

## **TECHNICAL SPECIFICATIONS & GENERAL CONDITIONS**

### **General Instructions: -**

1. The works shall be carried out according to the drawings approved by the Railways and shall conform to the provisions of the Indian Railways - “Signal Engineering Manual”, “Telecom Manual”, “Schedule of Dimensions”, “Manual of Instructions for Installation of S&T equipment on 25 KV, 50 Cycles, A. C. electrified sections” and Joint Procedure Order (JPO) for undertaking digging work in vicinity of Signalling, Electrical and Telecommunication cables as modified from time to time unless deviations, if any, are specifically approved by the Engineer in-charge. The Contractor shall be solely responsible for the proper execution of the work as per the said deviations and specifications.
2. Cable and other material required for execution will be supplied by concerned SSE/S&T or any store/depot of SSE/S&T of division. Transportation of material from any store/depot of division to the site will be done by contractor. No transportation charges will be paid by Railways. Released material, if any, will be transported by contractor to the store of concerned SSE/S&T at his own cost, no additional charges will be paid by the Railways.
3. Trenching, cable laying & laying of HDPE pipe including supply shall be treated as one item for the purpose of payment, wherever provision of HDPE pipe is given. No individual separate payment of these items shall be admissible.
4.
  - i) Items shall be inspected by RDSO/RITES/Consignee etc. as per inspection clause.
  - ii) In case of Consignee inspection, high value materials, having complex technologies for which Consignee is not equipped to test the material, may be tested in Laboratory/ Factory premises to confirm, whether they meet specifications or not. The inspection authority should clearly reflect derivations vis-a-vis standard parameters.
  - iii) Contractor shall submit OEM’s invoice, Test Certificate, Delivery challan, Warranty certificate etc. along with the supply of material.
5. Rates quoted by the tenderer shall be inclusive of all charges/taxes such as transportation charges, octroi charges, toll tax etc. and also taxes as per CGST regime. All incidental charges may be included in the rates quoted. Claim of any additional Taxes/Charges shall not be entertained at a later stage.
6. Petty material like screw, nails, nut/bolts, gutties etc. required for execution of works shall be arranged by the contractor at his own cost.
7. All items shall be offered for inspection to the consignee before supply. UG Cable shall be supplied by Railway. The contractor shall transport the equipment/material to different sites of work, to/from store of consignee at his own cost.
8. Material supplied and the work done by the contractor shall be under warranty for one year after certified date of completion of work. Certificate of which will be given by officers in-charge of work.
9. Workmanship of the items of work shall be of good quality and to the satisfaction of the Railway Engineer at site.

10. Railway reserves the right to reject any material/portion of the work found not as per specification.
11. Work shall be executed as per directions/instructions of the Railway Engineer in charge of the work and any other person deputed by him in this regard. Contractor shall be required to nominate his Engineers/Supervisors who will supervise the work and shall take instructions from Railway Engineer.
12. All tools, instrument, components and other items required for the execution of the work have to be arranged by the contractor on his own cost.
13. The contractor shall not execute the work, which may interfere with train traffic until adequate protection has been arranged as per the instruction of the site-in-charge. Contractor will be himself responsible for the safety of his personnel during execution of the work. Railway will not be responsible for making payment of any type of compensation.
14. Normal 230 VAC Supply shall be provided by Railway. Suitable adapter if required shall be arranged by Contractor.
15. Any other hardware software requirement arising during execution of various items will be made with by the Contractor without any additional charges.
16. Credentials:
  - i. At least one Office /Service Unit of the contractor should be available in the State of Delhi, Chandigarh, Haryana, Punjab, Himachal Pradesh, J&K, Uttarakhand or Uttar Pradesh. He shall furnish the details of his establishments nearest to Firozpur with address, Telephone Nos. and Manpower availability at the center.
  - ii. Supportive documents/certificate from the organizations worked with whom they worked/are working should be enclosed.
17. **PAYMENT TERMS:** - The payment to the tenderer would be made through EFT/ECS/LC. If the tenderer opts for payment through LC (Letter of credit) following conditions shall be applicable-
  - (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) In case tenderer opts for payment through LC, following shall be the procedure to deal release of payment through LC:
- (a) The LC shall be a sight LC.
  - (b) The contractor shall select his Advising/Negotiating bank for LC. The incidental cost 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 based on online requests received from Railway Accounts Units for tenders opened in financial year 2022-23. 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.
  - (e) The value of LC to be opened initially as well as extended thereafter shall be finalised by the engineer in consultation with the contractor on the basis of expected progress of work, 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 Authorisation 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 Authorisation.
  - (h) The Document of Authorisation shall be issued by Railway Accounts Office against each bill passed by Railways.
  - (i) On issuance of Document of Authorisation, a copy of Document of Authorisation shall be posted on IREPS for download by the contractor. A digitally signed copy of Document of Authorisation 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 Authorisation 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 Authorisation, bill of exchange and Bill.

- (k) The payment against LC shall be subject to verification from Railway's Bank (Local SBI Branch).
- (l) The contractor's bank (advising bank) shall submit the documents to the Railway's Bank (Local SBI Branch).
- (m) The railway's bank (issuing bank) shall, after verifying the claim so received w.r.t the digitally signed Document of Authorisation received from Railway Accounts 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 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 P VC 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.

Further, item wise payment shall be as under:

**17.1 Payment terms for Supply items-**

- i. 90% of the accepted cost of material supplied will be paid when the materials are supplied subject to furnishing of Inspection certificate and receipt order by the nominated consignee.
- ii. 100% will be paid for spares and for items, which are not required to be erected by the contractor on receipt of the equipment and its inspection certificate.

**17.2 Payment terms for execution items other than supply-**

- i. On account payment will be done on the basis of measurements recorded.
- ii. For combined items involving supply and erection/installation - 70% payment shall be made when the materials are supplied subject to furnishing of Inspection certificate and receipt order by the nominated consignee.
- iii. Balance 30% of the cost of the material supplied shall be paid as under:
  - a. 20% cost held up shall be paid after successful commissioning of the system.
  - b. Balance 10% of the cost of the material held up shall be paid after successful completion of system.

**17.3** For the item of designing 100% payment will be made after completion of activity, acceptable to the Railways.

- 18. Provisions of Payments of Wages Act:** 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.

**18.1** (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](http://www.shramikkalyan.indianrailways.gov.in)'. Contractor shall register his firm/company etc. and upload requisite details of labour and their payment in this portal. These details shall be available in public domain. The Registration/ updation of Portal shall be done as under:

- (a) Contractor shall apply for onetime registration of his company/firm etc. in the Shramikkalyan portal with requisite details subsequent to issue of Letter of Acceptance. Engineer shall approve the contractor's registration 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](http://www.shramikkalyan.indianrailways.gov.in)' till \_\_\_\_Month, \_\_\_\_Year."

**18.2** 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.

### Annexure-2

## CABLE TESTING RECORD: SUMMARY SHEET

Cable No.		Cable Function	
Cable Size		Make	
Length		PO No. and date	
Between Locations		Inspection No. and Date	
Type of Protection		Spare Core Nos.	

[illegible]

\*Tests sheets for Insulation and Loop resistance results in matrix format to be maintained separately for each cable in the cable testing register.

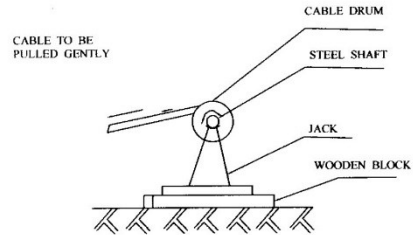
**Annexure-3**

**CABLE INSULATION RESISTANCE TEST SHEET**

Date of Meggering:										Signature																						
(All figures in mega ohms unless otherwise specified)																																
No	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		
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(All figures in mega ohms unless otherwise specified)

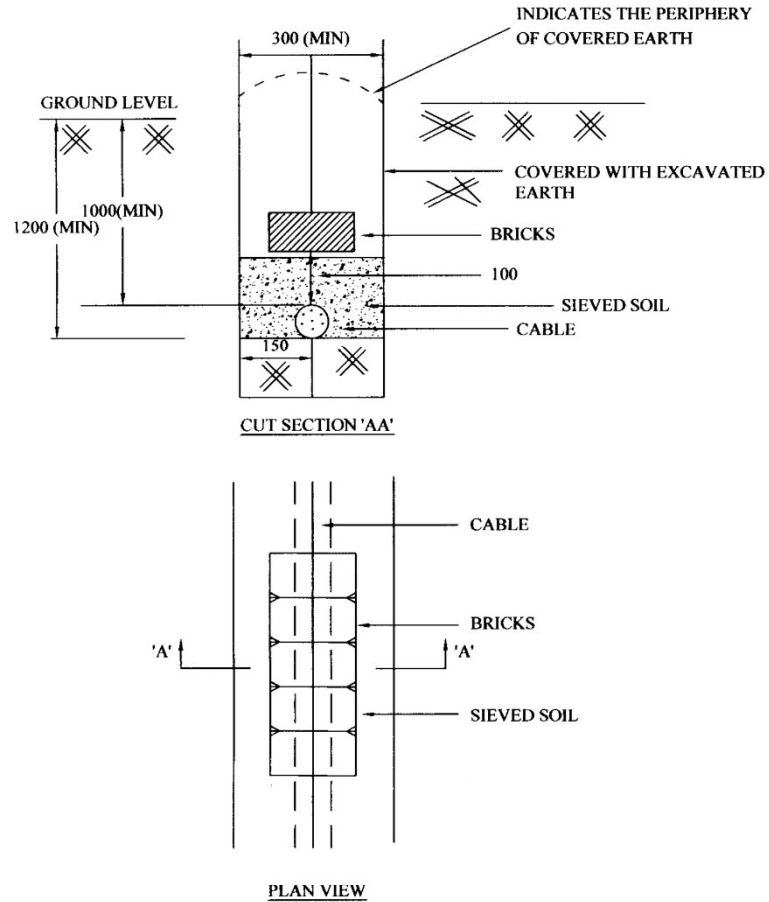
Date of Meggering: \_\_\_\_\_ Signature \_\_\_\_\_



CHECKED BY	JE/SE/SSE	METHOD OF UNROLLING CABLE	SDO/CABLE LAYING /021
APPROVED BY	ADE	R.D.S.O.	DATE :- 31-10-2011
NOT TO SCALE			



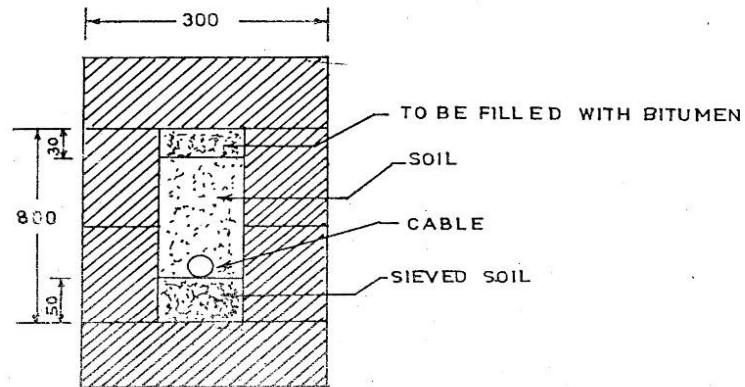
**Annexure-6**



NOTE :  
1. ALL DIMENSIONS ARE IN MILLIMETER.


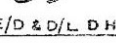
CHECKED BY	JE/SE/SSE	CABLE TRENCH	SDO/CABLE LAYING/003
APPROVED BY	ADE	R. D. S. O.	DATE : 31-10-2011
NOT TO SCALE			

1



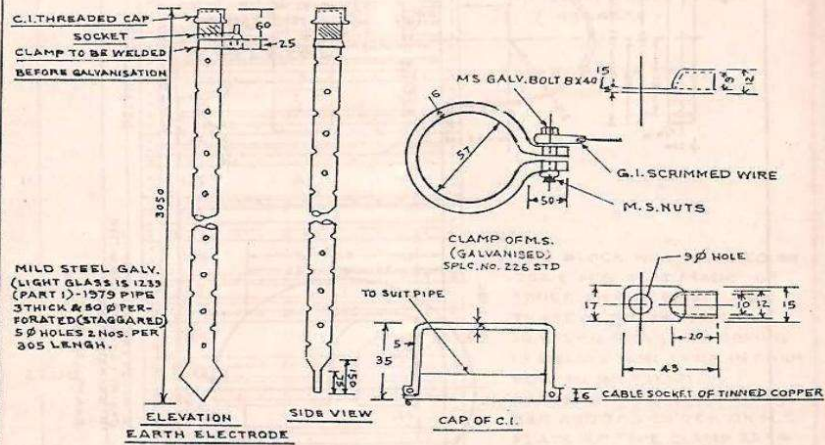
## NOTES:-

- 1 MASONRY WORK TO BE DONE WITH 1:3 CEMENT MORTAR.
- 2 BRICK COVERING TO BE DONE AFTER THE CABLE IS LAID.
- 3 BRICK - SECOND CLASS.

 S.E/D & D/L DH	N. Mohd. DRN:	BRICK MASONRY CHANNEL	Nº NR/S&T/CON/1-1/97
 A.S.T.E/C/SPL/TKJ	SE/SPL. Yan	NOT TO SCALE	

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17

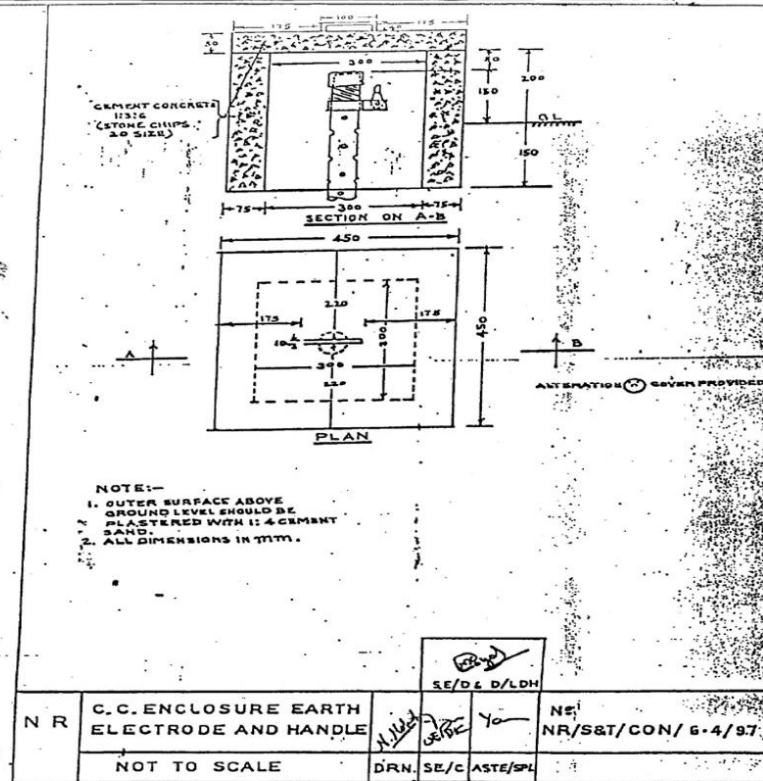


## NOTE :-

- 1 ALL DIMENSIONS IN MM.
- 2 NOT TO SCALE
- 3 LOWER END OF PIPE TO BE SHAPED AS SHOWN BY SQUIZZING & IF NECESSARY BY CUTTING OF DEFORMED MATERIAL.
- 4 EARTH ELECTRODE PIPE TO BE GALVANISED AFTER DRILLING AND FABRICATION.
- 5 EACH ELECTRODE SHOULD BE SUPPLIED WITH A GALVANISED HEX-HEAD IRON BOLT TO SPEC. NO. I.S. 1821-1961 (8 Ø, 40 LENGTH WITH 25 THREADED PORTION) AND TWO ROUND FLAT WASHERS AND A NUT TO SUIT FOR FIXING THE SOCKET TO PIPE CLAMP.

		S-E/D&D/LDH		
N.R.	EARTH ELECTRODE (G.I. PIPE)	W. Mohd.	Yes	Nº N R/S&T/CON/6-3/97
	NOT TO SCALE	DRN.	S.E./C ASTE/SFL	

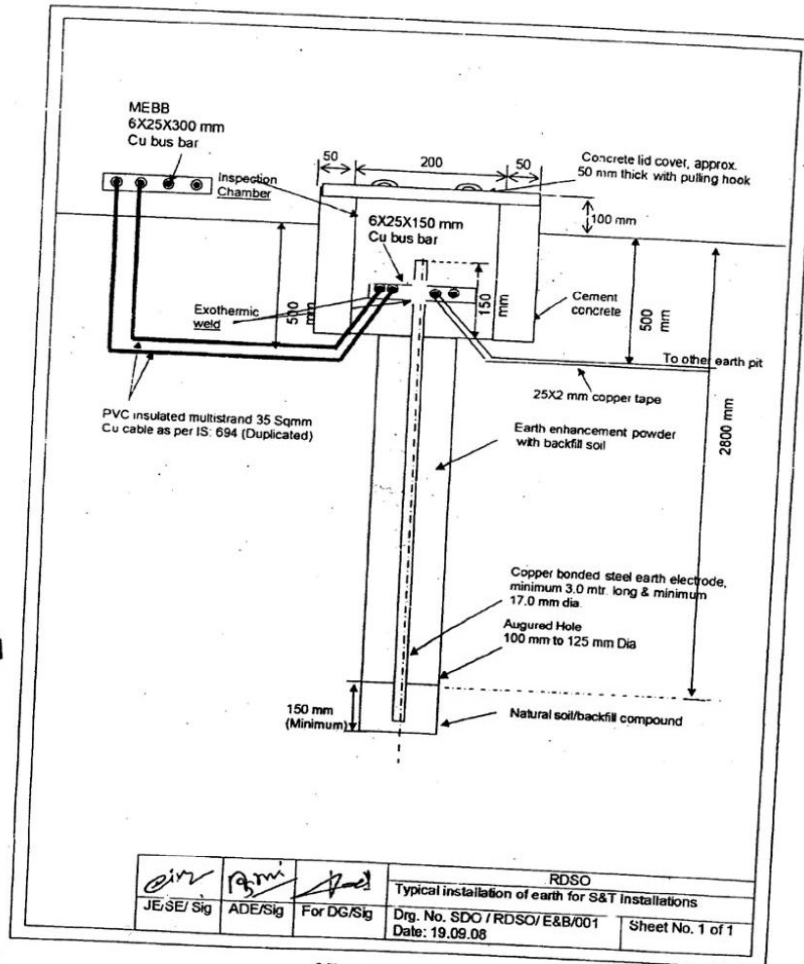
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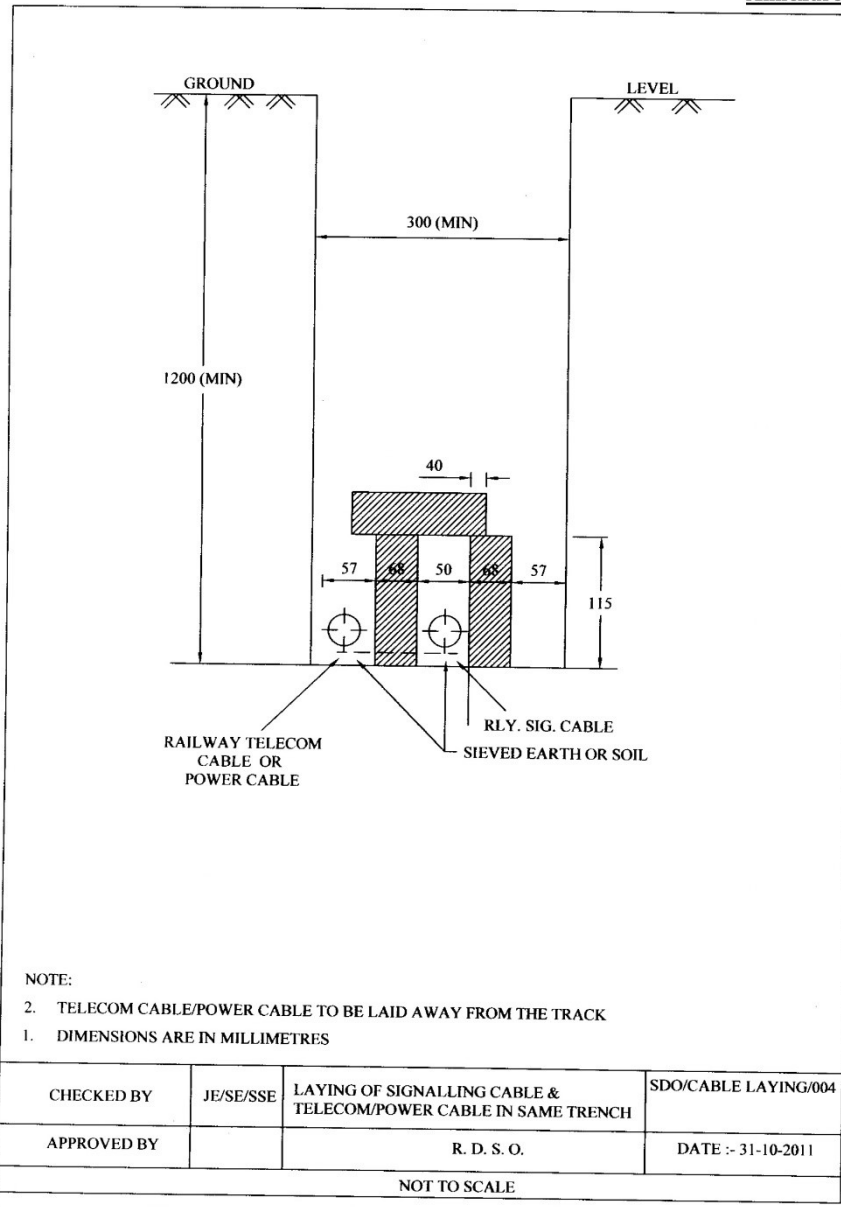
NR/S&T/CON/6-4/97

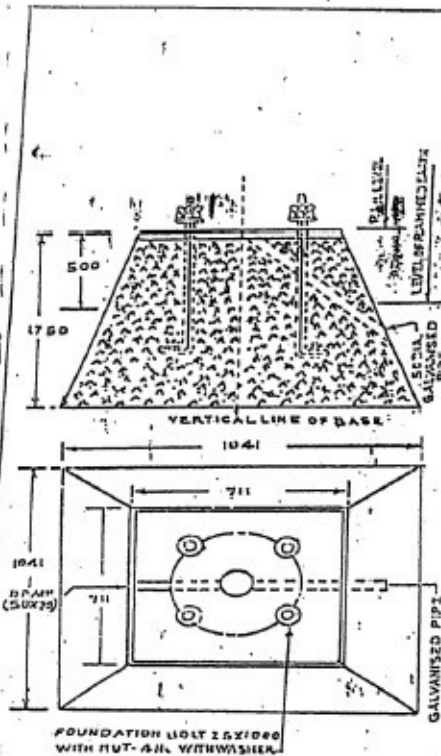
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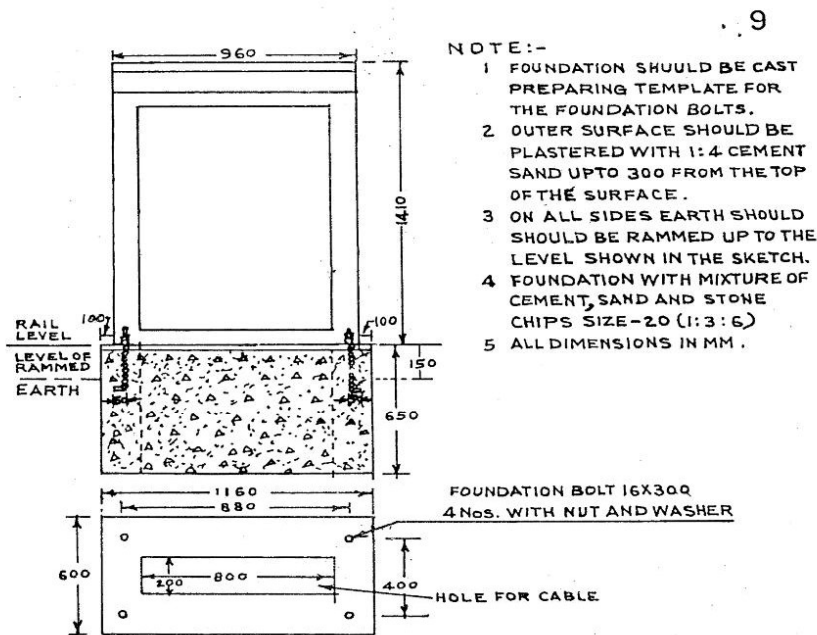




NOTE :- CASTING OF BOLTS TO BE DONE

1. CASTING OF BOLTS TO BE DONE IN THE CONCRETE BASE DULY TAKING THE MEASUREMENTS OF THE SURFACE BASE AND CIRCLE ALSO ALIGNING THE FOUR HOLES OF THE SURFACE BASE WITH THE BOLT LOCATION 1, 2, 3 & 4 BY PROVING TEMPLATE.
2. ENTIRE FOUNDATION SHOULD BE CAST IN ONE STRETCH AND WITH 1-2 BOLT ONLY.
3. DRAIN ON SURFACE OF THE FOUNDATION SHOULD HAVE ENOUGH SLOPE FOR DRAINING OUT ANY WATER.
4. 50 DIA. G.I. PIPE TO BE EMBEDDED DURING CASTING ITSELF. (& NOT LATER ON)
5. AFTER CASTING OF BASE AND CURING OF THE SAME IS OVER THE FOUR SIDES OF THE BASE TO BE CLEARED OF ALL LEFT OVER CONCRETE AND SIDES DULY RAMMED WITH EARTH UP TO 500 BELOW THE TOP OF THE BASE.
6. WHERE REQUIRED PITCHING ON THE RELEVANT SIDES OF THE RAMMED SURFACE WITH 225 TO 300 SIZE BOULDERS SHALL BE DONE & FILLING THE CREVICES WITH 1:6:12 CONCRETE WITH FINE 20 STONE CHIPS. PITCHING WILL BE TO THE FULL HEIGHT OF THE RAMMED EARTH.
7. OUTER SURFACE SHOULD BE PLASTERED FROM TOP OF FOUNDATION WITH 1:2 CEMENT SAND UP TO A LEVEL OF 50 BELOW.
8. FOUNDATION WITH MIXTURE OF CEMENT, SAND AND STONE CHIPS SIZE-25 (1:3:6)
9. ALL DIMENSIONS IN MM.

N.R. SIGNAL FOUNDATION		SE/DAD/LDH		N: NR/S&T/CON/2-1/97
NOT TO SCALE		DRN.	SE/C	
		ASTE/SPL		

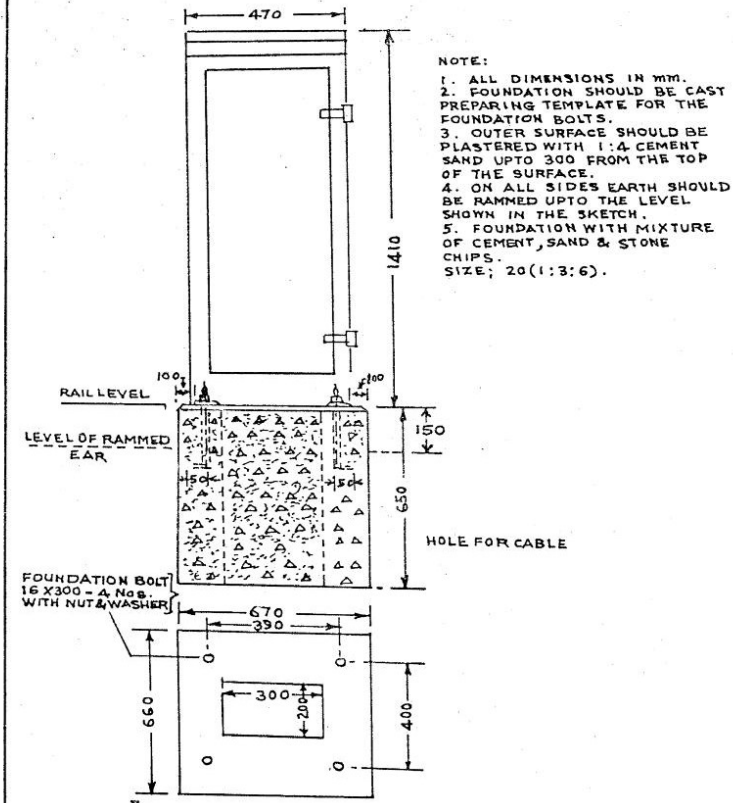


		S.E/D&D/ LDH		
N. R.	FOUNDATION FOR APP. CASE SINGLE	H. K. K.	P. Z.	Y. K.
	NOT TO SCALE	DRH.	SE/C	ASTE/SPL
		Nº NR/S&T/CON/2-7/97		

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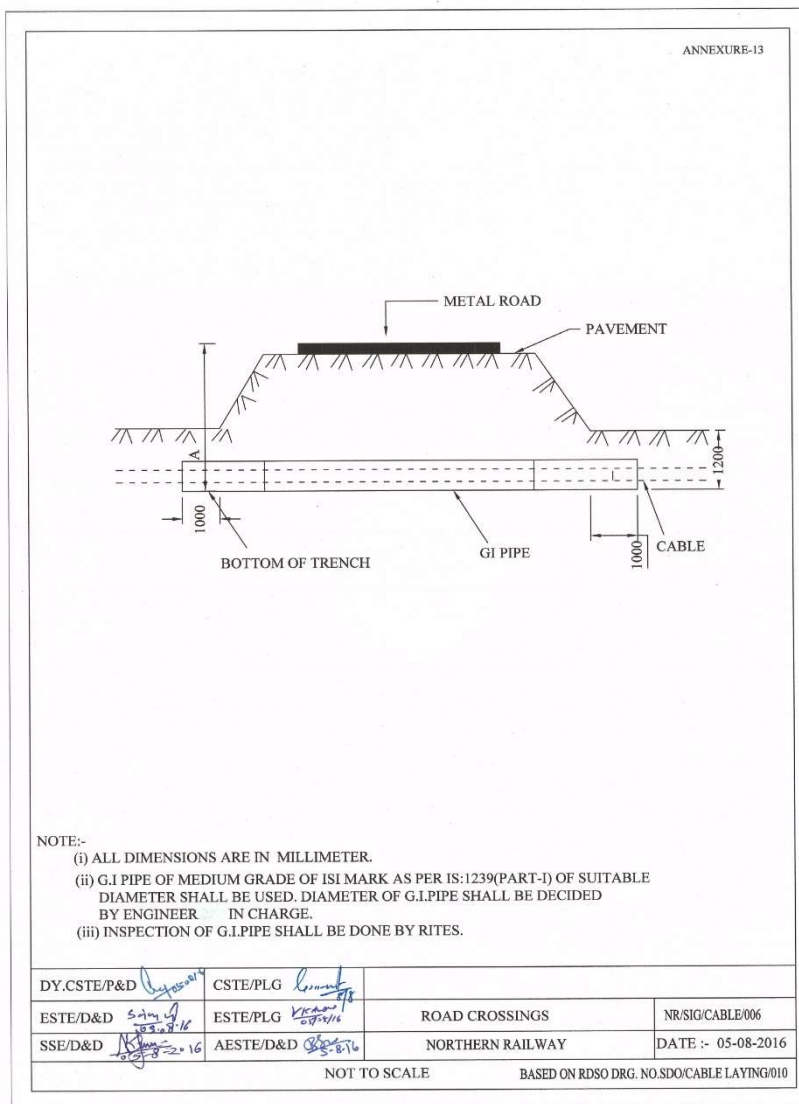
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		SE/D&D/ L D H		
N. R.	FOUNDATION FOR APP. CASE HALF	<i>H. H. H.</i>	<i>Yor</i>	Nº NR/S&T/CON/2-8/97
	NOT TO SCALE	DRN.	SE/C	ASTE/SPL

Contd.....

**Annexure-13**





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



सं.2021/Tele/5(2)/3-Part(1)(3425647)

नई दिल्ली, दिनांक: 12.06.2023

The GM/CMD/MD/PCAO/CAO,  
All Indian Railways, KRCL, PUs, CORE, COFMOW  
(As per standard list)

The DGs/Directors  
RDSO, NAIR, All CTIs

**Sub.: Procedure for undertaking digging work in the vicinity of Signalling, Electrical and Telecommunication cables**

**Ref.: JPO issued vide Board's letter No.2003/Tele/RCIL/1Pt.IX dated 24.06.2013 (Telecom Circular No.17/2013)**

\*\*\*\*

A Joint Procedure Order (JPO) for undertaking digging work in the vicinity of underground Signalling, Electrical and Telecommunication cables was issued last vide Board's letter No.2003/Tele/RCIL/1Pt.IX dated 24.06.2013 (Telecom Circular No.17/2013). Notwithstanding the provisions contained in the JPO for protection of cables, a significant number of cable-cut incidents and practical difficulties in implementation of certain provisions of the said JPO were reported.

Board, therefore, constituted a committee of SAG officers to revisit the JPO. Based on the recommendations of the committee, Board (MI) has approved broad guidelines for procedure to be adopted by Zonal Railways for protection of cables while undertaking digging work in their vicinity (**Annexure**). These guidelines are in supersession of JPO issued vide reference above.

Zonal Railways are requested to issue local instructions/guidelines/JPO implementing these broad guidelines within a month of issue of this letter. Zonal Railways may also ensure that these local instructions/guidelines/JPO are also made part of all tenders for works in the vicinity of cables in accordance with the instructions issued by Civil Engineering Dte of Railway Board vide letter No.2023/CE-I/EDCE(G)/Misc. Dated 18.04.2023.

DA: As above

*edtd*  
12/6/23

(राकिश रंजन)

कार्यकारी निदेशक (दूरसंचार विकास)

दूरभाष: 011-47843012, 030-43012

ई.मेल: edtd@rb.railnet.gov.in

Copy to:

1. PSO to M(I) for kind information of Member/Infra
2. ED/SD, EDEE/M, EDCE/G, ED/GS/C-II for information & ensuring implementation of guidelines in letter & spirit
3. PCSTE, PCE & PCEE, All Indian Railways

**Annexure****Guidelines for protection of cables while doing work its vicinity**

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

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









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





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



No. 2023/CE-I/EDCE(G)/Misc.

New Delhi, Dated: 18.04.2023

The General Managers,  
All Zonal Railways.

**Sub: Instructions for incorporating the JPO, Circular etc. provisions in the Tender Document for all Works requiring digging work close to Railway signaling, telecom, electrical etc. cables**

**Ref:** (i) No.2010/Tele/3(5)/1 Pt (3346793) New Delhi dated 29.09.22  
(ii) Telecom Circular 17/2013 containing JPO for undertaking digging work in vicinity of Cables

Due to increase in cable cuts, a letter dated 29.09.22 under reference (i) above was written by Member-(Infra) to all GMs advising the following:

- Zonal Railways to take necessary steps to ensure strict compliance of JPO for undertaking any digging work in the vicinity of cables.
- Proper coordination among various departments undertaking any work near/along the track.
- Provision of utility relocation in the estimates and if the same is not existing, then the use of contingency provision for utility shifting/protection, apart from ensuring that the updated cable route plan are available and the marking of cable zone at sight is given before undertaking the work.

Further during Oral Evidence before PAC for one of the audit paras regarding recovery of penalty over SER and WCR for cable cut cases, PAC has taken a serious view of non implementation of JPO Provisions by Zonal Railways.

In view of above, it is advised that the provisions contained in circulars, JPOs regarding penalties should be included in all the Tender Documents for Works requiring digging close to Railway signaling, telecom, electrical etc. cables so as to bind them legally for ensuring recoveries from them.

18.04.2023  
(गौरव)

निदेशक सिविल इंजी.(जी)/रेलवे बोर्ड  
[Rly No. 030-47598, MTNL No. 011-23047598]  
e-mail address: dceg@rb.railnet.gov.in