Designing:
	6.1.2.1	Interlocking and circuit Requirements
		The requirements given in IRS: S36-87, Signal Engineering Manual (of Indian Railway) for Route-setting type Relay interlocking with IDF shall be complied. Any other design practice followed by Western Railway as per Headquarter policy circular should also be incorporated. In addition, the following requirements shall also be met.

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	6.1.2.2	General Circuit requirements
	A	The internal circuits shall be suitably protected and electrically isolated from external circuits.
	B	Signal circuits shall be so designed as to prevent display of signal aspect less restrictive than intended and also prevent setting up of unsafe conditions when signaling supply voltage or frequency fluctuates or the supply is restored following a failure of normal supply.
	C	Cross-over between tracks and diamond crossings shall be provided with protection that will eliminate the possibility of a train, engine or wagon occupying the cross-over or diamond and signal on either track displaying other than the most restrictive indication.
	D	Relays controlling double yellow and green aspects of signals shall have arrangements of cutting in relays similar to track repeater relay, where such relays are fed from outside locations.
	E	With reference to Para 4.3.1 of IRS S-36-87, sectional route release facility shall be provided.
	F	With reference to Para 4.3.6 of IRS:S-36-87, Emergency full route / sub-route cancellation in case of track circuit failures with sealing facility and emergency operation for throwing signal to danger, shall be provided along with non-re-settable counters for recording the operation. It shall be ensured that the counter shall record the operation, just before the operation is affected. Emergency sub-route cancellation facility as referred in Para 4.3.6 of IRS: S-36-87 shall be provided. Also facility for Emergency operation of points (under track relay down condition) shall be provided which shall be counted with mechanical counters.
	G	The circuit shall be so made that the vital operation of throwing back the cleared signal to the least restrictive aspect shall be possible and the circuits shall be so prepared to affect the operation, even if its original supply fuse is blown off.
	H	The lamp lighting circuit for all lamps including shunt signals shall be on double cutting principle.
	I	Care should be taken during design of circuits and installation, so as to contain repercussions of any failure to the minimum possible gears and equipments. The contractor shall be bound to amend his design, if the Railways suggest another design for achieving the above.
	J	Initiation and cancellation circuits should be drawn as per geographical layout of the yard.
	6.1.2.3	Route setting and interlocking circuit:
	A	Setting of conflicting routes shall not be permitted.
	B	Necessary back locking of the intended route shall become effective, when all concerned points have taken up their final position and route is set and approach track has been occupied and the signal is cleared or the 'Calling on' is lit.
	C	Approach and time locking shall be provided for all controlled signals. Approach and time locking shall be continuously effective from the pre-determined point in rear of the signal concerned. Dead approach locking should be provided where no suitable track circuits are available in rear of the signal.
	D	Time release for approach locking / dead approach locking shall be provided so that 2 minutes shall lapse after the signal has been put to 'ON' position, before the route can be released.

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	E	The overlaps shall set only when the last sub-route leading towards the overlap is set.
	6.1.2.4	Route Release circuits:
	A	Route release circuit shall be designed on the principle of automatic route release by the passage of the train as provided in (Para 4.3.1 of IRS: S-36-87).
	B	Circuits which release routes for interlocking shall be controlled by slow operating relays, so that any inadvertent operation of track circuit due to a surge or other factors will not result in the release of the routes or the interlocking.
	C	All circuits shall be designed in such a way, that the relays picked up for clearing any signal are proved to have de-energized or normalized before the route or route section restored to normal. Also, it shall not be possible to re-clear the route, if the entire route or part of the route set is not released.
	D	It shall be possible to release a route in emergency after suitable time delay, with the approach track occupied, provided the train has not passed the signal during the time interval. The operation of the time relay shall commence upon the operator restoring the signal or calling on signal to 'ON'. The emergency releases must be provided with electric counter.
	E	It should be possible to release an entire route, including the overlap portion, in emergency when all controlling track circuits (except berthing track circuit) are clear. This emergency operation should be counted in an electric counter.
	F	It should be possible to release a complete route or individual sub-routes with controlling track circuits energized / de-energized with a separate emergency button which should be kept sealed. Such emergency operations will be counted on a separate electric counter.
	G	The delay time as mentioned in Para 3.10.5.1 of IRS Specification no.S-36-87 shall be between 60 to 120 secs. Facility shall be provided to set the delay time in between 60 to 120 seconds.
	H	It shall not be possible to cancel any set route or cancel any portions of the route by any button other than the signal button used to clear the route initially and by the emergency full route cancellation button.
	I	Overlap points shall be released only after the lapse of two minutes of occupation and clearance of the last point track circuit on the route. On cancellation, the overlap points may be released simultaneously along with the main route.
	6.1.2.5	Signal Control Circuits:
	A	Signal control circuits should be so designed that after train passes a signal, the signal will resume 'ON' aspect and it will not clear again unless the conditions for clearing the signal are available.
	B	Signal should not get clear unless – i) All points in the route isolation and overlap are correctly set and locked. ii) Concerned route is set and locked. iii) All tracks are clear not only up to the next signal ahead but also 120 mtr. Beyond the next stop signal. iv) All concerned level crossing gates in the path and in the overlap are closed against the Road traffic. v) All other conditions of taking off signal as specified in GR & SR are fulfilled.
		In Junction Route Indicators the Yellow aspect of the signal applicable to the diverging route must be displayed only after proving that at least 3 out of 5

		junction indicator bulbs/ route LED lamps are lit. The signal shall be maintained at, or returned to 'ON' aspect in case 3 or more lamps / route LED lamps are not lit.
	C	Calling on Signal Calling on signal shall be capable of being taken 'OFF' only when the main signal cannot be taken 'OFF' due to track relay not picking up due to any reason and the train has come to a stop and has been waiting for a pre-determined time of 2 minutes. The 'Calling on' signal shall comply with all conditions governing the clearing of a main signal, except the following: – Calling on signal should be capable of being taken 'OFF' without setting of points in the overlap. i) Every operation to take 'OFF' the 'Calling on' signal shall be counted by an electric counter on the panel. ii) 'Calling on' signal shall be restored to 'ON' automatically when the track circuit immediately in rear of the stop signal below which the 'Calling on' signal is placed is cleared by the train or all sub-routes over which the 'Calling on' reads have been released after the passage of the train. It shall not assume the 'OFF' aspect again unless the process of clearing it is repeated. iii) Calling on signal shall display miniature yellow light for the 'OFF' aspect and shall show no light for 'ON' aspect. iv) The calling-on signals shall use the LED signal lamp as per latest RDSO specification RDSO/SPN/153/2011 (Rev.4.1) or latest with latest amendments.
	D	Shunt Permitted Indicator (SPI) Shunt Permitted Indicators are used to facilitate un-interrupted shunting over a fixed route. It shall display no light both by day and night in each direction when shunting is prohibited. It shall exhibit an illuminated yellow diagonal cross both by day and night in both directions when shunting is permitted. NOTE: In spite of what is contained in these specifications, if the Railway's desire anything in deviation to this, the same shall be conveyed to the contractor in writing and it shall be binding on the contractor to implement the same.
	E	Main Signal Lighting:
		(I) Main Signal light supply shall be alternating current at 110 Volts 50 Hz. LED Signal Lamps as per RDSO specification RDSO/SPN/153/2011 (rev 4.1) (with latest amendments) shall be used for 'OFF' & 'ON' aspects respectively.
		(II) The circuits shall be so designed that – i) The failure of a lamp of a colour light signal shall always cause the signal to display a more restrictive aspect than intended. (Cascading). ii) In the event of a lamp of the red aspect of the signal failing, the signal next in rear shall display a red aspect. (Red lamp protection).
	F	All other requirements as per the manual of instructions for installation of S&T equipment on 25 KV 50 C/s electrified sections should be followed.
	6.1.2.6	Point Interlocking, Control circuits and Interlocking of Emergency Point Crank Handle.
	A	Individual operation of points shall be possible only when the interlocking is free and relevant point track circuit / circuits are / are clear. Individual operation of points shall also be possible when the interlocking is free and relevant point track

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		circuit / circuits are / are de-energized. Such emergency operation of a point should be counted in an electric counter. This emergency point operation button should be provided with sealing facility.
	B	Cross - over's will be operated by separate point machines, one at each end. The detection of setting and locking of the points at the two ends shall be connected in series, after the operation circuit is cut-off. The initiation of points should be staggered to avoid excessive drain on the power equipment.
	C	Point circuitry shall ensure that once a point movement is initiated, it must be completed even if the controlling track circuit / circuits fail in the meantime.
	D	While changing a point control relay or unit, if the points in the field and the control relay or unit in the relay room are not in correspondence, no operation of point should occur. To bring the point to the corresponding position, the operator shall have to operate the respective push button as in the case of individual operation of points.
	E	The NX key for the point / points should be released from the control panel. The key lock relay to be used for this purpose, shall be located in the cabin ASM's office / in the field.
	F	In case of power failure to EI/RR/PI systems, it should be possible to release crank handle through mechanical ECH as approved by CSTE/WR.
	6.1.2.7	Interlocking of Crank Handles:
		The grouping of crank handles for point operation is as detailed in the Signaling plan. There shall be two common controlling buttons for each group for releasing control / taking back control.
	6.1.2.8	Cross Protection:
		For all external circuits, cross protection with double cutting shall be provided to prevent unsafe operation due to a cross, break or both.
6.2	Specifications and Requirements for the supply of EI	
		1) All Materials supplied for Electronic Interlocking should be as per RDSO/SPN/192/2019 Ver 2.0 dated 24.05.2019 or latest.
	A	ARCHITECTURE
	I	The system shall be a microprocessor-based system with the configurations of redundancy as approved by the RDSO. For Mumbai Suburban area, 2out 2 or 2out of 3 Architecture shall be preferred due to large number of gears and traffic density.
	II	The system shall be supplied with 100 % HOT STAND BY as per RDSO specification.
	III	The interlocking logic shall be implemented at the centralized unit only. Object controllers shall have no interlocking unit. OC to be decided by Railways.
	IV	The system shall be capable of working with the DUAL VDU.
	V	It shall be possible to synchronize the RTC of EI system with external sources like Data Logger, STM equipments or any other source of clock.
	VI	It should have space to expand minimum 10% I/O cards on overall basis.
	VII	The system shall be supplied with OBJECT CONTROLLERS as per the tentative approved SIP.
	VII	Response time of EI must be less than 5 Seconds for sub urban

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	B	OBJECT CONTROLLERS
		The Object Controllers O.C) shall be without Interlocking logic.
		All the inputs and outputs of an O.C shall be fully isolated.
		The O.C. shall be kept at strategic locations as decided by the Railway to meet its requirement.
		The O.C shall drive the output and input functions either directly or through interface relays.
		The O.C shall drive field gears and take the feedback from fears without any modifications/ change.
		Each O.C shall be fully independent from the other O.C
		In case of any error or unsafe failure the O.C shall withdraw all the output commands and remove the source supply outputs.
		The O.C shall communicate with Central Interlocking Units on OFC with redundant ports (i.e. ring basis)
		The (24 +24) fiber FDMS system shall be supply as a part of EI system as per RDSO specification.
	C	CONTROL TERMINALS WITH DUAL VDU
		Following minimum requirements shall be fulfilled by the Maintenance and control Terminals.
	I	Embedded Industrial grade fan less PC with latest PC configuration shall be provided and suitable Compact Flash Disc memory space shall be catered for the backup requirements and inbuilt power backup.
	II	Shall have Ethernet/OFC communication with the CIU either on copper cable or OFC, with suitable isolators.
	III	It shall have key board/mouse operation.
	IV	It shall be possible to disable the menus in case of emergency.
	V	It shall synchronize the counters/clocks all the time and particularly when resuming from a failure.
	VI	Shall support buzzers/alarms as in CCIP.
	VII	The monitor shall be of high resolution (minimum 2560 x 1600), the minimum size of monitor shall be 48 inches minimum with stand having height, tilt and pivot adjustments. If it is not possible to accommodate station interlocking in one screen then it shall be possible for VDU computer to get connected with multiple screens. In case of multiple screens, it shall be possible to select a route if entrance point is in one screen whereas, exit point is in another screen. A typical of VDU layout (Drg. No. CSTE/6262) and a list of standard commands for gear operation in Electronic Interlocking through VDU were finalized by WR/HQ office with the approval of CSTE and same were circulated vide policy circular No. 211/2016 for implementation in all EI works. Size of monitor to be as per schedule.
	VIII	A flashing indication shall be provided on the VDU to indicate healthy condition of the main system, communication channel.
	IX	The current position/ status of various field equipment and track circuits shall be displayed on the VDU using different colors/ symbols.
	X	Three dot markers in Red, Blue & Green colours respectively shall also be displayed prominently at conspicuous locations on the VDU terminal to indicate

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		that the colour monitor is healthy and all the three colours (Red, Blue & Green) are present in right proportion.
	XI	The control terminal shall work with 230V $\pm$ 10%, 50Hz AC power supply, for which an UPS of adequate capacity shall be supplied along with the system.
	XII	If VDU and CIU are in separate buildings (which is generally the case), then they shall be interfaced using FOM (Fiber Optic Modem) to protect against lightning and surges. Railway shall allow only underground OFC for its use if the CIU and VDU are in different rooms. Patch-cords shall be allowed only in case where both are in the same room.
	XIII	Operation of signal gear shall not be possible simultaneously through both vduc. In case of VDU's used in Hot standby, VDU switch over is required in the following conditions: A) VDU to EI communication failure. B) VDU computer failure. C) VDU monitors failure. D) One VDU is not controllable due to mouse failure.
	XIV	To circumvent any unauthorized operation inadvertently, logic equivalent to Stop collar function of Panel system to be incorporated through software.
	XV	As per WR's policy circular no. 192/2015 dated: - 10.03.2015 Separate Key cum counter box with 2 VDUs in E.I to be provided. Key cum counter box shall be framed as per CSTE drg No. 6229 and comprises SM & RRBUs keys, Eight electromechanical counter (ERRB, EBPU, RRBUs, UOS, COGGB, COCYZ, ECHYZ), one spare and ammeter with bypass switch.
	XVI	MT consisting of a standard PC with printer from a reputed manufacturer (as per instructions of Railway's engineer in-charge) shall be provided for following Operations: - Display of the current status of points, signals, controls etc. Of the yard. Ii) Storage of minimum one month data or 10,00,000 events. Iii) Display of recorded events and iv) Data transfer to floppy, CD, flash memory or any other storage media. V) Transfer of recorded events to external data logger.
	D	POWER SUPPLY REQUIREMENTS
	I	The power supply requirements are as defined below.
	II	The system shall be capable of working in 25 KV AC environments.
	III	IPS will be provided by Railways, two no inverters of 24VDC or 110VDC will be used for VDU.
	IV	The requirements of Earthing and lightning and surge protections shall be provided by the tenderer as per the RDSO/SPN/192/2019 Ver 2.0 dated 24.05.2019 or latest. or as latest defined by the RDSO.
	E	WARRANTY
	I	The EI system including its equipment and subsystems shall be under warranty for one year from the date of commissioning of complete system.
	II	During the Warranty period the contractor should make availability of service engineers of RDSO approved manufacturer of EI and spares at mutually agreed locations to achieve system availability. The maintenance engineer of the contractor will visit all the stations at least once in a month for ensuring implementation of maintenance plan and attend to any fault on the systems. No

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		separate charges shall be paid for visit of engineers for attending to faults and repairs or towards the supply of spare parts.
	III	During the Warranty period of One (1) year, the system with standby must be maintained in such a manner that both the systems shall be available normally. In case of failure of one system, urgent & immediate action shall be taken to rectify that fault within 12 hours. In case there is complete breakdown of interlocking provided at a station, the contractor must arrange for rectification of the same within 3 hours, failing which a penalty of Rs. 10000/- per station for every 12 hours will be imposed. The contractor must keep adequate spares as well as skilled manpower so that defects if any are rectified promptly. Failure report shall be generated and put up within 24 hrs.
	F	INFORMATION TO BE FURNISHED BY THE RAILWAY
	i	Tentative SIP with the tender.
	ii	VDU shall be DUAL VDU of requirements as defined in above.
	iii	Data-logger is a separate item in the schedule.
	IV	Signal Lamp lighting circuits shall use 110 Volts AC supply to light the LED units.
	V	Size of VDU is as defined in above.
	Vi	The point operation shall be on 110 Volt DC. Point circuit shall be implemented with QL1 relays and QBCA relays.
	Vii	All the cables connecting to the outdoor gears shall be either 1.5 sq mm copper signaling cables or quad cables as approved for the Railways.
	Viii	OFC / E1 channel will be provided by Railway, dark fiber will also be provided between station to station for EI communication.
6.3	Specifications for Relays	
		In addition to the requirements of IRS S-36-87 , the following requirements shall also be met.
	A	The circuits should be developed using signal groups suitable for LED signal lamps, point groups, route groups, and shunt groups etc. Which are already approved and are in use on the Railways.
	B	The circuitry should take care detecting of the contingency of the contact welding.
	C	D.C. relays used in signal cabin, when controlled from an outside source, shall be wired on double cutting principle coupled with cross protection. Similarly D.C. relays located in the field shall be wired on double cutting principle coupled with cross protection.
	D	A.C. immunized relays shall be used for controlling outside functions.
	E	Relay shall be furnished with contact arrangements as approved by the Railway.
	F	In case of A.C. Electrified areas, the Relays shall be in conformity with R.E. Manual.
	G	The relays or relay groups shall be repeated suitable illuminated indicators the proper functioning or otherwise of each unit which it controls. This facility will be useful to the maintainer at a glance in the relay room to have a clear picture of the functioning of each unit at any stage. Such indications shall also include indications for failure or functions which are incomplete.
	H	Where feasible all relays except track relays, shall have 10% of working contacts as spare subject to a minimum of one front and one back to facilitate addition and

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		alteration to the circuits at a later date. Extra space to accommodate repeater relays shall be provided in the relay rack to cater for future expansion.
	I	THE BASE PLATES FOR ALL THE RELAYS AND GROUPS SHOULD ALSO BE PURCHASED FROM THE OEM OF RELAY/GROUP.
	J	Type of relays to be quoted by contractor as a break up of EI components. However, as per railway requirement Type/Configuration of relays can be modified.
6.4	Specifications and Requirements for Relay/CT Racks	
	A	The racks for RRI/PI shall be supplied as per the CSTE's drawings. The drawings to be followed are: CSTE-6028 for relay rack, CSTE-5004, 5005, 5006 for CT rack . In addition to the drawing parameters following shall also be complied. EI relay racks to be supplied as per OEMs specification to suit different type of relays.
	B	Until and unless it is specifically mentioned, all the racks shall be supplied with IDF arrangements.
	C	IF THE CONTRCATOR WISH TO SUPPLY RELAYS OF M/s INTEGRA MAKE, THEN HE SHALL SUPPLY ADDITIONAL QUANTITY OF RELAY RACKS (1.2 TIMES QUANTITY IN THE SCHEDULE) AT HIS OWN COST AS THESE RELAYS REQUIRE MORE SPACE.
	D	The Scaffolding should include 20% extra (with minimum 2 Relay Rack positions).
	E	The G type fuse base and links in the fuse strips shall be of any of the following make MALNAD or RAPID or SYSTEM ENGINEERING WORKS .
	F	The value and ratings of resistances and capacitors shall be advised at the time of installation. The capacitors shall be RESCON make Long Life grade .
	G	All the cables shall be guided on proper ladders. All these ladders shall be supplied by the contractor.
	H	The cable supporting L-angles on the back side of the Relay Racks shall be of sufficient length (minimum 250 mm) to cover all the cables.
	I	For all the relay racks each row shall be supplied with one string rod (properly insulated by sleeves) for the cable dressings.
	J	All the guide plates for major groups shall be supplied by the contractor.
		The CT Racks shall also be supplied with proper size string rods to support cables at the back side.
6.5	Specifications and Requirements for Tag Blocks	
	A	All types of tag blocks shall be provided as per the RDSO specifications no. IRS(S)-77/2006 (Rev.1) and drawing no. SA-24751 & 52.
6.6	Specifications and Requirements for Indoor Cables:	
	A	All types of Indoor cables shall be supplied as per the specifications IRS (S) 76/89 (Amendment 3) or latest with latest amendments.
6.7	Specifications and Requirements for Power Wire of Copper (multi-strand):	
		All the power wires shall be supplied as per IS specification no. IS 2465/1984 & IS 694/1990 with test parameters as per IRS (S) 76/89.

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			Sr No	Area in Sq mm	Total no. Of condu ctors	Dia of each conductor in mm (+/_ 0.01)	Insulation thickness in mm	Nominal conductor resistance in Ohm/Km	Current rating	
			1	6	85	0.3	0.8	3.3	35	
			2	10	141	0.3	0.8	1.91	45	
			3	16	226	0.3	1.0	1.21	62	
				16	126	0.4	1.0	1.21	62	
			4	25	354	0.3	1.2	0.78	80	
					196	0.4	1.2	0.78	80	
			5	35	495	0.3	1.2	0.554	102	
					276	0.4	1.2	0.554	102	
6.8	Specifications and Technical requirements for Power arrangement.									
	A	First of all, load calculations shall be done by Railway officials; accordingly designing of IPS shall be planned.								
	B	IPS and Conventional Power system (Transformer, Transformer-Rectifier Set and Chargers) along with Distribution cum Automatic Changeover set will be installed at every station. (Dual stand by Arrangements)								
	C	All the mcbs if used shall be of make SIEMENS or LA GRAN. These mcbs shall be of self-restoring type i.e., Restoring to initial position after normalization of current to its normal value.								
	D	All the fuses shall be D type fuses.								
	E	For a 4–6-line station all the wirings shall be carried out by min 25 sq.-mm multi-strand flexible copper wire. The neutral shall be wired by 25 sq. mm multi-strand flexible copper wire. In addition to this if load requirements justify higher grade wiring, contractor shall be bound to provide as per the drawing issued to him at the time of supply.								
	F	All the wires shall be terminated with proper copper lugs on WAGO type terminals of proper size.								
	G	All the power supply equipments shall be supplied as per the RDSO specifications With LATEST AMENDMENTS.								
6.9	Specifications and Requirements for Batteries									
	A	All the batteries shall be supplied as per the RDSO specifications IRS (S) 88/2004 OR LATEST WITH LATEST AMENDMENTS.								
6.10	Specifications and Requirements for Earth Leakage Detector: The ELD conforms to RDSO specification no. RDSO/SPN/256 /2002 Or latest amd.									
	A	Each ELD set should be have 4 no 110V AC Modules and 4 No 24V DC Modules.								
6.11	Specifications and Requirements for Indicating type low voltage non deteriorating Fuse links									
	A	All the fuses and base shall be supplied as per the technical specification IRS (S) 80/92 OR LATEST WITH LATEST AMENDMENTS. For 0.6V and 1.6 V the fuse links shall be of the same make as of the fuse base supplied. For 6 A the specifications to be followed are IRS (S) 80/92 OR LATEST WITH LATEST AMENDMENTS								

6.12	Specifications and Requirements for Terminal Blocks, Fuse Terminal Blocks and miniature Fuse links	
	A	The material shall be supplied as per the RDSO specifications no. RDSO/SPN/189/2004 or latest
6.13	Specifications and Requirements for Solder wire:	
	A	The solder wires shall be supplied with “No clean, Inbuilt flux, SN/Pb ration of 63/37”.
6.14	Specifications for Block/UFSBI Equipments: Block Proving by Axle counter using UFSBI will be used for i) Double Line IBS operation as per Spec. IRS S-104/2012 Ver – 0 ii) Double Line Operation. as per IRS:S-105/2012Ver.0 with latest amendment	
A	Universal Fail-Safe Block Interface for Double Line IBS operation shall be supplied as per Spec. IRS S-104/2012 Ver – 0. One set will include equipments required for one complete double line IBS Section except DAC, which should be suitable to work on OFC channel and Quad Cable. The OFC Channel may be of E1 or Voice channel as per standard practice of RTM division. The equipment should also have required relays, modem, media change over and related accessories.	
B	Block proving with digital Axle counter using UFSBI complete set for Double line operation shall be supplied as per IRS:S-105/2012 Ver.0 with latest amendment. One set will include equipments required for one complete double line Block Section except DAC. Each Set consisting of following: 1-Universal fail-safe block interface for double line as per RDSO Spec.no. IRS:S. 105/2012 with latest version and amd. it shall have auto changeover facility for quad and OFC E1 Channel, necessary interface for quad and E1 channel to be supplied along with auto changeover arrangement. 2- Block panel complete with all accessories as per RDSO/S/3/2017 with latest amd. 3- Relay rack with double locking and sealing arrangement as per RDSO drg no. RDSO/S/3/2018 including relays for each Relay rack (QN1-19 no., QNA1-07no, QL1-02 and Timers-1 no). 4-Block telephone with accessories as per RDSO spec.no. RDSO/SPN /191/2000 (the block phone should work without any interruption after auto changeover) 5- Supply of reliability improvement kit suitable to work with UFSBI as per RDSO/SPN/147/2005 or latest. It comprises (a) automatic media changeover of modem working on redundant channel for data transmission on OFC/ quad/ micro wave radio (any two media) (b) secondary modem for UFSBI for use with secondary media OFC/quad/voice channel (c) power & data SPD: type c & d: power line 24 AC/DC-2no, V20C/3PH 150v & data line SPD (MDP 4D/5T (d) Power monitor and soft start unit PMSS	
6.15	Specifications and Requirements for Data Logger System:	
	A	Each data loggers shall be supplied as per RDSO specifications IRS: S-99/2006 (Amendment 3) or latest with latest amendments.
	B	Each data logger shall be supplied for the Digital inputs and analog inputs as mentioned in the schedule of materials.
	C	While supplying the data logger it shall be kept in mind that only those data logger shall be supplied which can be programmed to be a part of network of the existing data loggers.
	D	Each data loggers shall be supplied along with the online UPS.

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	E	Each data loggers shall be supplied with the Fault diagnostic software (as per clause 3.17.5) and Failure analysis system as per the requirements issued by the HQ from time to time.
	F	Each data logger shall be supplied along-with the printer. The suitable connecting cable shall also be supplied for connecting the data logger with the printer.
	G	The Failure analysis system shall be supplied
	H	The servers if a part of schedule shall be supplied
	I	The Front-end Processor shall be supplied along with the Data Logger IF specifically, has been asked in the schedule of materials.
	6.15.1	The Minimum Specifications and Requirements for the failure Analysis system are asunder, however, actual should be confirmed before the supply from Officer in Charge.
	A	The Failure analysis system shall be Industrial grade computer.
	B	The system shall have minimum 4 GB RAM upgradable upto 8GB.
	C	The system shall have minimum 500 GB HDD.
	D	The system shall be supplied with minimum 32" LED monitor.
	E	The system shall be supplied with Optical mouse and keyboard along with USB connections.
	F	The system shall have minimum 4 USB ports.
	G	The system shall have minimum 2 PCI express slots.
	H	The system should have DVD read/write features.
	I	The system should have Ethernet port of minimum 10/100 Mbps.
	J	The system shall be supplied with licensed windows 8 or the latest as decided by the Officer in charge.
	K	The system should also have loaded licensed antivirus valid for minimum 36 months from the date of installation.
	L	The system shall be supplied with licensed MS office 2010 or the latest as decided by the Officer in charge.
	M	The system should be supplied with standard computer table with chair of Godrej make.
	6.15.2	Specifications and Requirements for the Printers: Following are the minimum specifications; however, actual should be confirmed before the supply from Officer in Charge.
	A	The printer shall be heavy duty printer with laser Black and White printing.
	B	The printer shall have USB connections.
	6.15.3	Specifications and Requirements for the Servers: (NOT APPLICABLE)
	A	The server shall be supplied in 100 % HOT STANDBY configuration.
	B	The servers shall be Rack Mounted servers.
	C	Each server of the configuration should have minimum 0f 16GB RAM, extendible upto 32GB.
	D	Each server of the configuration should have minimum 1 TB HDD with RAID 0-5.
	E	The monitors supplied should be minimum 19" LCD monitor.
	F	The servers should be supplied along with mouse and keyboards with USB connectivity.
	G	The system should have DVD read/write features.
	H	The system shall have minimum 4 USB ports.

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	I	The system should have Ethernet port of minimum 10/100 Mbps.
	J	The system shall be supplied with licensed windows 8 or the latest as decided by the Officer in charge.
	K	The system should also have loaded licensed antivirus valid for minimum 36 months from the date of installation.
	L	The system shall be supplied with licensed MS office 2010 or the latest as decided by the Officer in charge.
	6.15.4	Specifications and Requirements for the UPS:
	A	The UPS system for the servers and Failure analysis system should be online UPS of reputed make.
	B	The UPS system for the servers and Failure analysis system should be able to supply minimum 1/2 Hrs. back-up.
	6.15.5	Specifications and Requirements OF FAULT DIAGNOSIS SOFTWARE:
		Some Logic for Report generation are defined as under as per Western Railway Practice.
	A	LOGIC FOR FAULT ALARMS:
	I	Signal Bobbing: The time difference between ECR (UP to DN to UP) is in between 500 mS to 2 seconds which should be taken as 1 count and for satisfying the fault logic 2 to 3 counts should happen within 10 seconds.
	II	Track Bobbing: The time difference between TPR (UP to DN to UP) is in between 50 mili Sec. To 1 seconds which should be taken as 1 count and for satisfying the fault logic 2 to 3 counts should happen within 10 seconds.
	III	Point Bobbing: The time difference of (NWKR/RWKR) (UP to DN to UP) is in between 500 mili Sec. To 2 seconds which should be taken as 1 count and for satisfying the fault logic 2 to 3 counts should happen within 10 seconds.
	IV	Point failure: When WNR/WRR) picks UP it has to wait for 20 seconds, if NWKR or RWKR is not picking UP then it should trigger this message.
	V	Point Loose packing: With TPR DN the time difference of (NWKR/RWKR) (UP to DN to UP) is in between 250 mili Sec to 2 seconds.
	VI	Timer Setting Less: The time difference between JSLR UP and NJPR Up is less by more than 10% (less than 108 seconds for 120 seconds timer) of the prescribed time.
	VII	Timer Setting More: The time difference between JSLR UP and NJPR Up is greater by more than 10% (more than 132 seconds for 120 seconds timer) of the prescribed time.
	VIII	Check for Charger: The time difference between present voltage and previous voltage is greater than 5% and it should continue beyond that range for at least 30 seconds and LVR relay is UP.
	IX	Blanking of Signals: Concerned LVR (AC power supply for signal available) relay is Up and all ECRs are DN for that particular signal for more than 20 seconds.
	X	Fusing of Signal Lamp: Concerned LVR (AC power supply for signal available) relay is UP (b) Yellow (three aspect): - After HR picks Up and DR is down, if HECR is not picked Up within 10 seconds. HR is triggering signal. (c) Green (three aspects): - After HR and DR picks UP, if DECR has not picked UP within 10 seconds. HR is triggering signal.

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		(d) Red: - After HRDR is DN, if RECR has not picked UP within 10 seconds, HRDR is triggering signal. (e) Yellow/Green (two aspects): - After HR/DR picks Up, if HECR/DECR has not picked Up within 10 seconds. HR/DR is triggering signal.
	XI	Track circuit Failure: T1, T2, T3 are sequential tracks. (a) When T2 is DN. (b) T1 and T3 UP (c) The time difference between T1 UP and T2 DN is more than 5 second. (d) The time difference between T3 UP and T2 DN is more than 5 second. (e) T2 is not bobbing and is DN for more than 10 seconds.
	XII	Power Supply failure: LVR is DN for more than 100 ms.
	XIII	Power Supply restored: LVR is Up for more than 100 ms.
	XIV	Signal Flying Back to Danger: (a) UCR UP and (b) RECR UP and (c) HR DN and (d) TSR UP or (TSR DN and Control track Up or Approach track UP).
	XV	Route section not released: Previous route section released sequential route release relays of route section. UP but sectional route release relay not picked UP.
	XVI	Sluggish Operation of Point: After WNR/WRR picks UP, NWKR/RWKR picks UP after a delay of 10 to 20 seconds.
	B	LOGIC FOR UNUSUAL INCIDENT ALARMS:
	I	Late Start of Train: (a) Berthing track DN and (b) HECR/DECR/UP and (c) Signal difference track DN and (d) Time difference between time of occurrence (b) and (c) is more than time defined by user.
	II	Over Speeding of Train: T1, T2 & T3 are track circuits in sequence Length of 1,2 is fed in the logic option. (a) Counter starts when T2 goes DN with T1 already DN. (b) Counter starts when T3 goes DN with T2 already DN. (c) Time interval between (a) and (b) is less than length of T2 divided by maximum permissible speed by more than 10%.
	III	Clearing of Signal without Route Locking: (a) HECR/DECR UP and (b) ASR UP
	IV	Signal Assuming Green Aspect with One or more points in Route in Reverse Condition: (a) DECR UP and (b) RWKR of any point in the route UP.
	V	Home/Main Line Starter Signal Assuming Green Aspect with Advance Starter Danger: (a) Home Signal DECR UP or Main Line Starter DECR UP and

		(b) Advanced Starter RECR UP.
	VI	Point Burst: If the arrives on the track 2 proving the sequence of track 1 DN and the point setting in the unfavorable position and then the NWKR/RWKR both are DN for 20 seconds.
	VII	Check for passing of defective/danger signal: (a) When track 2 is DN after Track 1 is DN, RECR UP. (b) The time difference between T2 DN and T3 UP is more than 5 Seconds. (c) The time difference between T2 DN and RECR UP is more than 5 Seconds. (d) T2 is not bobbing and is DN for more than 1.2 seconds.
	C	LOGIC FOR UNUSUAL SEQUENCE ALARMS:
	I	Picking Up of track circuit when adjacent track circuits are DN: T1, T2 & T3 are consecutive track circuits in sequence. (a) T1 & T3 are DN and (b) T2 is UP and not bobbing & remains continuously UP for more than 10 seconds.
	II	Route getting released without all the sequential route relays in the route picking Up: (a) ASR UP and (b) Concerned Route TSSLR DN or TPZR DN or TLSR DN or TRSR DN and (c) Emergency Route cancellation, NJPR DN
	III	Block getting released without picking up of sequential train arrival relays: Block clearing relay picks UP without picking UP of sequential track relay. NOTE: - This will require change in wiring of block instrument so that the pickup contacts of Block TAR are brought the Block Instrument.
	IV	Advance Starter OFF without Line Clear: HR UP and concerned Line Clear relay DN.
	D	FAULT ANALYSIS REPORT OF VARIOUS SIGNALLING GEARS:
	I	Battery Low Voltage.
	II	Battery Charger Defective
	III	Signal lamp failure.
	IV	Blanking of Signals.
	V	Track circuit failure.
	VI	Sluggish relay operation.
	VII	Axle Counter RX low.
	VIII	Fusing of Signal lamp.
	IX	Bobbing (i) Track circuit (ii) Signal bobbing.
	X	Signal passing at danger.
	XI	Analog voltage.
	XII	Late start.
	XIII	Calling on operation.
	XIV	Train speed etc.
6.15.6	Requirements for DAC (SSDAC/HADAC/MSDAC)	
	A	Bits of different detection systems like AFTC, DAC(SSDAC/HADAC/MSDAC) though in parallel shall be taken separately, if possible, with permissible limits of I/O cards.

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	B	If possible, depending upon availability of I/O ports, Auto resetting of DAC to be planned through EI logic.
	C	Each track section can be reset independently from the Reset Box/Reset Module of Reset Panel/Visual Display Unit (VDU). The Event Logger shall record all the events occurring in the multiple sections of axle counter.
	D	Auto resetting bypassing reset button or key as per HQ's approved circuit shall be done wherever dual detection is provided
	E	<i>The Event Logger shall record all the events occurring in the multiple sections of axle counter. Mismatch indication panel (VDU/hard wired BASED) should be provided where dual detection is provided.</i>
6.16	Specification for DAC: The DAC will be supplied as per given in schedule (SSDAC/HADAC/MSDAC)	
	A	High Availability Single section digital axle counters with Dual sensor system will be supplied as per RDSO/SPN/177/2012 version 3 or latest. One set of HASSDAC system will include equipment required to monitor One Up line or One Down line of a full Block Section between two stations. This includes High frequency web mounting type Tx coil/Rx coil, VR/PR Box duly wired, Vital relays, PR Relays, Clamp with deflector plates & hardware, Dual display reset box with auto resetting facility, Surge voltage protection devices and filter cards.
	B	High Frequency Digital axle counter Single Section type equipped for 4 detection points, monitoring 3 track sections, suitable for working with straight line and suitable for intermediate block system will be supplied as per RDSO/SPN/177/2012 version 3 or latest. This includes High frequency web mounting type Tx coil/Rx coil, VR/PR Box duly wired, Vital relays, PR Relays, Clamp with deflector plates & hardware, Dual display reset box with auto resetting facility, Surge voltage protection devices and filter card.
6.17	Specifications and Requirements for the Panel cum Block Instrument table: The Panel cum Block instrument table shall be supplied of size 4102x2576 mm for provision of 02 Nos. Monitors, Block Panel and other devices/equipments	
	A	The block tables shall be provided as per the drawings and specifications of the concerned engineer in-charge. 1. Technical Specifications: -The control room console solution shall conform to high standard of engineering as mentioned in the document; meeting the specified codes, standards and designs. It shall be capable of performing 24X7 operations under the specified environmental condition. 1.1. Structure: - 1.1.1. Made of heavy duty extruded vertical and horizontal Aluminum profiles of 6005 grade. The extrusions shall be duly powder coated with 40+ microns over all surfaces. All sheet metal parts must be finished with a durable, black, electrostatic powder coating. 1.1.2. To allow future extension and expansion, a weld free system shall be proposed. Interconnecting joints shall not be visible. The structure shall be rigid enough to withstand BIFMA X5.5: 2014 (Latest Edition) test. The structure shall allow easy assembly of hinged shutters, slat wall, gland plate, and monitor arms in extremely rigid manner. Following tests shall be qualified to ensure the stability of the structure: 1.1.2.1. Concentrated Functional Load Test (minimum 90 Kgs) 1.1.2.2. Distributed Functional Load Test (minimum 135 Kgs)

		1.1.2.3. Concentrated Proof Load Test (minimum 135 Kgs) 1.1.2.4. Distributed Proof Load Test (minimum 200 Kgs) 1.1.2.5. Stability Under Vertical Load Test (minimum 55 Kgs) 1.1.2.6. Tests shall be based on ANSI BIFMA X5.5 -2014 standards applied to the proposed product solution. 1.2. Table top: - The material of the working surface shall be made of thermally treated Alumina Tri-hydrate and acrylic resin material supported on minimum 12 mm thick MDF base. The top finish shall be fire retardant, water resistant, and scratch resistant and shall have high hardness. 1.3. Slat Wall: - Shall be made of approximately 2mm thick Extruded Aluminum (HE9WP aluminum alloy). Proposed control room console shall be rohs Certified from UL/Intertek. 1.4. Monitor Arm: - The control room console shall feature ergonomic display mounting arms for mounting monitors. It shall enable quick & easy replacement of VESA mounts & arm extensions as per the ergonomic requirement defined in ISO 11064. UL audit certified design feature of monitor arm assembly shall have auto lock, push & remove feature for quick release of VESA mounts and modular arm extensions for ease in maintenance and fixing of monitor. 1.5. Large monitor mounting arrangement: - The large screens shall be mounted on the in-build structure made up of extruded aluminum on the back side of the slat wall. The separate mounting stand shall be made up of extruded aluminum profiles for provision of mounting the screens above 48" in dimensions. 1.6. Shutters& Side Legs: - Front, back shutters shall be of 18 mm Laminated MDF Board with premium finish. Side leg shall be of 25mm of the same finish. Proposed control room console shall comply with the stringent/advanced version of BIFMA X7.1 standard. The Console (open plan) shall not emit TVOC (A), Formaldehyde, i.e., 152 µg/m²*hr., 6.2 µg/m²*hr., respectively. This is to ensure healthier air quality for the operators. Proposed control room console shall be Greengard Gold certified. 1.7. Cable Trays and Wiring: - The control room console shall be designed with vertical and horizontal cable trays to allow for continuous cable management between the cabinets. Wire shall be routed into the cabinet through gland plate. 1.1. Hardware: - All bolts shall be of SS material to avoid rust due to environment. Remaining hardware shall be Nickel Plated MS.
6.18	Specifications of Fuse Alarm system of various types of Fuses with Automatic Changeover System along with Audio-Visual Indication:	
	5.18.1	Supply, Installation, Testing and Commissioning of Automatic Fuse Changeover & Fuse 'Blown Off' Indication system in some of the Signaling Installations for Improvement to system Reliability.
	A	This specification lays down the requirements and tests of Fuse Monitoring & Automatic Changeover System for Railway S&T Installations.
	B	The changeover system covered in this specification is suitable for changing over to spare fuse automatically when main fuse in the signaling system is blown. At every changeover Auto/Visual indication will appear.
	C	The system covered under this system shall work on 110V AC. Alternatively supply of 24V DC can also be provided if required.
	D	Equipments should be suitable for monitoring 8/16 'G' type fuse and suitable to fit in the relay rack without any modification like drilling in the existing system.
	E	For 0.6A and 1.6A fuses, module shall accommodate 16 no. Of fuses.

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	F	For 6A fuses, module shall accommodate 8 no. Of fuses.
	G	The Railway also has to specify the system voltage of the fuse i.e., 24V DC/AC, 60V DC, 110V DC, 110V AC etc. The unit will be suitable only for one source. Different units shall be used for different source of supply.
	6.18.2	TERMINOLOGY: For the purpose of this specification the terminology given in IRS: S: 23 shall apply.
	6.18.3	CONSTRUCTION:
	A	The equipment shall conform to drawing dimension and layout mentioned herewith. Maximum outline dimensions shall be as under: - For 8 fuse 250 x 150 x 175 (5mm) For 16 fuse 500 x 150 x 175 (5mm)
	B	The equipment shall be of natural air-cooled type and shall be suitable for use in the cabins signal cabins/location box where the maximum ambient temperature may reach 55°C. The unit shall be of Relay Rack mounting type either directly or on the square bars of mini group.
	C	The equipment shall be of robust construction. They shall be housed in cubicles made of cold rolled cold annealed mild steel sheet of thickness not less than 1mm.
	D	The equipment cubicles shall be treated with zinc chromate primer followed by electrostatic epoxy powder coating paint finish; Passivation shall be done through seven-stage process. Small metal parts such as nuts, bolts and washers shall be plated. All other metal parts of the cubicle shall be plated for protection against corrosion.
	E	The layout of the components and wiring shall be such that all parts are easily accessible for inspection, repairs and replacement.
	F	The AC input portion shall be protected to prevent accidental contact.
	G	All the cables and wires used for wiring shall conform to specification No.IRS-S-76/89/IS 694 (1100 V grade) and shall be procured from ISI/RDSO approved sources. The cables and wires used shall be neatly secured in position by bunching & strapping. Aluminum wires shall not be used.
	H	The gauge of wiring shall be such that the current density does not exceed 3 Amps/mm ² . The colour scheme used for wiring shall conform to normal conventions and shall be shown in the Instruction Manual.
	I	The following components shall be provided on the Panel as shown in figure- 1) Mains ON/OFF switch. 2) Mains Fuse. 3) Mains ON indication. 4) Buzzer Acknowledge Push Button. 5) 'Test' Push Button. 6) 'LED' Indications. 7) Buzzer. 8) Spare fuses of 'G' type.
	6.18.4	COMPONENTS
	A	Transformer
	I	The main transformer shall be double wound and shall conform to category 3 of IS: 6297 (Pt.1) of 1971 and grade 2 (table 1) of IS-6297 (Pt.2)-1973. Class B insulating material shall be used.
	II	The transformers shall be vacuum impregnated.

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	III	When tested in accordance of IS: 6297 (Pt.1)-71, the main transformer shall show an insulation resistance of not less than 1000 Mega Ohms.
	IV	The maximum permissible rise in temperature above ambient shall be 65°C for transformers.
	V	'R' Core type transformer should be used.
	B	Printed circuit Cards and Electronic Components.
	I	The temperature rise above ambient shall not exceed 50°C or 20°C less than the specified by the manufactures whichever is less of any semiconductor component used in circuit.
	II	Glass epoxy, copper clad laminates confirming to RDSO/SPN/ 121/91 shall only be used for printed circuit control cards. The thickness of laminates shall not be less than 1.6mm and the thickness of the copper foil shall not be less than 35 microns (corresponding to a weight of 305 grams per square meter).
	III	Solid state, Industrial grade components shall only be employed for mounting on the printed circuit cards. If plug in arrangement is provided the connectors used shall be of Euro/D type with gold plated contacts.
	IV	The printed circuit cards shall be specifically designed to suit the circuitry used and no extra wires shall be used for interconnection of components on the PC cards. Soldering of components shall be neatly done.
	V	After mounting and soldering of all the components and testing, the printed circuit cards shall be coated with transparent epoxy paint to provide environmental protection.
	C	Switches & Terminals
	I	Each equipment shall be provided with ON/OFF switch.
	II	Insulated Terminals should be provided in back of the equipment for termination of wire from fuse and for input supply.
	III	All current carrying terminals shall be of brass and shall be plated for protection against corrosion.
	6.18.5	Performance Requirement
	A	The system design shall be such that it should be only supervisory/monitoring circuit. Failure of any component should not interrupt the supply to load by any means. For monitoring the fuses, wires shall be taken from respective fuses. The design shall be such to operate the system with N + 2 wires. In each set of above, green LED shall glow when main fuse is healthy and other indicate the healthy 'Spare Fuse'. Similarly, one red LED indicates failure of main fuse and other will indicate failure of spare fuse.
	B	On the failure of main fuse, a spare fuse should come in circuit automatically & instantaneously, before dropping of signaling relay. On the failure of main fuse red indication, will glow and buzzer should give audio alarm.
	C	The alarms shall be provided with resetting button for cutting off the alarm.
	D	The LED will light up till the fault persists and audible alarm shall only be reset. The visual indication should disappear when the fuse is replaced and TEST button is pressed.
	E	When the changeover takes place the green LED of main fuse should disappear and RED should glow. For any reason the spare fuse is also blown, then it should also give audio and visual alarm.
	F	Any relays if any used in the circuit shall be OEN make only.

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	G	The nominal system voltage of the fuse circuit and fuse capacity should be specified by the Purchaser.									
	H	2 sets of potential free contacts shall be provided on rear side for taking remote indication/alarm.									
	I	There shall be one spare fuse for every fuse to be monitored. Green leds to be provided for indicating healthy fuse and RED for failed fuse. The indications shall be provided for both main and spare fuses. There should be 2 green leds and 2 Red leds along with one fuse.									
	6.18.6	Marking									
	A	All markings/indications shall be easily legible and durable. Where the marking is by use of labels, the labels shall be metallic and shall be firmly fixed and shall not be capable of being removed by hand. Durability of marking shall be checked by rubbing the marking by hand for 15 seconds with a piece of cloth soaked with petroleum spirit. The requirement shall also be met after completion of cubatic tests. All markings/indications shall be placed in the vicinity of the components to which they refer and shall not be placed on removable parts, if these parts can be replaced in such a way that the marking/indications can become misleading.									
	B	The words "Indian Railway Property" shall be indelibly printed, etched, engraved or embossed on the unit at a conspicuous position.									
	C	The A.C. line terminal shall be indicated by the letter 'L' and the neutral terminal by the letter 'N'. Supply voltage has to be indicated nearby the same.									
	6.18.7	Instruction Manual									
		The Manual shall be provided along-with every equipment. It should clearly illustrate installation, connection and operating procedures.									
	6.18.8-A	Test and Requirements									
	I	Conditions of Tests: Unless otherwise specified all tests shall be carried out at ambient atmospheric condition.									
	II	For inspection of material relevant clauses of this specification shall also apply.									
	III	Test equipment – The ammeters and voltmeters and wattmeter used in the tests shall be of an accuracy class of 0.5 or better of IS: 1248-1968.									
	B	Acceptance Test A) Visual Inspection (Clause 3.4.7, 3.4.8, 3.4.12) B) Insulation Resistance test (Clause 3.4.16). C) Applied high voltage test (Clause 3.4.17). D) Induced high voltage test (Clause 3.4.18). E) Temperature rise test (Clause 3.4.19). F) Performance test (Clause 3.4.11, 3.4.20). The following sampling plan shall be adopted. There shall not be any failure during acceptance test. <table border="1"> <thead> <tr> <th>Lot size</th><th>Sample size for performance test as per Clause 3.4.20</th><th>Sample size for other than performance test</th></tr> </thead> <tbody> <tr> <td>2-8</td><td>2</td><td>1</td></tr> <tr> <td>9-15</td><td>3</td><td>1</td></tr> </tbody> </table>	Lot size	Sample size for performance test as per Clause 3.4.20	Sample size for other than performance test	2-8	2	1	9-15	3	1
Lot size	Sample size for performance test as per Clause 3.4.20	Sample size for other than performance test									
2-8	2	1									
9-15	3	1									

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		16-25	5	2	
		26-50	8	2	
		51-100	13	3	
		101-150	20	3	
		151-200	32	3	
	C	Routine Test			
		A) Visual Inspection (Clause 3.4.7, 3.4.8, 3.4.12) B) Insulation Resistance test (Clause 3.4.16). C) High Voltage test (Clause 3.4.17). D) Performance test (Clause 3.4.11, 3.4.20).			
	D	Visual Inspection: The system shall be visually inspected to ensure compliance with the relevant requirements of Clause 3.4.7, 3.4.8, 3.4.12.			
	E	Insulation Resistance Test.-			
	I	This test shall be carried out –			
		(i) Before the high voltage test (ii) After the high voltage test (iii) After induced high voltage test (for main transformer only). (iv) After the temperature rise test when the system has attained ambient temperature and			
	II	The measurement shall be made at a potential of not less than 500 Volts DC. The insulation shall be measured between –			
		(i) AC input terminals and earth. (ii) Fuse sensing terminals and earth. (iii) AC terminals and Fuse sensing terminals.			
		The IR value shall be greater than 10 Mega Ohms for the unit and 1000 Mega Ohms for Transformer.			
	F	Applied High Voltage test			
	I	The equipment shall withstand for one minute without puncture and arcing a test voltage of 2000 Volts RMS applied between:			
		(i) AC input terminals and earth. (ii) Fuse sensing terminals and earth. (iii) AC terminals and Fuse sensing terminals.			
	II	The test voltage shall be alternating, of approximately sinusoidal waveform and of any frequency between 50 and 100 Hz.			
	G	Induced High Voltage Test			
	I	The main transformer of the unit with no load shall be connected to a voltage equal to two times nominal supply voltage the frequency being not less than two times the rated frequency. The voltage shall be raised from 1/3rd of the maximum value to full value as is consistent with accurate reading of the instrument. Full test voltage shall be maintained for one minute and shall then be rapidly reduced to 1/3rd of the maximum voltage to full value as is consistent with accurate reading of the instrument. Full test voltage shall be maintained for one minute and shall then be rapidly reduced to 1/3rd of the value before being switched off. At the end of the test the transformer shall be tested for the following			
		A) Insulation Resistance.			

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		B) No load current.
	II	The value of IR shall not differ from the specified value. No load current of the transformer shall not be more than 10% of the full load input current.
	H	Temperature Rise Test
		During this test, all the main fuse shall be blown and let load be connected through spare fuse mounted in the unit. Keep the unit ON for six hours while supplying 0.6A/1.6 Amps current through the fuses. After the test, check visually for any damage.
	I	Performance test
	I	The equipment should be tested for its output performance by connecting a variable resistive load across the output terminals. Following parameters should be measured: -
		1) No load currents. 2) On load current. 3) Test check.
	II	When 'test' push button is pressed then all the leds should glow.
	III	When one main fuse blows/unscrewed, then buzzer should come along with main fuse failure indication. Same time spare fuse should take the load automatically. (Test Zig should be designed and manufactured and made available at the time of inspection for doing performance test).
	IV	When spare fuse is blown/ unscrewed, then buzzer should come along with the indication.
	V	When spare fuse is replaced the circuit should be completed.
	VI	When main fuse is replaced and 'Test' push button is pressed the system should go to normal and appropriate indication should come on panel. The load should be shared by main fuse.
	VII	All the testing instruments should be calibrated and calibration shall be traceable to national standard. The calibration report should be made available at the time of inspection.
	VIII	At least one sample shall be tested at an environment temperature of 55 ⁰ C & 0 ⁰ C for its satisfactory operation.
	6.18.9	Packing and labeling:
		Units shall be packed in suitable boxes/crates, strong enough, with additional packing to prevent damage or loss to the unit during transit. Loose space inside the box/crate shall be filled up with suitable packing material.
	6.18.10	Wiring from fuses to Units:
		Wiring from various fuses to the Tag Blocks of Fuse Monitoring unit to be carried out by the contractor, as per the instructions of Engineer-in-charge.
6.19	Specifications for Automatic Fire Alarm & Detection System: -as per RDSO/SPN/217/2018 Ver 2 or latest	
	A	ASPIRATING (AIR SAMPLING) TYPE SMOKE DETECTOR: 1) The air sampling-type detector system shall be able to withstand dusty environments by onboard monitored air filtering, Auto cleaning facility in optical chamber, electronic discrimination of particle size, or other listed methods or combinations thereof. The detector should be capable of providing time delays (< 10 seconds) of alarm outputs to eliminate nuisance alarms due to transient smoke conditions. The detector should also provide facilities for the connection of monitoring equipment for the recording of background smoke level

		information necessary in setting alert and alarm levels and delays. It shall have event logging facility with date and time stamp. It shall also have clock synchronization facility. 2) Air Sampling Type detector shall use LASER or High power LED. This type of detector shall use piping or tubing distribution network that shall run from the detector to the areas to be protected. The aspiration fan in the detector housing shall draw air from the protected area and back to the detector through air sampling ports, piping, or tubing. At the detector, the air shall be analyzed for fire products. 3) The detector shall have the capability of generating four alarm signals depending upon level of smoke detected: A. Stage 1 - 0.5 to 0.95% obs/m B. Stage 2 - 1.0 to 1.45% obs/m C. Stage 3 - 1.5 to 1.95% obs/m. D. Stage 4 - > 2.0% obs/m 4) The value of the defined smoke levels above for various stages of alarm can be changed depending upon the site conditions. 5) The piping or tubing to air sampling ports shall be laid depending upon the floor area detailed as below: A. One number sampling point shall be provided on either side of each one way relay rack, cable termination rack, Air Conditioner, 230V AC Used and unused points etc. B. Maximum transport time from the most remote port to the detection unit of an air sampling system shall not exceed 60 seconds. C. Minimum sensitivity settings above ambient airborne levels for the air sampling system installed shall be as follows: I. Alert condition: 0.2 percent per foot obscuration (effective sensitivity at each port). Ii. Alarm condition 1.0 percent per foot obscuration (effective sensitivity at each port). 6) It shall be suitable for operation in a temperature range of 0- 49 °C.
	B	LINEAR HEAT SENSING (LHS) CABLE: 1) Temperature sensitive cable also known as Linear Heat Sensing Cable shall be laid in all cable trays located in Power Equipment room and relay room. Signal about alarm temperature shall be sent to Control Panel by LHS interface module attached with cable system. 2) Linear Heat Sensing cables shall be of temperature sensitive insulated wire type. 3) This linear heat sensing shall be in the form of continuous cables consisting of copper conductors / cores and shall be of analogue type 4) Each core of analogue Linear Heat Sensing cable shall be insulated with a negative temperature coefficient material. (Clause 5.1.1.4 of IS: 2189-2008). An outer sheath of high temperature, flame retardant PVC insulation, shall protect the cores. The outer sheath, as well as the metallic braid shall not affect the performance of the heat sensor. 5) The Linear Heat Sensing cable for each zone / room shall be connected to an electronic interface module, which shall sense the temperature variations by continuously monitoring the resistance of the negative temperature coefficient

		core insulation. The electronic interface module shall be located suitably in the area being protected. 6) The analogue linear heat sensing cable of every zone shall be continuously monitored for open and short circuit. A breakage, disconnection or a short between cores shall initiate a FAULT alarm on the fire alarm panel of Control Panel. 7) LHS cable shall be resettable type. 8) The design of the analogue, linear heat sensing cable and corresponding electronic sensing circuits shall be such that the cable length and the number of required loops should be set up to provide optimal coverage for the desired region with cable length ranging from 10m to 200 m. The system shall be designed to have an optimum sensitivity. 9) For a given length of sensing cables it shall be possible to set the alarm temperature at 70 °C with an Interface Module and with a tolerance not to exceed +/- 5%. 10) The Linear heat sensing cable should have strong capability to withstand the mechanical damage, tensile, water and corrosion and electromagnetic interference. 11) Linear heat sensing cable should be brought from UL/FM/Vds/EN/LPCB approved source.
	C	LINEAR HEAT SENSING (LHS) INTERFACE MODULE: 1) LHS Interface should be a microprocessor-based device that communicates between LHS Cable and Control Panel. It should be an intelligent device that will monitor LHS cable for continuity and over temperature fire signatures. Performance of the linear heat sensing cable along with its interface module shall be immune to changes in ambient temperature. 2) The alarm temperature shall be 70°C. 3) An increase in temperature at any location along the LHS: cable's length shall lower the Resistance between conductors in the cable. The change in resistance shall be detected by the interface module, which will trigger an alarm at the Control Panel if the temperature rises above a preset threshold. 4) The LHS interface shall be able to distinguish between a Short Circuit Condition & an Actual Fire Event in order to prevent unwanted activation of fire alarm system, in case of an accidental short circuit fault by damage to the sensor or field wiring. 5) The LHS interface shall supervise the sensing cable for alarm temperature condition, open & short circuit to generate a fault condition which shall be displayed on the interface module faceplate by the 2 LED indicators: FIRE LED & FAULT LED. 6) LED indicators shall also be provided for normal system operation, faults, pre-alarm, fire - alarm status. 7) It shall be suitable for operation in a temperature range of 0-49°C.
	D	FIRE SURVIVAL CIRCUIT INTEGRITY CABLES 1) The electrical characteristics of all cable, such as voltage drop, current carrying capacity, Impedance and, where appropriate, ability to transmit data shall be suitable for the system. 2) The Circuit Integrity cable specification for AFDAS is as follows:

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		3) Armored copper cables of minimum 2 Core x 1.5 sq.mm having cross linkable Low smoke halogen free insulation, inner & outer sheath, 1000V rated, twisted shall be used when the entire circuit is not within the same building. 4) Unarmored copper cables of minimum 2 Core x 1.5 sq.mm having cross linkable Low smoke halogen free insulation and sheath, 500OV rated, twisted with ATC uninsulated circuit protective of 1.5 sq.mm, aluminum tape screening shall be used when the entire circuit is within the same building. 5) Armored and unarmored shall have anti-rodent outer sheath with Low Smoke Properties. 6) Armored & unarmored (CI) cables should meet fire performance test under simultaneous action of Flame, water stress and impacts on single sample at 950°C for minimum 2 hours, certified by LPCB or equivalent. Vendor shall submit certificate for the same. 7) The cables used shall be exclusively for fire detection system. The multi-core cables shall not be shared for other low voltage or high voltage circuits. 8) Cables/wiring shall be laid down in metallic/rigid PVC conduits. PVC Conduits shall be used only in concealed spaces. 9) Cables connected to detectors shall be given 'S' loop on both the sides of the detectors which shall be properly clamped to the ceiling. Loop shall also be left where cables connect sounders, panels, dampers, etc. Appropriate 2 hours fire rated glands shall be provided where the cable enters the junction box. 10) All the cables and wires shall be tagged for proper identification. Wires shall be identified by ferrules at junction and cables by colour bands at every 3 m distance. 11) The cable manufacturer should provide test certificate related to the manufacturing of fire-resistant wires & cables from UL/FM/EN/Vds/LPCB/BRE Global or any recognized lab by Government of India. The vendor shall also give self-certification in this regard.
	E	PIPING STANDARDS: 1) The pipes used in the pipe network shall be made of copper preferably with 25mm dia (±5%) and 1mm (±5%) thickness to cater for ceiling temperature of 69°C and their assemblies such as couplings, unions, elbows, tees, end caps, capillary tubes, sampling ports, mounting brackets and they shall be tested in accordance with ASTM E 814. 2) All distribution piping shall be installed by qualified individuals using accepted practices and quality procedures. 3) In cabinet and above cabinet sampling shall also be planned as per request of the purchaser. 4) The system integrator shall carry out the piping design and validate the same with a hydraulic flow calculation generated by using the UL/EN/FM/Vds/LPCB approved software. The appropriate fill density shall be arrived at based on the same. 5) The design & calculation shall be checked & certified by manufacturer / manufacturer's trained design engineer. 6) Plans and calculations shall be approved prior to installation.
	F	CONTROL PANEL FOR DETECTION: 1) Detection, actuation, and control system shall have provision for automatic as well as manual operation. Where they are automatic, provision shall also be made for manual operation.

	2) The Control Panel shall be the central processing unit of the system, receiving and analyzing signals from Probe type bimetallic heat detectors, UV&IR flame detectors, Heat and Smoke multi sensors, LHS Interface, Aspirating Type Smoke Detectors and Manual Call Points, providing audible and visual information to the user. 3) It shall have suitable audio-visual alarms for drawing attention/indicating various events. 4) It shall also have the capability to electronically/electrically activate and release Fire Extinguishing System, if used any. 5) The Control Panel should be located in the Station Master's Room. 6) The Control Panel shall have sufficient input ports for connecting various sensors/detectors along with their interfaces, if any, & shall have sufficient output ports for controlling fire extinguishing system, operating/switching off electrical units and shall have provision for remote monitoring in network. The system shall be approved by UL/EN/FM/VDS/LPCB. The software shall be able to monitor the health of each detector and other devices along with control panel. It shall also have clock synchronization facility. 7) There shall be preferably one Control Panel for a station. However, at stations having bigger relay room & power equipment room deploying a greater number of sensors/ detectors, more than one Control Panels can be provided but there shall be a main Control Panel also to control fire extinguishers, to provide alarms, for user interaction etc. Of the entire installation through the individual Control Panels. In order to cater more than one room, the control panel should have the Loop expandability. 8) The AFDAS shall be designed to work on power supply of 24 V DC $\pm 20\%$ as well as 110VAC/230 V AC 20%. The control panel shall have in-built charging facility to have 24V DC battery backup (VRLA as per IRS: S-93/96(A) or latest) for at least 24 hours. It shall power the aspiration type detection system, the Linear Heat Sensing Cables and all detectors, Manual Call Points etc., which constitute AFDAS. Addressable modules can be used if required to connect electronics of LHS interface module and Aspiration Type Smoke Detector to the control panel. 9) The Control Panel shall have means for the user to visualize and interact with the complete Automatic Fire Detection and Alarm System layout through a user-friendly software executable on a standard Windows based Personal Computer. 10) The front panel of the Control Panel shall have the facility of buzzer silence, alarm silence and alarm activate, lamp test & reset. The front panel shall also indicate the status like fire, fault, disable, test, supply, primary supply fault, battery fault, secondary supply fault, and earth fault by respective LEDS/other suitable means. 11) The Control Panel shall have sufficient sets of Potential Free NO/NC contacts (minimum 4 NO and 3 NC for each zone); to trigger the Automatic Fire suppression system as per RDSO/SPN/218/2016 or latest pertaining to Signalling Installations, if provided, switching off the power supply to power equipment /relay room (if required) and for interfacing with the existing Data Logger system. The Current carrying capacity of NO and NC contacts shall at least 500ma. The Control Panel shall be able to communicate and display the exact
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		number of the Sensor or the Part of the Linear Heat Sensing Cable, which has activated the Fire Detection System, for pinpoint location of the seat of fire. 12) The Control Panel shall be modular in structure, so that any fault in any of the modules can be set right by simply replacing the Faulty Module, with a spare. 13) It shall be possible to download data or extend alarms from Control Panel through suitable ports like RS232/USB or TCP/IP into a PC/Laptop/remote location operating on Windows platform. The software for downloading and analyzing fault data shall be provided & shall be compatible with the latest windows operating system.
	G	MANUAL CALL POINTS: 1) Manual call points must be mounted visibly along escape and rescue routes (e.g. Exits, Passage ways, stairwells) and be easily accessible. 2) It shall be installed at a height of 1400 mm $\pm$200 mm measured from the middle of the manual call point to the floor. 3) Manual call points must be sufficiently lit with daylight or another light source (including Emergency lighting). Lighting shall be provided by the purchaser. 4) It shall be addressable. 5) It shall be resettable. 6) Visual indication of normal operation and activated operation shall be available. 7) It shall have inbuilt fault isolator or alternate arrangement which shall isolate the Manual Call Point in case of open/short circuit fault within it.
	H	AUDIO VISUAL ALARM: 1) Audio visual alarm shall be provided along with Control Panel. 2) Audio visual alarm system shall get activated in Control Panel in case of fire/smoke 3) Audio visual alarm shall be provided with provision of resetting the hooter from Control Panel. However, visual alarm shall continue to be lit till such time the alarm conditions exist. 4) Visual Alarms: It shall work on 24V DC and shall be preferably flashing type RED Color 5) Audio Alarms: It shall work on 24V DC and shall be preferably with Piezo-electric type sounder with tone type of Fire-Engine. The sound level shall be preferably adjustable type up to 90db at a distance of 1m. 6) Audio and Visual alarms can be extended to ESM duty room, subject to condition that loop distance doesn't exceed beyond 1.2Km. 7) Operating devices such as system isolate switches and ancillary equipment; including shutdown equipment; dampers and door closures, required for successful system performance should be considered integral parts of the system. All ancillaries should incorporate manual reset facilities. The exact number of controls required shall be specified by, the purchaser as per the site conditions. 8) The software preferably should have the capability for the following 4 levels of actions: ● Level 1- When Stage 1 signal is received from aspirating type smoke detector, it shall activate a visual alarm near control panel. ● Level 2 -When Stage 2 signal is received from aspirating type smoke detector it shall activate visual and audio alarm in the SM Room.

		● Level 3 -When Stage 3 signal is received from aspirating type smoke detector it shall activate an alarm condition in the Fire Alarm Control Panel to initiate Railway Staff for extinguishing the fire and shutting off the power supply to Signalling system, if required. ● Level 4-When Stage 4 signal is received from aspirating type smoke detector or an alarm is received from any other detector such as cross zoned multi sensor, cross zoned probe type bimetallic heat sensor, cross zoned UV&IR Flame detector and independent LHS module, the automatic suppression system, if provided shall get activated after a time delay adjustable by user up to 10 minutes in multiples of 0.5 minutes. 9) The control panel should have a GSM module and the system(s) shall send SMSS on GSM network to not less than 5 preselected GSM mobile numbers in case of Level 2, Level 3 and Level 4 signals or as desired by the user. The mobile numbers shall be configurable. SMS shall be generated within 30 seconds of the control panel receiving the detection signals and if the sending fails, subsequent sending of SMS shall be tried by the system immediately. The GSM modem shall be from reputed make and compatible to Quad-band GSM 850, 900, 1800 and 1900 mhz. It shall support GPRS class 10 and shall work on power supply of the AFDAS with suitable power supply adapter. It shall be able to withstand operating temperature 0°C to 49°C and humidity up to 85%. 10) The Alarm of Control Panel shall have means to indicate the room i.e., Relay Room or Power Equipment Room or DG Room etc., from where the alarm situation has been reported and shall also indicate the location of sensor in that room which has reported the alarm situation. The Control Panel shall activate the fire extinguisher, if used any, of that room only for extinguishing the fire. 11) The front panel shall have character display (LED/LCD) and alphanumeric keyboard. The control panel shall also work in degrade mode, i.e., the failure of the control panel shall operate the audio-visual and other output devices in case of an alarm detected.
	I	HEAT & SMOKE MULTI SENSOR FOR POWER EQUIPMENT ROOM, BATTERY ROOM, ASM ROOM, RELAY ROOMS, DIESEL GENERATOR ROOMS: 1) Heat & Smoke multi sensor shall be robust, rugged, & suitable for surface mounting. 2) Heat & Smoke multi sensor shall incorporate state of art optical chamber providing efficient & accurate detection of fire with high level of reliability & high immunity to spurious signal. The sensitivity of the Heat & Smoke multi sensor shall vary with the ambient conditions including dust particles to reduce false alarms. 3) Heat & Smoke multi sensor shall incorporate integral LED indicator to show the status of the detector 4) Each Heat & Smoke multi sensor shall have suitable indications for indicating Normal Healthy Mode & Alarm Indication mode. 5) The detector's alarm condition shall be visible from a distance of 6 Meters and shall be visually different from the indications of the other conditions. 6) The insulation resistance of the detector shall not be less than 10M ohm. 7) Failure of any indicator shall not prevent the detector from emitting fire signal indicating the existence of fire.

		8) The Detector / devices must have inbuilt fault isolator or alternate arrangement at detector level which shall isolate the detector in case of short circuit or open circuit in the loop. 9) It shall automatically adjust the sensitivity level without the operator intervention based on ambient conditions. 10) The detectors shall be addressable type. 11) It shall detect the fixed heat above 58°C and the rate of temperature rise (10°C/minute) Independently in addition to the photo electric smoke detection. 12) It shall be resettable type. 13) The detectors shall be provided with means for mounting (on ceiling/wall) securely and Independent of any support from the attached wiring. 14) Plastic, if used for detector, shall not start softening, deforming, or melting at a temperature lower than 95°C as per Clause 4.2 of IS: 2175-1988. 15) Smoke detector in this multi-sensor shall be able to detect smoke and shall communicate alarm signal to Control Panel when optical density of smoke exceeds 0.1db/m (10 m visibility) as per Clause 5.2.1 of IS: 2189-2008. 16) The response threshold value (r. T. V.) Of smoke detection in this detector shall not be less than 0.05 dB/m and the ratio of highest r. T. V. And lowest r. T. V. Shall not exceed 1.6 as per Clause 4.2 of IS: 11360-1985. 17) The smoke and heat multi sensors can be provided in power equipment room, battery room, ASM room, non-air-conditioned relay rooms, diesel generator rooms, and other rooms of Signalling installation. Documentation: 1) The following documents shall be supplied along with each system: ● Guaranteed performance data, technical and other particulars. ● One copy of Installation and maintenance manual. This should include the following information: ● Schematic block diagram showing mounting arrangement of various modules, Components & details of each type of assembled PCB. ● Details of Hardware e.g., Schematic diagrams of the system circuits/components, Details for each type of assembled PCB and part list ● Mechanical drawings of every unit. ● Part no. And manufacturer's details of components used. Trouble shooting procedure along with test voltages and waveforms at various test Points in PCBS. ● Details/procedure of trouble shooting of AFDAS. ● Dos & Don'ts 2) The vendor shall arrange for pre-installation, pre-commissioning and maintenance check lists for successful installation, commissioning, and maintenance of the AFDAS system. 3) Warrantee: The manufacturer shall give a warrantee of 24 months from the date of supply for the equipment supplied under this specification. 4) Training: The manufacturer shall impart suitable training in operation & maintenance inspection & testing of the AFDAS.
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GENERAL GUIDELINES FOR EXECUTION OF INDOOR WORKS

These instructions are General in nature. In absence of any other guidelines these may be followed.		
6.20	General Requirements and Specifications for installation of EI system: The installation of EI should be complied as per Technical advisory note no. STS/E/TAN/3012 Ver 3.0 dated 28.06.2021 or latest.	
	A	The design of the EI system shall be as per the Signalling plan issued to the contractor.
	B	Railway shall provide approved diagrams like SIP, Table of Control.
	C	Any alteration in the interlocking plan to be done during the course of execution, shall be carried out by the contractor expeditiously without any extra cost.
	D	The system shall be commissioned with 100 % HOT STANDBY configuration of all levels as approved by RDSO.
	E	Until and unless specifically advised, the EI system shall be commissioned with the dual VDU for the operation of signaling gears.
	F	All the execution/wiring of the system shall be carried out as per the standards defined by RDSO.
	G	All the terminations on the Racks or back-plane, shall be tagged both ways i.e. The origin and destination of the wire can be understood.
	H	The signal flow diagram for diagnostic purposes shall also be supplied along with the execution.
	I	The Earthing shall be provided as per the latest standards of RDSO as mentioned in tender documents. Parametric earth bond as per drawing TAN / 3006 shall be provided as far as possible for better protection of E.I installation.
	J	All the cables connected to the EI system, O.C. (if any) shall be properly laced and described.
	K	The optical fiber connecting the different subsystems shall be connected through FDMS. All these connections shall be housed in required telecom racks which are protected against interference and dust.
	L	The contractor shall supply the AS MADE DOCUMENTS.
	M	Pre-commissioning checklist shall be jointly signed by the Railway's and OEM's representative.
	N	The warranty clause shall be operated as
	(I)	The contractor shall inform names of qualified Service Engineers deputed at the location approved by Railway's Engineer and their contact numbers, so that they can be contacted during failure. The failure is to be attended and rectified within least possible time from the time of reporting of failure.
	(II)	All replacement and repairs that Railway shall call upon the contractor to deliver or perform under this warranty shall be delivered and performed by the contractor promptly and satisfactorily, if the contractor so desires the replaced parts can be taken over by him, or his representative in India for disposal as he deems fit within a period of three months from the date of replacement of goods / parts. At the expiry of this period, no claim whatsoever shall lie on the Railway.
	O	QUALITY AUDIT OF INSTALLATIONS:
		The Contractor shall arrange for a quality audit of installation by authorized representative of manufacturer for Electronic Equipments like Electronic Interlocking (EI), AXLE COUNTERS, AFTC, UFSBI, MUX, Data-logger etc. Who will certify that the installation has been done as per OEM's specification & standard practices and pre-commissioning check list / guidelines issued by RDSO from time to time. The

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		Contractor should also submit certificate issued by OEM Stating “That quality and integrity of the installation (Electronic Interlocking System) remain complete responsibility of the OEM, any deficiency pointed out later should be rectified free of cost by OEM.”
	P	Western Railways practice for installation of Q series relays should be adopt (leaving space after every two relays.)
	Q	All contacts of Q series relays should be duplicated.
6.21	Specifications and requirements for the erection of relay rack and cable termination rack	
	A	All the relay racks shall be installed as per the scheme approved by the engineer in charge. All the erection fittings shall be supplied by the contractor as a part of installation.
	B	It is to be ensured that all the major groups shall be installed with proper guide plates. These guide plates shall be supplied by the contractor of its own.
	C	Full hylam board shall be used for the cable termination racks to fix the multi-way isolating blocks/ wago terminals.
	D	Full hylam boards shall be fixed on the front side of the CT rack. The hylam boards are covered in the schedule of supply. On the hylam board the holes shall be done to suit the fixing of wago/other terminals.
	E	On the back side of the hylam board the cable conductors shall be supported by the string rod on which insulation sleeves have been provided. The string rods with insulation sleeves shall not be covered in supply items separately. The string rods with insulation sleeves shall be supplied by the contractor as a part of installation of CT rack.
	F	Sufficient space as per site in-charge shall be left between two rows of cable terminations so that description-writing work can be furnished.
	G	All the tag blocks shall be fixed on the Racks.
6.22	Specifications and requirements of Running of Indoor cables, Jumpering, installation and testing and commissioning	
	A	By default (if not advised by the Railways otherwise) the wiring shall be IDF based rack wiring.
	B	All the cables (60/40 core) shall be neatly laid from the relay rack to the IDF rack.
	C	The cable supporting angles should be of sufficient length (min 250mm) to support the cables such that there is no pressure on the cables due to the short length of the angles.
	D	The tag blocks shall be installed as per the instructions of site in-charge.
	E	The wiring on the bus bar shall be done in such a manner (in looping way) that after breakage from one side the supply shall be extended from the other side.
	F	All the cables shall be dressed properly and tied with the dressing threads only. It is to be mentioned that cable wires shall not in any case be used for the dressing of cables.
	G	The capacitors shall be of RESCON make with long life features.
	H	Before starting the Jumpering, jumper sheets shall be prepared.
	I	All the jumper wires shall be dressed with the dressing threads only.
	J	On the bus bar the power wires from the power room shall be terminated with the proper lugs with soldering.
	K	All the power wires shall be dressed above the Bus bar terminals on L-shape angles with insulation sleeves.
	L	The soldering material shall be approved from the engineer in-charge before starting the soldering.

6.23	Specifications and Requirements for the Earthing of the Power Equipment room:	
	A	The earthing arrangements shall be provided as per RDSO specifications no. RDSO/SPN/197/2008 or latest with latest amendments
6.24	Specifications and Requirements for the Installation of Power supply equipments:	
	A	The IPS and other power equipment along with batteries shall be transported to the site.
	B	The IPS shall be installed by the IPS supplier, if not covered separately in schedule..
	C	From the IPS the power wires shall be dropped on ladders or other casing/protection arrangements. The power wires shall be supplied by the Railways. The ladder or casing shall be supplied by the contractor as a part of installation.
	D	All the power wires shall be terminated in the IPS through proper lugs. The lugs shall be supplied by the contractor as a part of wiring.
	E	All the power equipment including the elds shall be terminated by the contractor on proper lugs. The lugs shall be supplied by the contractor as a part of wiring. If the base stand is not provided by the OEM of ELD, then this shall be arranged at site. The clamps shall be supplied by the contractor and the Hylam board for the base shall be supplied by the Railway.
	F	The wiring shall be terminated as per the wiring scheme approved by the Railways. All the programme switches installation is also a part of this wiring. The base to support the programme switches shall be made of Hylam sheets of required thickness. This sheet shall be supplied by the Railways. Contractor has to cut it for proper sizes and install it with proper angles having thickness not less than 3 mm. These angles shall be supplied by the contractor.
	G	The power wire for the termination shall be supplied by Railways.
	H	Necessary termination details shall be painted on all the equipment.
	I	All the masonry work required at site shall be done by the contractor with his own material as a part of installation.
	J	The earthing of power supply equipment shall be connected to the system as provided vide clause 4.24 above. The earthing wire (preferable 6/16 sq mm) shall be provided by the Railways.
	K	Ladders as decided by site in charge shall be mounted to take supply to various boards / program switches.
6.25	Specifications and Requirements for the Supply and Installation of Test Board:	
	A	The test board shall be designed, made and installed by the contractor with his own material in the Relay Room.
	B	The board shall be so made that it shall be able to test all the Bus Bar supplies available in the Relay Room.
	C	The board shall be made from minimum 12mm thick waterproof plywood and the surface shall be made from sun mica sheet as approved by the engineer in charge of the work. The size of the board shall be minimum 2 feet x 2 feet x 9 inch.
	D	The design and terminations shall be so that it shall be able to test both positive and negative parts of supplies.
	E	For the Indication purposes the size of leds shall be of 10-12 mm for both positive and negative supply.
	F	All the wiring material, fuses with base and terminations (preferably wago) material inside the box shall be supplied by the contractor.

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	G	The connectors shall be banana pin type connectors as approved by the engineer in charge.
	H	The fixing arrangements shall also be done by the contractor with his own material.
6.26	Specifications and Requirements for charging of the secondary cells	
	A	All the secondary cells shall be charged as per the charging instructions of the OEM of the batteries.
	B	The contractor shall supply the Acid/ Solution for the batteries at its own.
	C	The batteries shall be charged and discharged minimum three times before the installation.
6.27	Specifications and Requirements for the Installation of Data Logger System	
	A	The data logger system shall be installed at a place as decided by the Officer in charge.
	B	All the wires shall be terminated inside the data logger and at the data logger tag block at IDF by the contractor of the data logger.
	C	The Railway shall terminate the data logger contact wirings (i.e. Wirings of potential free contacts) up-to the data logger tag block at the IDF rack.
	D	All the subsystems and interfaces required to monitor the digital and analog inputs shall be supplied by the contractor.
	E	The contractor shall also validate all the contacts of digital inputs and all the analog supplies before the signing of RDSO's checklist with the OEM.
	F	All the necessary Operating and Application software shall be loaded in Failure Analysis system and Servers.
	G	Pre-commissioning checklist shall be jointly signed by the Railway's and OEM's representative.
	H	The contractor shall ensure that all safety features have been arranged for its labour.
	I	The contractor shall also apply for and get issued the ID card for its labour supervisor and associated labour.
	J	Railway shall not be responsible for the staying facility of the labour during the work.
6.28	Specifications and Requirements for the fixing and wiring of QNA1 relays for cutting-In purposes	
	A	The relays shall be fixed in the locations in the TOP rows.
	B	The relays shall be fixed in a manner that there should be a gap of one relay after every two relays.
	C	The relays shall be fixed on square bars which shall be supplied by the contractor as a part of this item.
	D	For the wiring the flexible wires (16/0.2) shall be supplied by the contractor i.e. The contractor shall carry out the wiring with his own wires.
	E	All the contacts used shall be made parallel with one additional contact.
	F	The fixing material like square bars, nut/bolts etc. shall be supplied by the contractor.
6.29	Specifications and Requirements for the Installation of DAC equipments	
	A	INDOOR EQUIPMENTS:
	I	Necessary spares, consumables, tools & instruments shall be preferably supplied by the contractor at least two weeks in advance of commissioning of the particular station
	II	All the consumables and sundry installation materials required for execution of this work like Nut and Bolts, Welding Rods, Sleeves, Lugs etc., and not listed as per the detailed schedule will have to be brought by the Tenderer at his own cost
	III	All the wires, fuses/MCB, required for installation of indoor equipment shall be marked properly with the label identification tag. The wires, fuses/MCB required for

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		installation of indoor & outdoor equipment shall be as per OEM specification unless specified by the Railways. All the materials in this connection shall be supplied by the contractor.
	IV	The Racks shall be installed in the concerned room as approved by the engineer in charge. If the supplied system is not approved with the cabinet, then the system shall be installed in the standard Relay racks of the Railways. These relay racks shall be supplied by the Railways but shall be installed by the contractor.
	V	All the indoor equipment shall be properly fixed as per the installation manual which shall be verified by the engineer in charge.
	VI	The wiring shall be done in a standard manner of wiring and cabling as approved in the installation manual. All the connecting wires, cables, shielded wires shall be supplied by the contractor.
	VII	The connections between the field cables (quad cables) and the indoor equipment shall be done through the spds. These spds shall be supplied along with the DAC equipment.
	VIII	The power supply shall be extended by the contractor to the indoor equipment as per the site instructions inside the slotted casing/coverings. The power wire shall be supplied by the Railways. However, the D-type fuses of proper capacity with base shall be supplied by the contractor.
	IX	All the Contacts of final clearance Relay shall be repeated in existing IDF/Relay rack by providing Tag Blocks in IDF/Relay rack & laying/termination of 40/60 core Indoor Signaling cables from Connectors in DAC cubicle to Tag Blocks in IDF/Relay Racks. Auto resetting wiring and potential free contacts to be wired in data logger
	X	All the indoor cables and the power wires shall be properly dressed on the ladder which shall be supplied by the contractor.

PART-II (Outdoor Works)

6.30	All the items to be supplied and / or installed shall be conforming to the relevant RDSO Specification with latest amendment or unless otherwise stated in this chapter. RDSO specification material should be procured from the RDSO approved firm only. Material will be supplied/procured only after getting the approval from Railway Competent authority for make & model of the materials/machines/axle counters, etc to solve the problems of compatibility with existing railway's equipment/systems, if any. 5 6 6.30 6.30.1 Point Machines (a) Electric point machines as per IRS-S-24/2002 Amd-1 or with latest amendment or Siemens type working at 110V DC shall be supplied by the Railways. (b) Means shall be provided in the circuitry adopted by the contractor to cut off the motor feed in case of obstruction to the movement of the point after a time lag of approximately 10 seconds. (c) The point operating / control circuits shall provide for track circuit control, overload protection, cross-protection and surge absorption as required. These circuits shall have the approval of the Railway.
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- (d) The circuit design shall enable reversal of the movement of the points during mid-stroke.
- (e) Indication shall be provided to prove that the points have been correctly set and locked in the required position. The indication relay will pick up proving the correspondence of the operating function and the position of relays.

6.30.2 Cables

The conductors in the cables shall be 1.5 sq. mm (copper) conforming to IRS: S-63/2007 Amd-2 or with latest Amd. & IS 1554 Part-1. All outdoor cables will be supplied by Railways.

6.30.3 Specifications and Requirements for Digging of Cable Pit

The cable pit shall be dug near to the room where all the cables are entering the CT rack room. The cable pit shall be of dimensions (minimum 2x2x1 meter) as per schedule of material and works. Before concreting the cable, pit shall be filled with sand. It shall be kept in consideration that the top of the cable coils shall be minimum one meter below the top of the concreting. The cables shall be coiled approximately five meters per cable.

6.30.4 Soldering

Soldering shall be carried out with the resin cored solder or any standard solder (BT make only). Before soldering, the approval of the Engineer-in-charge shall be obtained. Care should be taken to ensure that the insulation of the wire is not burned while soldering. The soldering should be done by skilled wire-men preferably having ITI qualification. Vide CSTE's letter no. SG/217/14, DT 04.09.2009, the personnel deputed for soldering should have adequate soldering skills & competency certificates issued by ITI/reputed institutions. The soldering material shall be of BT make of appropriate grade. However, the soldering material shall be approved from the Engineer in-charge before starting the soldering.

6.30.5 Terminals:

- (a) Terminals shall be disconnecting terminal blocks and as per RDSO spec RDSO/SPN/189/2004.
- (b) Terminals shall be mounted so that they cannot be turned in base of frame to which applied. They shall be properly insulated from each other and other metallic parts.
- (c) Terminals supporting the fixed parts of front and back contacts of relays shall be fastened in their supports, so as to preclude adjustments of any kind without first breaking the seal of the relay.
- (d) Terminals shall be installed in an accessible position and neatly arranged on terminal boards in housings.
- (e) The terminal blocks provided at the locations and other places shall be provided with suitable links to facilitate isolation of the two sides of the circuits which are connected through the terminal links.

6.30.6 Specifications and Requirements for the Crank Handle: It will be fixed in the S&T equipment

Rack provided in SM Office.

6.30.7 Specifications for Colour Light Tubular Post

In addition to the drawing as mentioned in the schedule the maintenance platform shall also be supplied at the time of installation. All the MS structures like maintenance platform, bracket, ladder etc shall be of MS with thickness not less than 5 mm.

6.30.8 Specifications and requirements for Digging of Trenches in the Soft Soils, Asphalted area and Track Crossings.

- (a) The contractor shall depute proper and competent supervisor for trenching and cable laying work.
- (b) Before starting the trenching foot by foot survey shall be done along-with the Railway's representative. The cable route shall be jointly finalized by the contractor's and Railway's representatives. The proposed cable route plan shall be submitted to the Engineer-in-Charge and it shall be got approved. In addition to the main cable plan, a track crossing plan shall also be got approved before starting the work.
- (c) The cable shall be laid at the Railway's boundary (one meter inside the outermost boundary). While trenching it shall be kept in mind the depth of the trench shall be 1 meter until and otherwise specified by the engineer in charge. All the payments shall be made in cubic meter accordingly.
- (d) The preparation of trench shall include the clearing of roots of tree and bushes and removal of any minor obstruction in the path of trenches. It also includes clearance of any concrete foundation like foundation for OHE mast etc. If it is not feasible to clear the route the route shall be diverted accordingly with the prior permission of the engineer in-charge. Railway decision will be final. All excavated earth shall be staked by the contractor away from the track and not on ballast or shoulders. The contractor shall take written permission from the Supervisor-in-charge or from the person authorized by him, before trenching work is commenced.
Any permission for trenching and laying of cable from the Municipal Corporation or any other authority including Railway if required, will be obtained by the Railway. At the discretion of the Engineer-in-charge, the trenching and laying of the cable will have to be undertaken simultaneously at more than one location.
- (e) In case digging is to be done in between tracks the excavated earth shall be carried manually beyond the adjacent track/tracks and stacked completely outside.
- (f) In case the trench gets filled up with water from the surrounding area due to rain etc, the Contractor shall have to make his own arrangement to pump it out without any extra charges payable for the same.
- (g) If during the trenching, any cable markers, obstruction such as pipes or cables or any bricks or warning covers which appear to be deliberately placed in the location is noticed, the digging should be stopped immediately and the Railway Supervisor should be called. Further excavation will be done in his presence very carefully with the help of wire claws and digging can be further resumed only with the permission of the Engineer/Supervisor-in-charge.
- (h) Where the cable route is on uneven ground, a reasonably long section of consistent grounding shall be dug, rather than following every undulation of the ground.
- (i) **The width/depth of cable trench will be as per guidelines of CSE/ CCG's letter no. SG 217/9 Vol. V dated 10/8/2010.**
- (j) Trenching for track crossing and laying of cables across the track shall be done only in presence of the Engineer's representative. No digging shall be done below the sleepers. Digging while crossing a track shall be done between sleepers in the presence of a Railways representative. Before the track crossing it shall be ensured that a commencement notice shall be given to P-way supervisor.

- (k) Before starting the trenching in the asphalted area, the contractor shall get prior approval of competent authority. During the trenching and cabling work in the asphalted areas the contractor shall cordon off the area with proper means of barricading and warning board for the user of that area. After the cabling or the laying of suitable pipes or ducts the asphalted area shall be restored back to its earlier state of surface by proper means. While restoring back the contractor shall take care that the level of this area must match with the nearby areas. The trench shall be levelled with soft soil, rammed and platform re-asphalt. The item includes covering of cables laid in trench by soft soil for a depth of 5 cm before covering by bricks. Levelling of trenches excavated and restoring the original surface is the responsibility of the contractors.

During trenching the muck in the form of soil or ballast shall be filled in gunny bags and kept away from the track area.

- (l) **The contractor shall keep one additional man to look for the trains while the trenching and cabling work is being done in track areas. The duties of this person shall be to look for the trains and warn the labours working in the track areas. Railway shall in any case not be responsible for any mis-happening on the track areas.**

The contractor shall ensure that all safety features have been arranged for its labour. The contractor shall also apply for and get issue the ID card for its labour supervisor and associated labour.

- (m) The trenching should be done in a straight route as far as possible except where the curve has to be negotiated. Where the direction of the trench is to change, it should be done in a gentle curve and not at a sharp angle. The change in the level of the cable when laid shall be gradual and uniform while negotiating the ups and downs encountered in the terrain. Normally trench shall be dug at a distance, from the center of the track to center of trench of 2500 mm for MG and 3100 mm for BG, as shown in Drawing No. CSTE/3644 Page No.1. However, depending upon site conditions, the decision of the Engineer-in-charge of the Railways shall be final & binding. Digging of trenches will be done in all types of soil including soft rocky and semi rocky soils as per cable route plan and back filling after laying of cables.

- (n) The work will be done in accordance with CSTE'S Drg. No. CSTE/3644 and latest policy circulars issued by Western Railway Headquarters and RB with conventional method in force as per instructions of the Engineer. Digging of cable trench and laying of cables on rocky surface/asphalt platform shall be as per drawing No. CSTE/ 3644 page 4. Digging of cable trench one meter Deep below bottom of sleeper /road level shall be done for track/ road crossing as per drawing No. CSTE/3644 page 7 and latest policy circulars issued by Western Railway Headquarters and RB.

- (o) The trench shall be levelled with soft soil, rammed and platform re-asphalt. The item includes covering of cables laid in trench by soft soil for a depth of 5 cm before covering by bricks. Leveling of trenches excavated and restoring the original surface is the responsibility of the contractors.

6.30.9 Specifications and requirements of Cutting in the rocky Area

- (a) Cutting in the rocky area will be done by the Contractor by adopting good engineering practice like use of pneumatic drills, good pointed chisels or blasting. If blasting is to be done, the Contractor will have to produce necessary license of the same in his name or his sub-contractor. Blasting must be done under full block

condition. Suitable precautions must be taken to safeguard Railway buildings, structures and rolling stock or any other Railway property. Clearing stones or rubble after blasting, especially seen or near the track infringing the standard dimensions will have to be carried out by the Contractor immediately and within the block period. The Contractor must take written approval of the supervisor-in-charge before starting blasting work and should stop the work when asked to do so by the concerned Supervisor-in-charge. After blasting is completed, the Contractor will give a clearance certificate to the effect that blasting is over to enable the Supervisor-in-charge to remove block.

6.30.10 Specifications and Requirements for laying of Cables.

6.30.10.1 General Requirements.

- (a) All the cables shall be transported to the site by the contractor by its own means. The cables at site shall be stored properly, fully protected against harsh environmental conditions like rains etc.
- (b) The cables shall be meggered before and after it is laid by the contractor under the supervision of Railway representative and contractor will submit meggering test report for each cable.
- (c) Cable shall be laid in trenches/culverts/track crossing only after the inspection by engineering in-charge.
- (d) Cable drums mounted on Jackscrew stand shall be used for cable laying to avoid any kinks or pressure on the cable during cable laying. Sufficient manpower should be arranged by the contractor to lay the cable manually so that it does not rub on the ground. If the firm fails to lay the cable with Jackscrew stand type arrangement, a penalty equivalent to 50% of accepted cost of cable laying for the work carried shall be levied on the contractor.
Cable shall be laid with due caution so as not to cause any damage due to rough handling. While laying the cable, precautions shall be taken to avoid any kind of pressure on the cable and also to avoid any twist in the cable.
- (e) The cable drums shall always be kept i.e., axle being kept parallel to the ground. The drums shall not be subjected to jerks, but shall be handed slowly with care. The Side plates of the cable drum should not be damaged while moving the drums. Pulling of the Cable by jerks shall be avoided. While laying the cable, precautions shall be taken to avoid any kind of pressure on the cable.
- (f) After laying of the cables before the terminations in the location boxes it shall be ensured that all the cables are covered with the insulating tape / cap at their ends. All the cables shall be taken inside the location boxes marked for the concerned cables. While entering the location boxes it shall be ensured that the pit near the location box is of sufficient size such that after burying the cable, the uppermost portion (top) of the cables is at least 0.5 meter below the surface level.
- (g) As a matter of practice, until and otherwise, not more than 2-3 meter of coils are left for all the cables as a loop after considering the length required for the termination.
- (h) Before the back filling is done, the cable markers will be provided in such a way as to keep the top portion visible after filling. The marker should be so placed as to be clearly visible and shall not project above rail level of the nearest track and shall not be more than 200 mm from the top surface of ground level. There will be one cable route marker at every thirty meters interval in addition to additional cable markers to be provided at bends and at such other locations which will be indicated by the supervisor-in-charge.

	i. One cable route marker shall be placed at the point of divergence. ii. One cable marker at either end shall be placed at each track crossing. iii. One cable marker at each side of culvert/bridge etc. (i) When Signalling and Main Telecom cables are laid in the same trench, a distance of 100 mm is to be maintained between them. (j) Tail cable shall be laid in HDPE pipe or as per instruction of site engineer. When Signalling and L.T. or H.T. power cables are placed in the same trench; they must be separated by a row of bricks between them. NOTE: These instructions apply to power cables from 230V to 660 V. For higher voltage, larger separation is required and for lower voltage, no separation is required. In case several cables of different Categories are laid in the same trench, they should be placed in the following order starting from the main track end, so that in case of accidents the maintenance staff may easily recognize the damaged cables from Sight 1st Main Telecom cable. 2nd Signalling Cable. 3rd L.T. Power cable. 4th H.T. Power cable. In case of Signalling cables running parallel to H.T. or L.T. Power Cables in different trenches, minimum horizontal distance of 0.30 meters between Signalling and Power Cables should be maintained. At the point of crossing, a minimum distance of 0.20 meters should be maintained between the two cables. In case of Signalling cables running parallel to H.T. or L.T. Power Cables in different trenches, minimum horizontal distance of 0.30 meters between Signalling and Power Cables should be maintained. At the point of crossing, a minimum distance of 0.20 meters should be maintained between the two cables. The cable shall be laid in trenches with due caution so as not to cause any damage due to rough handling. While laying the cable, precautions shall be taken to avoid any kind of pressure on the cable. Instructions of the Engineer-in-charge in connection with the laying of cable shall be strictly adhered to. Certain additional precautions for special circumstances are as under: 6.30.10.2 Laying of Cable Direct in Trench For direct laying, the bottom surface of trench should be made free of corrosive elements and the cable to be laid on the bedding of the soft earth of the trench. Depth of trench shall be minimum 1M prior to laying of cable and depth should be measured from the ground level to the bottom of trench. Drawing No. CSTE/3644 page 2 issued should be generally adopted for this method of cable laying. However, the depth of cable trench should be 1 meter in lieu of 800 mm as mentioned in the drawing. In case two layers of the cables are to be laid in same trench, the first layer will be covered with soft sand or sieved soil of 25mm before the second layer is laid. In no case, more than two layers of cables to be provided, providing two layers should be avoided as far as possible. 6.30.10.3 Laying of Cables for Track/Road Crossing. The general arrangement of cable laying shall be as per Drawing No. CSTE/3644 Pg 7 and the cable shall be laid 1 meter below bottom of the sleeper/ road levels for rail/ road crossing. Jointing of G.I. pipe shall be by means of G.I. collars.
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The ballast disturbed while digging shall be screened and dressed up as required by engineer in charge and the road tarred immediately after the pipes are laid.

The work of laying of RCC pipe while crossing the track shall be done under the railway official's supervision.

6.30.10.4 Cable Laying on Rocky Soil.

Cable laying arrangement shall be as per Drawing No. CSTE/3644 Page 4.

RCC trunking will be laid after trench has been inspected by the Engineer's representative.

The cable will then be laid with due caution and earth/sand will be filled in the trunking.

Capping will be placed in position and back filling of the trench done. Any earth/stones etc. which might have fallen into the RCC trunking should be removed before the same is filled.

The RCC capping shall be placed on the trunking only after the supervisor-in-charge has approved the cable position in the trunking and sand filling.

Any damage to the RCC capping either during the transport or during laying be to any reason whatsoever will be to the account of the contractor and broken RCC capping will not be allowed to be installed.

6.30.11 Specifications and Requirements for Placing of Various Pipes/RCC Ducts in Trenches.

All the pipes/ducts to be placed in the trenches for laying of cables shall be transported to site by the contractor by its own means.

All the trenches shall be properly and thoroughly cleaned before laying the pipes/ducts.

While laying of ducts it shall be ensured that there is no damage to the duct due to mishandling. If more than one pipe or duct is to be laid in the same trench then both should be laid side by side.

6.30.12 Specifications and Requirements for Cable Laying and Fixing of Pipes and Troughing Bridges and Culverts (IS Spec should be followed for supplying & fixing of Troughing, channel).

First all the bridges shall be surveyed before commencing this item. After surveying it shall be jointly finalized by the Railway's and contractor's representative that what are the feasible spots where angles and channels can be provided.

The fixing of GI/RCC. /DWC pipe (with contractors on clamp) on culverts shall be as per Drg. No. CSTE/3644 Pg.6.

Cable shall be laid on culverts inside G.I. pipes suitably clamped on the sleepers/pathways. Where necessary G.I. pipes shall be joined by means of G.I. collars or suitable G.I. Bend pipes (contractor's own). The G.I. pipes shall be secured on sleepers/pathways by means of clamps (to be provided by contractor as approved by Railway's Supervisor). Holes in the sleepers/pathways for fixing clamps shall be drilled by the contractor.

Cables shall be laid in troughing on bridges. As per schedule item all the concerned material i.e., angles and channels required shall be supplied by the contractor along with GI fitting bolts and nuts.

All the angles and channels shall be made MS having thickness not less than 5 mm (It should be as per IS spec). The shape and size of the clamps, angles and channels shall be jointly finalized by the Railway's and contractor's representatives. It should be kept in consideration while finalizing the size of angles and channels that there should be sufficient space extra after providing the pipes. The plans and drawing, to fit the channels and angles on the bridge, shall also be got approved by the bridge organization of the concerned jurisdiction.

While laying the cables in the pipe/troughing the corners of the bridges shall be covered with solid concreting to prevent any access of the cables to the unwanted outsiders. All the pipes shall be properly coupled through couplers. In troughing the bitumen compound shall be filled as per proper procedures.

6.30.13 Cable Reserves

Suitable amount of cable reserves shall be kept while laying the cables, while asking the measurements of cable laying, the cable laid as reserve shall also be included and payment as per the rates applicable for cable laying shall be made thereof.

Unless otherwise specified, it will be necessary to provide cable reserves for future possible as decided by Engineer-in-Charge. Where a change to cable line is expected, the reserve to be allowed depending on circumstances. In freshly banked soil to allow for slipping of the bank, an allowance of 30 cm should be provided for every 10 meters of trench (3 percent). The cable should be laid in a sinuous form. Near roadways, buildings and culverts, a reserve of 5 meters should be allowed at down end.

On each side of a girder bridge a reserve of 10 meters should left. Where remodeling works on culverts, bridges and track doubling works are going on, it may be necessary to keep loops of cables as an extra reserve pending finalization of its future route. Near all cable termination points, cable reserve of at least 10 meters is left in the cable pits, i.e., near cable Termination Board, Cabin, Junction Boxes, etc.

Different ways of providing cable reserve shall be as per Drawing No. CSTE/3644 page 8. All reserve cables should be marked on plan and protected by brick or R.C.C. covers/capping.

6.30.14 Specifications and Requirements for the Casting of CC foundation for apparatus case.

The foundations shall be made as per the standard drawing issued to contractor. Before starting the digging work for foundation, the location of the foundation shall be jointly verified and signed by the representatives of Railways and Contractor.

While finalizing the location of foundation it must be taken care that the schedule of dimensions and other provisions of SEM are strictly adhered to. The distance of apparatus case with door fully opened should be minimum 2.36 meter from the center of tracks on all sides.

The foundation of apparatus case shall not be on the banking of the terrain. If the foundation on the bank is unavoidable (only in exceptional circumstances) due to site conditions, necessary supports should be provided as approved by Engineer-in-Charge. The pit around the apparatus case shall be dug so that the top of the cable is minimum 0.5 meter below the ground surface level i.e., the depth of the pit near the apparatus case shall be increased as per the site requirement. Once cables are put inside the location boxes, the bottom portion of the location shall be filled with sand and a layer of PCC shall be done to prevent entry of rodents and reptiles.

In addition to this if the required depth is not available, then as per approved scheme by Engineer-in-Charge; the contractor shall make a brick chamber like structure and fill the chamber with sand. The whole pit shall be covered with concreting. For this activity the concreting and brick work shall be paid by Railways as actual form the scheduled quantity of items.

6.30.15 Specifications and Requirements for the Installation of All Types of Apparatus Case.

The apparatus case shall be first rubbed to remove the rust in a complete way both inside, outside and all the interiors and corners. Then one coat of red oxide shall be painted on the complete body of the apparatus case including the base area.

The apparatus case shall be fixed properly carefully without damaging it. Angles shall be properly fixed for complete length of the apparatus case with the help of angles and clamps.

One coat of silver paint on the outer side of the walls of apparatus case and one coat of white/silver paint on the interior sides shall be painted before fixing the hylam board.

Both E-type locks shall be fitted before the painting. If somehow both E type locks are not covered in schedule due to some reason, the other side hole shall be covered with GI sheet of minimum 3mm thickness to prevent entry of rodents and other reptiles. The piece of sheet shall

be supplied by the contractor. The holder and location lighting switch shall be fixed on a piece of Hylam sheet. This piece of hylam sheet shall be supplied by the Railways.

6.30.16 Specifications and Requirements for Termination of the Cables:

All the cables shall be terminated on the Disconnecting terminal block /ARA terminals as schedule and as per approved scheme by Site in charge of Railways.

The scheme and number of cables to be terminated in different Location Boxes shall be approved by site-in-charge of Railways.

While terminating the cables it shall be ensured that the cables incoming to the location from one side shall be taken and dressed in one side (i.e., LHS or RHS) in the backside of the location.

The cables going out of the locations shall be taken and dressed in the opposite side to the upper one in the back side of the location.

All the cables shall be neatly dressed and terminated with help of proper support. It shall be ensured that the cable conductors shall be supported by string rods at each row of the cables in the back side. The string rods for the above shall be supplied by the contractor along-with insulation sleeves. All the conductors of the cables shall be dressed by threads also.

At the bottom of the location box/ Relay Rack/CT rack, all the cables shall be dressed in one row only. No jumble of cable is allowed to be formed. Each and every cable should be separately identifiable. At the bottom side the armory of all the cables shall be removed and bent outwards so that no sharp edge of the armory is in direct contact of the cable.

All the cable cores shall be meggered at the time of terminations. A report shall be submitted to the Railways in proper format of Railways.

At the front side of the location, sufficient space should be left between two rows; so that cable details may be painted (the painting item is separately covered under another schedule item).

6.30.17 Specification & Requirements for Casting of CC Foundation for Signal Post.

Before starting the digging work for foundation, the location of the foundation shall be jointly verified and signed by the representatives of Railways and Contractor. While finalizing the location of foundation it must be taken care that the schedule of dimensions and provisions of Signal Engineering Manual (SEM) are strictly adhered to. CC foundation for signal post shall be casted with Cement, Sand, aggregate in the ratio of 1:3:6 as per Drg. No. CSTE/3122. While erecting the signal foundation the GI holding down bolts of proper size & standard specification should be grouted. This item includes excavation; ramming, curing and plastering with 1:4 cement sand mixture (Aggregate not exceeding 3:8cm). Complete material for CC foundation for signal post like cement, sand, aggregate and holding down bolts, nuts to be supplied by the contractor.

Top of the signal foundation shall be at rail level unless otherwise specified by Engineer in-charge. The foundation of signal shall not be in any case on the banking of the terrain. If it is not feasible at site for the foundation to be on bank portion, the signal foundation should be shifted on the RHS of the concerned track as per provisions of SEM.

6.30.18 Specifications and Requirements for Installation of Signal Post & CLS Unit.

The item includes erection of colour light signal post with CI base, LED based colour light signal unit (CLS units suitable for LED Signal Lamps will be supplied by Railway), ladder with its base, ladder guards, platform and MS supporting bracket in the middle of the ladder, hoods, protective screens front staging for maintenance Platform, expanded metal cover on front. Also includes fixing of LED lighting units along with all accessories and arrangement of extra accessories for offset brackets. Junction type route indicators (if any) – 5 or 3 or 4 or 2 or 1 way etc. LED units & LED Signal Units will be supplied by Railways.

The item also includes termination of cable and wiring inside the signal unit as per standard practice. The cable shall be inserted in such a way that it is not bent sharply. The armory of the

cable shall be peeled off at the base of the signal unit. After that all the conductors shall be terminated on the ARA terminals/Disconnecting terminal blocks connectors. From these terminals the colour coded flexible wires shall be taken to the respective LED unit/signal lamp. The flexible wire shall be provided by the Railways.

Item also includes supply of number plates with photo luminescent paint/strips.

Wiremesh covering red and yellow aspect as per standard practice on this railway and wherever if required the screen shall also be provided on the side of signal post /signal unit adjacent to the centenary. The fixing of screen and its connection to the earth shall be done as per RE area standard.

Height of the post 3.5 m. For loop line starters, advance starters, distance signals, 4.5 m for mainline starters and Home 5 m. For Home signal on curves. Decision of site in charge regarding height of posts as required by site in charge and fixing of CLS units on the existing posts with or without offset as required by Site In charge. (I) 2/3/4 aspect signal unit mounted directly on signal post or with offset bracket.

`X' arms to be provided by the contractor till the signals are introduced.

Item includes supply and fixing of arrow on signal units for signals placed on the wrong side and blanking of ladder if so, required by site in charge.

All the clamps and angles shall be as per the drawings or as advised by the engineer in charge the ladder should be grouted in the ground properly.

Supply of colour light signal post tubular 140 mm dia complete with CI base, ladder with base, ladder guard platform, MS supporting bracket to support ladder, with offset bracket etc. shall be IRS Specification no. S-6/81 (latest) and RDSO diagram No. SA-24625 (Advance) is covered under Schedule "A".

6.30.19 Specifications and Requirements for the Installation of DC Track Circuits.

First of all, the contractors shall prepare and submit the track insulation plan as per the Signalling plan issued. This shall be approved by Site in Charge of Railways. The installation shall be done as per standard installations requirement of SEM.

For the installation of track circuits Track Lead box as per Schedule shall be used. The tail cables connecting the bootleg to the location boxes shall be 6-core Signalling cable. This cable shall be supplied by the Railways. This 6-core shall be terminated with lugs in the track lead boxes.

The seven-strand jacketed wire shall be used for TF/TR, jumper and continuity bonding across fish plates. The track lead boxes shall also be painted with details i.e., number/nomenclature of track circuit number.

6.30.20 Specifications and Requirements for the Wiring of DC track circuits.

The wiring practice shall be as per provisions of SEM and Western Railway installation and wiring practices.

The wiring material like 1.5 sq. mm wire, lugs shall be supplied by the contractor as a part of execution. The choke, charger, resistance shall be installed in such a manner that there should not be any congestion on the base.

The floor on which these equipments shall be installed shall be of 20mm /10mm thick hylam board. This hylam board shall be supplied by the Railways. The chokes and chargers shall be fixed with the help of screws on the hylam base on a single Hylam base not more than three equipments (chokes and chargers, apart from resistances) shall be installed.

All the flexible wires shall be properly dressed so that none of the wire is loose and hanging. The batteries inside the location box shall be fixed on a hylam board. The necessary hylam board shall be supplied by the Railways.

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	The wiring shall be done with flexible wires (1.5 sq mm) with proper lugs as per standard practice. 6.30.21 Specifications and Requirements for complete Painting, Varnishing and writing works. All the equipments which need painting shall be fixed/ installed with coating of Red Oxide i.e., Red Oxide should be coated before fixing/installation. After fixing/installations one coat of paint shall be applied on all the location boxes, signal units, signal posts etc. The final coat of paint shall be applied just before the commissioning. The description writing work shall be carried out before the commissioning of the station. This description writing work includes writing the details in the Relay Room and Location boxes. All the location boxes and the signal posts shall be painted with the distance of installation from the center of the track. The colour& painting scheme as per provisions of SEM and Western Railway practice should be adopted.

**Deputy Chief Signal & Telecom Engineer (Con.)
Western Railway, Ratlam-457001
For and on behalf of the President of India**

CHAPTER-7
TENDER SCHEDULE, INSPECTION AUTHORITY AND IT'S ANNEXURES

Tender Schedule of Tender No. S&T/C/RTM/100 R/2022-23 is as per the Tender Schedule (NIT) uploaded on IREPS website

Sr. No.	Item Code	Description	Unit	Qty	Inspection Authority
Schedule A					
1	01010000	Design, manufacture, and supply of Hot Standby Architecture Electronic Interlocking (EI) system complete as per RDSO specification No. RDSO/SPN/192/2019 with the latest amendment, as per technical requirement & tentative approved Signalling Plans & Diagrams. Electronic Interlocking (EI) system mainly consisting of Central Processing Equipment, Interface Equipment/Relays, etc as per requirements, Dual operator Industrial Grade VDU panel (48" or above with 4K LED) with Redundancy (Hot standby dual VDU Normally one system online and another system in standby mode), All Interfacing Relays suitable for EI, interconnecting cables and Jumper wires, Industrial grade maintenance Terminals (32" LED with UPS minimum 1 hr. back up), required power supply converters for EI equipment, Housing for EI types of equipment and Relay Racks, fuses, screw less disconnecting type terminals, fixture mounting arrangements and accessories necessary to make the EI system functional as per approved signaling plan. Supply of 10% Essential spares of the EI equipment subject to a minimum one of each type mainly consisting of processor, cards/ module, interface relay, etc. 1. Malhargarh-189 Vital Bits 2. Mandasor-239 Vital Bits 3. Daluada-243 Vital Bits 4. Kachnara Road-180 Vital Bits 5. Dhodar-179 Vital Bits 6. Jaora-224 Vital Bits 7. Namli-212 Vital Bits 8. Dhowas-271 Vital Bits 9. Kachnara IBH- 20 Vital Bits 10. Mundalaram IBH-20 Vital Bits	Per Vital bit of Station	1777	RDSO
2	01010300	Supply of documents (Manuals for Installation, Testing, commissioning, and maintenance of the system) (One set consists of 6 sets of the following drawings per Station).	No.	10	Consignee or Authorized representative

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		(i) Manual for installation, Testing, Commissioning, and maintenance of the system for Technicians / Jr. Engineers. (Installation & Maintenance level) (ii) Functioning and system overview (Higher management level). (iii) Completion documents as per special conditions of contract. (iv) Design & Supply of circuits and plans to suit layout given in the signaling plan for Hot Standby Architecture Electronic Interlocking (EI) system. All plans and wiring diagrams shall be prepared on Auto cad Drawing and supplied with CD. This will include supply of Control cum Indication panel / VDU diagram, Square Sheet, Wiring Diagrams (Application Logic and Interface Circuit), Fuse Analysis, Contact Analysis, Tag Block Analysis, Power Supply Distribution / Power equipment arrangement (with program switch) Diagram, Auto Change over diagram (if supplied by the contractor), and all other relevant drawings. NOTE: The contractor shall initially supply 1 set of documents (Paper Prints) for approval of Railways. He shall ensure that each sheet has a block for the signature of the Railway official as well as a block for the signature of the firm, duly signed by the authorized signatory of the firm. The name of the work as given by Railways shall be written on every sheet under the work column. All the drawings shall be supplied in a good quality folder for each station. After approval of documents by Railways, the contractor will make copies of the approved documents and return the approved document to Railways. The contractor will then make the necessary correction to Application Logic software duly incorporating Railways' alterations/ corrections/ comments if any. After Complete Testing / Commissioning of the station, tracings of completion documents as mentioned above will be submitted to Railways for approval. Along with the Completion of application logic, a difference report (showing addition & deletion in different colors) as compared to earlier approved application logic should also be submitted. After approval of completed application logic by Railways, 5 sets of copies of completion tracings will be submitted to Railways.			
3	01010400	Portable work station for Data input & configuration with necessary software/ programs / Accessories, simulation and functional testing, diagnostics, and	Work station	5	RDSO/RITES

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		troubleshooting and commissioning of EI system. A suitable table and chair of reputed make shall be supplied by the contractor. Note: Portable work station shall be of DELL XPS 15 or superior or other make as approved by Engineer In-Charge. All the required software should be uploaded Licensed CD should be given along with the software.			
4	01010500	Instruments and Tool Kits required for Trouble Shooting and repair of hardware and software for EI system should be supplied for stations as per schedule item 1 above. (This includes tools required for EI maintenance sorts of crimping, insertion, removal, general purpose tools like screw drivers, spanners, PCB extractor, temp. controlled soldering iron, wire cutter, nose pliers etc. & measuring instruments with carrying case/ holders/ cabinet for technicians/ J.E. for testing, Maintenance and repair at site). Each set comprises of the following :- * Crimping tool for all types of special cable assembly used in EI system. * Insertion tool for all types of special cable assembly used in EI system. * Removal tool for all types of special cable assembly used in EI system * Digital multimeter (Fluke 111 or better) * Steel cabinet/ Almira, Size: 1980mm height, 915 mm width and 485 mm depth (Godrej Make/Jalaram) of good quality to store tool, spare cards and documents. * Steel Book rack Size: 1850mm height, 900 mm width and 316 mm depth for keeping documents. (Godrej Make/Jalaram) * Clamp Earth Tester. * Clamp Current Meter.	Set	8	RDSO/RITES
5	01020000	Data logger system for Railway S&T installation as per spec. IRS: S-99 2006 (Amdt-3) or latest. Central Monitoring Unit (Hardware Configuration as per Annexure) with UPS minimum 06 Hrs. battery backup and required Software tools. This also includes supply of one no composite computer & printer table (Godrej work station table) for keeping Processor module and one no Godrej make operator chair model PCH7001. The datalogger should have E1 connectivity hardware.	Set		
(i)	01020100	1024 digital and 32 analog inputs.	No.	8	RDSO
6	01020300	Remote Terminal Unit (RTU) with 64 digital input& 16 analog input as per technical specification IRS: S-99 2006 (Amdt-3) or latest. In addition, RTU should	No.	5	RDSO

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		have dual leased line modem. It should possible to connect RTU up to 12 Kms from main data logger. This includes rack for installation & Battery backup for 06 hrs.			
7	01020500	Failure Analysis System or Central Monitoring Unit with Printer. As per technical specification IRS:S-992006 (Amdt-3) or latest. The specification of Failure Analysis System should be got approved from the Engineer in charge before supply. Note: The Specification of Failure Analysis System shall be as per technical specification given in contract Agreement or higher version as approved by Engineer In-Charge. (Technical specification shall be provided in tender documents.)	No.	8	RDSO/RITES
8	01020700	Failure Analysis & Fault Diagnostic software for data logger of 1024 digital inputs / 4096 digital inputs.	Set	8	RDSO/RITES
9	01020800	Provision of T-Networking suitable for Networking to the existing Data Logger equipments. This includes supply of all equipment / accessories required for the purpose.	Set	13	-
10	01030100	Relay racks assembly complete with scaffolding bus bars, fuse strips, fuses, resistors, capacitors, insulators, grouting bolts, tripods etc. as per Drg. No. CSTE /6028. [Scaffolding should include 20% extra (with minimum of 2 relay rack positions) as spare for future expansion]. Relay rack shall be Powder Coated. (Quantity of Resistance, capacitor & Other items as Annexure.)	No.	6	Consignee or Authorized representative
11	01030200	Cable termination racks as per Drg. no. CSTE 5004, 5005, 5006 complete along with fitting arrangements and also with arrangement for fixing four 8-way terminal strips/ Screw less terminals on each row having 16 such rows. Supply of 8-way terminal strips/ Screw less terminals not covered under this item. Cable termination rack shall be Powder Coated.	No.	15	Consignee or Authorized representative
12	01030800	Disconnect Terminal Block, Screw less type, as per RDSO Spec. No. RDSO/SPN/189/2004. With latest amendments.			
(i)		Disconnect Terminal Block, screw less type, 4-wire front entry (Two in-put & two out-put) The colour will be decided by Engineer - in - Charge. (Preferably In Blue, Red & Grey Colors in the ratio of 1:2:3)	No.	15000	RDSO/RITES
(ii)	01030900	Supply of End plate for above item (I) 2.5mm/0.091 in thick as per site requirement.	No.	1500	RDSO/RITES

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(iii)	01031000	Supply of End Stopper for above item (I) 10mm/0.0394 in width as per site requirement.	No.	1500	RDSO/RITES
(iv)	01031100	Supply of Carrier Rails for above 35mm x 7.5mm, 1mm/0.039 in thickness un-slotted type as per site requirement.	Mtrs.	150	RDSO/RITES
13	01031300	Indicative type Fuse base/ holder with cap, suitable to G type fuse of capacity 0.63A - 3.0A. (System, Rapid, Malnad, or RBCO make or similar).	No.	150	RDSO
14	01031400	Indicative type Fuse suitable to G type fuse base/holder of capacity 0.63 A - 3.0 A (System, Rapid, Malnad or RBCO make or similar).	No.	150	RDSO
15	01031600	D type fuse block non indicating type low voltage non deteriorating fuse base suitable for fuse link of capacity 2A/6A/10A as per specification IRS:S-80/92 or latest. Quantity break up of each type of fuse block will be specified by Engineer in-charge.	No.	500	RDSO
16	01031700	D type fuse link non indicating type low voltage non detonating, capacity 2A/6A/10A as per specification IRS:S-80/92 or latest. Quantity breaks up of each type of fuse block will be specified by Engineer in-charge.	No.	500	RDSO
17	01031800	Fuse auto changeover system for used in Railway Signaling System as per RDSO/SPN/209/2012 rev.1 with latest amendments. One Automatic changeover Unit comprises 32 nos. of external Non-Deteriorating Type or 'G' type fuses from 0.6 Amp to 4 Amp capacities which are in signaling circuits. The system shall have 8 cards with a monitoring arrangement of 4 fuses in one card.	Per Module	70	RDSO
18	01031900	Fuse auto changeover system for used in Railway Signaling System as per RDSO/SPN/209/2012 rev.1 with latest amendments. One Automatic changeover Unit comprise 24 nos. of external Non Deteriorating Type or 'G' type fuses from 4 Amp to 10 Amp capacities which are in signaling circuits. System shall have 6 cards with monitoring arrangement of 4 fuses in one card.	Per Module	15	RDSO
19	01041500	Key Lock Relay working on 24V DC, AC Immunized with different ward combinations (Three ward plates to be supplied with each relay).	No.	120	RITES
20	01050100	Relay QNA1, AC immunized, 08F/08B, 12F-4B, 24VDC along with plug board, retaining clip and connectors conforming to BRS: 931A, IRS: S60, IRS: S34 & IRS: S24.	No.	700	RDSO

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21	01050400	DC neutral line relay QNA1K (QSA3), AC immune, DC neutral line 24V, 12F/4B contacts, complete with plug board, retaining clip and connectors. Conforming to BRS 930A, (as applicable) IRS: S34&IRS: S23 or latest.	No.	50	RDSO
22	01050500	Relay QSPA1, 24VDC, Slow to pick up, 8F.4B along with plug board, retaining clip and connectors. Conforming to BRS: 933A, IRS: S60, IRS: S34 &IRS: S23.	No.	400	RDSO
23	01050700	Track Relay QBAT, AC immunized, 2F-2B contacts, 9 ohms. Complete with plug board, retaining clip & connectors as per RDSO /SPN/84/88 dated. 16/05/91 or latest.	No.	60	RDSO
24	01050800	Universal AC ECR of Q series, type "QECX61" suitable for AC LED all signal aspect, Front & back contact Metal to Carbon type complete with plug board retaining clip & connectors conforming to Spec STS/E/Relays/AC Lit LED Signal/09/2002, BRS: 941A, IRS: S34 and IRS: S23 (as applicable)	No.	600	RDSO
25	01051300	Sealing wire used for sealing of signaling relays & equipments.	Kg	1	Consignee or Authorized representative
26	01051400	Lead Tablet for sealing wire used for sealing of signaling relays & equipments.	Kg	1	Consignee or Authorized representative
27	01060100	PVC insulated Railway Signaling multi-core Indoor Cable 1mm x 60mm x 0.6mm dia conforming to IRS:76/89(Amd3) or latest.	Km	1	Consignee or Authorized representative
28	01060200	PVC insulated Railway Signaling multi-core Indoor Cable 1 mm x 40 mm x 0.6 mm dia conforming to IRS:76/89(Amd3) or latest.	Km	1	Consignee or Authorized representative
29	01060300	PVC insulated Railway Signaling multi-core Indoor Cable 1mm x 24 mm x 1 mm dia conforming to IRS:76/89(Amd3) or latest.	Km	1	Consignee or Authorized representative
30	01060600	Single core multi-strand wire 0.5 sq.mm. (16 conductor each dia. 0.2mm), as per IRS 76/89 (Amd3).	Km	5	Consignee or Authorized representative
31	01060700	Flexible cable (Power wire), multi-strand copper conductors' cross section 1x6 Sq.mm. (85 conductor each diameter 0.30 +/- 0.01) as per IS 694/1990 with insulation thickness of 0.80 mm nominal conductor resistance 3.30 ohms/km and test parameters are as per IRS(S)76/89.	Km	5	Consignee or Authorized representative
32	01060800	Flexible cable (Power wire), multi-strand copper conductors' cross section (1x16Sq.mm).101 Conductors each diameter 0.45 + 0.01 as per IS 694/2010 with insulation thickness of 1.2mm nominal conductor resistance 1.127 Ohms/Km and test parameters as per IRS(S) 76/89.	Km	10	RDSO/RITES

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33	01071000	Low maintenance Lead acid secondary cell 2V/80 AH (Track feed Battery), shelf mounting type conforming to IRS:S-88/2004 or latest (uncharged)	No.	1200	RDSO/RITES
34	01072000	Transformer 230V/110-130V Single Phase 1 KVA as per Spec. IRS S-72/88 with latest amendments. (For Signal Lighting)	No.	13	RDSO
35		Transformer Rectifier Set as per IRS(S) 91/93 Amendment - 1.			
(i)	01072300	For point operation 230V A.C./ 120V DC/40 A.	No.	8	RDSO
36	01073800	Rubber Mat for Power Equipment room. (5mm thick)	Kg.	130	Consignee or Authorized representative
37	01074300	Transient Surge Suppressor Electronic Grade Surge protective device (Surge) current Capacity 50 KA as per following Specifications: 1) Connection Type: Parallel, 2) Nominal discharge current: 3KA 3) Response Time:<0.5 nanoseconds, 4) Status Indication: LEDs, Dry Contacts.	No.	13	RDSO/RITES
38	01080700	Desk type Electronic Magneto Telephone as per spec No IRS/TC-79/2000 or with latest amendments.	NO	15	Consignee or Authorized representative
39	01080800	Battery Block for magneto telephone, 12 V 7 Ah along with charger 230V AC/12V DC 1 amp. As per RDSO spec. TC 72/97.	No.	15	Consignee or Authorized representative
40	01080900	Fire Extinguisher CO2 type (capacity 5 kg.)	No.	26	Consignee or Authorized representative
41	01081100	Earth Leakage Detector as per RDSO/SPN/256/2002 with latest amendments. The basic detector unit shall comprise of 8 channels, for use on signaling circuits of 110V AC/DC and/or 60V/24V/12V DC as ordered by purchaser. If the detector is required for a smaller number of channels, dummy plates shall be provided. For additional requirement add on /expendable cabinet may be used. The voltage specified shall be provided with + 25% and – 10% tolerance.	No.	30	RDSO
42	01090100	Office Chair makes Godrej CH-7B or similar of reputed brand.	No.	42	Consignee or Authorized representative
43	01090200	Office Revolving Chair Godrej Make Model No.9u02r Bravo or Similar of reputed brand.	No.	16	Consignee or Authorized representative
44	01090300	Office table with laminated top with three drawers on left hand side and one locker on the right-hand side. Olive brown with duplicate keys. Make: Godrej Model T-9 or Similar of reputed brand.	No.	21	Consignee or Authorized representative
45	01090400	Steel Plain Almirah with 4 adjustable slaves Size: 1980mm height, 915 mm width and	No.	21	Consignee or Authorized representative

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		485 mm depth. Make: Godrej Storewel Plain Large or Similar of reputed brand.			
46	02010100	Colour Light Signal Complete. This includes: (1). Post Tubular 140 mm Dia, as per IRS: S-6/81 or Latest & RDSO Drg. No. SA-24625 (Advance). (2). CI Base (As per IRS S-10 & RDSO Drg. No. 2011/M with latest assembly). (3). Pinnacle. (4). Ladder Assembly, as per RDSO Drg. No. SA-23156, with Base, Ladder Guards, Platform, Front Maintenance Platform, MS Supporting bracket to Support Ladder. (5). Signal Front Staging Complete Assembly for CLS Unit. (6). Signal back staging as per extent WR Practice Note: Height of the Post shall be 5.5 Long.	No.	20	Consignee or Authorized representative
47	02010900	Non-Metallic (FRP) colour light signal housing multi-unit type for railway signaling suitable for RE area TWO Aspects. Complete without lenses, lamps and signal transformer as per RDSO DRG. No. SA 23003/A/M Adv. Alt- S and as per SPEC. No. RDSO/SPN/194/2006 (Vol. 1.0) or latest and FRP material as per RDSO SPEC. No. RDSO/SPN/151/1997 or latest.	No.	20	MITES
48	02012300	Pad locks Godrej makes, Hardened Nav - Tal 7 lever, 65mm dia with common key or similar product having same feature & technical data.	No.	40	Consignee or Authorized representative
49	02020100	Track Lead Junction Boxes as per C.RlyDrg. No.RST 11509 made from fiber glass along with terminal blocks.	No.	3000	MITES
50	02020200	Choke Coil for Single Rail Track Circuit on 25 KV 50 Hz AC Electrified Section as per Spec No IRS S 65/1983 with latest amendments.	No.	800	MITES
51	02020300	Adjustable Track Feed Resistance disc type 30 ohms as per RDSO Drg. No. SA 20166/M (Adv.) with latest amendments (with Phenolic molded base).	No.	400	Consignee or Authorized representative
52	02020400	Track feed battery chargers, 110V AC input, 2 to 6 V DC Output; as per Spec.No.IRS.S 89/ 2013 with latest amendments. Charger shall be suitable for charging 80 AH battery.	No.	400	RDSO
53	02020500	Channel Pins MS (Galvanized) single groove, 7 mm suitable for 4mm dia bonding wire as per spec No IRS S 17 & RDSO Drg No. S-69/M.	No.	15000	Consignee or Authorized representative
54	02020600	PVC jacketed wire rope for Track Lead connections. PVC jacketed wire rope should be of Galvanized steel wire rope 6 mm dia (6x19 stranded wire with steel core	Km	75	Consignee or Authorized representative

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		of 6 mm dia) sheathed with PVC 2mm wall thickness, overall thickness being 10 mm. PVC sheath should be made of type 6 compound as per IS 5831 of 1970. Reclaimed or recycled material should not be used.			
55	02020700	GI wire 8 SWG (4mm dia) suitable for track circuit rail bonding.	Kg	12000	RITES
56	02040100	Apparatus Case Single NE Rly Type as per Drg. Now. Rly/SW/47/68 Alt-A, fitted with two nos of E Type lock (ward No will be specified by Engineer-in Charge) as per RDSO Drg. No. SA 3376/3473 and Key to Drg. No. 3377 Note: This item includes the supply & fixing of 2 Nos E Type Lock fitted on both doors, along with two Keys.	No.	20	Consignee or Authorized representative
57	02040200	Apparatus Case half NE Rly Type as per Drg. No. W. Rly/SW/47/68 Alt-A fitted two nos E Type lock of (ward No will be specified by Engineer-in Charge) as per RDSO Drg. No. SA 3376/3473 and Key to Drg. No. 3377. Note: This item includes the supply & fixing of 2 Nos E Type Lock fitted on both doors, along with two Keys	No.	10	Consignee or Authorized representative
58	02040700	Phenolic laminated Sheet, grade P3 in standard size of 1220 X 1220 x 20 mm as per spec. No IS 2036 of 1995 or latest. Test report of manufacture to be supplied.	No.	10	Consignee or Authorized representative
59	02040900	Phenolic laminated Sheet, grade P3 in standard size of 1220 X 1220 x 10 mm as per spec. No IS 2036 of 1995 or latest. Test report of manufacture to be supplied.	No.	10	Consignee or Authorized representative
60	02041100	ARA Terminal blocks with links made of PBT Spec No. IRS/75/2006(Rev - 2) with latest amendments and RDSO Drg.No.SA-23741A Alt.4.	No.	1000	RDSO
61	02041200	Cartridge fuse block made of PBT as per RDSO Drg No SA-23748 Alt 4 & Spec No IRS S 75/2006 with latest amendment. Fuse block shall be suitable for round head type voltage fuses. This also includes supply of equivalent no of ND type Fuses of 2A capacity as per specification IRS S-78/92.	No.	100	RDSO
62	02041300	Round head type non deteriorating type low voltage cartridge fuse as per Spec No IRS/S/78/92 with latest amendments 2A/4A/6A capacity.	No.	100	RDSO
63	02050100	Earth Electrode as per Drg. No. CSTE / 6091.	No.	100	Consignee or Authorized representative
64	02050200	Maintenance Free Earth Electrode of length 3m, including supply of 3 bags of Earth enhancement material for earthing (20KGs /bag) for each electrode & other accessory as per Drg. No. SDO / RDSO/	Set	120	RDSO/RITES

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		E&B/001 and RDSO Spec No. RDSO / SPN/197/2008.			
65	02060100	Medium Class G.I. Pipes to IS: 1239 (Pt.)-2004 or latest; 100 mm dia. (int. dia) 3.65 mm+/- 10% thick with coupling. G.I. pipes shall have ISI mark on it and contractor should submit manufacturer's test certificate of G.I. pipes.	RM	120	Consignee or Authorized representative
66	02060200	Double Walled Corrugated (DWC) HDPE Pipe with associated collars etc. as per RDSO Specification No. RDSO/SPN/204/2011 or latest anti-rodent & anti-oxidant and non-flame propagating type in 6 meters straight length and of size 120 mm outer dia, & 103.5 mm inner dia. (The manufacturers, suppliers must produce valid IS license and should be certified under ISO 9000 and shall submit copy of certificate). One of the following coupling arrangements should also be supplied with each pipe as per the site requirement. 1) Suitable snap fit coupler with rubber 'O-Ring 2) Spacers 3) Tees 4) Bend, 5) End-cap (The total quantity of above items is equal to no. of pipes supplied.) DWC pipe shall be marked at every 1 m length in such a way that manufacturer's name, vendor name and year of manufacture can be easily identified.	No	70	Consignee or Authorized representative
67	03010100	Phase II-Design of circuits' alteration and plans to suit layout given in the signaling plan of the Hot Standby Architecture Electronic Interlocking (EI) system. All plans and wiring diagram shall be prepared on Auto cad Drawing and supplied with CD. This will include supply of Control cum Indication panel diagram, square sheet, wiring diagrams, Fuse analysis, contact analysis, Power panel diagram, IPS wiring diagram, Auto change over diagram, Power equipment arrangement with program switch, Block circuit wiring diagram, Digital Axle counter wiring diagram and all other relevant drawings. NOTE: The contractor shall initially supply 2 sets of documents (Paper Prints) for approval of Railways duly highlighting the altered portion in red color. Railway will return one set to the contractor duly approved with alterations/corrections, if any. The contractor shall incorporate Railways' alterations/ corrections/ comments, if any, in the tracing & CD without any deviation and submit all the tracings and Final CD complete with all respect for Approval of Railways. After Approval of Railways on the tracings, the contractor shall submit 3 sets of final	Stn. Per Route	150	-

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		approved diagrams to the Railways within 15 days. He shall ensure each sheet has a block for signature of railway official as well as a block for signature of firm, duly signed by the authorized signatory of the firm. The name of the work as given by Railways shall be written on every sheet under the work column. All the drawing shall be supplied in a good quality folder for each station			
68	03010300	Design of circuits and plans to suit layout given in the Signalling plan of IBS/ABS/LC GATE. All plans and wiring diagram shall be prepared on Auto cad Drawing and supplied with CD. This will include supply of Control cum Indication panel diagram, Route section plan, square sheet, wiring diagrams, Relay rack/Relay arrangements, Bus bar details, Fuse analysis, contact analysis, Relay room tag block analysis, panel tag block analysis, Power panel diagram, IPS wiring diagram, Auto change over diagram, Power equipment arrangement with program switch, Block circuit wiring diagram, Digital Axle counter wiring diagram and all other relevant drawings NOTE: The contactor shall initially supply 2 sets of documents (Paper Prints) for approval of Railways. Railway will return one set to the contactor duly approved with alterations/corrections, if any. The contactor shall incorporate Railways' alterations/ corrections/ comments, if any, in the tracing & CD without any deviation and submit all the tracings and Final CD complete with all respect for Approval of Railways. After Approval of Railways on the tracings, the contractor shall submit 3 sets of final approved diagrams to the Railways within 15 days. He shall ensure each sheet has a block for signature of railway official as well as a block for signature of firm, duly signed by the authorized signatory of the firm. The name of the work as given by Railways shall be written on every sheet under the work column. All the drawing shall be supplied in a good quality folder for each IBS/ABS/LC Gate.	LOT	3	-
69	03010500	Preparation of following completion plan on standard 75-micron polyester film all drawing will be prepared on CAD & one DVD/CD will be provided for the finally corrected version of drawing & documents after it is checked & approved by Rlys. Completion documents will also supply for ST/LT, WD etc. 6 copies will also be provided for each of the documents	Route per Stn.	350	-

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		mention below cable Route plan including depth of cable, cable core chart, location details, plan for all location and 20 copies of SWR plans, SWR literature and other literature required for commissioning.			
70	03020100	Phase I - Installation, wiring, programming, testing and commissioning of EI equipment supplied as per supply item in schedule 'A' including transportation from Consignee's depot to site. The works and materials for installation, wiring, testing and commissioning, grouting, cutting of floors, walls, refilling of the same, re-plastering, required CC/ masonry works, fixing/ placing/ laying of insulated ladders/ casing-capping/ cable trays/ RCC/GI pipes / Cables, termination of cables with lugs/ connectors, painting,/ lettering are to be provided/ done by the contractor for the equipments supplied vide Item of Schedule "A" of this contract This also covers the networking of built in EI Data loggers of all the stations to monitor the system to any other places where desired by Engineer-in-charge. Note: Installation shall be comply to RDSO Technical advisory note no. STS/E/TAN/3012 Ver 3.0 dated 28.06.2021 or latest. Policy/letter to RDSO Installation, wiring, programming, testing and commissioning of Operator VDU in Hot stand-by with Redundancy. Any Equipments/cards/Modules required for Hot stand-by with Redundancy shall be supplied & Installed by the Contractor Note: - This also includes supply of Two nos. of composite computer & printer table (Godrej work station table) for keeping VDU and one no Godrej make operator chair model PCH7001. Termination of indoor/ PIJF cables in relay room on relays, tag blocks, CT racks as per approved wiring diagram including alterations/ modifications as required at site. Soldering to be done at all required termination. Dressing/ lacing of wiring shall be done neatly with help of dressing thread / plastic self-lock strip of suitable size. The tools/ equipments/ materials/ simulation boards required for testing shall be supplied / fabricated by contractor. this included replacement of modules/ cards/ LEDs/ equipments going defective during testing. Necessary power supply boards with required capacity plugs, sockets, surge & lightning protection boxes shall be supplied and installed by the contractor. 230V supply shall be arranged by Railways. In case supplies are required to	Job	10	

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		be extended, from Power room / relay room then same shall be extended by the contractor with his own materials such as 1X16 sq mm wires, cables, lugs, RCC/GI pipes, insulated ladders etc After ST/LT testing, Factory Acceptance Tests (FAT) & Square Sheet testing system should be fault free while submitting to Railways, otherwise suitable necessary action can be taken by Engineer-in-charge.			
71	03020300	Training of Technician/ Jr. Engineer for installation, Commissioning, Testing, Repairs& Troubleshooting of EI system. (Hard copies of training material/ course modules to be given to each participant).	Man/ Day	160	-
72	03020400	Training of Officers for installation, Commissioning, Testing, Repairs& Troubleshooting of EI system. (Hard copies of training material/ course modules to be given to each participant).	Man/ Day	40	-
73	03020500	Earthing of EI equipment, relay racks and Power equipment etc to be done along with the supply of all requisite materials. Earthing shall be in the form of Ring Earth conforming to RDSO specification No. RDSO/SPN/197/2008 (with a min. of 6 maintenance free earth electrodes) & RDSO Drawing issued under Railway Board letter No. 2010/Sig./SGF/EI (Ansaldo) Dated 22.06.11, made using copper rings with earth resistance less than 1 ohm. The earthing shall be maintenance free & earth enhancement compound should be used. The ring earth shall be connected to copper flat of size 25x3 mm in the relay room and IPS room. This copper flat shall be fixed on the wall to the entire breadth of the Relay room and IPS room as an earth bus bar and all earth connections shall be taken from it. A, B, C, & D class protection shall be provided for all EI equipment Note: - This will also cover the earthing& necessary protection of EI equipment as per details given in the scope of work of Special Condition of Contract and other requirement given in Chapter 5 & Pre-commissioning check list of EI system.	Job	10	RDSO
74	03030300	Installation of Relay Rack Assembly including IDF pillars if any complete with wall supports, scaffolding, ladders, runway for cables, fixing of Relay / Relay group base plates, fixing of Tag blocks etc. The work shall be done as per approved plan, extant practice on WR& the instructions of Rly engineer at site.	No	6	
75	03030400	Installation of Cable Termination Racks Assembly complete including wall	No	15	

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		supports, scaffolding, 8 way/ARA terminals /Screw less connectors, Tag blocks & other necessary accessories etc. The work shall be done as per approved plan, extant practice on WR & the instruction of Rly engineer at site.			
76	03030700	Installation wiring testing and commissioning of Fuse change over system (FACS). This includes provision of common Buzzer & indication at ASM Room & ESM Duty Room and painting of fuse details. This also includes fabrication of frame for installation of FACS at Station/ LC gate where installation of relay racks not feasible.	Per Module	85	
77	03030800	Supply & installation of Test board (LED, Pin tool type) for relay Room as per as per Drg No RST/C/105 A & B	No.	8	
78	03031100	Circuit wiring/Jumpering as per circuit diagrams in the relay racks/IDF rack tag blocks. This includes preparation of Jumper sheets by wire man duly checked by firm's site supervisor & wire to wire testing as per circuit diagram. Any wrong jumper done by wireman will not be paid & correction shall be done free of cost. Jumper wires will be issued by Railways. Good quality solder resin core to be supplied by contractor for soldering of Jumper wires. Soldering of jumper wires to be done after completion of testing by Railways.	Per Jumper	600	
79	03040100	Installation, wiring, testing and commissioning of Data logger complete along with accessories using Contractors own wiring & fixing materials as per following configuration. (It includes loading of NETWORKING software, networking of data logger, installation of FEP & Fault diagnosis system). The requisite communication cable/channel for networking will be arranged by Railway. 1024 digital & 32 analog inputs / 4096 digital & 32 analog inputs	Set	8	
80	03040200	Installations, wiring, testing and commissioning of Remote Terminal Unit complete along with accessories using Contractor's own wiring & fixing materials. (It includes loading of NETWORKING software and networking with data logger The requisite communication cable/channel for networking will be arranged by Railway.	Set	5	
81	03050100	Installation of LT Power Panel/ Power distribution panel/ Auto Changeover Panel, power supply equipments such as Rectifiers Transformers, Battery chargers etc including mounting on wooden planks/Hylam Sheet and complete wiring	LOT	17	

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		for automatic change over arrangement, mounting of Program switches on Bakelite sheet of size 300 mm x 300 mm x 8 mm fitted to MS angle (size 25mm x 25mm x 5mm) brackets, wiring as per requirements. Necessary wires to be supplied by Rlys, lugs & glands to be supplied by Contractor.			
82		Installation, Wiring and testing of Integrated Power Supply System. This includes power distribution connection to bus bars and relay racks in the room with contractor's own wiring materials and fabrication and fixing of AC/DC power distribution board made on 10mm thick Phenolic hylam sheets or any standard make with connections suitable for 32 A. Wiring to be done considering site requirement, depending upon the load with suitable wires, lugs & glands as per instructions of Engineer-in-charge. The work includes installation of Thermo flasher relay, ELD's, fixing & wiring of change over switch (program switch) for selection of DG set supply (DG1 & DG2) and wiring of change over switch (program switch) for selection of mains or DG supply. This item also includes supply & fixing of ladder along the wall for carrying power supply wires/cables from IPS room to Relay room/power room etc. Any masonry work required will be carried out by contactors own material.			
(i)	03050200	For Station	Nos.	8	
(ii)	03050300	For LC gate/IBS/OC	Nos.	5	
83		Charging of Lead Acid Batteries with contractors own battery grade sulphuric acid and distilled water with minimum two charge - discharge cycles, installation of charged batteries in groups & their connection & wiring. The work shall be done as per extant practice of W.Rly& instruction of Engineer-in-charge. Detailed measurements of initial charging shall be recorded jointly by contractor & Rly's site-in-charge.			
(i)	03050500	2V 80AH	No.	1200	
84	03050900	Installation and commissioning of various classes of lightening cum surge protection device as decided by site engineer. This include supply and fixing of any other material required to complete the installation & commissioning of lightening cum surge protection device.	No.	13	
85	03060300	Wiring, installing of Magneto / DTMF telephone in ASM office, at locations, Relay Room, Point locations on both directions and siding Point Control	Per Tele	15	

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		locations as per instructions of Engineer-In-Charge for traffic purpose.			
86	03060700	Installation, Testing & commissioning of Block proving by Axle Counter (BPAC) including UFSBI equipment as per standard practice & directive on 1:3:6 CC foundations as per drawing No CSTE 6095.	Set	5	
87	04010100	Preparation of cable route plan, cable core age plan, location particulars, Cable termination rack particulars, cable meggering report, earth resistance particulars, Traction bonding diagram, 1/2 wire count sheet and any other drawing in AutoCAD in A3/A4 size. The contractor shall initially supply 3 sets of circuits complete for approval of Railways. Railways will return one set to the contractor duly approved with alterations/corrections, if any. The contractor shall incorporate Railway's alterations/corrections in the tracings without any deviation and submit all tracings complete in all respects to the Railways along with CD & 4 sets of final approved drawings. This includes submission of final cable route plan as per laid cable duly measured at every 30m clearly indicating distance of laid cable from fixed point of reference & indicating all track crossings and tail cables. This also includes designing of cable core age plan based upon I.P in consultation with engineer-in-charge for small/medium yards	LOT	5	
88	04020100	Excavation and Casting of foundation for main signal post as per CSTE/3122 (WR) with contractor's own materials including cement and anchor bolts of standard size. The required scaffolding Fermat for Casting of foundation will have to be brought by the contractor at his own cost.	No.	20	
89		Erection of CLS Post with base and signal unit on top or on OFF set Bracket, fixing of front and back staging, ladder and guards, signal name plates / boards if any with contractor's own brackets and fixing materials. This also includes erection of auxiliary signals like calling on, shunt signal if any. The work shall be done as per instructions of Rly engineer at site. It also includes provision & fixing of maintenance platform as per design given by Engineer - In-Charge at site. The Item includes cutting of Signal post if required by Site In charge.			
(ii)	04020300	2/3/4 aspect signal unit mounted directly on signal post	No.	20	
90	04020800	Fixing of Calling-on Signal/A-Sign/AG-Sign unit on signal post. The item includes	No.	20	

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		fixing of Co- On signal /'A' sign/ 'AG' sign unit on signal post with bracket, hood etc. Item includes supply bracket & fixing materials etc. by the contactor. The item also includes termination of cables & wiring inside Co- On signal /'A' sign/ 'AG' sign unit as per standard practice.			
91	04020900	Supply & Fixing of Stop Board, Block section limit Board, goods warning board with contractors own material. The work shall be done as per instruction of Rly. Engineer at site.	No.	20	
92	04021100	Fabrication and fixing of Signal Number Plate (CSTE Drg No CSTE/6186), 'A' Marker (Drg No. CSTE/6180), 'AG' Marker (Drg No. CSTE/6181), 'P' Marker (Drg No. CSTE/6182), Arrow Marker (Drg No. CSTE/6183), 'G' Marker (Drg No. CSTE/6184), 'C' Marker (Drg No. CSTE/6185). marker disk on signals as per standard practice All material required for this work shall be supplied by Contractor.	No.	30	
93	04030100	Installation of DC track circuits covering points zones also. The item includes provision of continuity bonds of seven strand PVC jacketed wire/ GI wire 8 SWG on rail joints after drilling bond-hole of 7.0/7.1/7.2mm dia (double bond with sleeves and rail clips are to be provided at each rail joint), insertion of insulated block joint, fixing of Track lead Junction box on MS angle two numbers of size 40X40X5 mm 1200 mm length for track feed/ jumper / track relay ends of track CCTs (as per double TLJB arrangements) and also for fixing jumper cables as per insulation diagram WR Drg No. CSTE/6055 and standard practice, making rail connections through suitable insulated sleeves from Track lead Junction box at TF, jumper & TR end with seven strand PVC jacketed wire /GI wire 8 SWG , rail clips for fixing bond wire on the TLJB as per standard practice, termination of tail cables on bootleg terminals etc TF/TR wiring shall be fixed on the suitable arrangement on PRC sleepers with the help of Hooks. Hooks shall be provided on PRC sleepers with the help of suitable steel bracket. This item also includes fixing & supply of channel pins etc. The item also includes supply of MS angles / trestles, GI wire 8 SWG / seven strand PVC jacketed wire, hooks, rail clips etc. (Supply of insulation material for block joint & Boot leg is covered in Schedule separately or will be supplied by Railways).	No.	400	

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94	04030200	Fixing and wiring of DC track circuit equipments i.e., track feed charger, resistance, track relay, battery, etc., in the Apparatus Case and battery box as per standard practice. Termination of tail cable on M 6 / Screw less terminals WAGO or FINOLEX or similar approved make terminals/ fuse blocks / HRC fuse. Item includes testing /commissioning of track circuit. Complete wiring material will be supplied by contractor (Supply of Track feed battery charger, track feed battery, resistances & 'B' type choke & Track relays will be supplied by Railways / covered in Schedule separately).	Per Track Cct.	400	
95	04030300	Erection, Fitting and Rail connection of Track Lead Junction Box on two supports (M.S.angle) with contractor's fixing material and PVC jacketed wire for track lead connection including angles of size 40 x 40 x 5 mm 1200 mm length This will include drilling of holes for track lead/side connections on rail. The work shall be done as per Drg. No. S&T/Const./JHS/T 115 & instructions of Rly engineer at site	NO	150	
96	04030400	Provision of bonding with GI wire 4mm dia (8 SWG) for track jumper & fish plate joints bonds. This will include drilling of 7.0/7.1/7.2 mm dia holes in rails (4 Nos.) and provision of two jumpers for each bond, clipping of bonds etc. with contractors own tools as per instruction of Rly. Engineer at site.	NO	250	
97	04031000	Installation testing & commissioning of Single Section digital axle counter single section type system complete with track devices and other associated accessories. This include fixing of device, relays, wiring, lacing /dressing, cable termination with lug eyelet, drilling holes in rails, Installation of track devices and make it functional along with existing UFSBI. Material required other than supply item of schedule A shall be arrange by contractor to make it functional.	set	5	
98		Excavation and Casting of Apparatus Case foundation with contractor's own materials including cement and anchor bolts of standard size. The required scaffolding Fermat for Casting of foundation will have to be brought by the contractor at his own cost.			
(i)	04050100	Single Case as per Drg No SK 748 or CSTE/5074	No.	20	
(ii)	04050200	Half Case as per Drg No SK 747or CSTE/5074 or SS Location	No.	10	

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99		Installation of Apparatus Cases with miniature 'E' type lock on CC foundation. This includes filling of location foundations with river bed sand and plastering on top of the sand. 'E' Type lock will be provided by Railway.			
(i)	04050300	Single Case	No.	20	
(ii)	04050400	Half Case	No.	10	
100		Fabrication and fixing of phenolic laminated sheet of size 10mm thick in location box by providing all fixtures as per Railway Drawing including fixing of PVC coated string rods at the back side for cable support with contractor's own materials. The work shall be done as per drg and arrangement similar to SK 783-1/2. with latest alterations & as per instructions of Rly engineer at site.			
(i)	04050600	Single Case	No.	20	
(ii)	04050700	Half Case	No.	10	
101	04050800	Fixing of ARA Terminals /Screw less connectors and fuse blocks on phenolic laminated sheets and fixing by stainless steel/brass nuts & bolts. This includes provision of two additional holes on the board on either side for cable conductor entry.	No.	1000	
102	04050900	Termination of cable cores on ARA terminal/fuse blocks, 8 way terminals block/ Screw less connectors in the apparatus Cases/ cable termination rack. This includes all associated works of pulling out the cable from underground. The work shall be done as per location plans and instructions of Railway Engineer at site. This item includes dressing of Cable, making wiring tree etc.	Per Conduct or	2000	
103	04051100	Fixing & wiring of QNA1 / QNA1K relays for GPR Circuit in apparatus case as per Standard practice. Fixing and wiring material shall be supplied by the contractor.	No.	20	
104	04060100	Excavation of cable trench as per cable route plan, 1Mtr. deep and of 0.3 Mtr. to 0.6 Mtrs wide advised by Engineer-in-charge alongside the track in normal (all type) soil/strata, conforming to distances as per cable route plan and refilling. This work includes clearing of route from bushes etc, covering of cable laid in trench by loose soil for a layer of 50mm thickness approximately before covering by bricks. The work shall be done as per the extant practice on Western Railway and instructions of Railway Engineer at site. In case 1m depth of trench is not achievable due to site conditions, specific approval of JA grade officer will be required for each site where trench depth of 1m is not	Cu. Mtr	32000	

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		possible. Without the approval of JA Grade officer, no payment for trenching will be made for trench depth less than 1m.			
105	04060200	Digging of trench 1.2 M deep from rail flange/ road level and, 0.3 Mtrs to 0.6 Mtrs wide and back filling after placing of DWC/ RCC/GI pipe. (Placing of DWC/RCC/GI pipe covered separately).The ballast disturbed be screened and dressed as required by Engineer-in-charge or his representatives and road tarred immediately. For track crossing, Drg. No.CSTE/3644 Pg.7 of 11 and for Road Crossing, Drg. No. CSTE/3644 Pg. 5 of 11 are to be followed.	Cu. Mtr	1000	
106	04060400	Horizontal direction drilling/boring without damage of surface road using Auger Machine. The bore shall be 150 mm dia& shall be done at the depth of minimum 1200 mm from the ground level. The ground level shall be considered ignoring the bank height of the bank of the road. The length of the bore shall be minimum 4 Mtrs long. this include insertion of different dia DWC pipe/ GI pipes coupling etc. as per direction of Engineer In charge. Note: - Pipe will be supplied by railway. Contactor shall provide all material required for boring and adequate nos. of labours for proper laying of cables into the bore. Cable shall be laid cautiously so that it should not get damage due to rough handling & pressure on cable	Mtrs.	4000	
107	04060800	Placing of DWC/RCC/GI pipes along with collars in trenches at places of track and road crossings, platform cuttings etc.	RM	420	
108	04061000	Fixing of GI pipes for crossing the culverts, bridges etc. and concreting of ends with brick masonry at both ends as per the instruction of Rly engineer at site.	RM	120	
109	04061400	Laying of S&T Cables of various cores/ pairs/ quads in trenches/ GI pipes/ RCC pipes/ DWC pipes/ Trunking. This also includes laying of cables in track crossings & road crossings. Item includes provision of labels of coloured plastic adhesive tapes or any other identifiable material on each cable to give the cable number at each G.P.(Cables will be meggered before and after its laying by contractor under supervision of Railway Representative and he will submit the meggering report of each testing). Length of the cable laid includes the length of the cable coiled for termination purposes.	RM	80000	
110	04061800	Supply and installation of RCC cable route marker engraved and painted on both side along the route every 50mm and route	No.	2000	

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		diversion as per Drg. No 4014/00/CC4 or latest/ Stone marker.			
111	04062900	Earthwork in filling in embankment, guide bunds, around buried type abutments, bridge gaps, trolley refuges, rain bunds if provided, platforms etc. with earth excavated from outside railway boundary entirely arranged by the contractor at his own cost as per RDSO's latest guidelines and specifications and special condition of contract including all leads, royalty, lifts, ascents, descents, crossing of nallahs or any other obstructions. The rates shall include all dressing of bank to final profile, demarcation and setting out of profile, site clearance, removing of shrubs, roots of vegetation growth, heavy grass, benching of existing slope of old bank, all handling/re-handling. Taxes, Octroi and royalty etc. as a complete job. Cut trees shall be property of railways and to be deposited in the railway go down unless specified otherwise in the Special conditions of contract	Cu. Mtrs	500	
112		Painting of two coats of synthetic enamel paint over one coat of primer on the following after scraping & cleaning surface wherever necessary with contractor's own supply of paints. Wherever required contractor shall apply coating of epoxy paint also as per instructions of site-in-charge. Epoxy paint will be supplied by Railways. NOTE: - The paint and primer should be from Asian Paints/ Nerolac / Dulux / Berger. The primer / enamel paints (Aluminum synthetic, black enamel, brilliant white and yellow) will be as per (IS 5660 of 1970) / (IS 2932 of 1974).			
(i)	04080100	Apparatus Case Full Size. (Outside & inside)	No	20	
(ii)	04080200	Apparatus case Half Size. (Outside & inside)	No.	10	
(iv)	04080400	Main Signal Post with Signal Units, Surface base and complete fittings as per Western Railways standard practice.	No.	20	
(vi)	04080600	Track Lead Junction Box. (Black enamel outside only)	No.	3000	
113		Lettering / Numbering Termination particulars, equipments names etc., legibly and neatly inside location boxes. This includes supply of paints of Asian Paints/ Nerolac / Dulux / Berger make.			
(i)	04081200	Full Case.	No.	20	
(ii)	04081300	Half Case	No.	10	
114	04100300	Installation of Maintenance free Earth Electrode for Maintenance free earth spec of RDSO/SPN/197/2008	No.	120	

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Schedule B					
1	NS1	SMPS based Integrated Power Supply System for IBS & LC Gate in RE-Section as per RDSO Spec. No RDSO/SPN/165/2012 version -3 or latest and Drg. No. CSTE/6155/ 2 of 7. This includes transportation, installation and Commissioning of Integrated Power Supply System.	No.	5	RDSO
2	NS2	SMPS based Integrated Power Supply System for PI with Q series relays up to 4 Line, as per RDSO/SPN/165/2012 version -3 or latest and Drg No. CSTE/6155/ 7 of 7. This includes transportation, installation and Commissioning of Integrated Power Supply System.	No.	8	RDSO
3	NS3	Supply, Installation, Testing and Commissioning of Block proving with digital Axle counter using UFSBI complete set for Double line operation. as per IRS:S-105/2012Ver.0 with latest amendment & Manufacturing specification. NOTE: One set will include equipments required for one complete double line Block Section except DAC. Each Set consisting of following: 1-Universal fail safe block interface for double line as per RDSO Spec.no. IRS:S. 105/2012 with latest version and amd. it shall have auto changeover facility for quad and E1 Channel, necessary interface for quad and E1 channel to be supplied along with auto changeover arrangement. Quantity of this item -02 no in one set. 2- Block panel complete with all accessories as per RDSO/S/3/2017 with latest and QTY-02 no. 3- Relay rack with double locking and sealing arrangement as per RDSO drg no. RDSO/S/3/2018 including relays for each Relay rack (QN1-19 no., QNA1-07no, QL1-02 and Timers-1 no). Quantity of this item -02no in one set. 4-Block telephone with accessories as per RDSO spec.no. RDSO/SPN /191/2000 (the block phone should work without any interruption after auto changeover). quantity -2no. 5- Supply of reliability improvement kit suitable to work with UFSBI as per RDSO/SPN/147/2005 or latest. It comprises (a) automatic media changeover of modem working on redundant channel for data transmission on OFC/ quad/ micro wave radio (any two media)-1pair	Set	10	RDSO

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		(b) secondary modem for UFSBI for use with secondary media OFC/quad/voice channel=1pair (c) power & data SPD: type c & d: power line of 24 AC/DC-2no, V20C/3PH 150v-2no) & data line SPD (MDP 4D/5T- 2no). (d) Power monitor and soft start unit PMSS - 1 Pair. Make/Brand: Self.			
4	NS4	Supply, Installation, Testing and Commissioning of High Availability Single section digital axle counters with Dual sensor system as per RDSO/SPN/177/2012 version 3 or latest. This includes The supply of High frequency web mounting type Tx coil/Rx coil, VR/PR Box duly wired, Vital relays, PR Relays, Clamp with deflector plates & hardware, Dual display reset box with auto resetting facility, Surge voltage protection devices and filter card to be mounted on din rail etc as per OEM for complete installation & testing & commissioning of (HASSDAC) system NOTE: One set of HASSDAC system will include equipment required to monitor One Up line or One Dn line of a full Block Section between two stations.	Set	16	RDSO
5	NS5	Supply, Installation, Testing and Commissioning of Universal Fail Safe Block Interface for Double Line IBS operation as per Spec. IRS S-104/2012 Ver – 0 suitable to work on OFC channel and Quad Cable. This also includes supply and installation of modem and media changeover. The installation activity will be only considered complete only after IBS has been made functional t the satisfaction of Engineer In charge. his includes supply of relays and related accessories complete and One pair equal to 2 nos. Note-Installation testing and commissioning shall be done by RDSO approved eqpt manufacturer and pre commissioning checklist should be signed jointly by representative of RDSO approved equipment manufacturer & railways.	Set	6	RDSO
6	NS6	Supply, Installation, Testing and Commissioning of High Frequency Digital axle counter Single Section type , equipped for 4 detection points, monitoring 3 track sections, suitable for working with straight line and suitable for intermediate block system as per RDSO/SPN/177/2012 version 3 or latest. This includes The supply of High frequency web mounting type Tx coil/Rx coil, VR/PR Box duly wired, Vital relays,	Set	22	RDSO

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		PR Relays, Clamp with deflector plates & hardware, Dual display reset box with auto resetting facility, Surge voltage protection devices and filter card to be mounted on din rail etc as per OEM for complete installation & testing & commissioning of system. Note - This item includes Installation, wiring & testing / commissioning of Digital Axle Counter's Central Unit/Evaluator/Processor for the section /at station including its associated all indoor equipments, indication panel, monitoring console/interface computer and wiring the same to integrate with the relay circuits including supply of required power cable of multi -strand 10 Sq mm or more from power room to Central Evaluator, 2 core shielded cable of required size copper conductor as per IRS (S) 76/89(Amd.3) or IS 694/2010 with latest amendment as applicable with other accessories as per the instructions of Railway Engineer at site and earthing as per OEM's technical requirement and specifications. This also includes laying & termination of cable if any form Panel Room to Axle Counter room /Relay room in DWC pipe with contractor's material / existing ladder. Also supervisory track circuit to be provided by for which relays will be provided by Railway			
7	NS7	Modification, Alteration, Augmentation, Design, Manufacture, Supply, Installation, Testing & Commissioning of Existing Centralized Electronic Interlocking System of ANSALDO Make at HARKIYA KHAL & BARAYLA CHAURASI Stations as per RDSO specification No. RDSO/SPN/192/2019 with the latest amendment. This includes all items as per attached Annexure-1 which includes a) Re-Design of EI system – Preparation of TOC, application & interfacing circuits to suite approved Signalling Plan & installation, testing and commissioning of aforesaid station b) Factory Acceptance Test (FAT) @ in house in Bangalore office by HITACHI RAIL STS Engineers & the CSTE Representative to suite approved Signalling plan & Site Acceptance Test (SAT) shall be jointly carried out @ aforesaid station c) Supervision of Installation, Testing and Commissioning support	Station	2	-

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		d) Submission of "AS MADE" document in CD as soft copy with one set of Interfacing & application Logics Circuits in regular "A3" size shall be supplied e) Wiring pertaining to modification in existing data logger along with material required. Note: All relays as per annexure will be supplied by Railway. This schedule item also covers all the above-mentioned activities if any phasing of yard in relation to doubling is to be done at these 2 stations			
8	NS8	Modification, Alteration, Augmentation, Design, Manufacture, Supply, Installation, Testing & Commissioning of Existing Centralized Electronic Interlocking System of KYOSAN Make at PIPLIYA MANDI Station as per RDSO specification No. RDSO/SPN/192/2019 with the latest amendment. This includes all items as per attached Annexure-2 which includes a) Supply of Electronic Interlocking equipment. (Break up given in Annexure) b) Design, Preparation of TOC, FAT and Submission of As Planned and as build interface drawing, application logic & equivalent circuits in connection with alteration work. c) Alteration in existing relay room. This include supply of wiring materials required for alteration, Alteration in indoor wiring including datalogger, SAT and commissioning in connection with alteration work d) Wiring pertaining to modification in existing data logger along with material required. Note: All relays as per annexure will be supplied by Railway. This schedule item also covers all the above-mentioned activities if any phasing of yard in relation to doubling is to be done at this station	Station	1	-
9	NS9	Phase II - Installation, wiring, programming, testing and commissioning of EI equipment supplied as per supply item in schedule 'A' including transportation from Consignee's depot to site. The works and materials for installation, wiring, testing and commissioning, grouting, cutting of floors, walls, refilling of the same, re-plastering, required CC/ masonry works, fixing/ placing/ laying of insulated ladders/ casing-capping/ cable trays/ RCC/GI pipes / Cables, termination of cables with lugs/ connectors, painting, / lettering are to be provided/ done by the contractor for the equipments supplied vide Item of Schedule "A" of this contract This also	Job	5	-

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		covers the networking of built in EI Data loggers of all the stations to monitor the system to any other places where desired by Engineer-in-charge. Note: Installation shall be comply to RDSO Technical advisory note no. STS/E/TAN/3012 Ver 3.0 dated 28.06.2021 or latest. policy/letter to RDSO Installation, wiring, programming, testing and commissioning of Operator VDU in Hot stand-by with Redundancy. Any Equipments/cards/Modules required for Hot stand-by with Redundancy shall be supplied & Installed by the Contractor Note:- This also includes supply of Two nos. of composite computer & printer table (Godrej work station table) for keeping VDU and one no Godrej make operator chair model PCH7001. Termination of indoor/ PIJF cables in relay room on relays, tag blocks, CT racks as per approved wiring diagram including alterations/ modifications as required at site. Soldering to be done at all required termination. Dressing/ lacing of wiring shall be done neatly with help of dressing thread / plastic self-lock strip of suitable size. The tools/ equipments/ materials/ simulation boards required for testing shall be supplied / fabricated by contractor. this included replacement of modules/ cards/ LEDs/ equipments going defective during testing. Necessary power supply boards with required capacity plugs, sockets, surge & lightning protection boxes shall be supplied and installed by the contractor. 230V supply shall be arranged by Railways. In case supplies are required to be extended, from Power room / relay room then same shall be extended by the contractor with his own materials such as 1X16 sq mm wires, cables, lugs, RCC/GI pipes, insulated ladders etc After ST/LT testing, Factory Acceptance Tests (FAT) & Square Sheet testing system should be fault free while submitting to Railways, otherwise suitable necessary action can be taken by Engineer-in-charge.			
10	NS10	Additional Functional testing (SAT) of PI/RR/IBS/Auto signal /EI etc. as per Selection table, control table etc. Contractor shall depute one Engineer, one Supervisor & wiremen technically qualified to carryout functional testing as per approved design. Technical knowledge of contractor's staff will be judged by Railways Engineer in charge	Per Route	150	-

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		before permitting them to do the testing. Contractor has to note down all the discrepancies found in testing noted during functional test in a separate design register and to be countersigned by Railways representative. Rectification of circuit discrepancies to be done after taking approval of changes in circuit diagrams by Railways. Mistakes found to be rectified free of cost by contractor. Omission in testing or wrong testing found after functional test will be penalized @5% pf rate per route.			
11	NS11	Fixing and wiring of Relays of all types as per the instructions of Engineer-in-charge. (Note-Relays and required wires will be provided by Railways)	No	100	-
12	NS12	Relay Contact break test of indoor relay wiring. Contractor shall depute Engineer, Supervisor & wiremen technically qualified to carryout contact break testing as per approved circuit diagrams. Firm Engineer to sign circuit diagrams for break testing after carrying out the test in presence of Railway's site supervisor/Engineer. (No to be count as per A3 Size Sheet)	No	500	-
13	NS13	Detailed testing of wiring as per approved wiring diagram (W.D.) at stations, including one and two wire check, functional testing, section table & locking table testing with simulation panel including making panel through, In the presence of railway officials. A copy of tested selection table, locking table and cross sheet duly signed by contractor to be submitted to field office for record. This item includes wiring of simulation panel for testing as per standard practice, with contractors own materials. Contractor will put sufficient staff to carry out the testing round the clock and will ensure that any alternations which may become necessary during testing are carried out and testing is repeated wherever required. This includes supply of lamps for simulation panel for testing. This also including extending various supplies up to bus bars in relay room, and up to battery room, providing manual by pass arrangement for automatic change over arrangement and stabilizers, provision of Test Board for monitoring supplies as per instruction of Engg. In-charge. All materials like nuts, bolts, fixtures etc required shall be supplied by Contractor.	Station	3	-

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14	NS14	Track relay QTA2, AC immunized, 9 Ohm, 2F/1B, along with plug board, retaining clip and connectors conforming to BRS:939A, BRS:966, IRS: S34 & IRS: S23.	No.	350	RDSO
15	NS15	Supply of 4 connection points single potential through screw less terminal block for 6 Sqmm-35 Sqmm, 4 connection points 284-621/624 or superior, suitable for power cable connection.	No	200	Consignee or Authorized representative
16	NS16	Distribution Cum Auto-changeover Box between two DC supplies of Reliance Make, GAEC or similar with capacity 70A consisting of suitable Contractors of Siemens /L&T make Or Programmable Solid state type Distribution Cum Auto-changeover Box. LED Lamps, Push Button, MCB, Wago Terminals etc. Terminals & Wires should be for appropriate ratings & accessories like Lugs for wire terminations to be provided. (To be got approved from Engineer in Charge before supply).	SET	15	RDSO/RITES
17	NS17	Distribution Cum Auto-changeover Box between two AC supplies of Reliance Make, GAEC or similar with capacity 38A consisting of suitable Contractors of Siemens /L&T make Or Programmable Solid state type Distribution Cum Auto-changeover Box. LED Lamps, Push Button, MCB, Wago Terminals etc. Terminals & Wires should be for appropriate ratings & accessories like Lugs for wire terminations to be provided. (To be got approved from Engineer in Charge before supply).	SET	45	RDSO/RITES
18	NS18	Distribution Cum Auto-changeover Box between two DC supplies of Reliance Make, GAEC or similar, with capacity 32A consisting of suitable Contractors of Siemens /L&T make Or Programmable Solid state type Distribution Cum Auto-changeover Box. LED Lamps, Push Button, MCB, Wago Terminals etc. Terminals & Wires should be for appropriate ratings & accessories like Lugs for wire terminations to be provided. (To be got approved from Engineer in Charge before supply).	SET	90	RDSO/RITES
19	NS19	Installation, Testing and Commissioning of Distribution cum auto changeover system including wiring material (Excluding Cable)	SET	150	-
20	NS20	Supply of Battery Charger self-regulating floor mounting type with 230V AC single phase input and output 24 V DC, 20A to spec. IRS-S- 86/2000 with latest amendment for Axle counter application. (Amd. 4)	No	17	RDSO

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21	NS21	Supply of Battery Charger self-regulating floor mounting type with 230V AC single phase input and output 24 V DC, 30A to spec. IRS-S- 86/2000 with latest amendment	No	17	RDSO
22	NS22	Supply of Power Supply Distribution Box with MCB/Fuse as per specification and requirement given by Site Engineer, Make 3M, SNATEL, ABB	No	10	Consignee or Authorized representative
23	NS23	Pyrotech Workspace make New Modular Control Desk size 4102x2576 mm for provision of 02 Nos. Monitors made in "XLAT" system. 1. Table Top: The material of the working surface shall be made of thermally treated Aluminum - Trihydrate and acrylic resin material supported on minimum 25 mm thick MDF base. 2. Structure: Powder Coated Aluminum Sturdy Structure and extreme side Aesthetic Legs. The structure shall be rigid enough to withstand BIFMA X5.5: 2014 (Latest Edition). 3. Monitor Arm: - UL certified monitor arm assembly shall have auto lock, push & remove feature for quick release of VESA mounts and modular arm extensions for ease in maintenance and fixing of monitor by one technician within 30 seconds without using any tools. 4. Shutters & Side Legs: - Front and back shutters shall be of 18 mm Laminated MDF Board with premium finish. Side leg shall be of 25mm of the same finish. Entire console must be Greengard Gold certified. 5. Slat Wall shall be made of approx. 2mm thick Extruded Aluminum (HE9WP aluminum alloy) and designed in such a way that no joints or gaps are visible in the entire width of the console. (To be got approved from Engineer In Charge before supply).	Nos	8	UTES
24	NS24	Supply of Rack for Housing of Various S&T equipments like KLCR, Reset Box, IPS Indication Panel, CAVA Unit for FACS, SPAU for Point Reversal, Crank Handle, Quad Cable Earth Sensing Unit along with Fixing of KLCR (KLCR will be provided by Railway) as per instruction of Site Engineer, Make: RITTAL, SANTEL, APC Schneider or similar reputed make	No	20	UTES
25	NS25	Supply, installation, fixing, wiring, testing and commissioning of Common Audio-Visual Alarm Unit (CAVA) -for Fuse Auto Changeover system as per RDSO specification RDSO/SPN/209/2012 Rev. 2.0 or latest.	No	20	Consignee or Authorized representative
26	NS26	Supply, installation, fixing, wiring, testing and commissioning of Safety Point Alarm/Reversal indication Unit	No	15	RDSO/UTES

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27	NS27	Supply of Microcontroller based Quad Cable Conductor's Earth Resistance Sensing Unit, for 24 nos. conductors with metering facility for one conductor at a time	No.	30	MITES
28	NS28	Installation of Microcontroller based Quad Cable Conductor's Earth Resistance Sensing Unit, for 24 nos. conductors with metering facility for one conductor at a time	No.	30	-
29	NS29	Supply and installation of 2-wire Talk Back System consisting of one Master and One Slave Unit suitable for IBS, and Working on 110V AC as per instruction of site in charge	Set	12	Consignee or Authorized representative
30	NS30	Installation, wiring & testing / commissioning of Axle Counter's Reset Box of all types in Cabin/Panel room and wiring the same to integrate with the Axle counter as per the instructions of Railway Engineer at site. This includes laying & termination of cable if any from Panel Room/Axle Counter room /Relay room to Reset Box in DWC pipe / existing ladder. (When reset box is shifted from existing building to new building)	Station	5	-
31	NS31	Supplying & fixing of key box made of MS sheet/ wood with a glass front and padlocking and sealing arrangements per std practice. Pad lock to be supplied by the contractor. All material i.e. wood, handle, hinges, glass sheet of 3 mm thick to be supplied by the contractor. Box to be powder coated/polished and description/size to be as per instructions of Engineer in - charge.	Set	30	Consignee or Authorized representative
32	NS32	Supply, Installation, Testing and Commissioning of Control Module to address sounder cum strobe as per RDSO spec. No. RDSO/SPN/217/2018 version 2 or latest	No	13	RDSO
33	NS33	Supply, Installation, Testing and Commissioning of Relay module to connect the Data logger to the panel as per RDSO spec. No.RDSO/SPN/217/2018 version 2 or latest	No	13	
34	NS34	Supply, Installation, Testing and Commissioning of Zone Interface module as per RDSO spec. No.RDSO/SPN/217/2018 version 2 or latest	No	13	
35	NS35	Supply, Installation, Testing and Commissioning of aspirating type (air sampling) for relay room with inbuilt fault isolator as per RDSO spec. No.RDSO/SPN/217/2018 version 2 or latest	No	8	

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36	NS36	Supply, Installation, Testing and Commissioning of UL/FM/VDS/LPCB approved Microprocessor based networkable analogue Addressable and modular type of Fire Alarm Control Panel with display, in built charging facilities and provision of GSM module suitable to send SMS to configured mobile no. The panel should be equipped with sufficient nos. of loops and provision of expandability as per RDSO specification No. RDSO/SPN/217/2018 Ver 2.0 or latest. The Control panel shall be the central processing unit of the system, receiving and analyzing signals from probe type bimetallic heat detectors, UV&IR flame detectors, heat and smoke multi sensors, LHS/LHSD interface and manual call points, providing audible and visual information to the user. The panel shall have provision of connectivity of TCP-IP suitable for programming and remote monitoring. The panel shall have dedicated RS 232 serial port for direct PC or MODEM connection, for interfacing with existing data logger, optional remote printer. (As per RDSO specification no. RDSO/SPN/217/2018 Ver 2.0 or latest)	No	13	
37	NS37	Supply, Installation, Testing and Commissioning of resettable, addressable multisensory (heat and smoke) which is fully compatible with analogue addressable protocol, electronically addressed as per RDSO Specification RDSO/SPN/217/2018/Ver.2) or latest (15 No/Stn.)	No	200	
38	NS38	Supply, Installation, Testing and Commissioning of Addressable Analogue Addressable, resettable Manual Call point with inbuilt integral short circuit isolator having status LED for alarming & standby mode, electronically addressed as per RDSO/SPN/217/2018 Ver 2.0 or Latest amendment). (2 No/Stn.)	No	26	RDSO
39	NS39	Supply, Installation, Testing and Commissioning of analogue type Linear heat sensing (LHS) Cable as per RDSO Specification RDSO/SPN/217/2018 /(ver.2) or latest (200m/Stn.)	Mtr	2600	
40	NS40	Supply, Installation, Testing and Commissioning of Liner heat sensing (LHS) interface module to be integrated on main fire alarm panel as per RDSO specification RDSO/SPN/217/2018/(ver.2) or latest (1 No/Stn.)	No	13	
41	NS41	Supply, Installation, Testing and Commissioning of Addressable loop	No	26	

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		powdered sounder cum Strobe with inbuilt fault isolator as per RDSO/SPN/217/2018 Ver 2.0 or Latest amendment). (2 No)			
42	NS42	Supply, Installation, Testing and Commissioning of fire survival circuit integrity cable i.e., armored cable & power cable with all accessories for connection of all fire alarm devices 2 core 1.5 Sqmm as per RDSO Specification RDSO/SPN/217/2018 (ver.2) or latest (250Mtr)	Lot	13	
43	NS43	Transportation and laying of 6 Quad/PIJF cable in trenches/ GI pipe/ RCC pipe/ DWC pipe, trunking, as per approved cable route plan.	Km	50	-
44	NS44	Supply of HDPE Ducts 40/33 mm dia as per RDSO/SPN/TC/45/2013/Rev 2.0 with latest amendments as available. Each km of HDPE duct should have 2 no End Plugs, 2 no Cable sealing plugs, 2 no plastic couplers slip fit/push fit type.	Km	50	MITES
45	NS45	Transportation and Laying of HDPE pipe as per approved cable route plan in the excavated trench, taking due care while transporting and laying the same in the trenches or other protective works. Both the end of duct should be sealed with end plugs before laying.	Km	50	--
46	NS46	Blowing of OFC through HDPE duct & protective work (elicited in above item) already provided. Where it is not feasible to blow OFC due to curves, road/track crossings, bridges or for any other reason, OFC shall be drawn /laid manually as per standard procedure. All the equipments and machinery required shall be arranged by the contractor at his own cost. In case OFC is to be laid adopting 'Direct in trench' method then this item shall be paid as per accepted rate of item of this schedule. OFC and HDPE pipe shall be supplied by the railway.	Km	50	-
47	NS47	Final End to end testing and commissioning of fibers of the OFC laid under above items between stations/cable huts/OC for complete section.	No.	10	-
48	NS48	Supply of SPLIT DWC pipe confirming to RDSO/SPN/204/2011 Ver. 1.1 or latest RDSO specification, Nonmetallic, corrugated, multiwalled, normal duty, pliable, without protection against chemical attack and Non flame propagating in 2-meter length of size 200 mm outer dia& 175 mm inner dia. (Permitted tolerance in dia = +/-2mm) (TWO half round pipe constitute one split pipe)	Mtrs.	60000	MITES

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49	NS49	Placing of DWC/RCC/GI pipes/ PVC channel along with collars in trenches at places of track and road crossings, platform cuttings etc. also for straight cable laying. (Cable laying is covered separately.)	RM	60000	-
50	NS50	Manual / Machine horizontal auger boring/drilling of 100 mm dia Horizontal Bore across the Railway Track/ Across Road at LC gates by Boring method at a depth of 1.65mm from the ground level/ ground level to be considered ignoring the bank height of the bank/road and insertion of HDPE/DWC/GI pipes etc., as per the instructions of Engineer in charge at site as per drg no. RAILTEL/SR/OFC/2008/10.	Mtrs.	1000	-
51	NS51	Installation of earth electrode Earth Electrode including MS flat for clamp etc. and connection to Signalling equipments, lever frames, apparatus cases, signal, relay rack, block instrument, etc as per technical specification given. This item includes digging of pit in earth 3 m deep & fixing earth electrode pipe, casting of cement concrete enclosure & cover as per RDSO/SPN/197/2016. Soil treatment to be done as per std. practice. This item includes provision of MS Flat, Earth lead wires and Soldering of lead wires. The other end of the wire is to be connected to block equipment, power equipment, cable sheath, signals etc. as per site requirements. 7strand GI wire shall be used as earth lead wire.	No	100	-
52	NS52	Supply of self-supported aluminum flat step ladder (conforming to ISI) 5 ft. height. Ladder should be self-supported and it should be made up of rust proof Aluminum of Min 16 SWG. No plastic hinges/Step support should be used.	No.	10	Consignee or Authorized representative
53	NS53	Digital low current clamp meter to measure current leaks (parasitic draw down to 1 mA) and electric loads from 1mA to 100 Amp AC/DC, Voltages from 0 to 600V AC/DC, small jaw size to measure current in Signalling circuit, 4-digit display. Make -Fluke, GTC/KEW, Scope or superior with better specification as mentioned with all accessories like test lead, batteries and carrying case, sample may be got approved from consignee before supply.	No.	10	Consignee or Authorized representative
54	NS54	Insulation Resistance Tester to check insulation resistance of electrical and telecom equipment. Test Voltages 100 for insulation resistance upto 5Gigaohms. AC Voltage 30V-750V. Display Count 2000. Built in LCD Display,	No.	4	Consignee or Authorized representative

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		CAT III 600V Safety rating. Supply includes batteries, leads & user manual. Brand : STAN ONE or similar reputed make			
55	NS55	Insulation Resistance Tester to check insulation resistance of electrical and telecom equipment. Test Voltages 500V for insulation resistance upto 5Gigaohms. AC Voltage 30V-750V. Display Count 2000. Built in LCD Display, CAT III 600V Safety rating. Supply includes batteries, leads & user manual. Brand : STAN ONE or similar reputed make	No.	4	Consignee or Authorized representative
56	NS56	Supply of Point Motor for 110V DC with 400v AC immunity as per IRS S:37/82	No	20	RDSO
57	NS57	Hiring of non-AC SUV/MUV vehicle for Officer(up to 2500 Kms) Innova/Hexa or similar type of vehicle including maintenance, major minor repairs, cost of lubrication, fuel, drivers and all other ancillary costa etc. complete. (2 nos vehicle for 24 Months)	Per Month	48	-
58	NS58	Hiring of one non-AC pick up vehicle for Supervisors(up to 2000 Kms per month) Tata/Mahindra or similar type of vehicle including maintenance, major minor repairs, cost of lubrication, fuel, drivers and all other ancillary cost etc. complete	Per Month	24	-

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Annexure of Tender Schedules

Annexure – 1: Break Up of Item No – B/7 of Tender Schedule S&T/C/RTM/100 R/2022-23

Sr No	Description of Items	Unit	Quantity			Qty Provide d by railway	Qty to be Supplie d
			HKL	BRL A	TOTAL Qty		
SUPPLY							
A	Microlok II Interlocking Material						
1	MLKII Vital Input PCB 24VDC	No.	8	4	12	0	12
2	MLKII Vital Output PCB 24VDC	No.	4	2	6	0	6
3	Address Select PCB - 48 Pin	No.	12	6	18	0	18
4	PCB Keying Plug	No.	72	36	108	0	108
5	48-Pin connector housing assembly	No.	12	6	18	0	18
6	48-Pin connector guide element	No.	12	6	18	0	18
7	48-Pin female connector	No.	12	6	18	0	18
8	48-Pin female crimp contact	No.	328	164	492	0	492
B.1	Communication Materials for New System Configuration	lot	1	1	2	0	2
B.2	Interconnecting cables, wires, fuses, terminals and Pre-Wiring	lot	1	1	2	0	2
C	Racks						
1	Relay rack with fuse,capacitor and resistor etc.	No.	1	1	2	0	2
D	Relays C/W Bases						
1	Relay QN1	No.	38	34	72	72	0
2	Relay QNA1	No.	12	0	12	12	0
3	Relay QL1	No.	8	0	8	8	0
4	Key lock unit	No.	4	0	4	4	0
5	Relay QBCA1	No.	8	0	8	8	0
6	Relay QSPA1	No.	22	14	36	36	0
7	Relay LED ECR	No.	9	5	14	14	0
8	Electronics Timer Relay-24V for Emergency Crank Handle circuit	No.	1	0	1	1	0
9	Electronics Flasher Relay-24V for Emergency Crank Handle circuit	No.	1	0	1	1	0
10	Relay QN1	No.	3	2	5	5	0
E	Power Supply						
1	DC/DC Converter for MLKII Card file / Vital I/O Supply / Non-Vital I/O Supply / Isolator Supply /	No.	3	3	6	0	6
EXECUTION							
1	Re Design of EI Systems with related application logic & interface Circuit	Stn.	1	1	2	0	2
2	Factory Acceptance Test / site acceptance test (FAT/SAT) - for aforesaid station	Stn.	1	1	2	0	2

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3	Supervision of Installation of Modified Program @ aforesaid station & removal of few wires, connectors, terminals & installation of few wires, connectors & terminals on account of aforesaid / proposed changes as per approved Signalling Plan	Stn.	1	1	2	0	2
4	"As Made" Document for said station ""AS MADE" document in CD as soft copy with one set of Interfacing & application Logics Circuits in regular "A3" size shall be supplied - HAKIA KHAL & BARAYLA CHAURASI station	Set	1	1	2	0	2

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Annexure of Tender Schedules

Annexure – 2: Break Up of Item No – B/8 of Tender Schedule S&T/C/RTM/100/R/2022-23

Item No	Description of Items	Unit	PIPLIA Station		TOTAL QTY	Qty Provided by Railway	Qty to be Supplied
			QTY	SPARES			
SUPPLY							
1	E-P5A SUBRACK WITH MOTHER BOARD	No.	1	0	1	0	1
2	IF CARD, LINE2B	No.	2	0	2	0	2
3	I/O card, PIO3C(PIO2-LOG)	No.	1	0	1	0	1
4	DC-DC converters	No.	7	1	8	0	8
5	EI MAIN RACK	No.	1	0	1	0	1
6	QN1 Relay	No.	16	2	18	18	0
7	QNNA1 Relay	No.	5	1	6	6	0
8	QNA1K Relay	No.	6	1	7	7	0
9	LED ECR Relay	No.	3	0	3	3	0
10	QBCA1 Relay	No.	4	1	5	5	0
11	QLI Relay	No.	4	1	5	5	0
12	QSPA1 Relay	No.	6	1	7	7	0
13	KLCCR Relay	No.	2	1	3	3	0
EXECUTION							
1	Design, FAT and Submission of As Planned and as build interface drawing, application logic & equivalent circuits in connection with alteration work	STN	1	STN	1	0	1
2	Alterations in existing relay room. this include supply of wiring materials required for alteration, alteration in indoor wiring including data logger, SAT and commissioning in connection with alteration work.	STN	1	STN	1	0	1

CHAPTER-8

1. **Annexure A** is “General Guidelines and Technical Specification” which is given in Chapter 6.
2. **Annexure B** is Scope of Work and its Compliances which are referred in SCC are to be studied properly and compliances may be submitted in desired format. This is given in this Chapter-8
3. **Annexure-C** is Drawings of Schedule Items, and is attached at the end of this chapter.
4. **Annexure -D**: Mini SIP of stations mentioned in the scope of work.

Annexure – B: Scope of Work

General requirement specifications and the Scope of Work of NMH-RTM Section (No deviation permitted in any of the items of this annexure)		
Sr.No.	Items describing scope of work	Compliance of Tenderer
1	GENERAL	
a	Nimach-Ratlam Section is 132.92 Km long RE Single Line (BG) section of Ratlam Division under Western Railway. The Tender is invited in connection of works associated with Project of “Doubling of BG Line between NIMACH-RATLAM” which was sanctioned through Rly Brd vide Letter No.2019/W-I/WR/DL/DPR/NMH-RTM/Pt. dtd. 07.10.2021. Under this project, double line working with all modern techniques will be provided at 13 existing stations along with provision of 05 no New IBS.	
b	Existing S&T systems: At present there are 13 stations in RTM-NMH sections which are working with MACS signalling. In this section, 04 stations (NMH, HKL, PIP, BRLA) are provided with Electronic Interlocking System, whereas 09 stations (MLG, MDS,DLD,KCNR, DOD,JAO,NAM,DHWS&RTM) are provided with Route setting type Panel interlocking/RRI. All Stations have BPAC with UFSBI, SSDAC, & DC Track Circuiting. Existing power supply consists of IPS arrangement.	
c	Scope of this S&T work under Doubling Project: Under doubling work between RTM-NMH, New hot standby Electronic Interlocking will be provide at 08 stations (MLG, MDS, DLD, KCNR, DOD, JAO, NLI, &DHWS). Alteration in existing EI will be done at 03 stations (HKL, PIP, and BRLA) and Introduction of IBS working in 05 no Block sections (NMH-HKL, HKL-MLG, PIP-MDS, KCNR-DOD & DOD-JAO). All stations will be commissioned with Absolute block working (EI/UFSBI based) along with Axle Counters, DC Track Circuiting, IRS Point Machines & MACLS. All IBH will be commissioned with dual track detection by MSDAC. At every station and IBH, Dual standby power supply arrangements will be provided through IPS and Conventional Systems.	
d	This tender is invited for 1) Provision of New hot standby Electronic Interlocking at 08 stations 2) Alteration in Existing Electronic Interlocking at 03 Stations 3) Provision of IBS working at 05 Sections. Two IBS system shall be EI based and three IBS shall be conventional relay based. 4) Various Indoor at 11 stations and Outdoor installations at 5 IBS. 5) Alteration in new EI at stations where PHASE Working will be introduced in connection of doubling as per planning of phases of doubling section to open.	

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e	Reference Signalling interlocking Plans – Following SIPs is taken as reference for all associated works station wise. It may change at any stage during execution by approval of competent authority. These are attached with Tender Documents. NMH- SG/SP/3322/7A-I, Jamunia KalanIBH- SG (SP) IBS, HKL -SG (SP) 3327/6, MatyakheriIBH - SG (SP) IBS, MLG – SG (SP) 3330/4, PIP - SG (SP) 3332/6 Sindapan IBH- SG (SP) IBS, MDS - SG (SP) 3336/6, DLD - SG (SP) 3340/7 KCNR - SG (SP) 3341/6, Kachnara HaltIBH- SG (SP) IBS, DOD - SG (SP) 3343/6 MundalaramIBH - SG (SP) IBS, JAO - SG (SP) 3349/6, BRLA- SG (SP) 3350/5 NLI - SG (SP) 3354/6, DHWS - SG (SP) 3356/5A																																														
2	Scope of work: - Indoor works (Provision of Interlocking)																																														
	Tabulated details for provision of interlocking are given as follows station wise to achieve redundant and reliable signalling system. OEMs of EI shall ensure that their equipment is most reliable and are fast in operations. <table><tr><th>Sr</th><th>Name of Station</th><th>Provision of Interlocking (PI/RR/I/EI)</th></tr><tr><td>1</td><td>Jamunia Kalan NMH-HKL Section</td><td>PI based IBH</td></tr><tr><td>2</td><td>HarkiyaKhal</td><td>Alteration in Existing Electronic Interlocking (Ansaldo Make)</td></tr><tr><td>3</td><td>Matyakheri HKL-MLG Section</td><td>PI based IBH</td></tr><tr><td>4</td><td>Malhargarh</td><td>Provision of New Hot Standby Electronic Interlocking</td></tr><tr><td>5</td><td>Pipliya</td><td>Alteration in Existing Electronic Interlocking (Kyosan Make)</td></tr><tr><td>6</td><td>Sindpan PIP-MDS Section</td><td>PI based IBH</td></tr><tr><td>7</td><td>Mandsaur</td><td>Provision of New Hot Standby Electronic Interlocking</td></tr><tr><td>8</td><td>Daluada</td><td>Provision of New Hot Standby Electronic Interlocking</td></tr><tr><td>9</td><td>Kachnara Road</td><td>Provision of New Hot Standby Electronic Interlocking</td></tr><tr><td>10</td><td>Kachnara Halt KCNR-DOD section</td><td>EI based IBH</td></tr><tr><td>11</td><td>Dodar</td><td>Provision of New Hot Standby Electronic Interlocking</td></tr><tr><td>12</td><td>Mundalaram DOD-JAO section</td><td>EI based IBH</td></tr><tr><td>13</td><td>Jaora</td><td>Provision of New Hot Standby Electronic Interlocking</td></tr><tr><td>14</td><td>BaraylaChaurasi</td><td>Alteration in Existing Electronic Interlocking (Ansaldo Make)</td></tr></table>	Sr	Name of Station	Provision of Interlocking (PI/RR/I/EI)	1	Jamunia Kalan NMH-HKL Section	PI based IBH	2	HarkiyaKhal	Alteration in Existing Electronic Interlocking (Ansaldo Make)	3	Matyakheri HKL-MLG Section	PI based IBH	4	Malhargarh	Provision of New Hot Standby Electronic Interlocking	5	Pipliya	Alteration in Existing Electronic Interlocking (Kyosan Make)	6	Sindpan PIP-MDS Section	PI based IBH	7	Mandsaur	Provision of New Hot Standby Electronic Interlocking	8	Daluada	Provision of New Hot Standby Electronic Interlocking	9	Kachnara Road	Provision of New Hot Standby Electronic Interlocking	10	Kachnara Halt KCNR-DOD section	EI based IBH	11	Dodar	Provision of New Hot Standby Electronic Interlocking	12	Mundalaram DOD-JAO section	EI based IBH	13	Jaora	Provision of New Hot Standby Electronic Interlocking	14	BaraylaChaurasi	Alteration in Existing Electronic Interlocking (Ansaldo Make)	
Sr	Name of Station	Provision of Interlocking (PI/RR/I/EI)																																													
1	Jamunia Kalan NMH-HKL Section	PI based IBH																																													
2	HarkiyaKhal	Alteration in Existing Electronic Interlocking (Ansaldo Make)																																													
3	Matyakheri HKL-MLG Section	PI based IBH																																													
4	Malhargarh	Provision of New Hot Standby Electronic Interlocking																																													
5	Pipliya	Alteration in Existing Electronic Interlocking (Kyosan Make)																																													
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	15	Namli	Provision of New Hot Standby Electronic Interlocking				
	16	DhoswasKalan	Provision of New Hot Standby Electronic Interlocking				
	Note – Provision of Alteration in EI at SOME stations will be introduced due to PHASE doubling according to doubling phases planned.						
3.	Scope of work: - Indoor works (Other than EI)						
	Sr	Name of Station	Block Working	Data Logger/R TU	Power Supply	FACS	ELD
	1	Nimach	UFSBI with Panel	Existing Data Logger	Existing IPS	Existing FACS	Existing ELD
	2	Jamunia Kalan IBH NMH-HKL Section	Both Side UFSBI	New RTU	Dual S/B System New IPS with Conventional	New FACS	New ELD
	3	Harkiyahal	Both Side UFSBI with Panel	Existing Data Logger	Existing IPS	Existing FACS	Existing ELD
	4	Matyakheri IBH HKL-MLG Section	Both Side UFSBI	New RTU	Dual S/B System New IPS with Conventional	New FACS	New ELD
	5	Malhargarh	Both Side UFSBI	New Data Logger	Dual S/B System New IPS with Conventional	New FACS	New ELD
	6	Pipliya	Both Side UFSBI with Panel	Existing Data Logger	Existing IPS	Existing FACS	Existing ELD
	7	Sindpan IBH PIP-MDS Section	Both Side UFSBI	New RTU	Dual S/B System New IPS with Conventional	New FACS	New ELD
	8	Mandsaur	UFSBI with Block Panel	New Data Logger	Dual S/B System	New FACS	New ELD

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			towards Pipliya Side & Inbuilt Block working in EI towards Daluada side		New IPS with Conventio nal			
	9	Daluada	Both Side Block working inbuilt in EI	New Data Logger	Dual S/B System New IPS with Conventio nal	New FACS	New ELD	
	10	Kachnara Road	Both Side Block working inbuilt in EI	New Data Logger	Dual S/B System New IPS with Conventio nal	New FACS	New ELD	
	11	Kachnara Halt IBH KCNR- DOD section	Both Side Block working inbuilt in EI	New RTU	Dual S/B System New IPS with Conventio nal	New FACS	New ELD	
	12	Dodar	Both Side Block working inbuilt in EI	New Data Logger	Dual S/B System New IPS with Conventio nal	New FACS	New ELD	
	13	Mundalar am IBH DOD-JAO section	Both Side Block working inbuilt in EI	New RTU	Dual S/B System New IPS with Conventio nal	New FACS	New ELD	
	14	Jaora	UFSBI with Block Panel towards to Barayla Chaurasi Side & Inbuilt Block working in EI	New Data Logger	Dual S/B System New IPS with Conventio nal	New FACS	New ELD	

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			towards Dodar side					
	15	Barayla Chaurasi	Both Side UFSBI with Panel	Existing Data Logger	Existing IPS	Existing FACS	Existing ELD	
	16	Namli	UFSBI with Block Panel towards Barayla Chaurasi Side & Inbuilt Block working in EI towards Namli side	New Data Logger	Dual S/B System New IPS with Conventio nal	New FACS	New ELD	
	17	Dhoswas Kalan	UFSBI with Block Panel towards to Ratlam Side & Inbuilt Block working in EI towards Namli side	New Data Logger	Dual S/B System New IPS with Conventio nal	New FACS	New ELD	
	The absolute block working between 5 block sections is to be through inbuilt in EI system.							
4.	Scope of work: - Outdoor Work							

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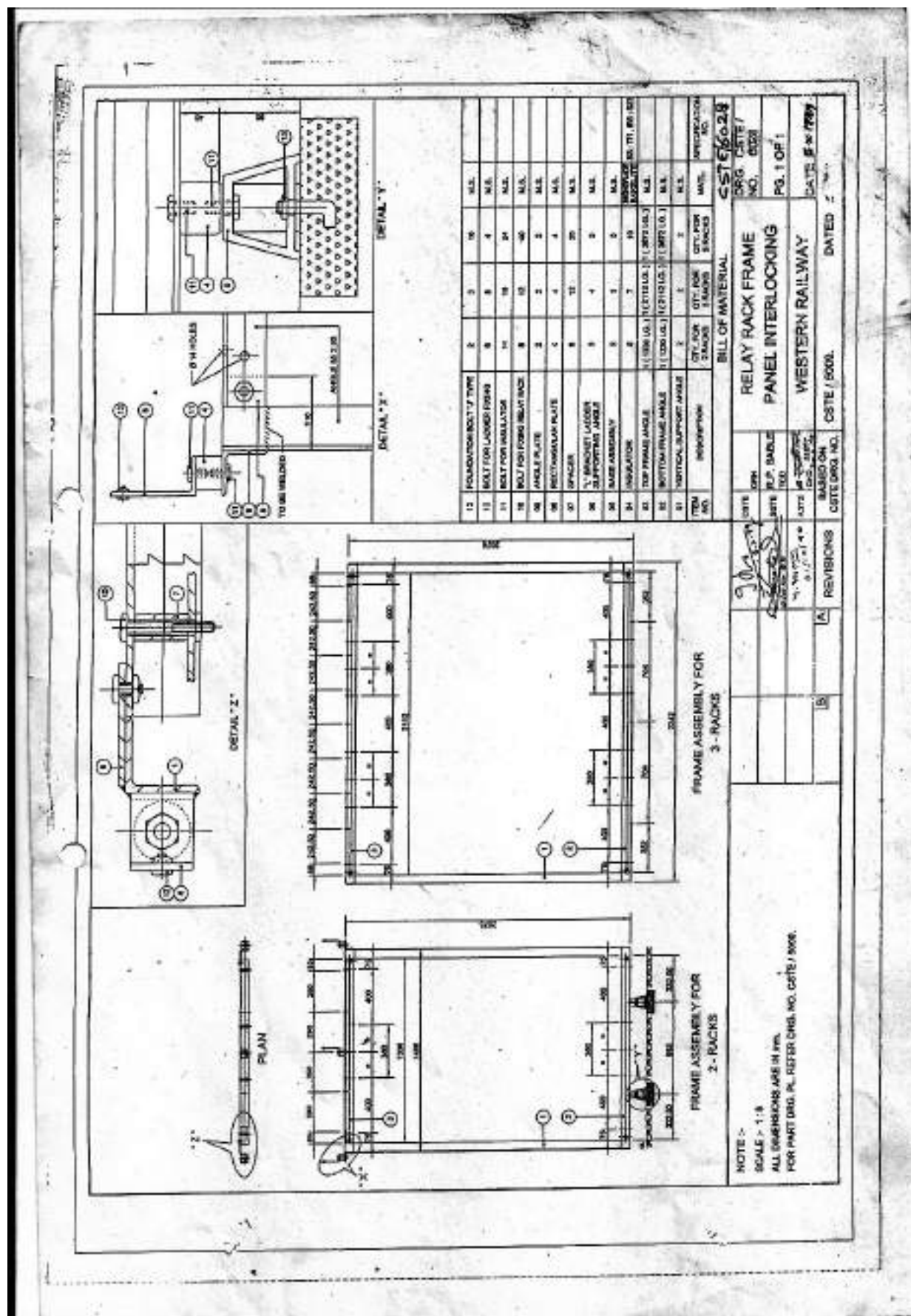
	Sr	Name of Station	Work	
	1	Nimach&Ratlam	Signalling outdoor work, DC Track circuit works and SS/HA DAC work.	
	2	All IBH (JamuniyaKalan, Matyakheri, Sindpan, Kachnara Halt &Mundalaram)	Signalling indoor work and all outdoor works associated with provision of new IBS working with dual MSDAC system. The auto resetting of MSDAC with dual detection system, through supervisory track section (when both the MSDAC fails) and manual resetting of MSDAC.	
	3	HarkiyaKhal, Malhargarh, Pipliya, Mandsaur, Daluada, Kachnara Road, Dodar, Jaora, BaraylaChaurasi, Namli, &Dhoswas	Signalling indoor work and all outdoor works associated with DC Track circuit and SS/HADAC	
	Note – Any additional outdoor work may be executed as per schedule at any Station/IBH as and when required.			
5.	S&T Building/Rooms status			
	Sr	Name of Station	Work Space	
	1	Nimach, HarkiyaKhal, Pipliya, BaraylaChaurasi & Ratlam	Existing S&T Building/Rooms	
	2	All IBH (JamuniyaKalan, Matyakheri, Sindpan, Kachnara Halt &Mundalaram)	New IB Huts	
	3	Malhargarh, Mandsaur, Daluada, Kachnara Road, Dodar, Jaora, Namli, &DhoswasKalan	New S&T Building/Rooms	
6	Technical Specifications: As per given in Tender Document for all S&T installations or latest as per amendment or policy guideline issued by Railway Board/RDSO/Head quarter/Division. The EI cards/modules/sub-modules connectors etc details submitted by tenderer against item 1 of schedule A shall not be limiting. In addition to the supply of items as per the details submitted, the tenderer has to supply all the material to realize the EI commissioning and spares according to scope mentioned in this schedule item and attached tentative SIP (Signalling Interlocking plan)			
7	Scope of work of Railways 1. Railways shall arrange signal interlocking plans (SIPs) and access of various rooms for indoor work & outdoor work 2. Railways shall provide statutory staff for testing purposes. 3. Railway shall provide Electricity free of cost for testing & commissioning. 4. OFC / E1 channels will be provided by Railway, dark fibres will also be provided between station to station for EI-to-EI communication, where required 5. Cables, Point Machine, LEDs, and other materials which are not covered in the tender schedule will be supplied by Railway.			

Annexure – C: Drawings

These drawings are given here for reference, although any deviation or amendment may be taken place as per policy guideline or approval of CSTE C-II-CCG.

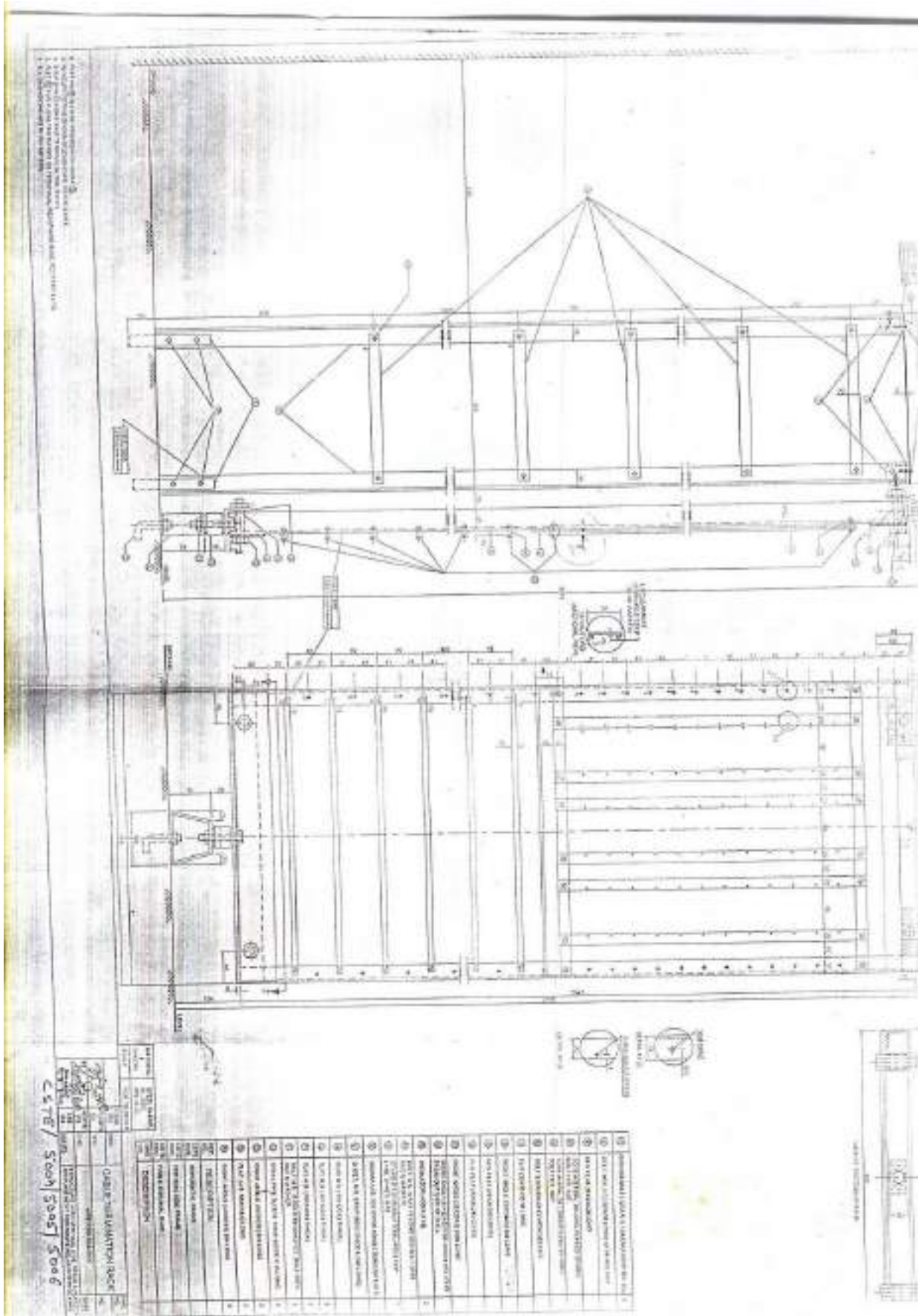
For various standard specifications and drawings pertaining to RDSO, please refer RDSO website.

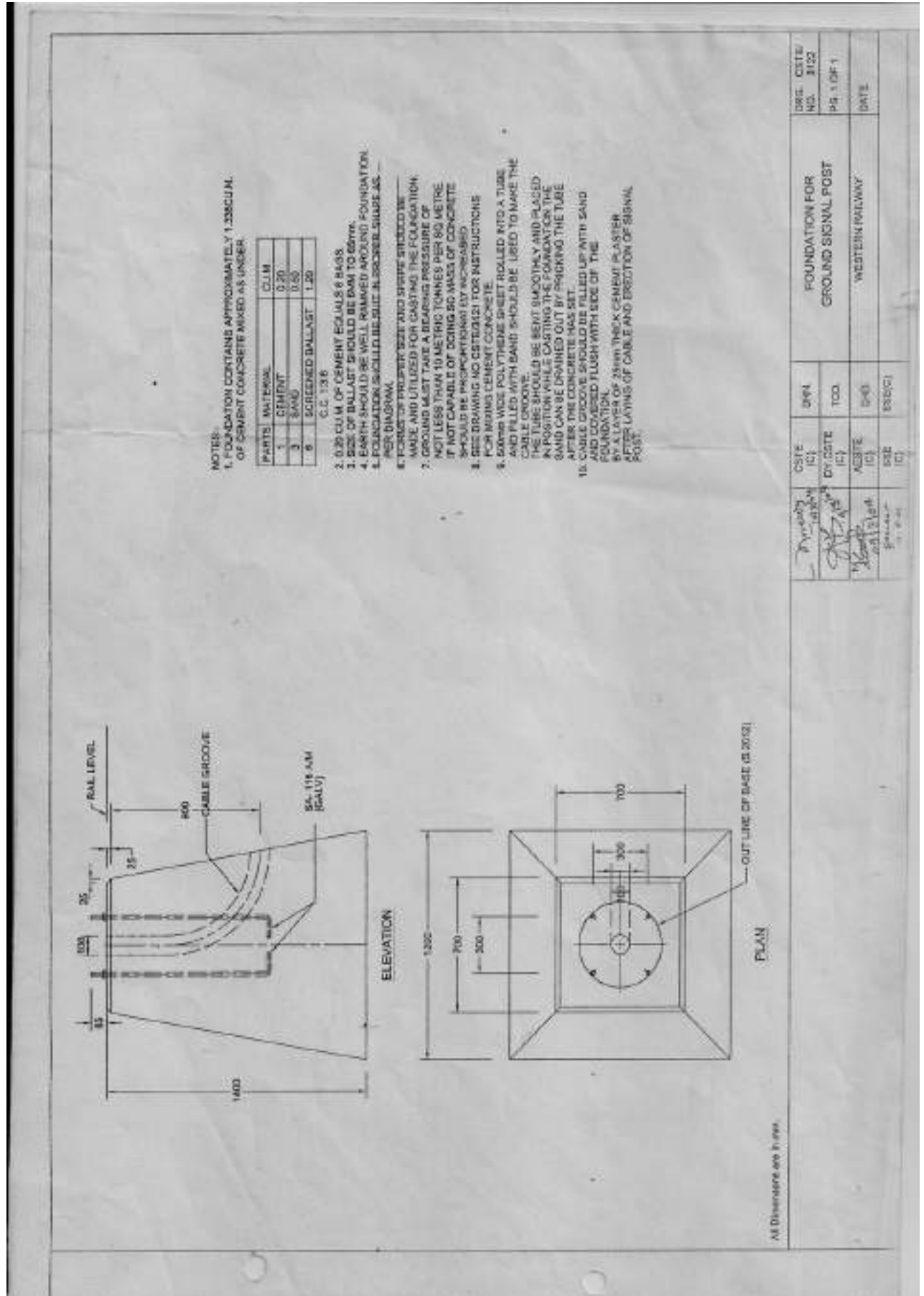
Tender No. SnT-C-RTM-100-R-2022-23



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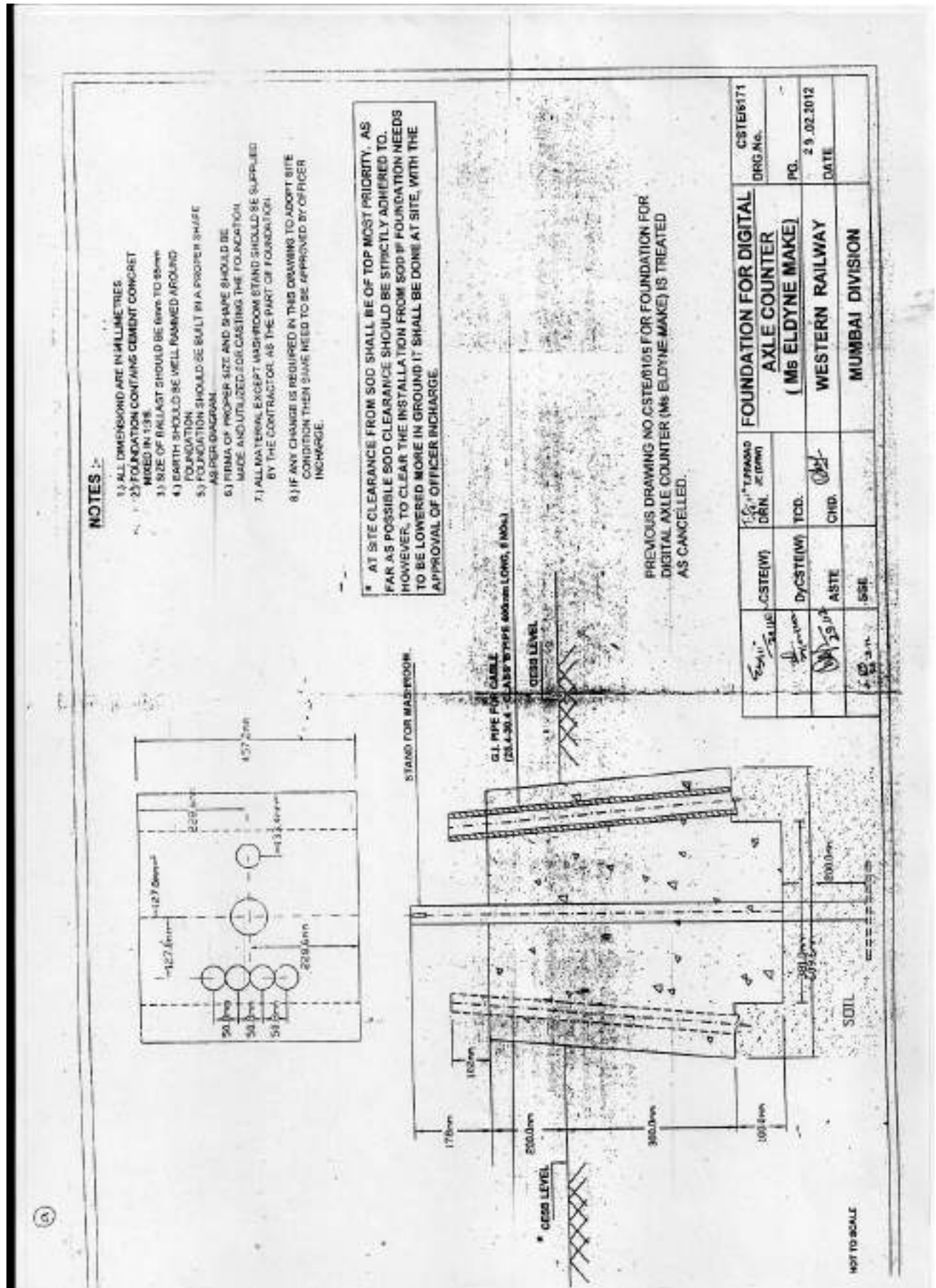
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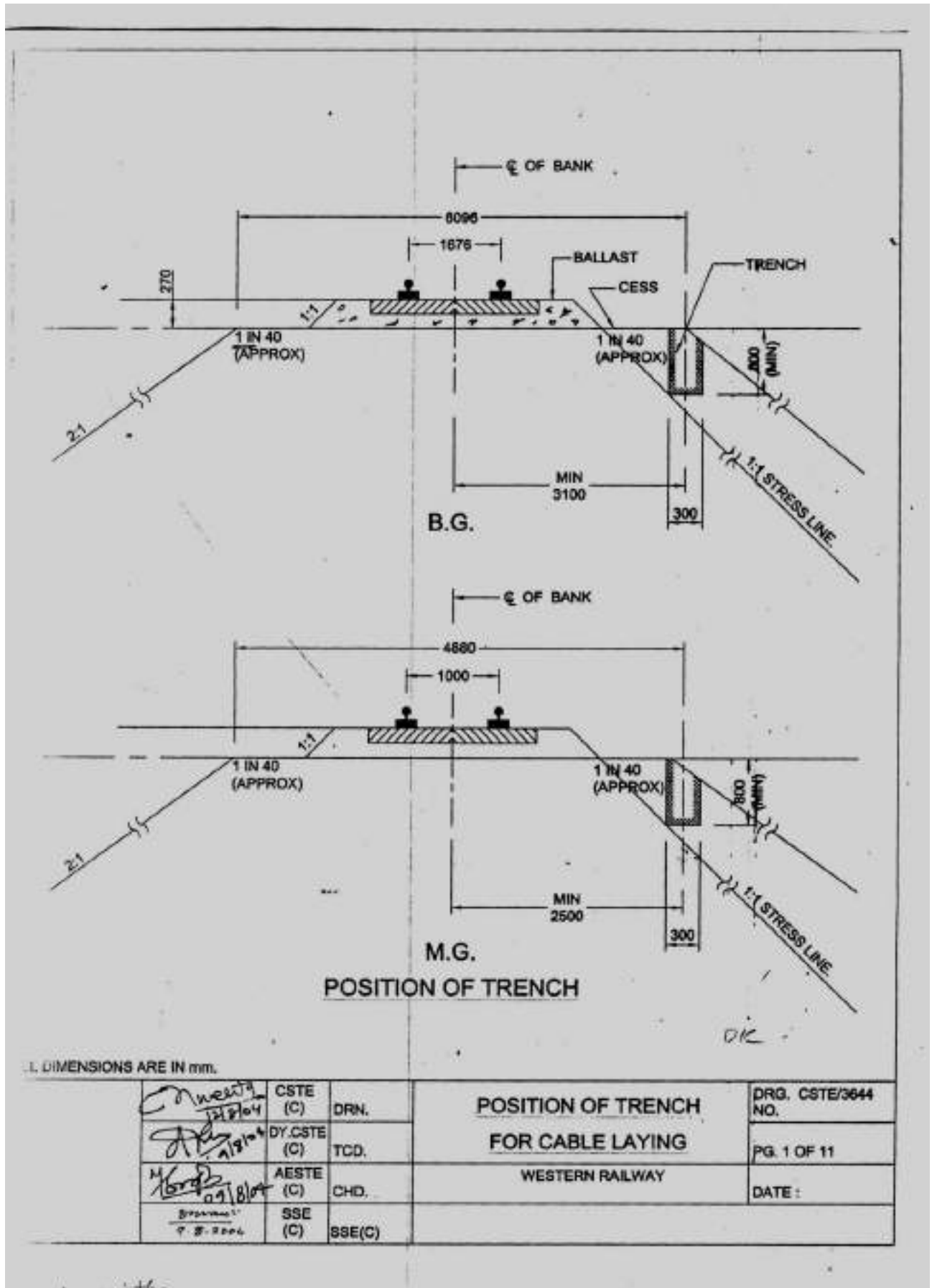
Tender No. SnT-C-RTM-100-R-2022-23





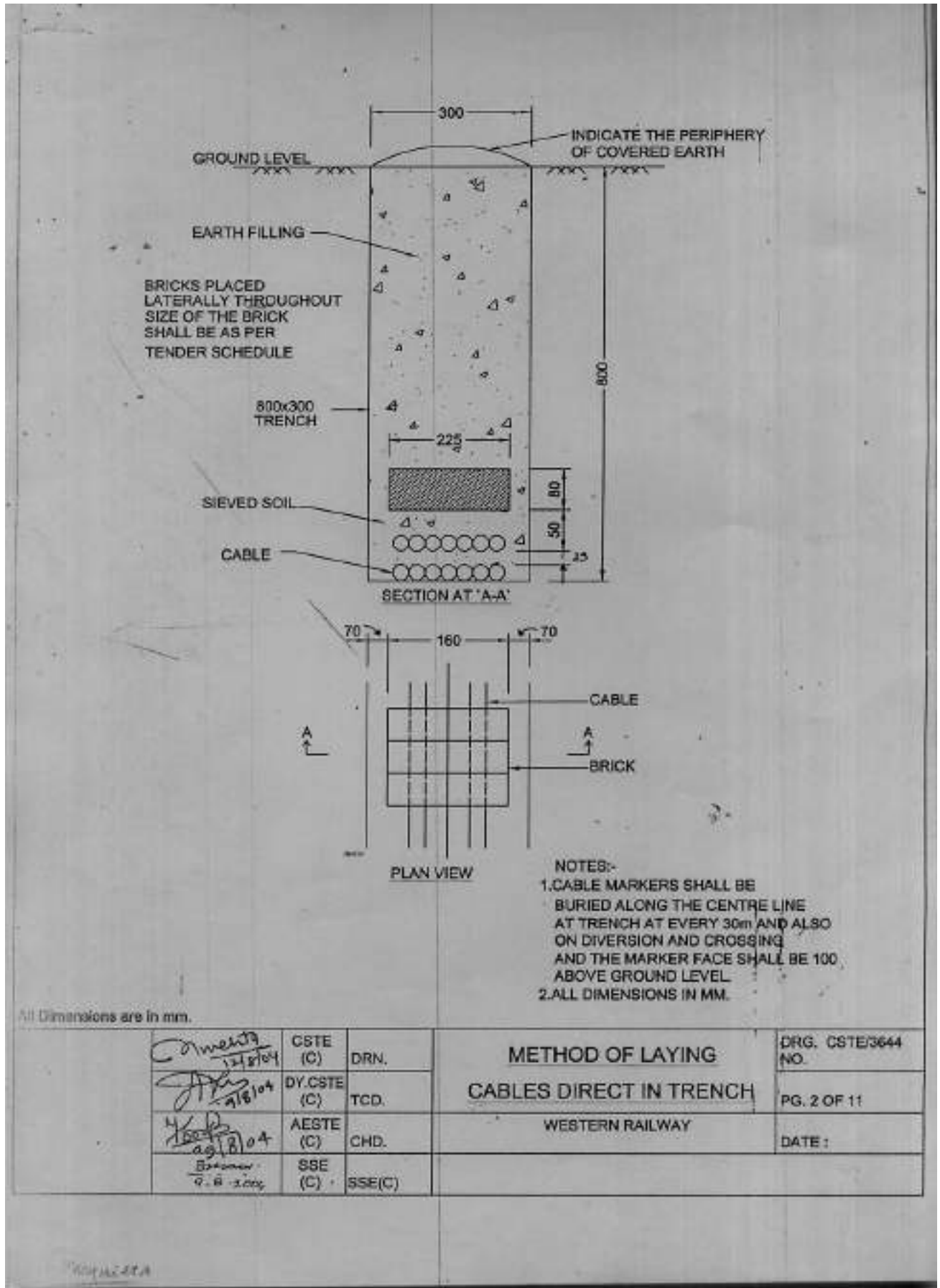
Western Railway
Construction

Tender No. SnT-C-RTM-100-R-2022-23



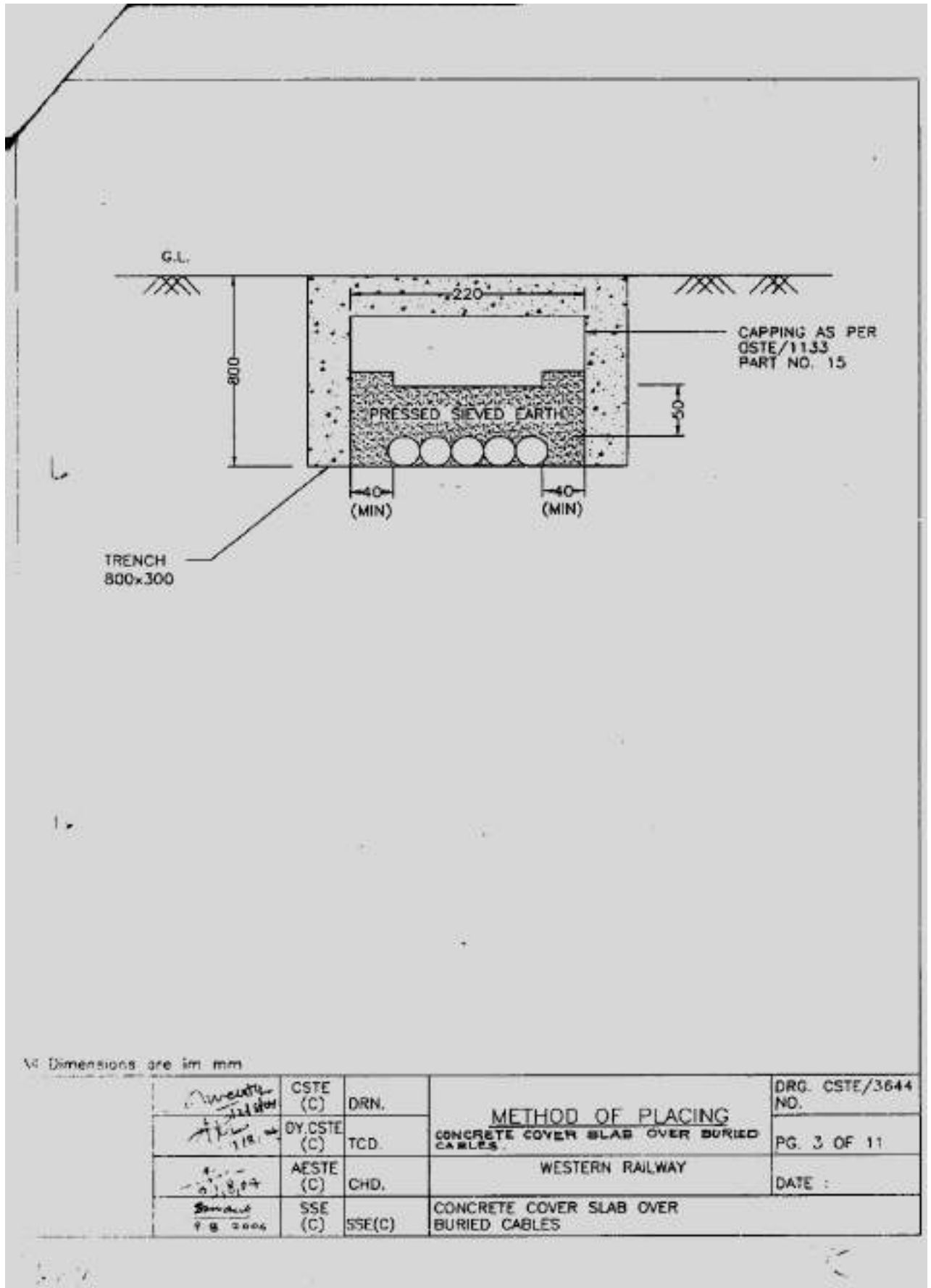
Western Railway
Construction

Tender No. SnT-C-RTM-100-R-2022-23



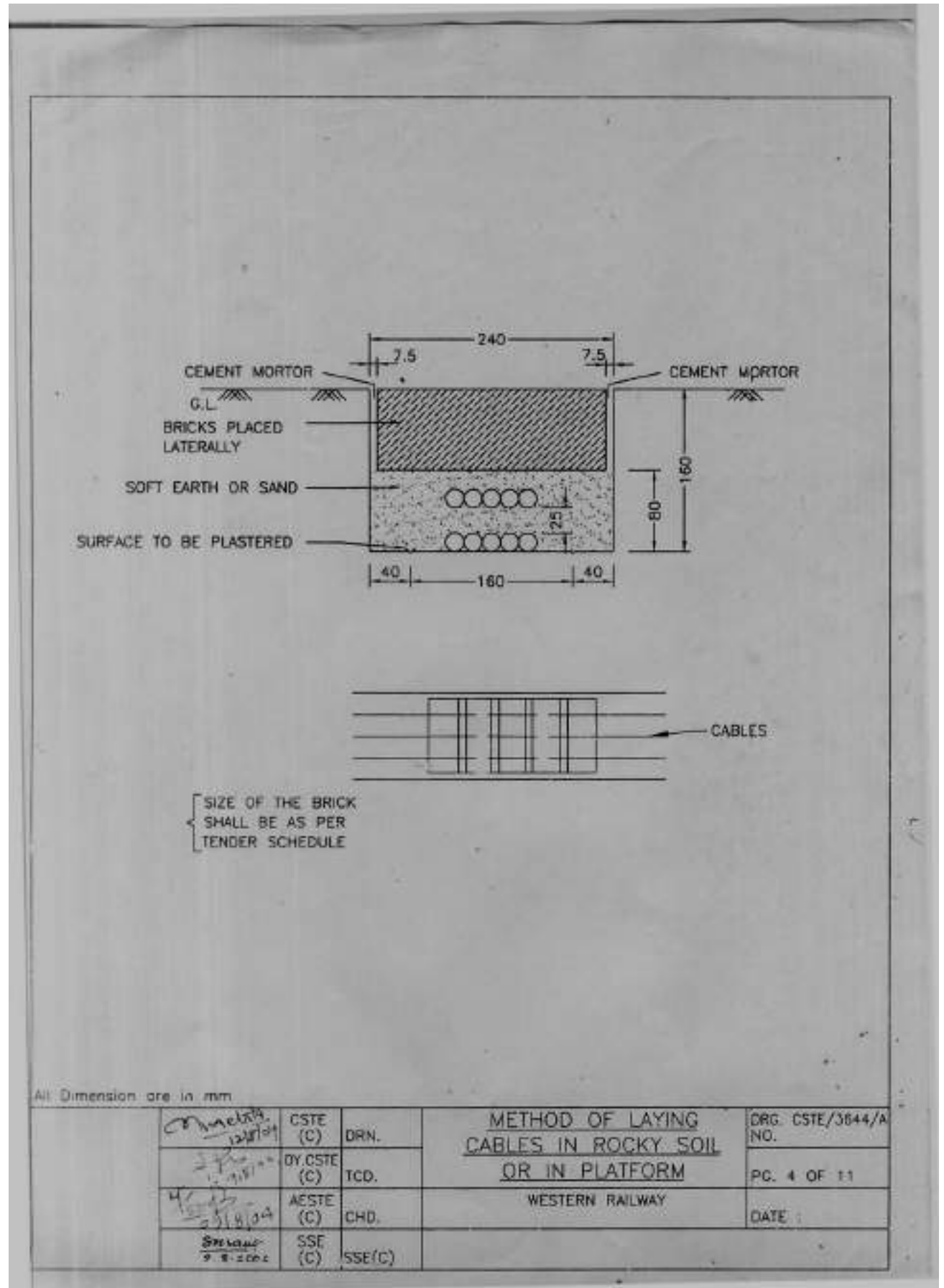
Western Railway
Construction

Tender No. SnT-C-RTM-100-R-2022-23



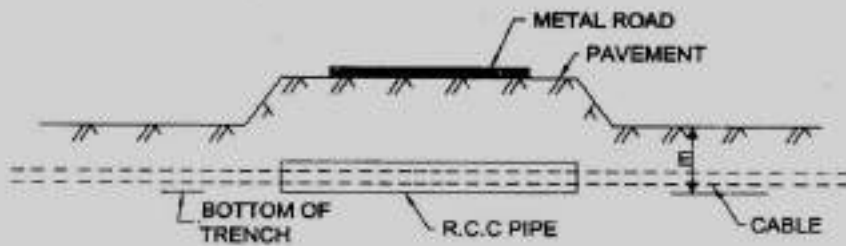
Western Railway
Construction

Tender No. SnT-C-RTM-100-R-2022-23



Western Railway
Construction

Tender No. SnT-C-RTM-100-R-2022-23

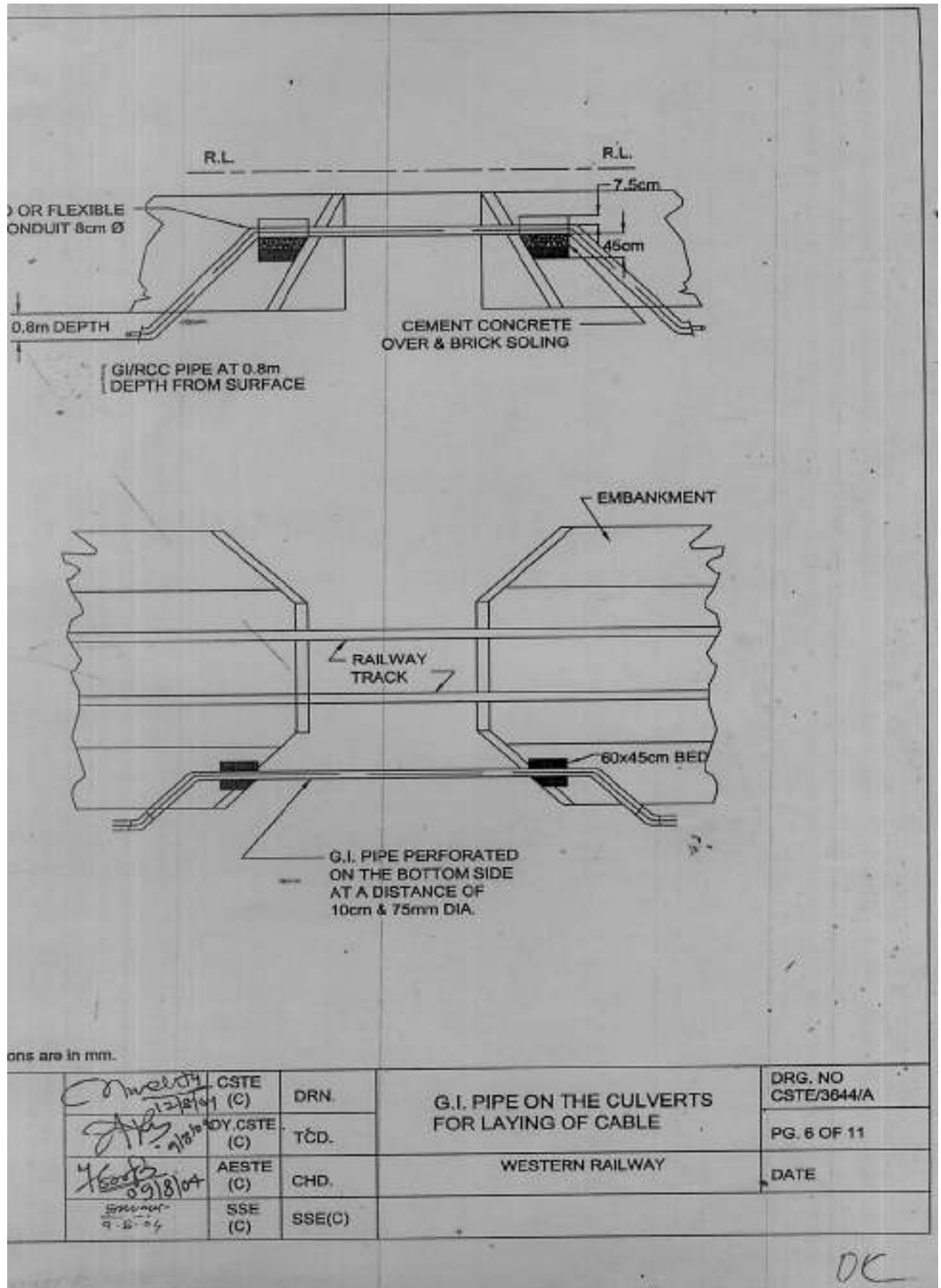


Dimensions are in mm.

<i>C. M. M. S. S.</i> 12/8/04 <i>A. S.</i> 29/6/04 <i>Prasad</i> 9.8.04	CSTE (C)	DRN.	ARRANGEMENT OF RCC PIPE/ TRUNKING UNDER METAL ROAD FOR LAYING OF CABLE	DRG. NO CSTE/3644
	DY.CSTE (C)	TCD.		PG. 5 OF 11
	AESTE (C)	CHD.	WESTERN RAILWAY	DATE
	SSE (C)	SSE(C)		

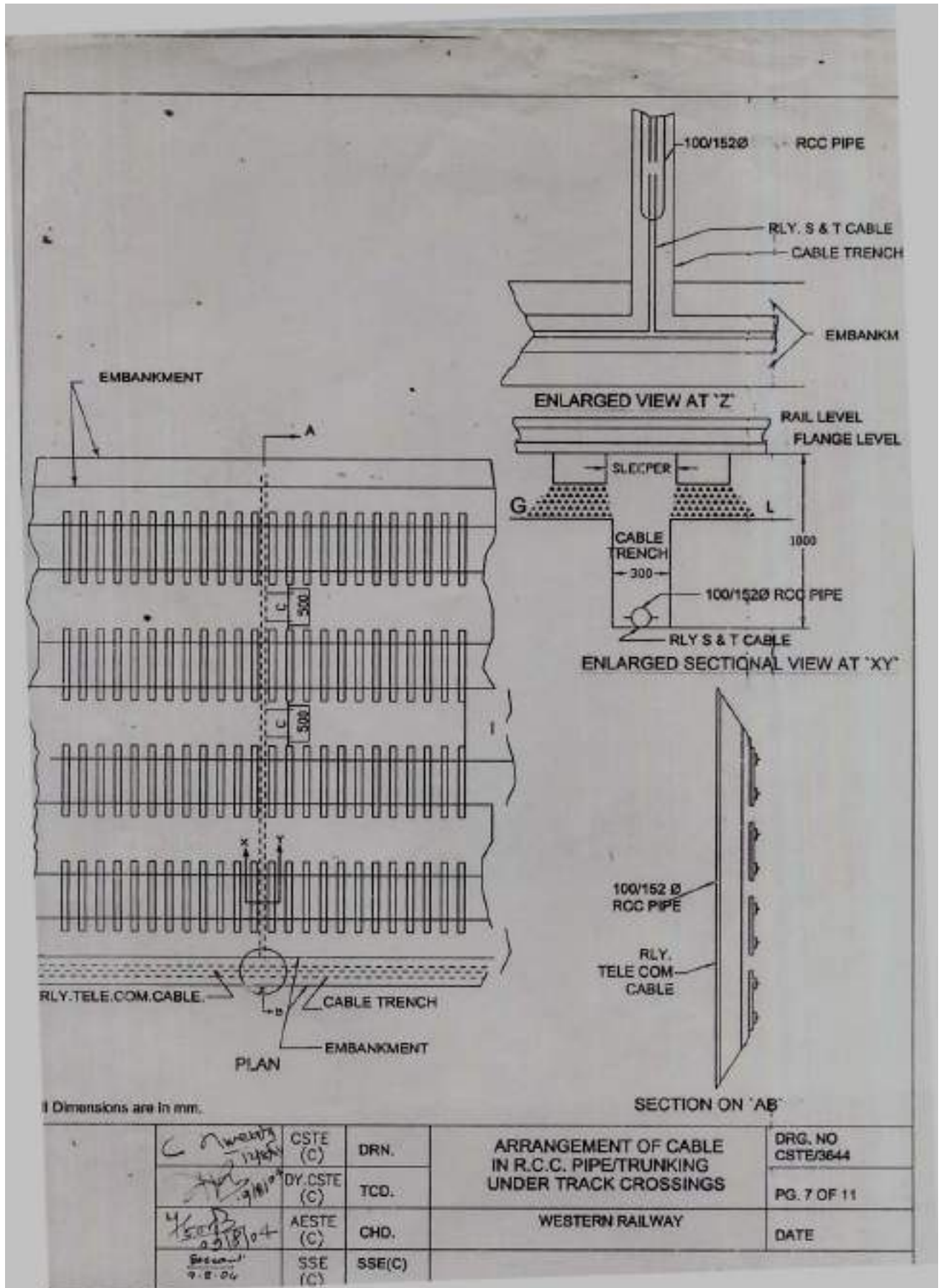
Western Railway
Construction

Tender No. SnT-C-RTM-100-R-2022-23



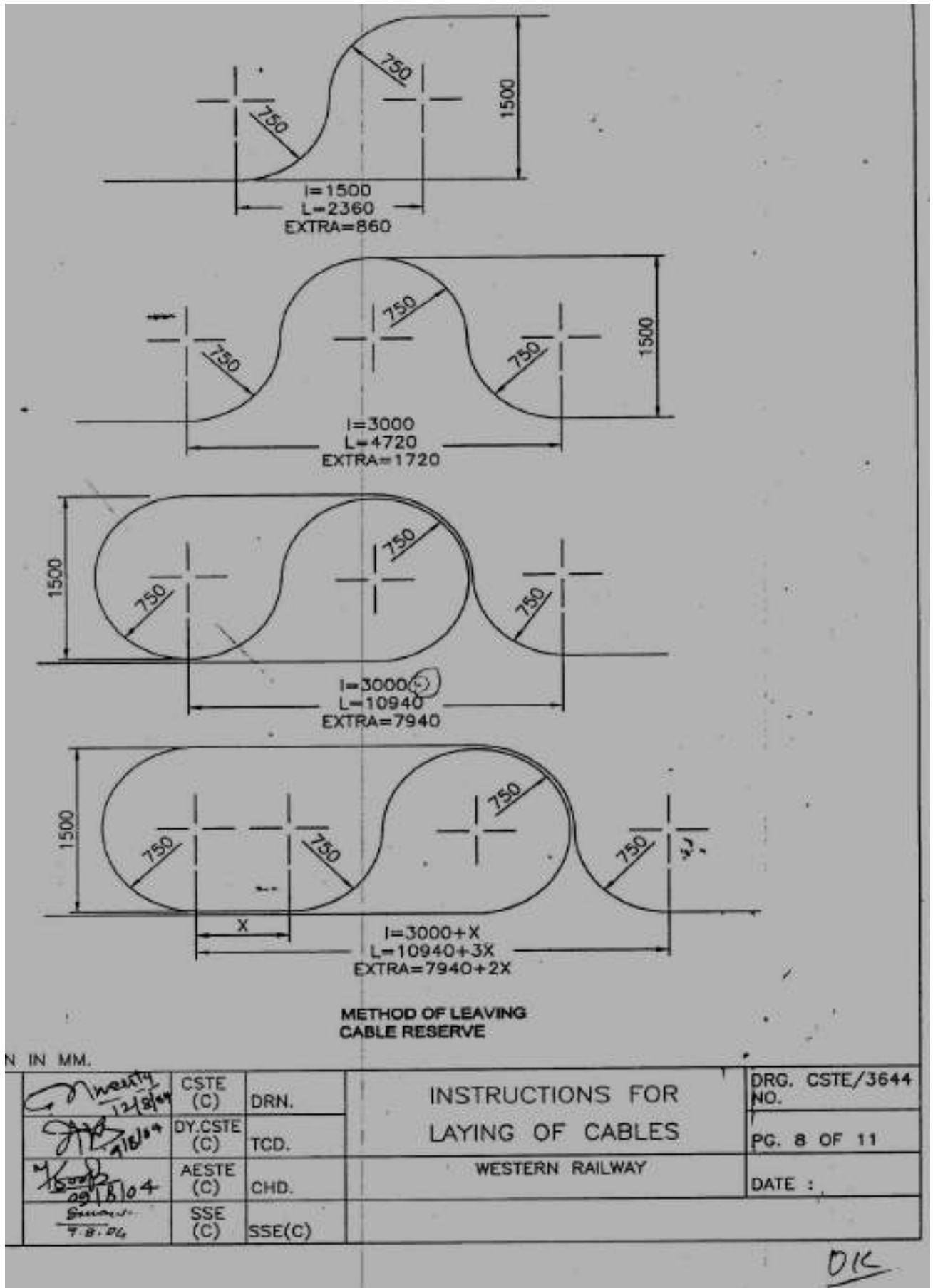
Western Railway
Construction

Tender No. SnT-C-RTM-100-R-2022-23



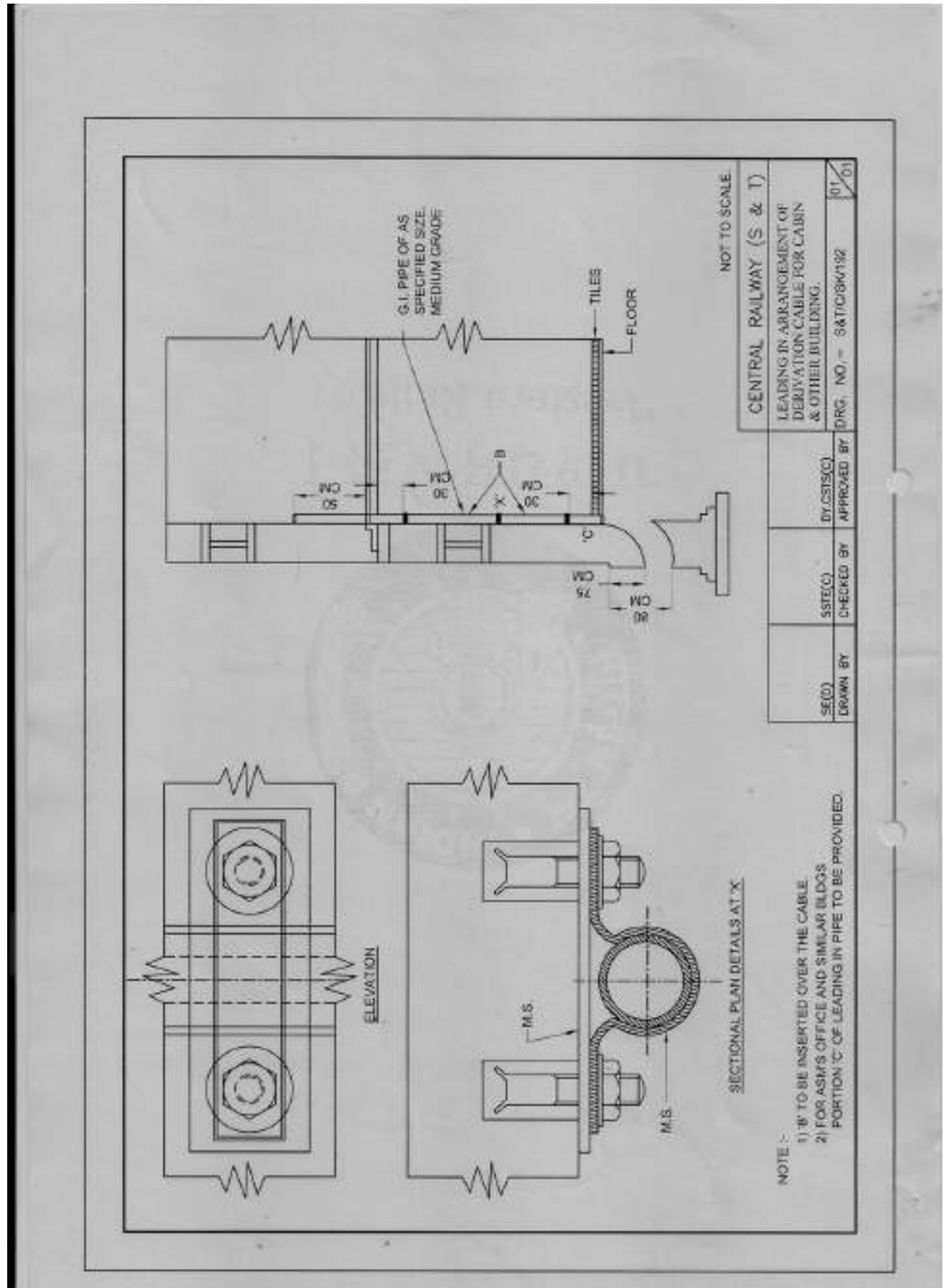
Western Railway
Construction

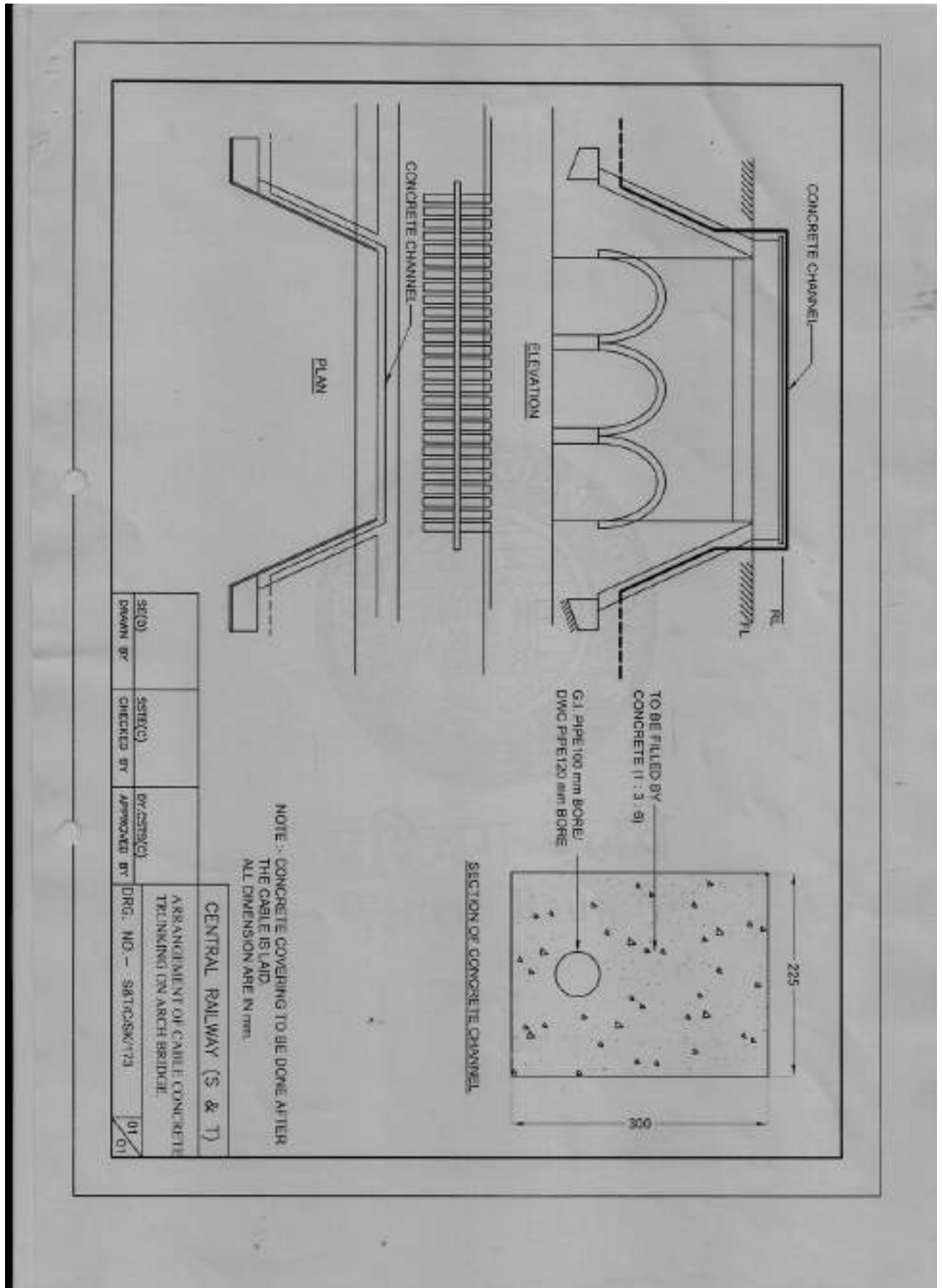
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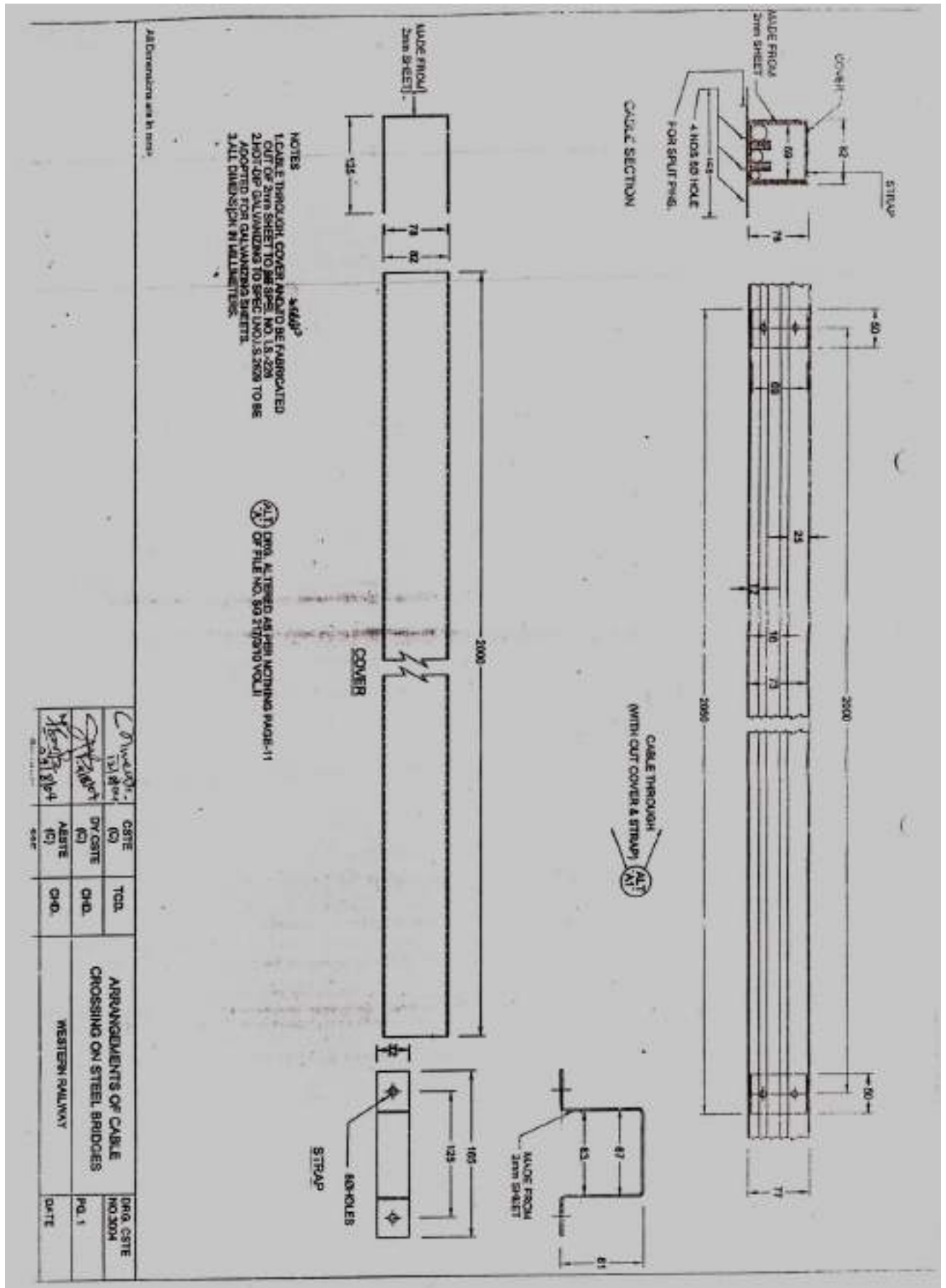


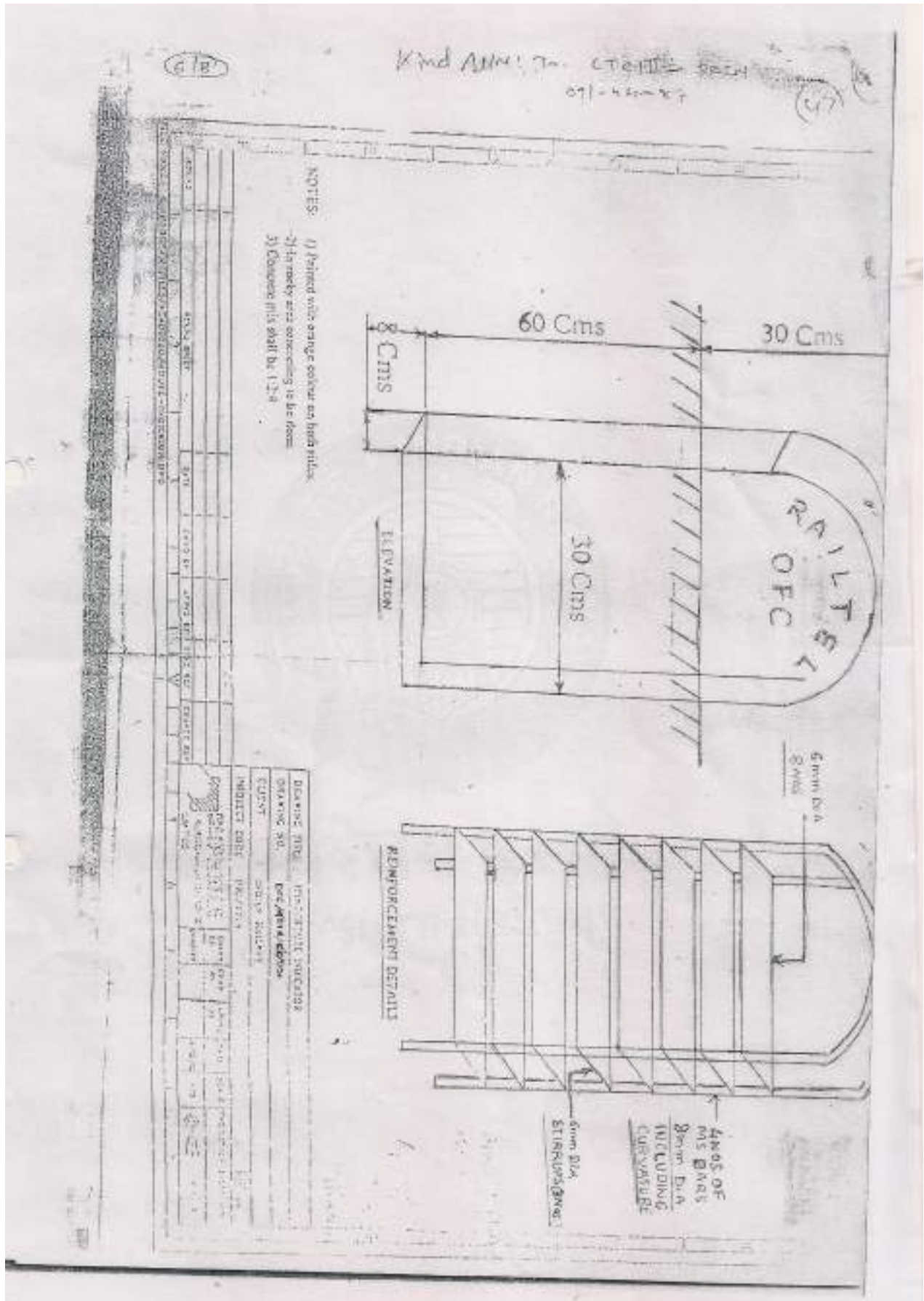
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DK







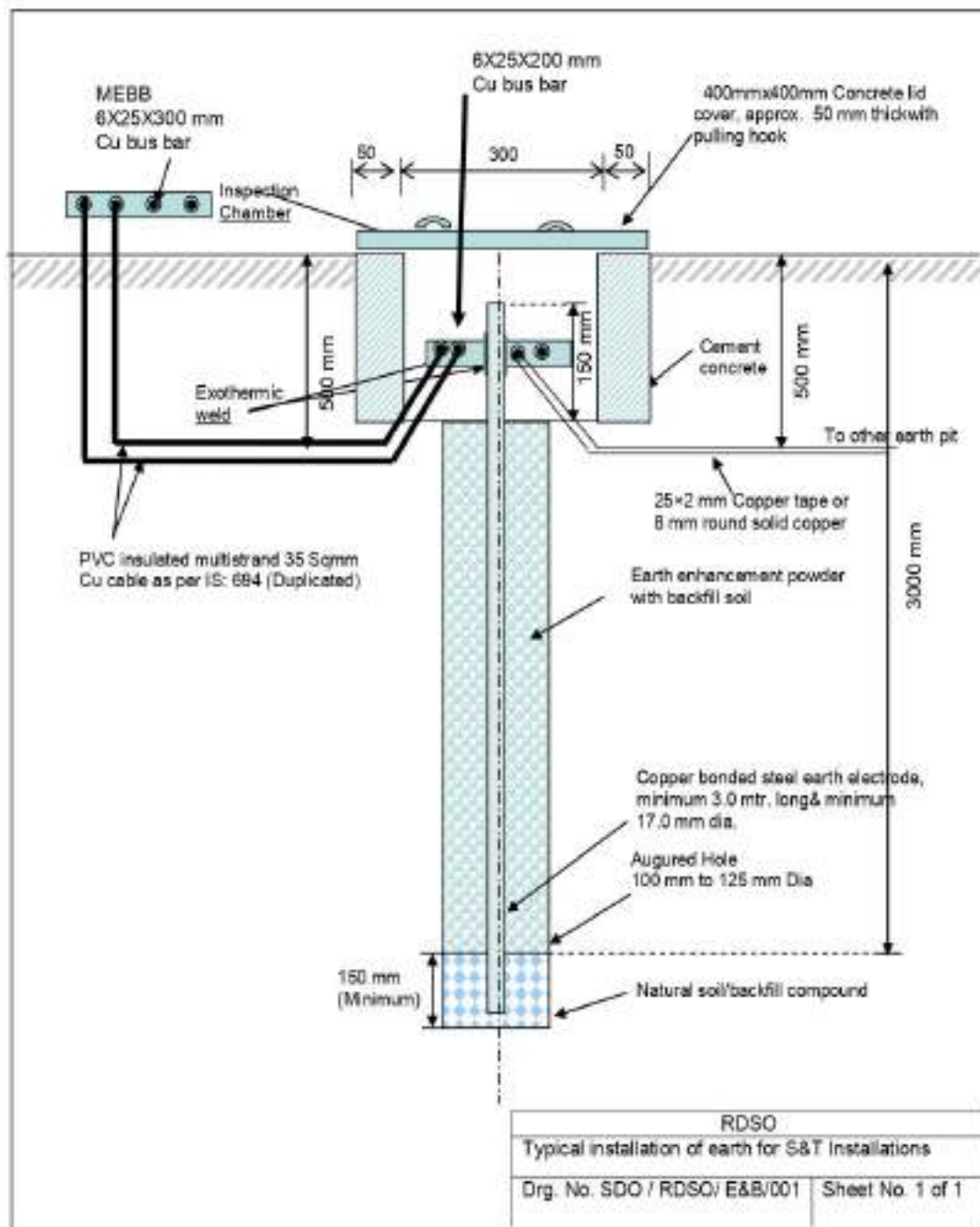




Western Railway Construction

Tender No. SnT-C-RTM-100-R-2022-23

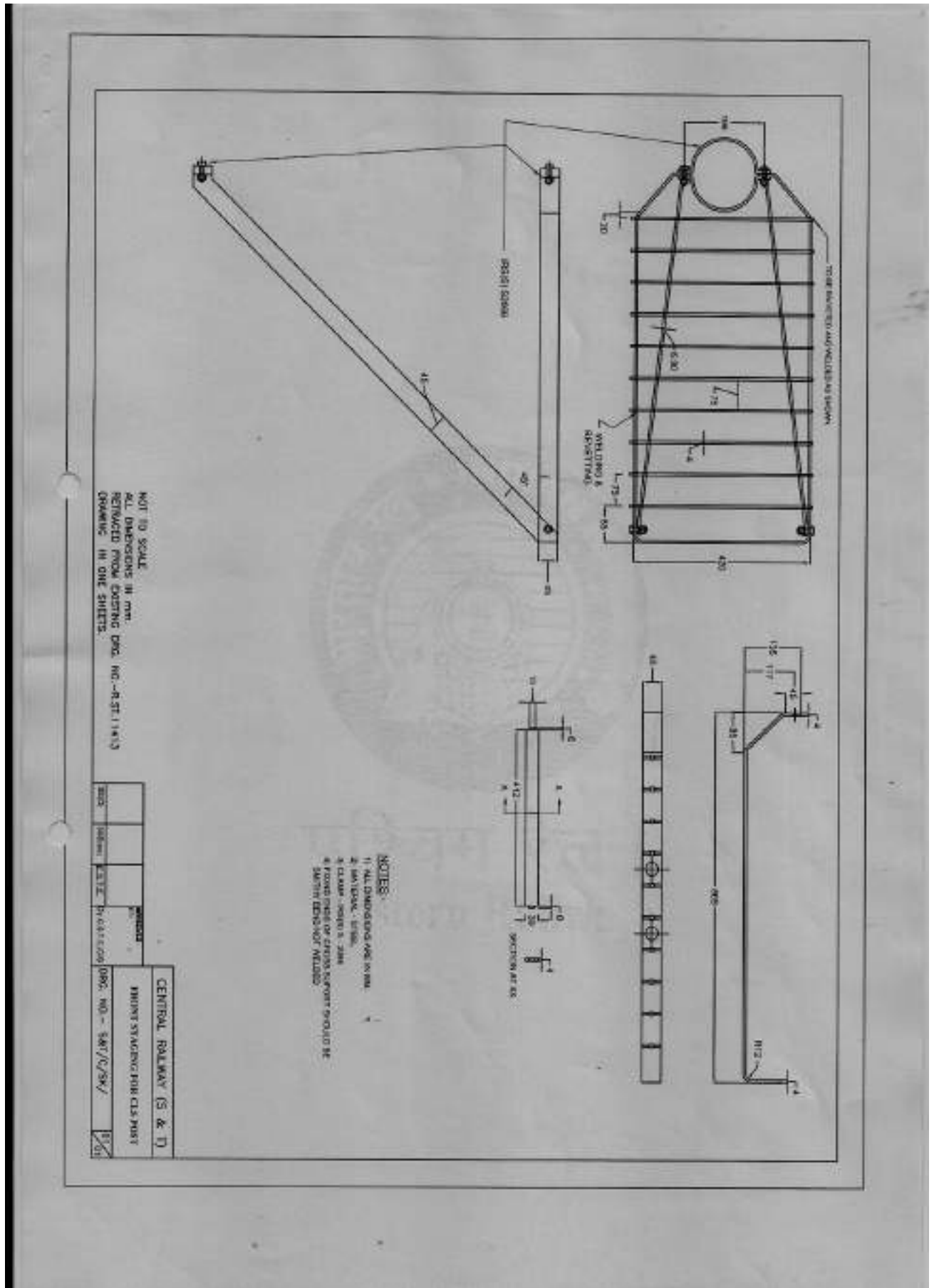
Page no.17 of 21	With effect from: 04.07.2016	Specification No. RDSO/SPN/197	Version 1.0
Document Title: Specification for Code of practice for Earthing & Bonding system for signaling equipments			



Prepared by: SSE/Signal	Checked by: DD/Signal	Issued by: Dir/Signal
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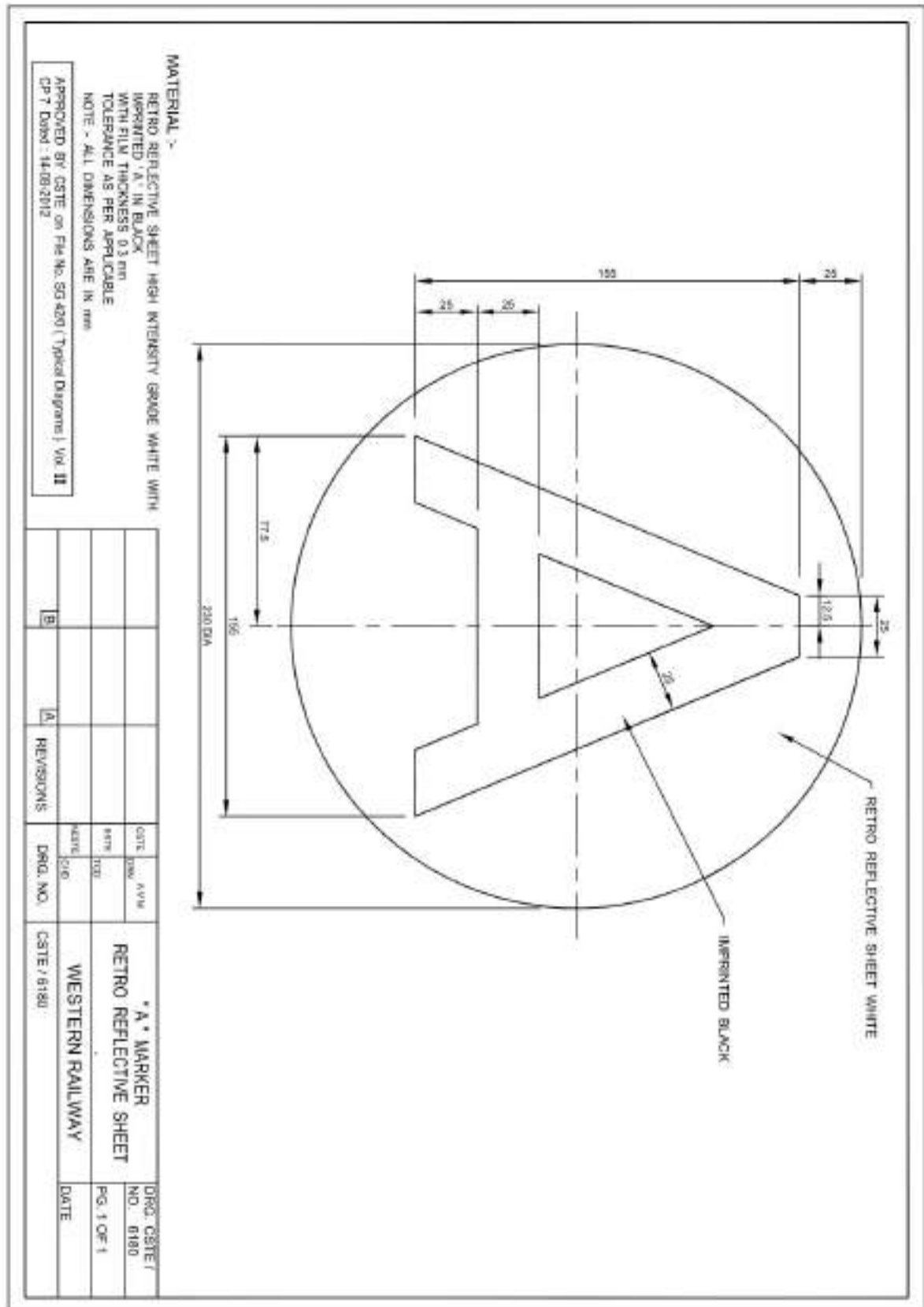
Western Railway
Construction

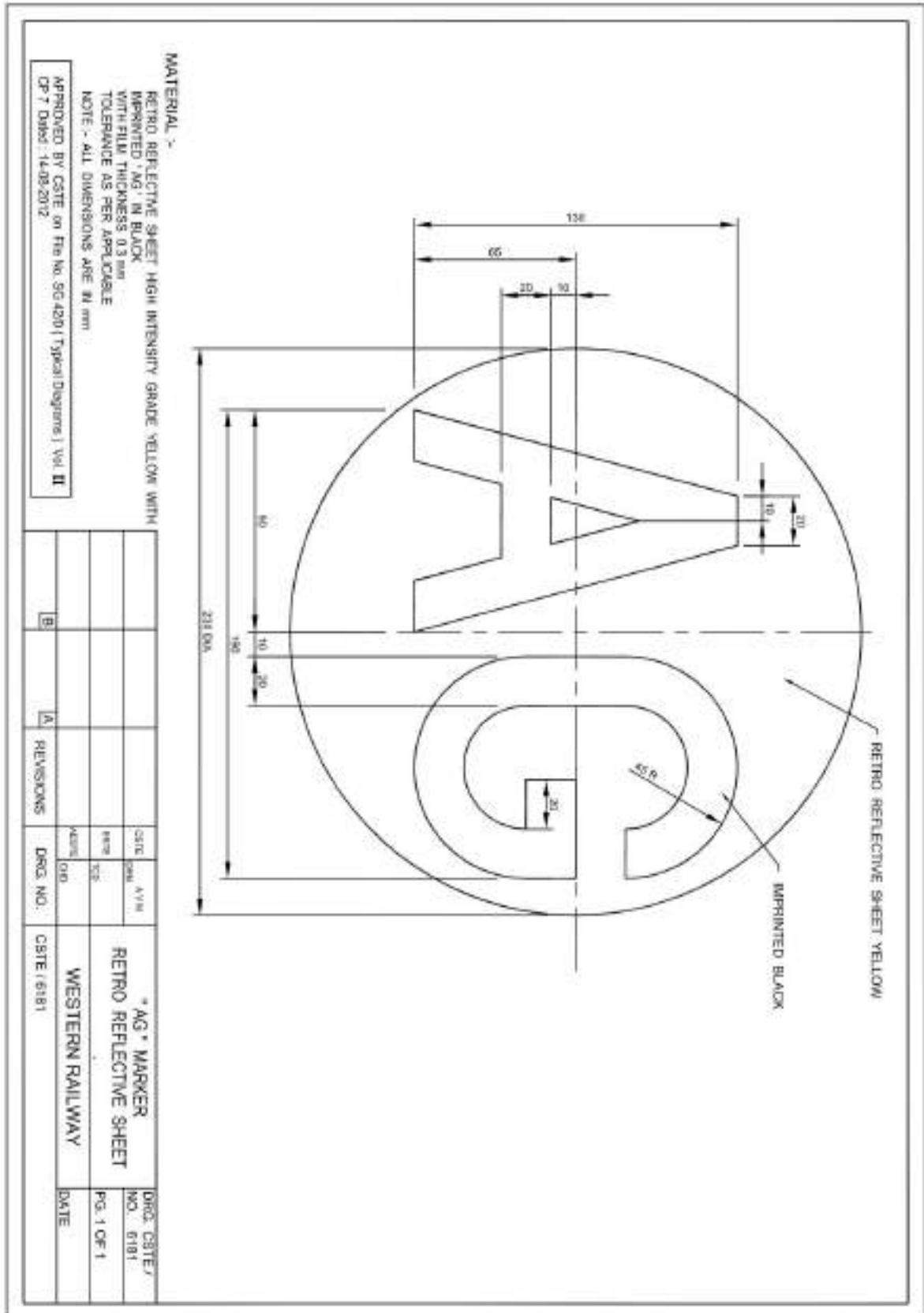
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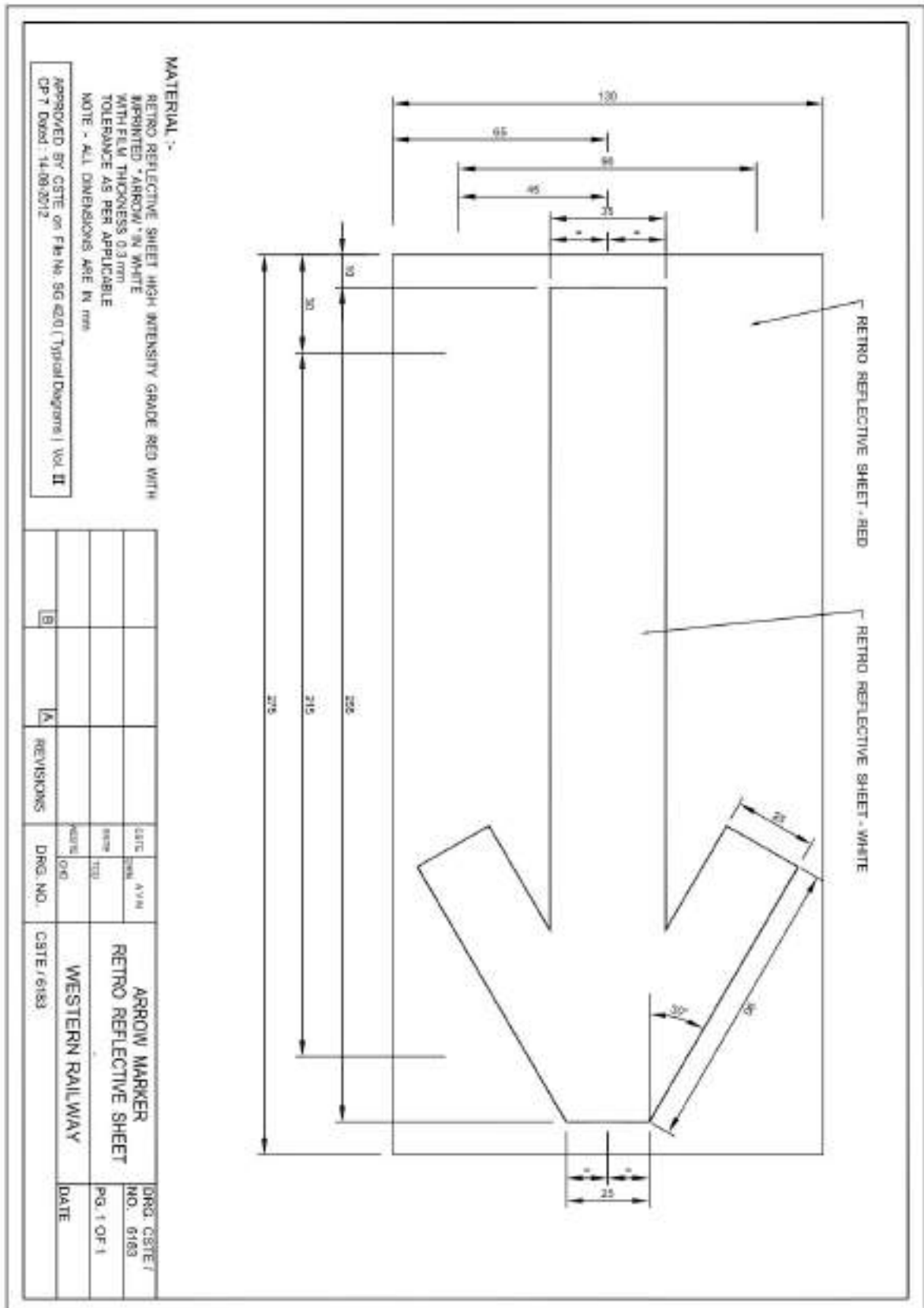


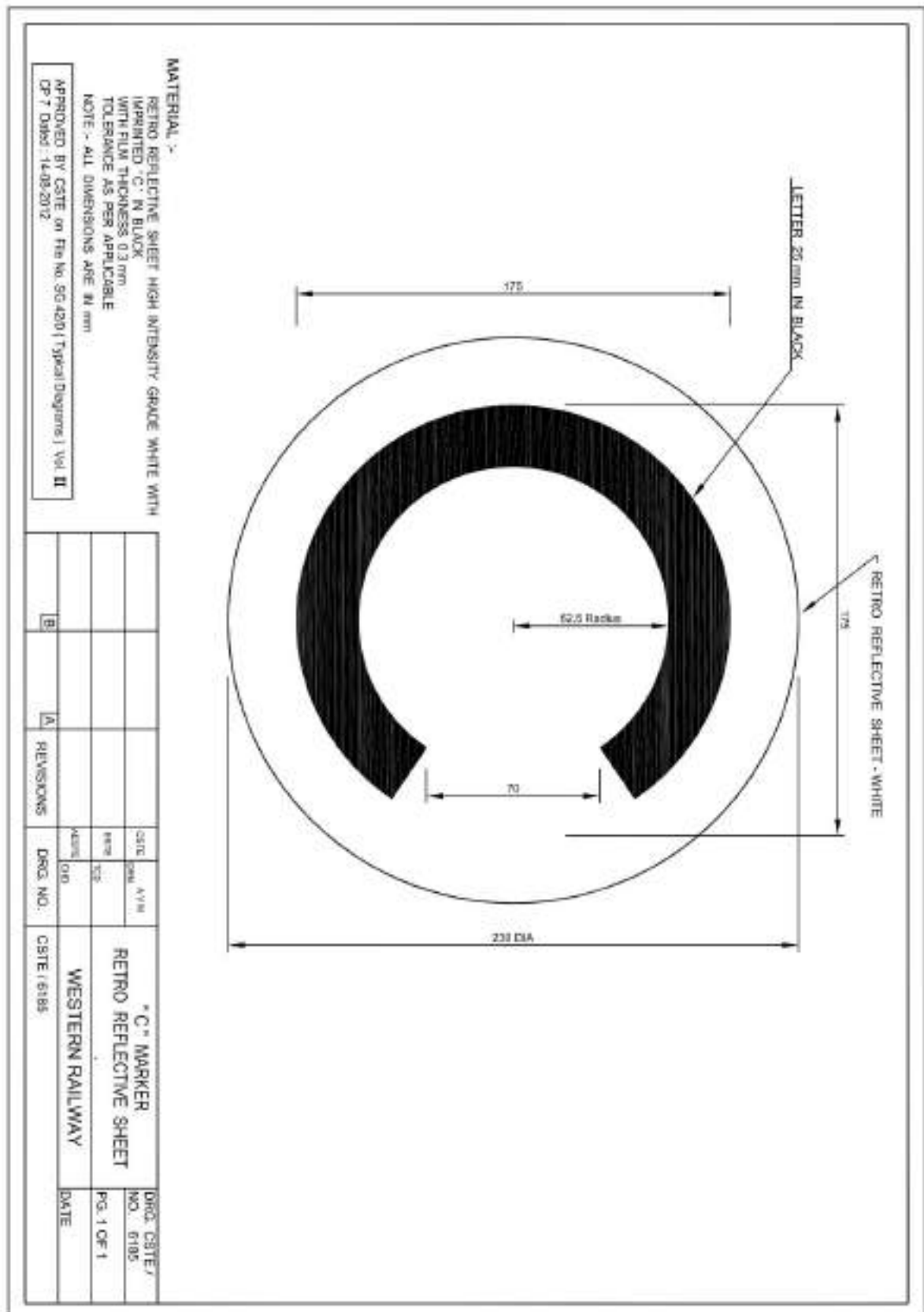
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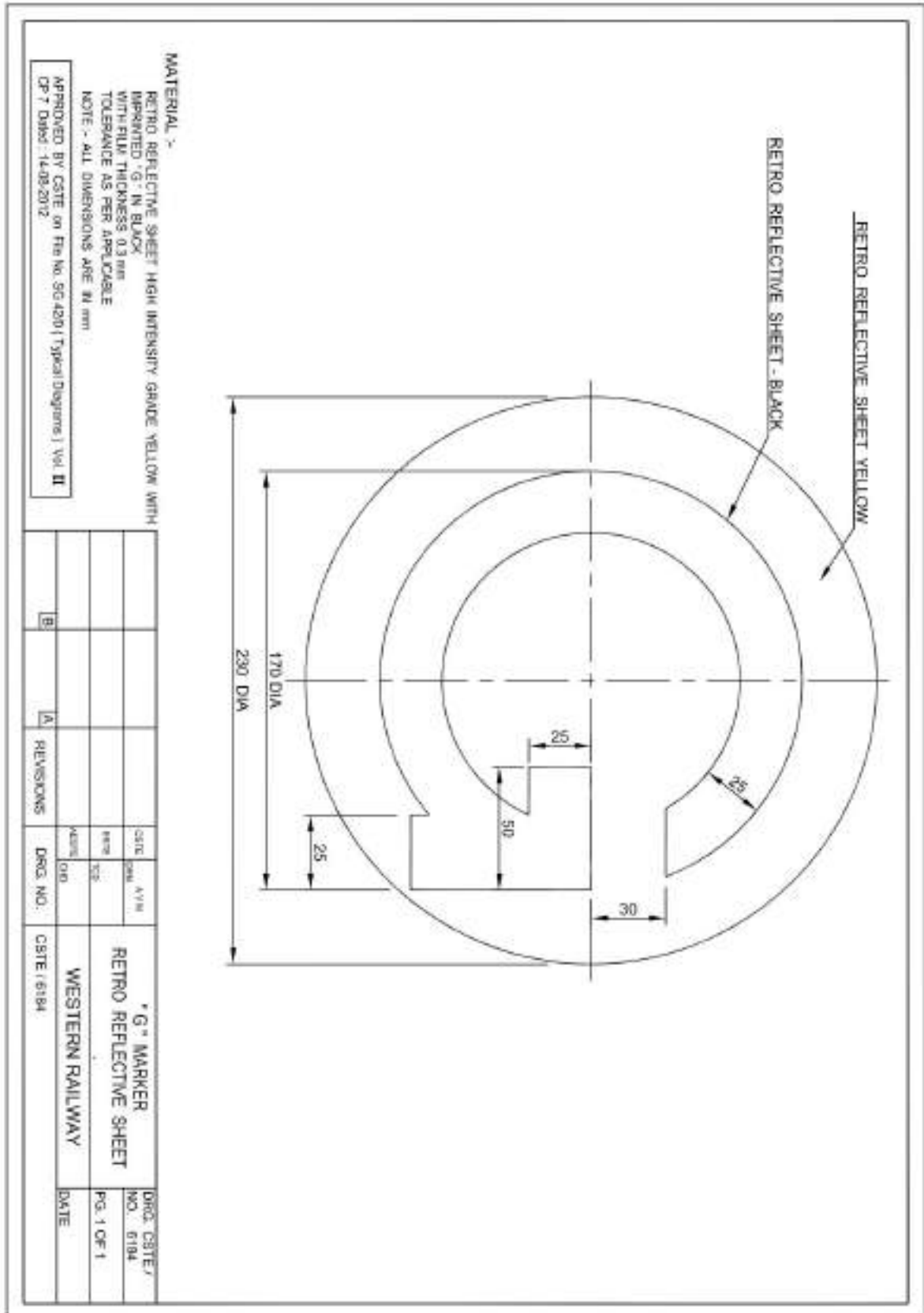


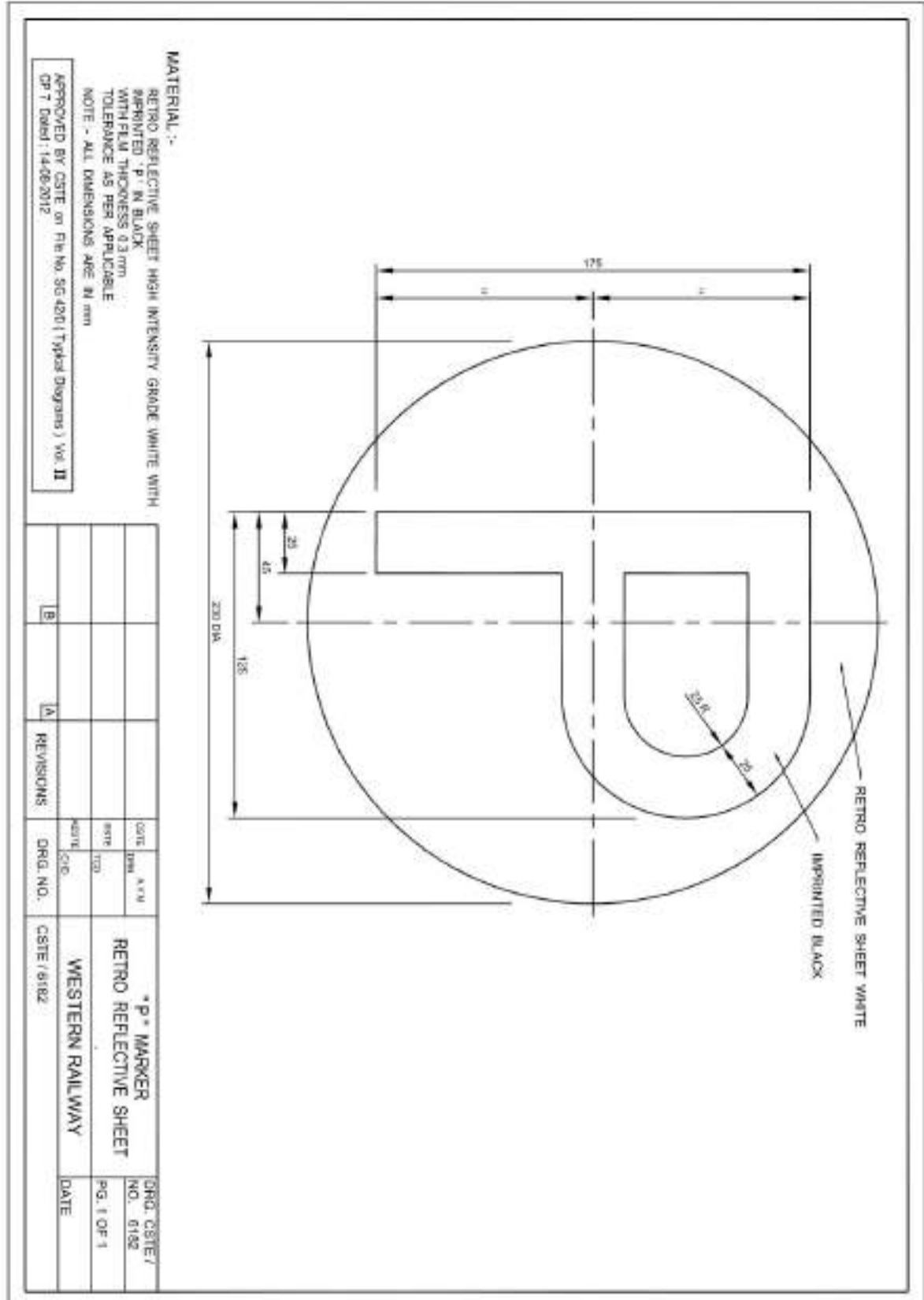






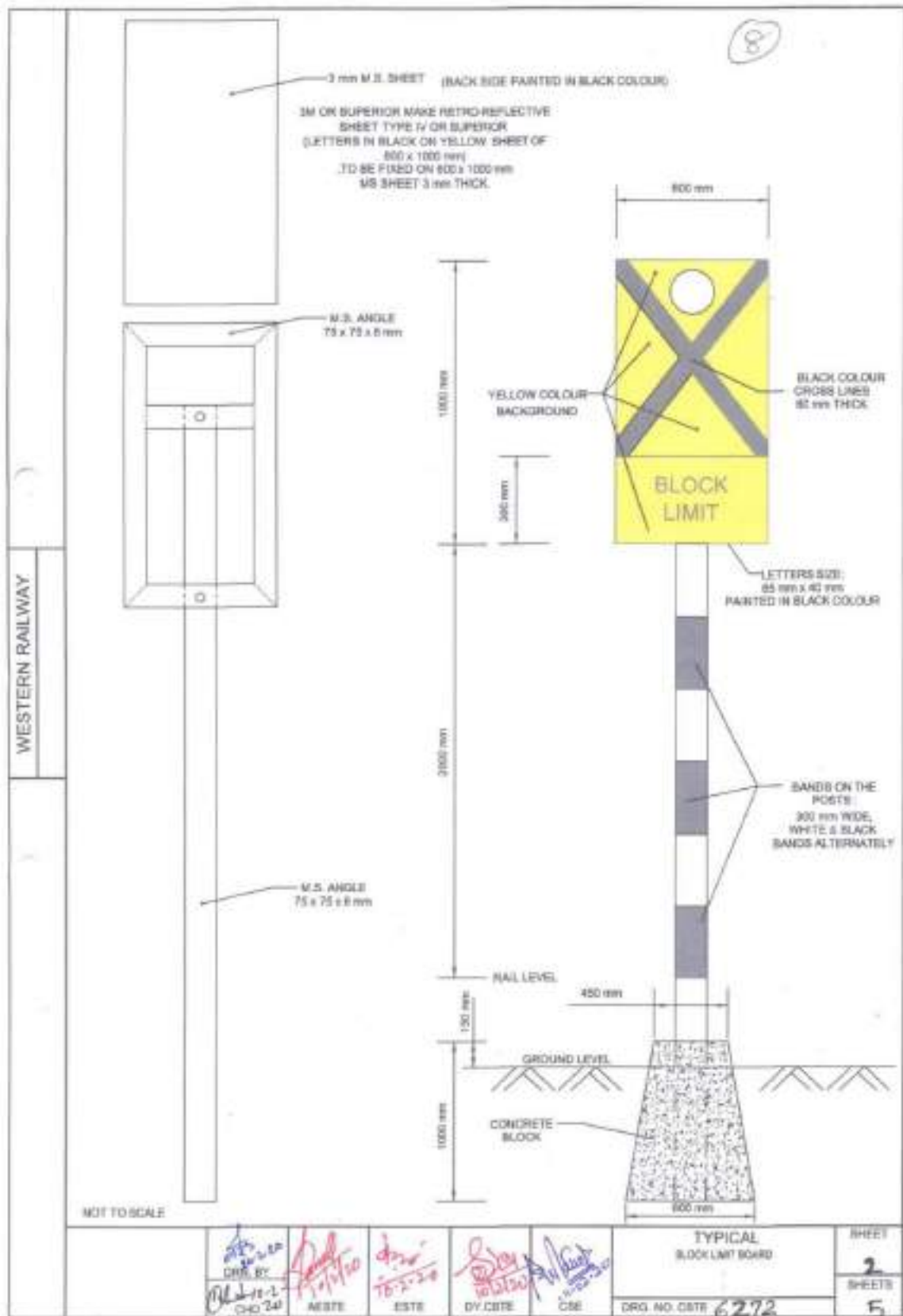






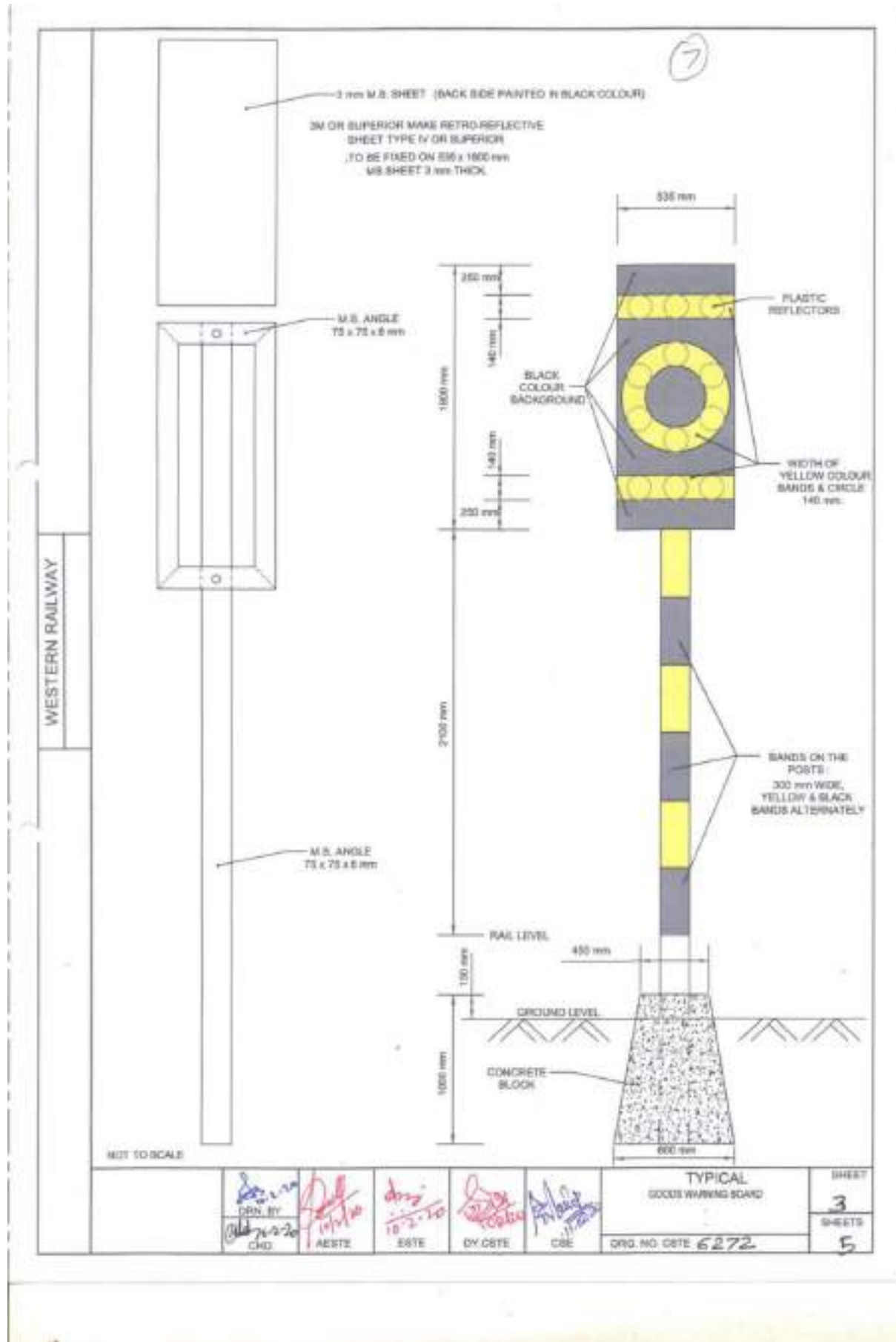
Western Railway Construction

Tender No. SnT-C-RTM-100-R-2022-23



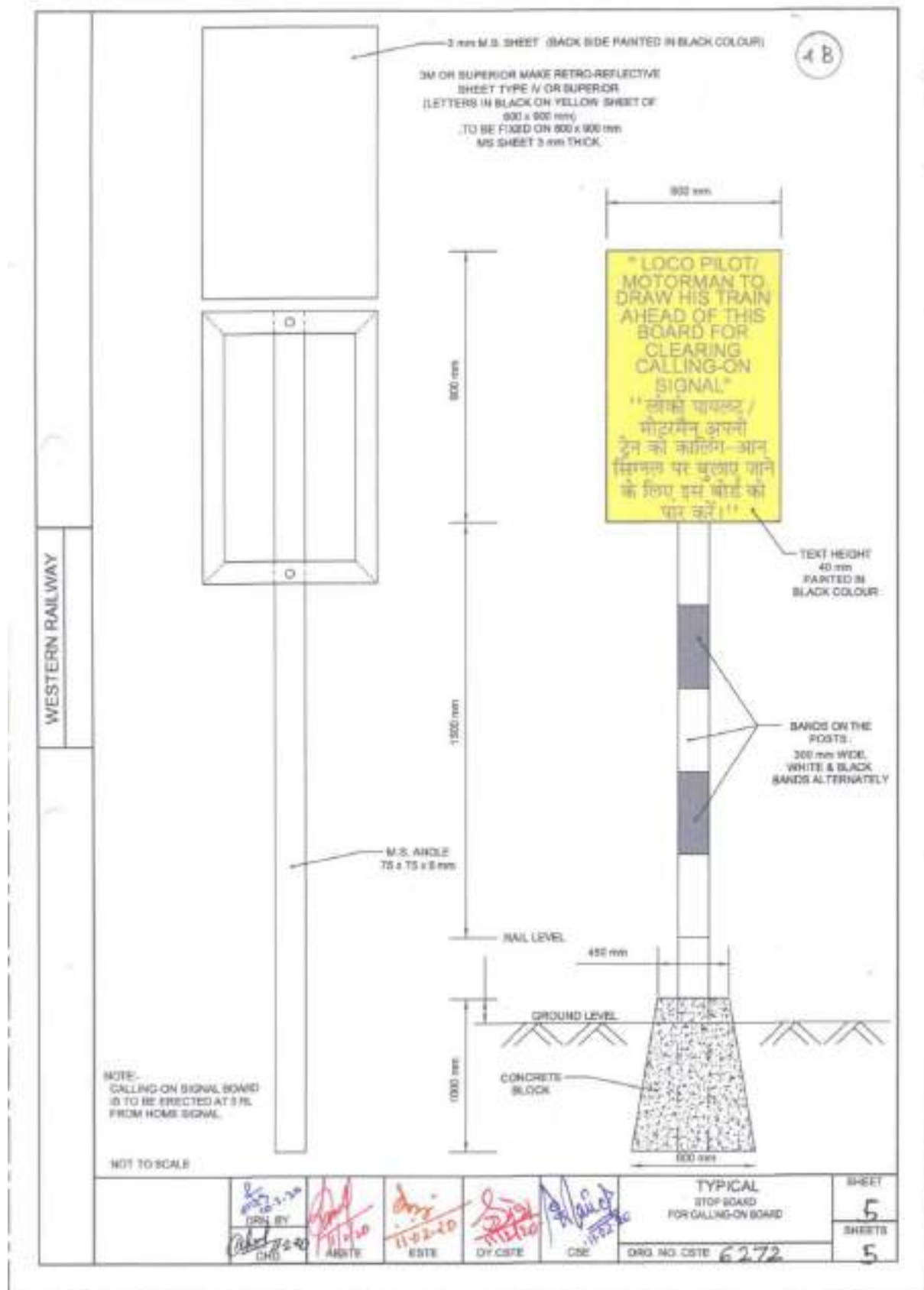
Western Railway Construction

Tender No. SnT-C-RTM-100-R-2022-23



Western Railway Construction

Tender No. SnT-C-RTM-100-R-2022-23



RETRO REFLECTIVE SHEET WHITE

LETTER / NUMBER IN BLACK

MATERIAL :-
PRESSURE SENSITIVE TYPE RETRO REFLECTIVE SHEET HIGH INTENSITY
GRADE WHITE WITH IMPRINTED NUMBER / ALPHABET IN BLACK
WITH FILM THICKNESS 0.3 mm
TOLERANCE AS PER APPLICABLE
NOTE - ALL DIMENSIONS ARE IN mm

APPROVED BY CSTE on File No. SG 420 (Typical Diagrams) Vol. II
CP 7 Dated : 14.08.2012

B	A	REVISIONS	DRG. NO.	CSTE / Sigs	SIGNAL NUMBER PLATE (DOUBLE DIGIT) RETRO REFLECTIVE SHEET WESTERN RAILWAY	DRG. CSTE / NO. 6186 PG. 2 OF 2

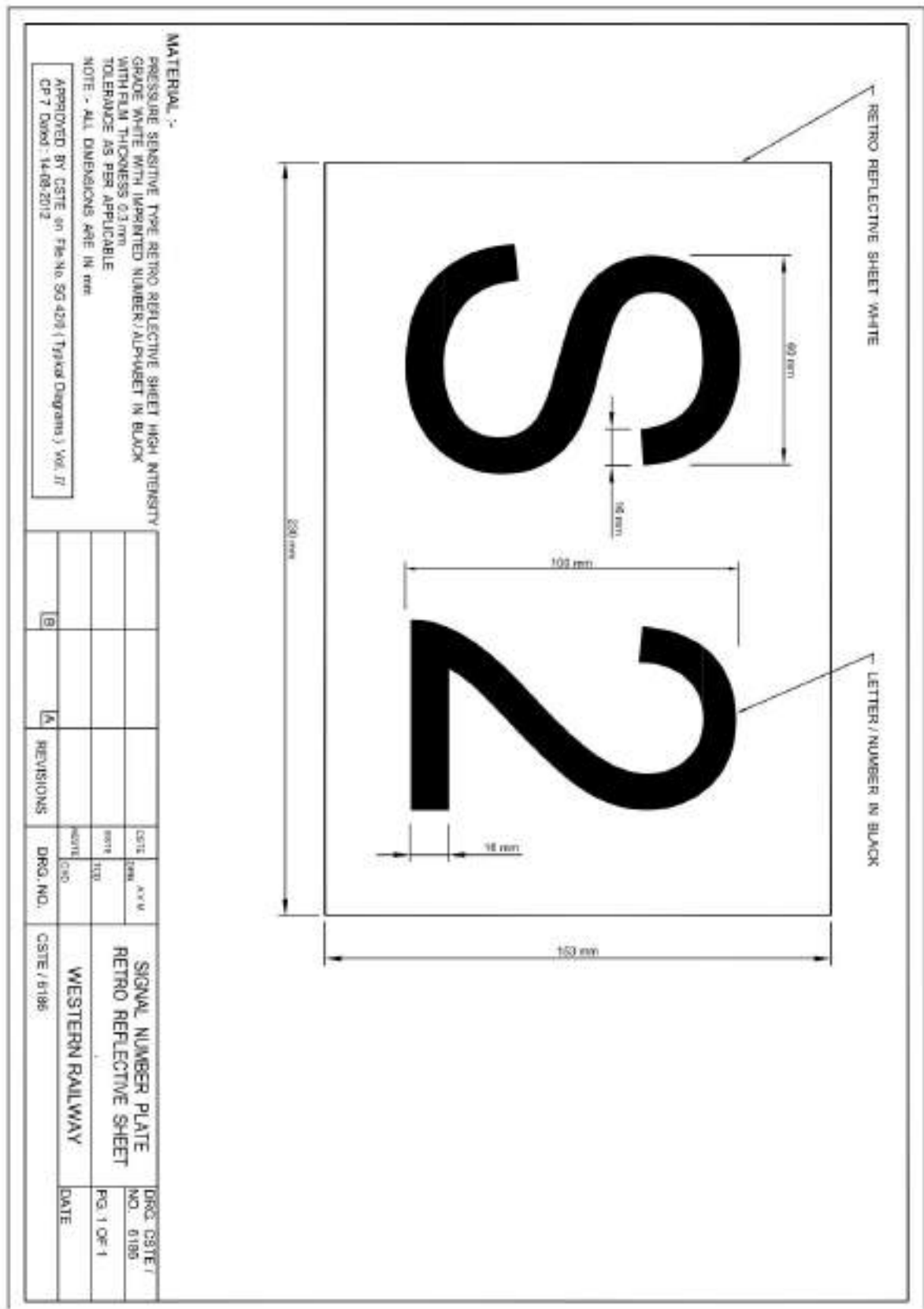
230 mm

15 60 10 60 10 60 15

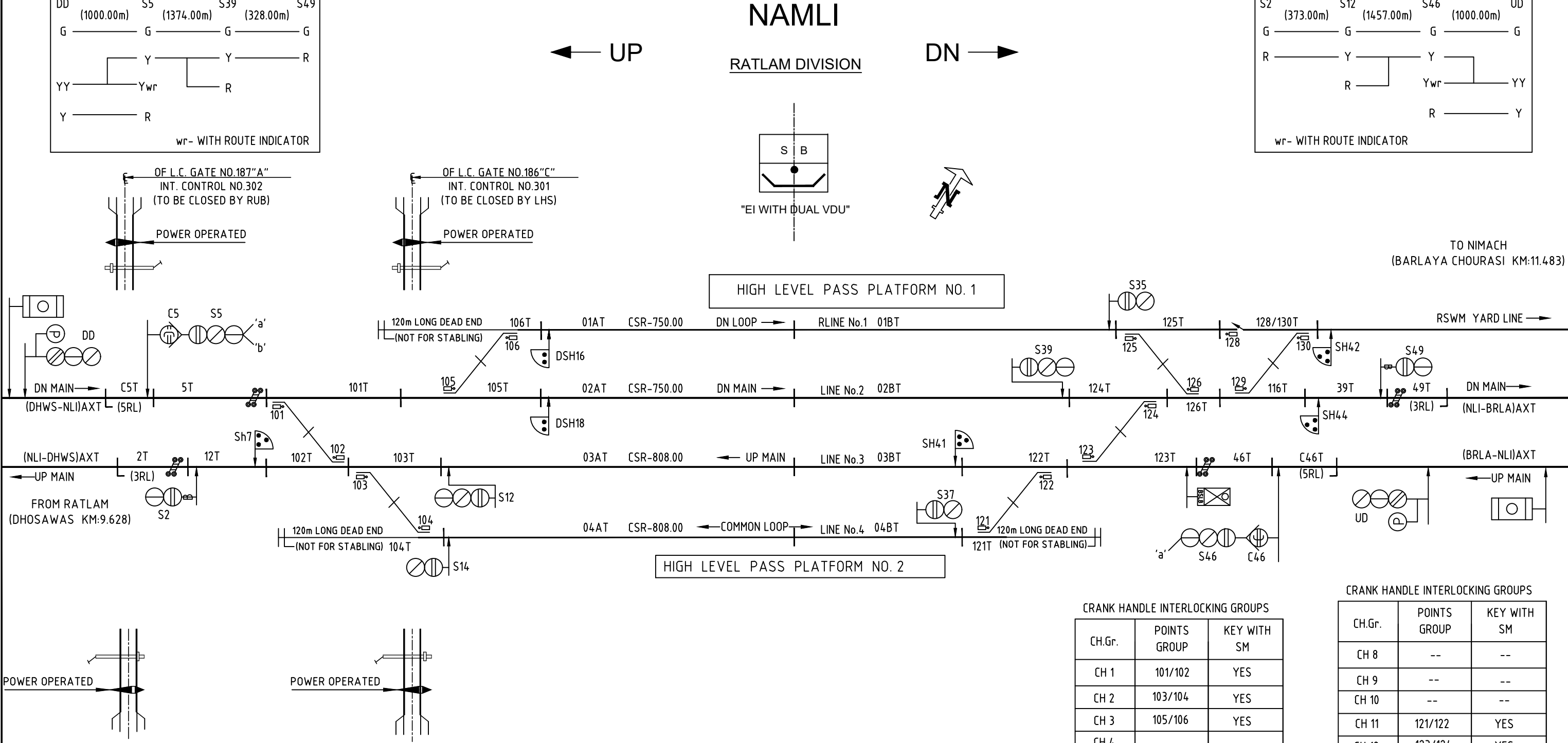
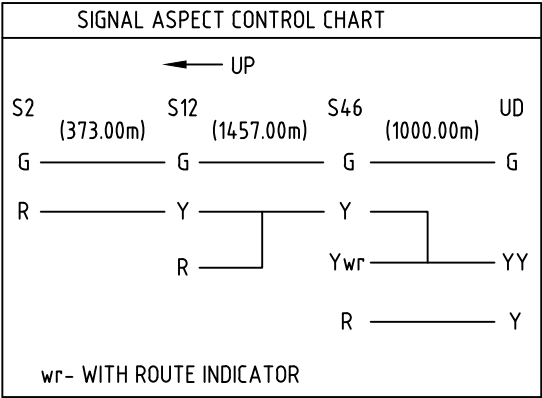
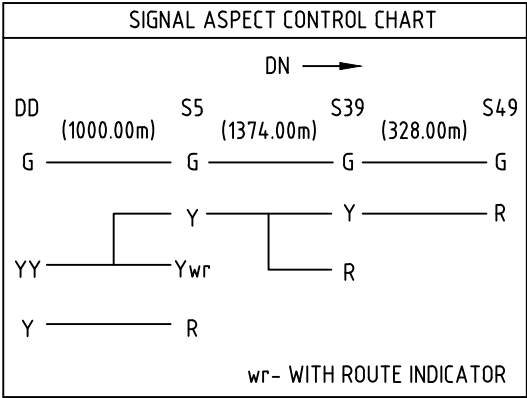
16 mm

16 mm

26.5 100 mm 153 mm



Annexure -D: Mini SIP



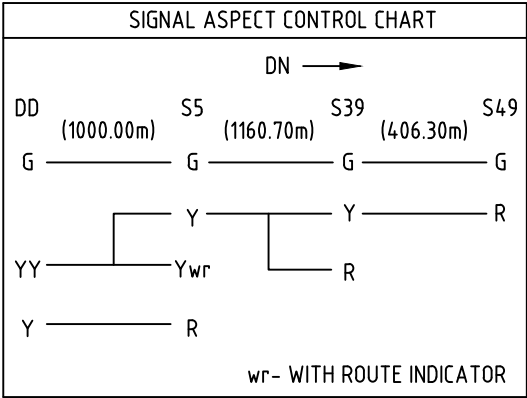
CRANK HANDLE INTERLOCKING GROUPS

CH.Gr.	POINTS GROUP	KEY WITH SM
CH 8	--	--
CH 9	--	--
CH 10	--	--
CH 11	121/122	YES
CH 12	123/124	YES
CH 13	125/126	YES
CH 14	/128	YES
CH 15	129/130	YES

CRANK HANDLE INTERLOCKING GROUPS

CH.Gr.	POINTS GROUP	KEY WITH SM
CH 8	--	--
CH 9	--	--
CH 10	--	--
CH 11	121/122	YES
CH 12	123/124	YES
CH 13	125/126	YES
CH 14	/128	YES
CH 15	129/130	YES

			L.R. SWARNKAR	f. CSTE(C)	SSE(C)	NAMLI MINI SIP	WESTERN RAILWAY	DRG. NO. SG (SP) 3354/6
			NITIN	ESTE (C-II)				SHT. No : MINI SIP
			SATYAPAL HUKAM SINGH	AESTE (C-I)				DATE:
			REVISIONS	BASED ON SIG. PLAN NO.				

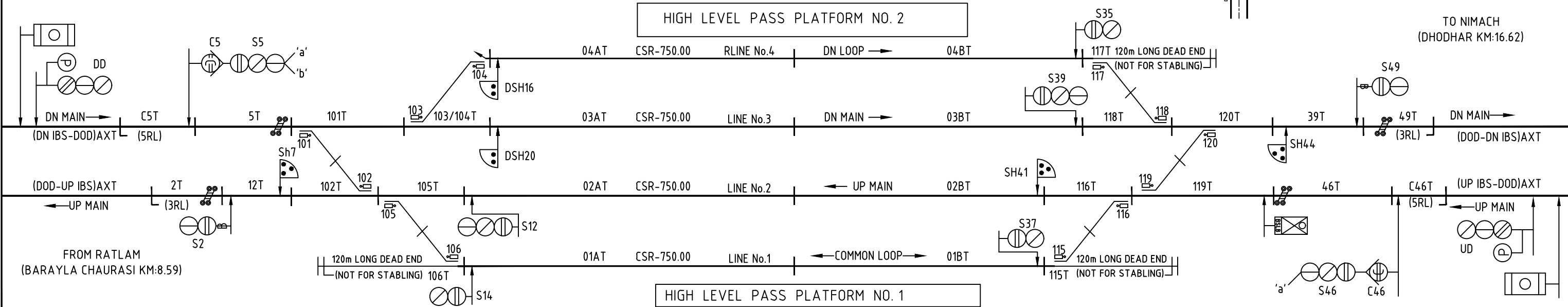
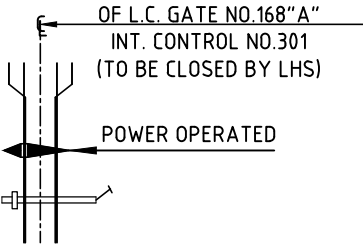
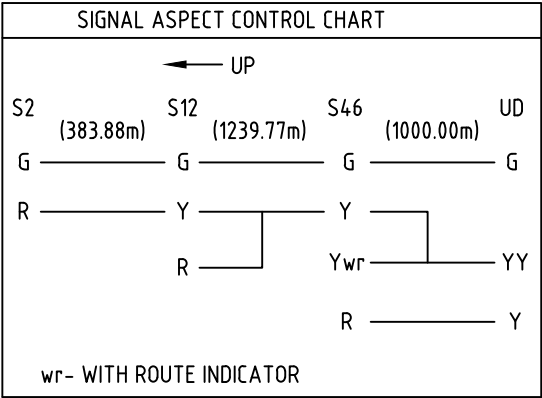


DHODHAR

RATLAM DIVISION

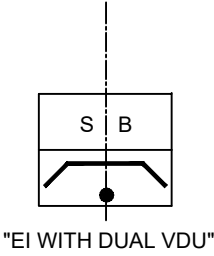
← UP

DN →



CRANK HANDLE INTERLOCKING GROUPS

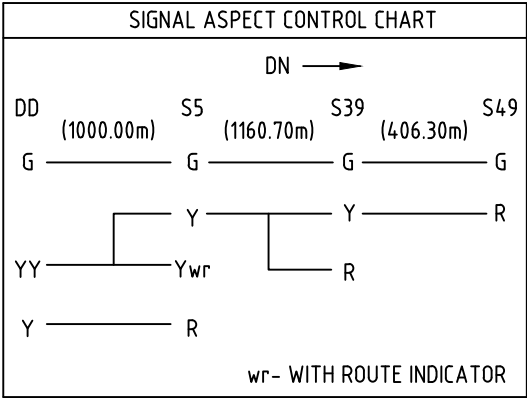
CH.Gr.	POINTS GROUP	KEY WITH SM
CH 1	101/102,	YES
CH 2	103/104	YES
CH 3	105/106	YES
CH 4	--	--
CH 5	--	--



CRANK HANDLE INTERLOCKING GROUPS

CH.Gr.	POINTS GROUP	KEY WITH SM
CH 6	--	--
CH 7	--	--
CH 8	115/116	YES
CH 9	117/118	YES
CH 10	119/120	YES

			L.R. SWARNKAR	f. CSTE(C)	SSE(C)	DHODHAR MINI SIP	DRG. NO. SG (SP) 3343/6
			NITIN	ESTE (C-II)	SSE(D)		SHT. No : MINI SIP
			SATYAPAL HUKAM SINGH	AESTE (C-I)	JE(D)	WESTERN RAILWAY	DATE:
	II	I	REVISIONS	BASED ON SIG. PLAN NO.		REF: DRG.NO.SG (SP) 3343/6	

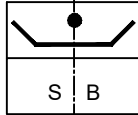


MANDSOR

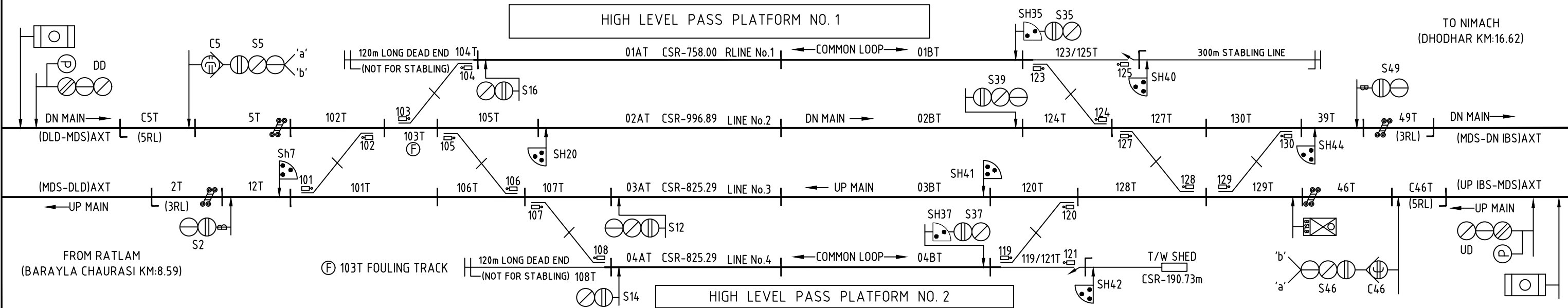
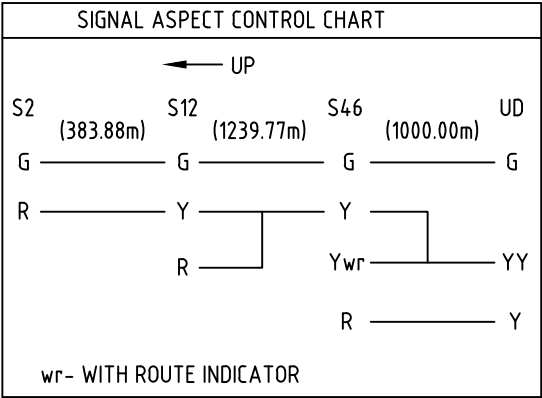
← UP

DN →

RATLAM DIVISION



"EI WITH DUAL VDU"



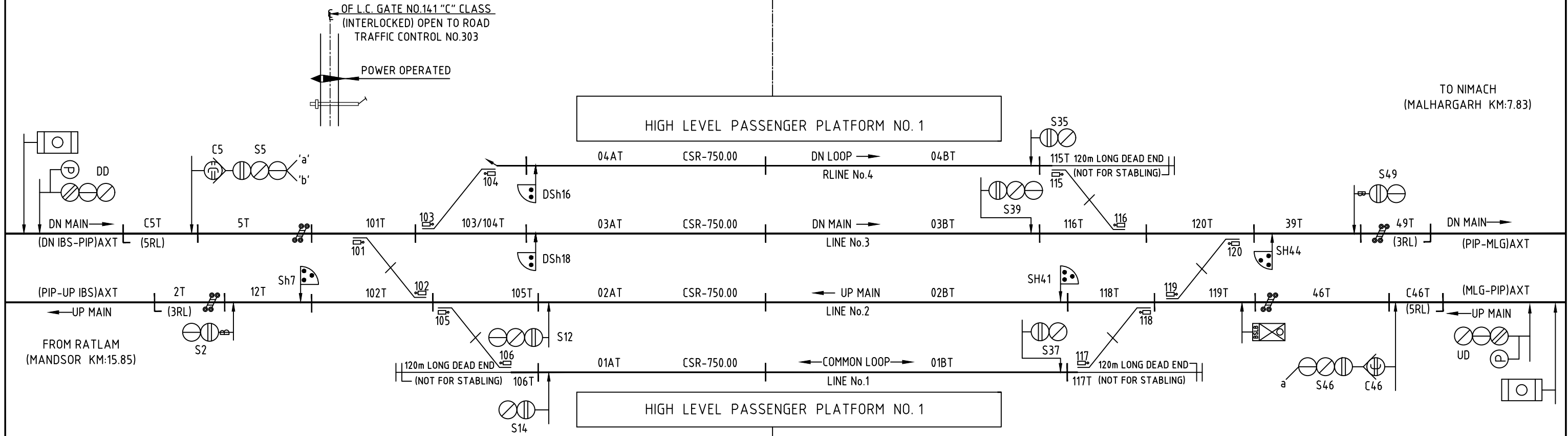
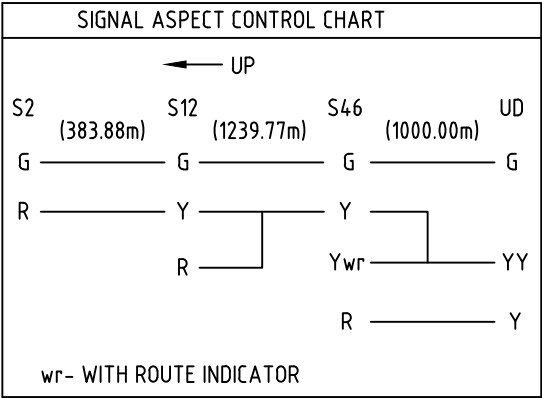
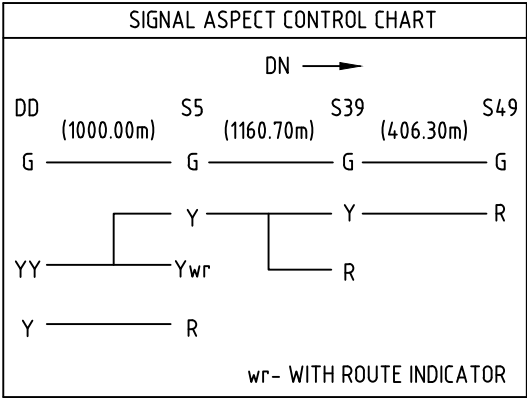
CRANK HANDLE INTERLOCKING GROUPS

CH.Gr.	POINTS GROUP	KEY WITH SM
CH 1	101/102	YES
CH 2	103/104	YES
CH 3	105/106	YES
CH 4	107/108	YES
CH 5	--	--
CH 6	--	--
CH 7	--	--

CRANK HANDLE INTERLOCKING GROUPS

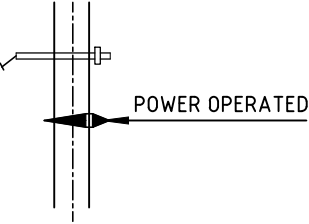
CH.Gr.	POINTS GROUP	KEY WITH SM
CH 8	--	--
CH 9	--	--
CH 10	119/120	YES
CH 11	121/	YES
CH 12	123/124	YES
CH 13	125/	YES
CH 14	127/128	YES
CH 15	129/130	YES

			L.R. SWARNKAR	f. CSTE(C)	SSE(C)	JAORA MINI SIP	DRG. NO. SG (SP) 3336/6
			NITIN	ESTE (C-II)	SSE(D)		SHT. No : MINI SIP
			SATYAPAL HUKAM SINGH	AESTE (C-I)	JE(D)	WESTERN RAILWAY	DATE:
	II	I	REVISIONS	BASED ON SIG. PLAN NO.		REF: DRG.NO.SG (SP) 3336/6	



CRANK HANDLE INTERLOCKING GROUPS

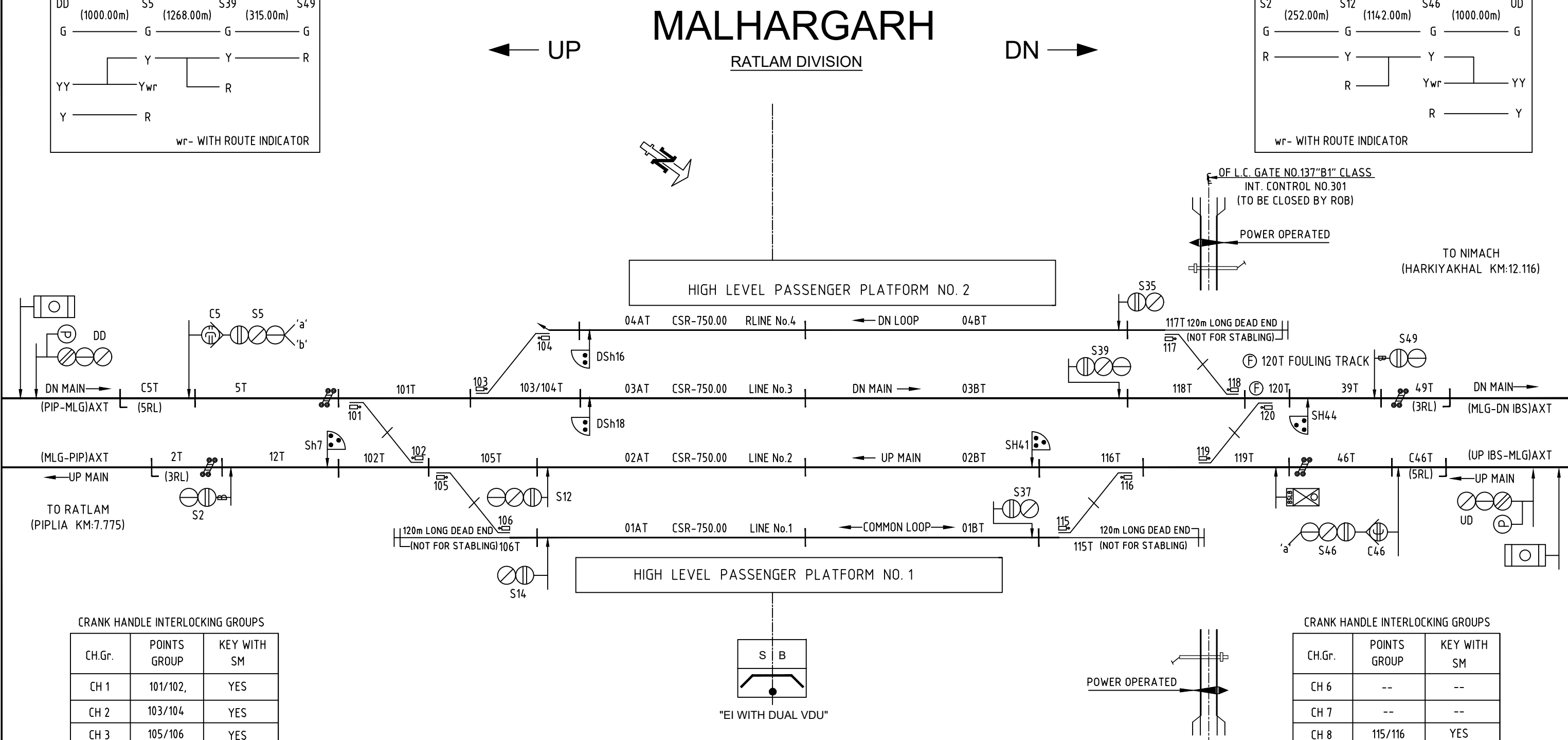
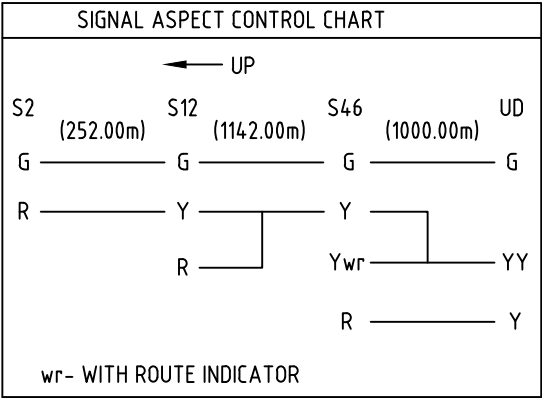
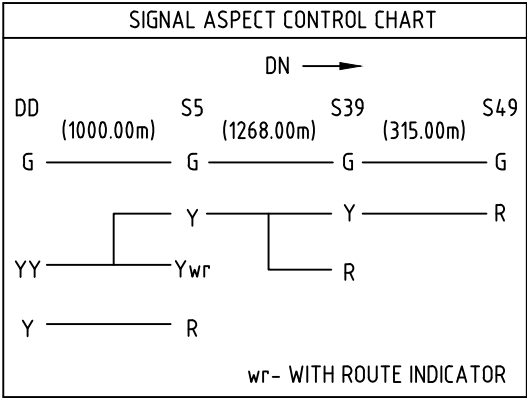
CH.Gr.	POINTS GROUP	KEY WITH SM
CH 1	101/102,	YES
CH 2	103/104	YES
CH 3	105/106	YES
CH 4	--	--
CH 5	--	--



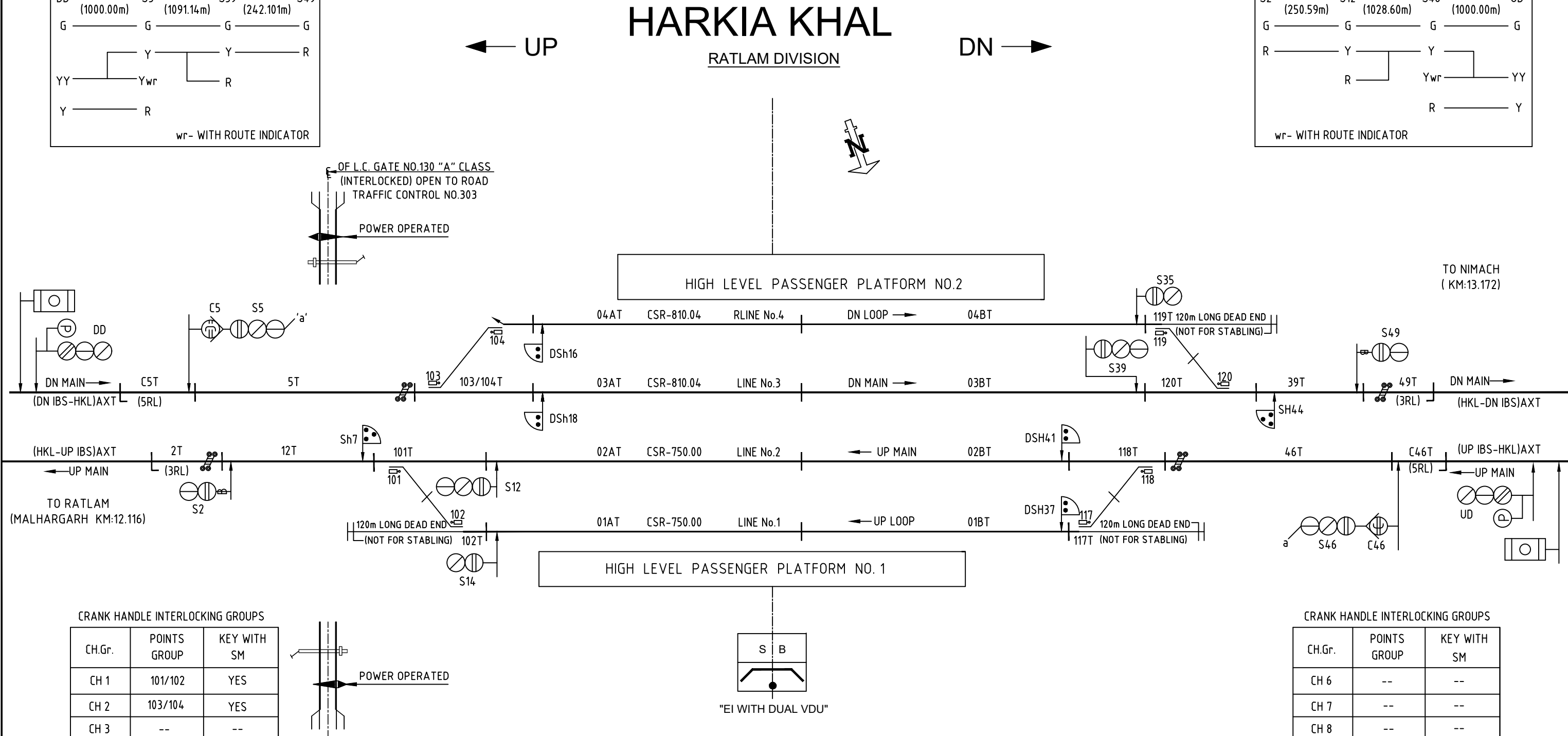
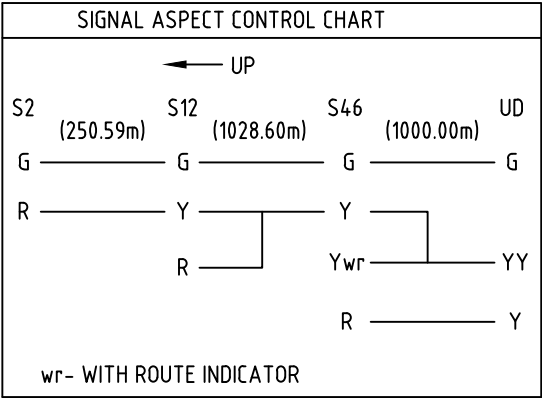
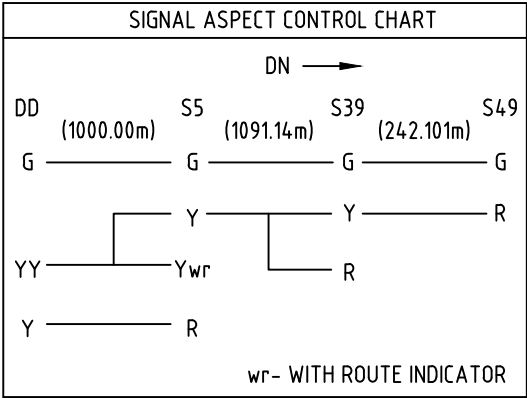
CRANK HANDLE INTERLOCKING GROUPS

CH.Gr.	POINTS GROUP	KEY WITH SM
CH 6	--	--
CH 7	--	--
CH 8	115/116	YES
CH 9	117/118	YES
CH 10	119/120	YES

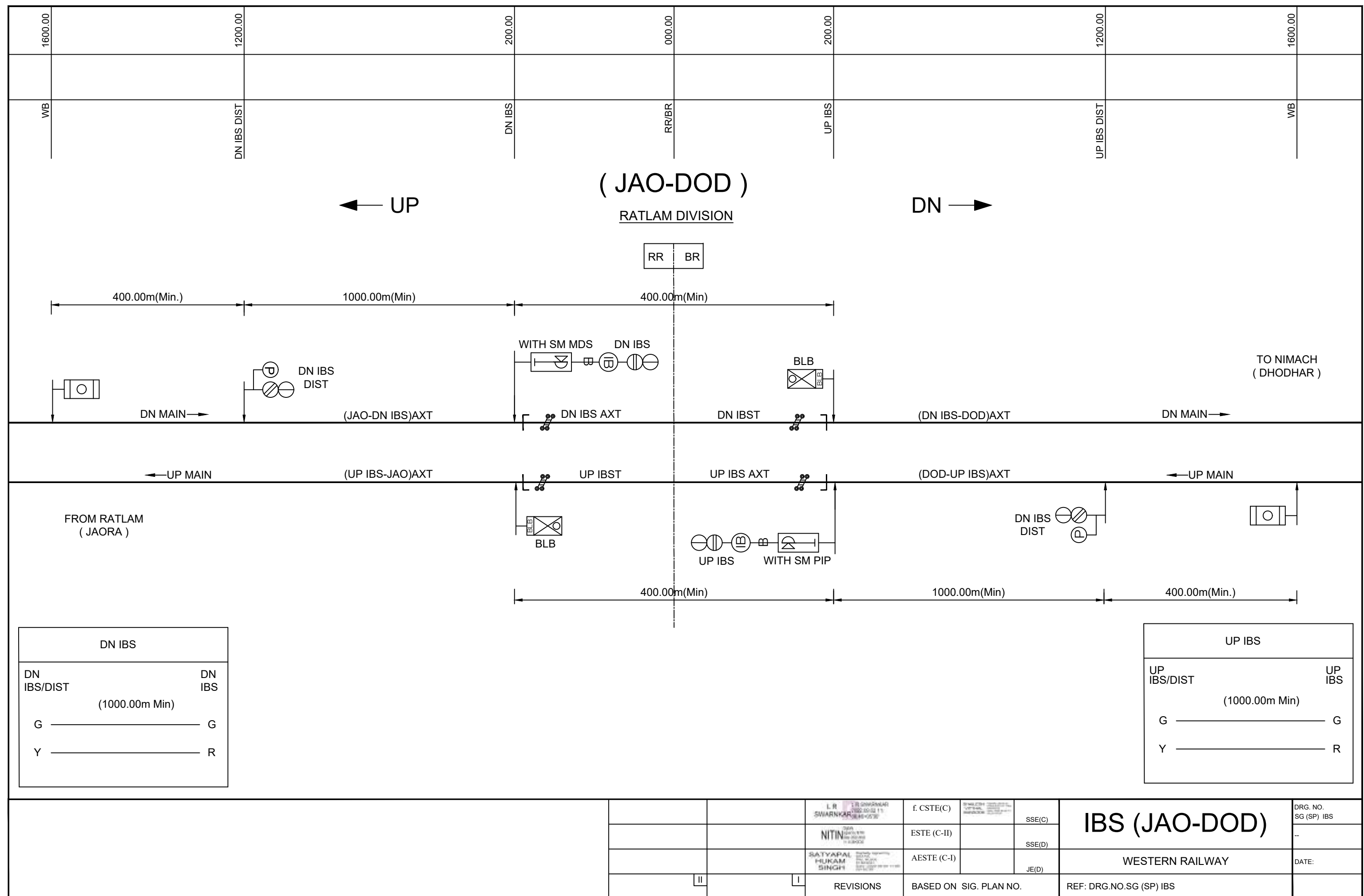
			L.R. SWARNKAR	f. CSTE(C)	SWARNKAR	SSE(C)	PIPLIA (PIP) MINI SIP	DRG. NO. SG (SP) 3332/6
			NITIN	ESTE (C-II)		SSE(D)		SHT. No : MINI SIP
			SATYAPAL HUKAM SINGH	AESTE (C-I)		JE(D)	WESTERN RAILWAY	DATE:
	II	I	REVISIONS	BASED ON SIG. PLAN NO.		REF: DRG.NO.SG (SP) 3332/6		

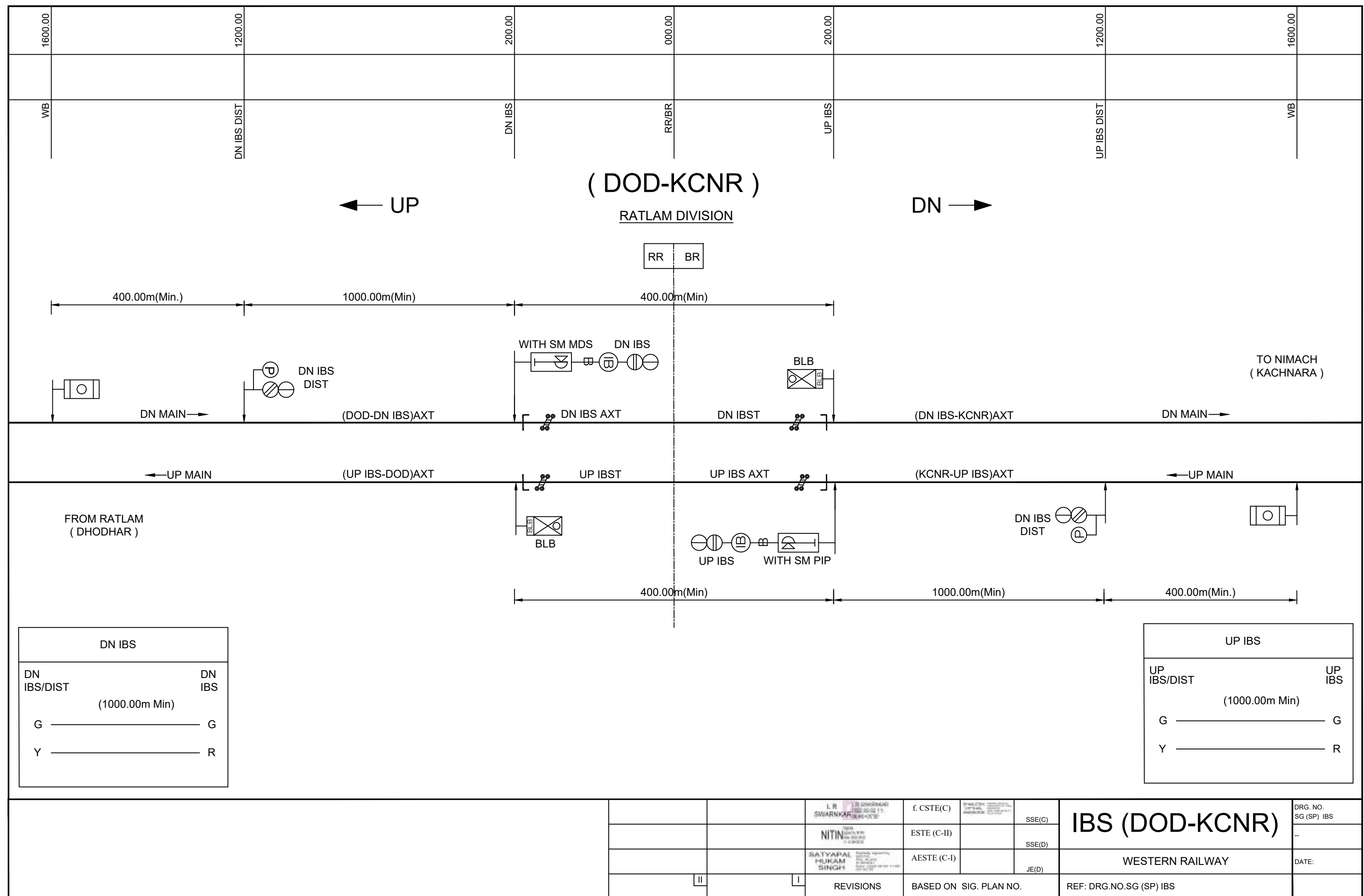


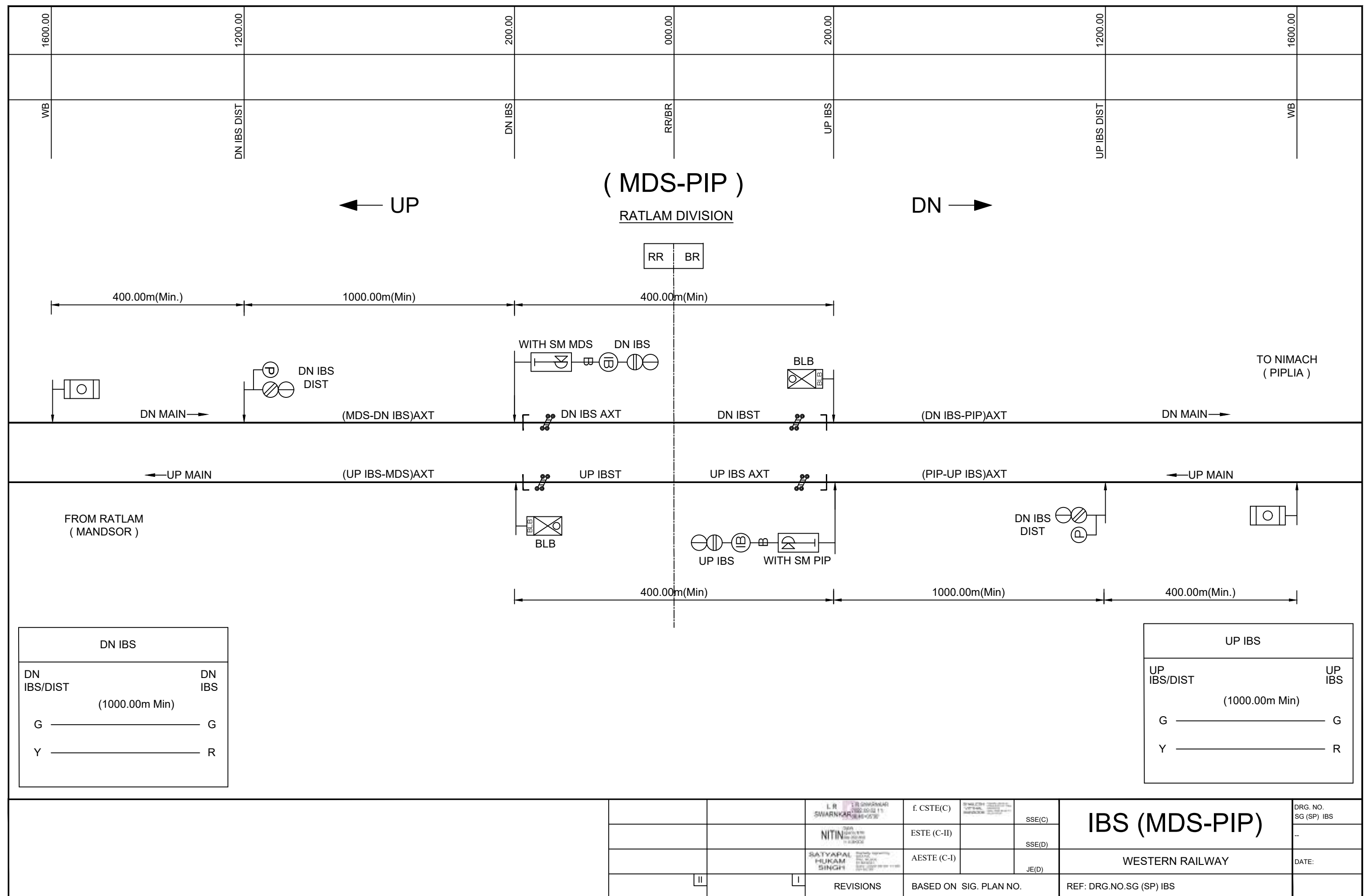
			L.R. SWARNKAR	f. CSTE(C)	SWARNKAR	MALHARGARH MINI SIP	DRG. NO. SG (SP) 3330/4
			NITIN	ESTE (C-II)			SHT. No : MINI SIP
			SATYAPAL HUKAM SINGH	AESTE (C-I)		WESTERN RAILWAY	DATE:
	II	I	REVISIONS	BASED ON SIG. PLAN NO.		REF: DRG.NO.SG (SP) 3330/4	

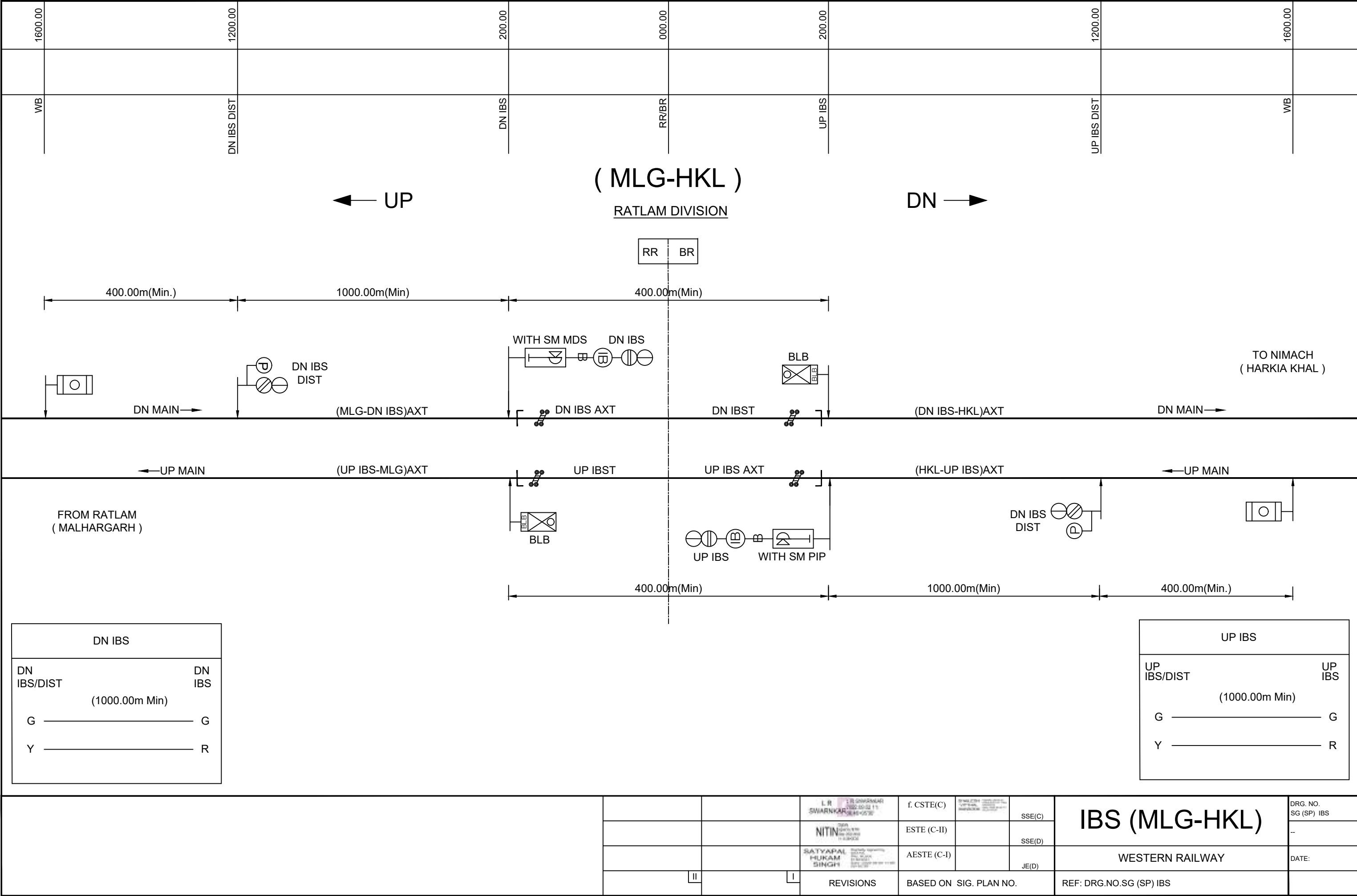


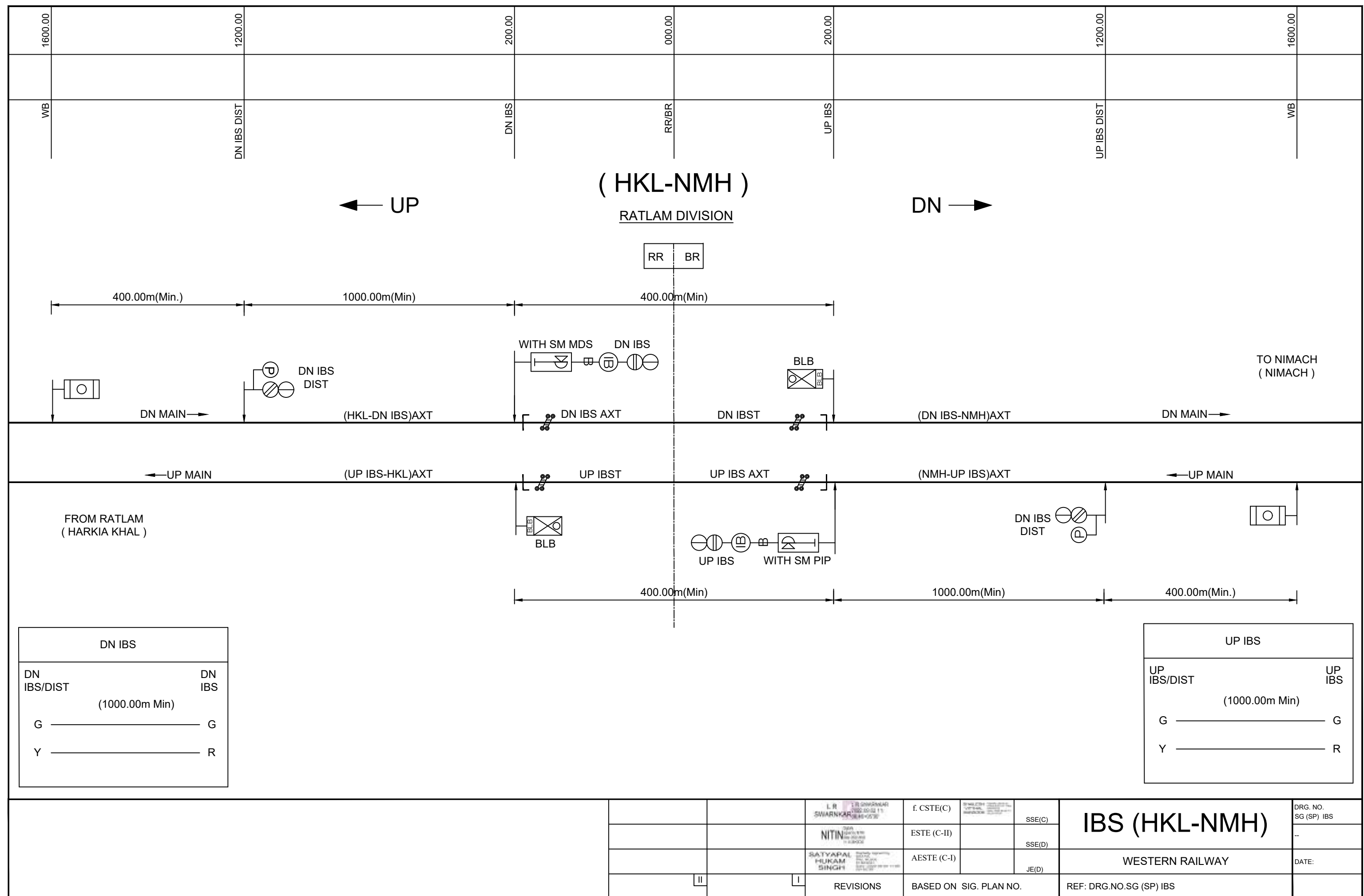
			L.R. SWARNKAR	f. CSTE(C)	SSE(C)	HARKIA KHAL (HKL)	DRG. NO. SG (SP) 3327/6
			NITIN	ESTE (C-II)	SSE(D)		SHT. No : MINI SIP
			SATYAPAL HUKAM SINGH	AESTE (C-I)	JE(D)	WESTERN RAILWAY	DATE:
	II	I	REVISIONS	BASED ON SIG. PLAN NO.		REF: DRG.NO.SG (SP) 3327/6	











END OF TENDER DOCUMENT.