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NORTH WESTERN RAILWAY



Compendium of instructions

On

Safety At Work Sites

31.03.2014

Signature Not
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Digitally signed by
AVADHESH KUMAR
Date: 2022.04.05
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Signature Not Verified
Location: New Delhi

Digitally signed by
SHEENA PANIYANDAN

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PREFACE

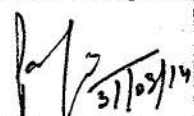
Accidents at worksites have been a major cause of concern and embarrassment as the same can be completely avoided if prescribed safety rules and procedures are adhered to. At times, the engineers and supervisors, in their enthusiasm to speed up progress of work or out of sheer ignorance and negligence, adopt certain short cuts which some time or the other are bound to result in disaster. Nothing may happen 99 out of 100 times if one doesn't follow the safety rules for crossing the road or track but in that 1 out of 100 occasions the consequences can be fatal. Accidents don't announce before taking place. They are caused by failures which we expect the least but it doesn't mean the accidents are unavoidable. Sufficient instances and precedents of various failures due to wrong assumptions, assessment and procedures are available to act as lessons and warning against similar recurrence.

The Open Line engineers are responsible not only for ensuring safety in works directly executed and supervised by them but also in works executed and supervised by other organization like RVNL, IRCON, RITES, RailTel or our own departments like Construction, S&T, Electrical, Mechanical. Remember: The running track primarily and ultimately belongs to Open Line engineers.

Primary instructions regarding safe working along running track are stipulated in Para 826 of IRPWM. Further instructions have been issued from time to time covering different types of lapses which have caused accidents in the past. With a view to bring all such instructions in one place, this "Compendium of Instructions on Safety at Worksites-2014" has been compiled. This compendium is meant for guidance of both Open Line and Construction officials. The instructions are in the nature of elaboration of existing instructions issued by Railway Board and not in derogation. In case of any conflict between the two, the instructions issued by Railway Board shall prevail.

It is expected that all officers and supervisors of engineering department will religiously adhere to these instructions while working near the track and strive towards inculcating a work culture which is safe and reliable. Every accident can be avoided if all of us decide: "No accident will take place on my account". Let us not forget, millions of passengers rely on us for safe journeys

Jaipur
31.03.14


(Pankaj Jain)
Principal Chief Engineer

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1. Measures to be ensured prior to start the work

1. The contractor shall not start any work without the presence of railway supervisors at site.
2. The methodology in detail for execution of the work at site shall be approved by engineering incharge of the organization executing the work and copies of the same shall be available with contractor's supervisor, railway supervisor, SSE/Pway/SSE (Works)/ADEN/DEN/Sr. DEN of the section in whose jurisdiction the work falls.
3. Before permitting the execution of certain works like earthwork in formation, bridge work, supply of ballast, transportation of rails, sleepers and other material, track linking, platform/any other civil work close to the running track etc for new/existing rail lines, gauge conversion, doubling, traffic facility work, ROB/RUB, open lines engineer-in-charge (ADEN/DEN/Sr. DEN) of the section shall ensure that he receives the prior intimation/confirmation of the following aspects from Assistant Engineer/Assistant Officer Incharge of the work of the executing agency i.e. Construction, S&T, Electrical, Mechanical, RailTel, RVNL etc.
 - a. Name and address of the contract assigned to execute the work. —
 - b. Name of the Contractor's supervisor. —
 - c. Name of the supervisor/assistant engineer/assistant officer of the Construction organization/other organizations who are going to be site incharge/incharges of work site.
 - d. List of the number(s) of individual vehicle(s)/machineries, names and license particulars of the driver(s) proposed to be used by contractor.
 - e. Information regarding location, duration and timings during which the vehicles/machinery are planned to be plied/worked.
 - f. The supervisors and operators of the contractor proposed to be deployed at work site, which is close to the running track, shall be imparted training by the Railway trainer at contractor own cost about the safety measures to be adopted while working in the vicinity of running track. Further competency certificate to the individual supervisors/operator shall be issued as in Annexure- I by a railway officer not below the rank of Assistant level officer who is incharge of site. No supervisor/operator of the contractor shall work or allowed to work in the vicinity of running track who is not possession of valid competency certificate.
 - g. Survey of site by supervisor of contractor and Railways to assess the precautions to be taken at site for working of trains and materials required for protection.
 - h. Written advice to sectional ADEN/SE(Pway) and SE(Works) about the detailed planning of work including protection of track and safety measures proposed to be adopted.

- i. A copy of the approved methodology (to be approved by engineer incharge) proposed to be adapted by the contractor with a view to ensure safety of trains, passengers and workers.
- j. Assurance that the methods and arrangements are actually available at site before start of the work and the contractors supervisors and the workers have clearly understood the safety aspects and requirement to be adapted/followed while executing the work.
- k. An assurance register has been kept at site duly signed by both Railway supervisor as well as by the contractor supervisor as a token of their having understood the safety precautions to be observed at site.
4. Information as indicated in item 3(a) to 3(k) shall be obtained from contractor prior to the start of the work and the methodology proposed to be adapted by the contractor with a view to ensure safety of trains, passengers and workers and shall be approved by sectional DEN/Sr. DEN if the work is directly supervised by open line.
5. No work shall which is to be done near running track shall commence unless permitted by sectional ADEN/DEN/Sr. DEN.
6. Before the start of work, the land strip adjacent to running track where road, vehicle/machinery is to ply/work (for the work) shall be demarcated by lime in advance at the appropriate distance from the centre of existing track in consultation with railway supervisor. Wooden pegs at interval not exceeding 75m shall be provided along the line marking as permanent marks. The road vehicles shall ply or machinery shall work so as not to infringe the line of demarcation. Sketches showing the location of marking are given in Annexure IIA.
7. Barricading as per the design given in Annexure IIB shall be provided in full length of work area along the track wherever justified and feasible as per site conditions.
8. Precaution shall be taken for safety of public or passengers, while executing works at locations, used by passengers and public. The worksite shall be suitably demarcated to keep public and passengers away from work area. Necessary signage boards such as "Work in Progress". Inconvenience is regretted" etc. shall be provided at appropriate locations to warn the public/passengers. The barricading with retro reflective strips should be provided around the worksites to make the worksites visible to passersby during night hours. Adequate lighting arrangement of worksite wherever required shall be done to ensure safety of public/passengers during night.
9. **Execution of works closed to or on running line:**
 - (i) Any work close to or on running tracks shall be executed under the presence of a Railway's supervisor only.
 - (ii) Precaution to be taken to ensure safety of trains while execution of work close to the running line or on running lines.
 - (a) Such works shall be planned and necessary drawings particularly with regard to infringement to moving dimensions shall be finalized duly approved by competent authority before execution of work. The work shall be executed only as per approved procedure and drawings.

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- (b) All temporary arrangements required to be made during execution of work shall be made in such a manner that moving dimension do not infringe.
 - (c) Suitable speed restriction shall be imposed or Traffic block shall be ensured as required.
 - (d) The site shall be protected as per provisions of Para No. 806 & 807 of P. Way Manual as case may be.
 - (e) Necessary equipment for safety of trains during emergency shall be kept ready at site.
10. Normally, the road vehicle shall be run or machinery shall be worked so as not to come closer than 6.0m from centre line of nearest track.
11. If a road vehicle or machinery is to work closer to 6.0m due to site conditions or requirement of work, following precautions shall be observed.
- a) In no case the road vehicle shall run or machinery shall work at distance less than 3.5m from centre line of track.
 - b) Demarcation of land shall be done by bright coloured ribbon/nylon chord suspended on 120 cm high wooden/bamboe posts at distance of 3.5m from centre line of nearest running track. Sensors with horn shall be provided as per sketch(Annex-II)
 - c) Presence of an authorized Railway's representative shall be ensured before plying of vehicle or working of machinery.
 - d) Railway's supervisor shall issue suitable caution order to drivers of approaching train about road vehicles plying or machineries working close to running tracks. The train drivers shall be advised to whistle freely to warn about the approaching train. Whistle boards shall be provided wherever considered necessary.
 - e) Lookout men shall be posted along the track at a distance of 800m from such locations who will carry red flag and whistles on both sides of affected portion of track to warn the road vehicle/machinery-users about the approaching train.
 - f) On curves where visibility is poor, additional lookout men shall be posted.
12. In case, work is planned to be done within 3.5m of centre line of running track, it shall be ensured that the work is done under block protection only and necessary safety precautions for protection to track as per Para no.806 and 807 of IRPWM are taken.
13. **Precaution to be taken while reversing road vehicle alongside the track.**
The location where vehicle will take a turn shall be demarcated duly approved by Railway's representative. The road vehicle driver shall always face the railway track during the course of turning/reversing his vehicle. Presence of an authorised railway representative shall be ensured such location.
14. Road vehicle shall not be allowed to run along the track during night hours generally. In unavoidable situations, however vehicles shall be allowed to work during night hours only in the presence of an authorised railway's representative and when adequate lighting arrangement are made and where adequate precautions as mentioned earlier have been ensured.
15. Check list given in Annexure V shall be used to ensure that all the requisite measures have been taken before start of the work.

II. Measures to be ensured during the execution of the work

1. Contractor has deputed trained supervisors in required number at worksites duly certified by ADEN/Incharge of the works.
2. Drivers of vehicle/operators of the machines have been briefed about the safety and precautions to be taken while moving/working close to traffic.
3. Contractor shall ply road vehicles/working of machinery only between sunset and sunrise. In case of emergency where it is necessary to work during night hours sufficient lighting shall be ensured in the complete work area for the safety of public and passengers. Also additional staff shall be posted as necessary for night working and taking safety precautions.
4. The contractor shall not change the approved vehicle/machinery and driver/operator for working at site. Contractor shall not induct any new vehicle/machinery and driver/operator without prior written approval of Assistant Engineer/Assistant officer and the list of such changes with numbers of individual vehicle, name and license particulars of the driver shall be given to ADEN/DEN/Sr. DEN of the section.
5. Contractor shall ensure that road vehicle/machinery ply/work in a way so that these do not infringe the line of demonstration.
6. Lookout men with required safety equipment shall be posted where necessary.
7. In unusual circumstances, where operator apprehends danger to track while working truck/machinery near running track, following action shall be taken.
 - (a) The contractor/supervisor/vehicle operator immediately advice the situation to railway official/officials of the organization executing the work and assist him/them in protecting the track.
 - (b) Protection shall be done as done for other emergencies.
8. Individual vehicle/machinery shall not be left unattended at site of work. If it is unavoidable and becomes necessary to stable the road vehicle/machinery at site near the running track, these shall be properly secured against any possible roll off and always be manned even during non-working hours. In addition, the road vehicle /machinery should be stabled parallel to track only so that incase of failure of any securing arrangement, it may not roll towards the track.
9. All temporary arrangements required to be made during execution of work shall be made in such a manner that moving dimension do not infringe. Necessary checks shall be exercised by site incharge from time to time.
10. While inspecting the worksite **check list given in Annexure VI** shall be used to ensure that all the requisite measures have been taken during the execution of the work.
11. During the hours of night, lamps of temporary indicators which are not of reflective type should be lit at sun-set and kept burning till sun rise, where trains run at night.

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III. Precautions required to be taken during execution of work requiring traffic blocks

1. Any work, which infringes the moving dimensions or causes discontinuity in the track/any activity making the existing track unsafe for passage of trains etc, shall be started only after the traffic block has been imposed, railway servant incharge of the work is present at the worksite, engineering signals are exhibited at specified distance and flagmen are posted with necessary equipment to man them etc.
2. Before closing the work, the track shall be left with the proper track geometry so that the trains run safely and flagmen are kept in the night with safety and track protection equipment to patrol the stretch and take action to protect the track, if so warranted and inform the railway supervisors.
3. After completion of work, the released sleepers and fittings should be properly stacked away from the track, and should be kept clear of moving dimensions.
4. Block shall be removed only when all the temporary arrangement, machineries, tools, plants etc have been kept clear of moving dimensions.

IV. Protection of track during emergency:

- A). Action to be taken when a contractors supervisor or vehicle operator apprehends any unusual circumstances likely to infringe the track and endanger safe running of trains. At any time if a contractor's supervisor or vehicle operator observes any unusual circumstances likely to infringe the track and apprehend danger to safe running of track, he shall take immediate steps to advise Railway officials of such danger and assist him in protection of track.

The track shall be protected as under.

Whenever in consequence of an obstruction of a line or for any other reason it is necessary for a railway servant to stop approaching train he shall plant a danger signal at the spot and proceed with all haste in the direction of an approaching train with a danger signal (red flag by day and red light by night) to a point 600 metres for Broad Gauge and 400 metres for Metre Gauge and Narrow Gauge from the obstruction and place one detonator on the line after which he shall proceed further for not less than 1200 metres for Broad Gauge and 800 metres for Metre Gauge and Narrow Gauge from the obstruction and place three detonators on the line 10 metres apart. He should then take a stand at a place not less than 45 metres from where he can obtain a good view of an approaching train and continue to exhibit the danger signal (As shown in Annexure-IV), until recalled, if recalled, he shall leave on the line three detonators and on his way back pick up the intermediate detonator continuing to show the danger signal. In case of single line similar protection shall be done on opposite direction.

- B). Action to be taken if train is seen approaching to site of danger and there is no time to protect the track as per guidelines mentioned above-
In such a case the detonators shall be planted on rails immediately at distance away from place of danger as far as possible and attention of driver of approaching train shall be invited by whistling, warning the red flag vigorously gesticulating and shouting.
- C). Action to be taken if more than one track is obstructed-
- a) In case of single line protection as above shall be done in both the directions from place of danger.

- b) In case of double line or multiple lines, if other tracks are also obstructed, the protection as above shall be done for other track also.
 - c) The protection shall be done in that direction and on that track first on which train is likely to arrive first.
 - d) The contractor's supervisors, operators and lookout men shall be properly explained about the direction of trains on running tracks.
- D). Equipment required for protection of track- Minimum compliment of protection equipment i.e. 10detonators, 4 red hand flags, 04 red hand lamp, 04 banner flag and whistle etc. shall always be kept ready at worksites for use in case of emergency. Railway will arrange to provide detonators, whereas contractors shall arrange other equipment at his own cost.

(V) General Instructions

1. Provisions of Para 826 of IRPWM are reproduced in Annexure I.
2. In case of works involving joint work of open line and construction department, the duties and responsibilities should be clearly brought out in advance duly signed by both the departments. It is preferable that the work is done by a single department in whose jurisdiction the major worksite falls. Wherever it is not feasible, responsibilities and the duties of each agency should be clearly outlined in advance and detailed MOU should be prepared and signed by both the agencies.
3. Caution order should be issued to all the trains passing through the work sites at least during working hours for the drivers to look out, with or without any speed restrictions, as per the site requirement.
4. It should be ensured that, no new OFC or quad cable be laid close to the existing track. It shall be laid close to the railway boundary to the extent possible to avoid any interference with the future works (doubling etc.). Route plan of S&T cable and electrical cable should be prepared by the concerned S&T and electrical officers respectively and got approved before undertaking the work. The completion cable route plan should be finalized Block Section by Block section, as soon as the work is completed.
5. Open line staff and Engineers shall keep a watch on the safety precautions being taken at the work site and should immediately stop the work, if any unsafe working is noticed, and the work should be started again after taking all the corrective measures.
6. Night working should be avoided as far as possible. If due to any emergency, night working is done then proper lighting arrangement should be made.
7. Availability of first aid box should be ensured at each worksite. At major work sites involving no of labour and heavy machineries, efforts should be made to make available medical assistance at the site itself during working.

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8. During machine working or execution of work involving heavy machines, protection man should be deployed in either side to warn the staff about the arrival of train, especially in double line.
9. No work shall be commenced on worksite during foggy weather or during restricted visibility. If in unavoidable situation, the work is to be carried out then additional lookout man, as per the site requirement, should be posted.
10. While digging in station area, if any cable is found, digging should be stopped and concerned signalling/electrical staff should be informed immediately.
11. Mobile phones or Walkie-Talkie sets where necessary should be provided at worksites. However all the staff should be counselled not to use above devices while standing on or near the track.

(VI) Joint procedure order for undertaking digging work in the vicinity of underground Signalling, Electrical and Telecommunication cables no 17/2013 is reproduced as Annexure-VII.

(VII) Precaution for handling of departmental material trains

Instructions for working of material trains are contained in Chapter XII of IRPWM which should be brought to the notice of the supervisors and other staff working on the material trains.

In addition to this, following precautions should be taken:

- a) Issue of 'fit to run' certificate.
As per Para 1207 before a material train is allowed to work, the complete rake should be examined by the Carriage and Wagon staff and a 'fit to run' certificate issued to the Guard.
- b) As per Para 1208 of IRPWM, a qualified Engineering official should be deputed on the train to ensure working of the material train as the Guard is not qualified to carry out such duties like Supervising of loading and unloading of materials.
- c) As per Para 1204 of IRPWM, the material train should not be permitted to work during the period of poor visibility due to fog, storm or any other cause except with the permission of the ADEN/DEN. Working of the material trains carrying labour should not be permitted between sunset and sunrise except in an emergency.
- d) While unloading rail panels by the side of the running track, placement of the panels, clear of the maximum moving dimensions should be ensured.
- e) Unloading of rail panels should be done by a team of trained staff under the active supervision of competent Supervisor/Officer.
- f) Before unloading of rail panels, site should be prepared by way of levelling/removing extra ballast, if any, from the crib and shoulder with the objective to ensure requisite

lateral and vertical clearances so as to prevent slippage of rail panels due to vibration during the passage of trains.

- g) Reasonably adequate block should be asked and provided for unloading of the material and the work should be done preferably in day light to avoid shortcut in haste which may infringe the safety requirements.

(VIII) Stacking of material along railway track.

1. The sites for material stacking shall be selected in advance ensuring that no part of the stacked material would infringe the standard moving dimensions. A plan of proposed stacking locations be made and signed jointly by an authorized Railway's representative and contractor's representative.
2. The selected locations shall be marked by lime in advance.
3. Presence of an authorized railway's representative while unloading and stacking shall be ensured.
4. The material shall be stacked up to such a height, which will not cause infringement to SOD in case of accidental roll off.

Note: For items of barricading, sign boards like 'work in progress', walkie-talkie sets, mobile phones, lookout men etc suitable provision may be incorporated in the tender conditions as per site requirement.

(IX) Safety aspects to be observed while working in OHE area

- a. No electrical work close to running track shall be carried out without permission of railway representative.
- b. **A minimum distance of 2m has to be maintained between live OHE wire and body part of worker or tools or metallic supports etc.**
- c. No electric connection etc. can be tapped from OHE.
- d. Authorized OHE staff should invariably be present when the relaying work or any major work is carried out.
- e. Power block is correctly taken and 'permit to work' is issued.
- f. The structure bonds, track bonds, cross bonds, longitudinal rail bonds are not disturbed and
- g. If disconnected for the work, they are reconnected properly when the work is completed.
- h. The track level is not raised beyond the permissible limit during the work.

Note: For items of barricading, Sign Boards like "Work in Progress", walkie-talkie sets, mobile phones, look out man etc., suitable provision may be incorporated in the tender conditions as per site requirements.

Annexure-I

Para 826 of IRPWM

826 Safe working of contractors – A large number of men and machinery are deployed by the contractors for track renewals, gauge conversions, doublings, bridge rebuilding etc. It is therefore essential that adequate safety measures are taken for safety of the trains as well as the work force.

The following measures should invariably be adopted:

- (i) The contractor shall not start any work without the presence of railway supervisor or his representative and contractors supervisor at site.
- (ii) Wherever the road vehicles and/or machinery are required to work in the close vicinity of railway line, the work shall be so carried out that there is no infringement to the Railway's schedule of dimensions. For this purpose, the area where road vehicles and/or machinery are required to ply, shall be demarcated and acknowledged by the contractor. Special care shall be taken for turning/reversal of road vehicles/machinery without infringing the running track. Barricading shall be provided wherever justified and feasible as per site conditions.
- (iii) The look out and whistle caution orders shall be issued to the trains and speed restrictions imposed where considered necessary. Suitable flagmen/detonators shall be provided where necessary for protection of trains.
- (iv) The supervisor/workmen should be counselled about safety measures. A competency certificate to the contractor's supervisor as per Performa annexed shall be issued by AEN, which will be valid only for the work for which it has been issued.
- (v) The unloaded ballast/rails/sleepers/other P-way materials after unloading along track should be kept clear off moving dimensions and stacked as per the specified heights and distance from the running track.
- (vi) Supplementary site specific instructions, wherever considered necessary shall be issued by the Engineer in Charge.
- (vii) The Engineer in-charge shall approve the methodology proposed to be adopted by the contractor, with a view to ensure safety of trains, passengers and workers and he shall also ensure that the methods and arrangements are actually available at site before start of the work and the contractor's supervisors and the workers have clearly understood the safety aspects and requirements to be adopted/followed while executing the work. There shall be an assurance register kept at each site, which will have to be signed by both, i.e. Railway supervisor or his representative as well as the contractor's supervisor as a token of their having understood the safety precautions to be observed at sites.

COMPETENCY CERTIFICATE:

Annexure-IA

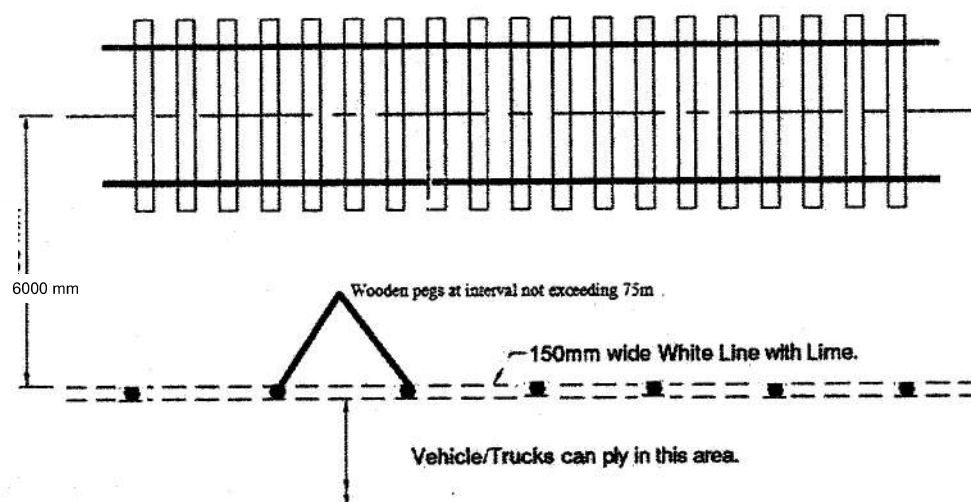
Certified that Shri _____ P.way supervisor of M/s _____ has been examined regarding P.way working on _____ work. His knowledge has been found satisfactory and he is capable of supervising the work safely.

Assistant Engineer

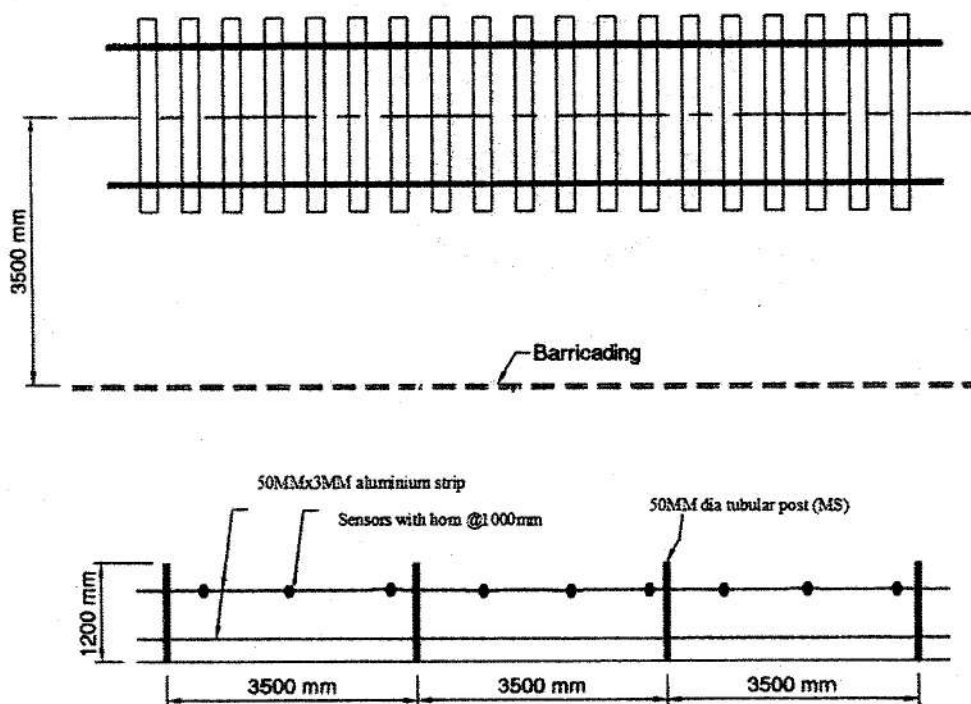
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A) Marking of White Line with Lime.

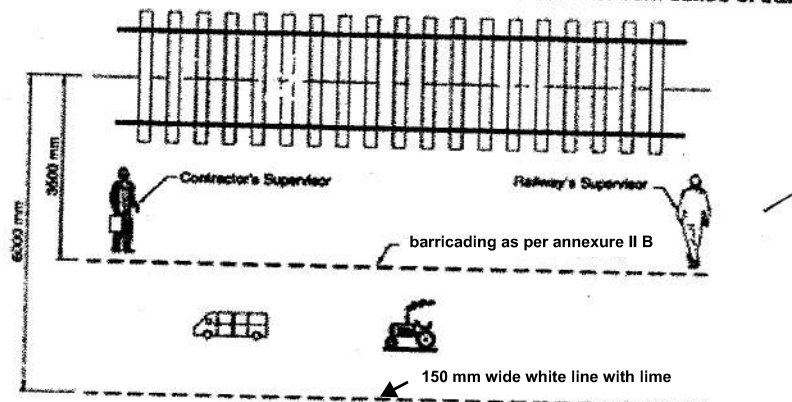
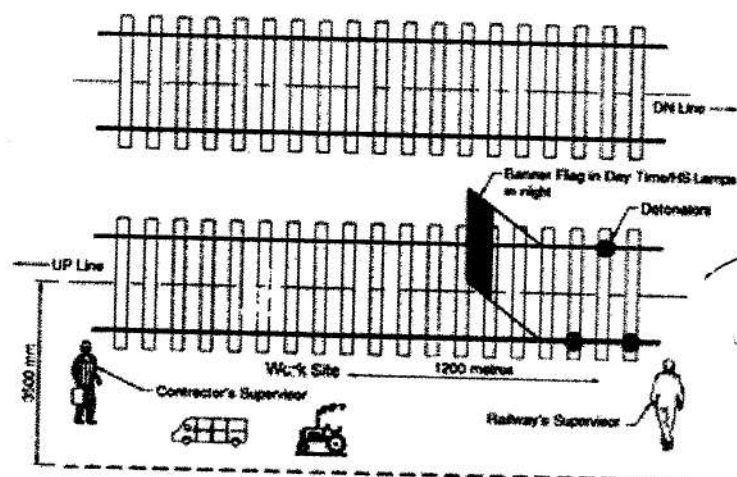
Annexure-II



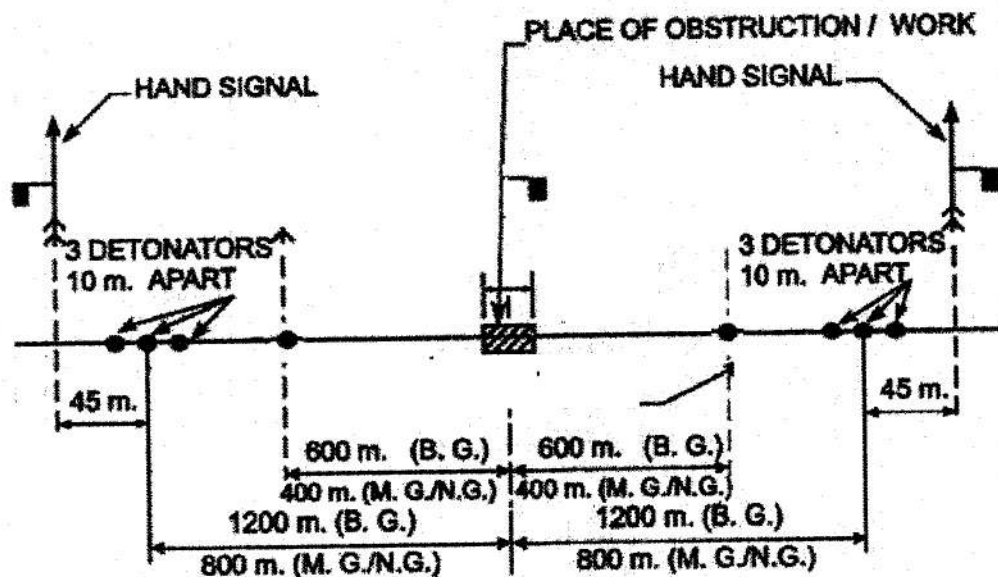
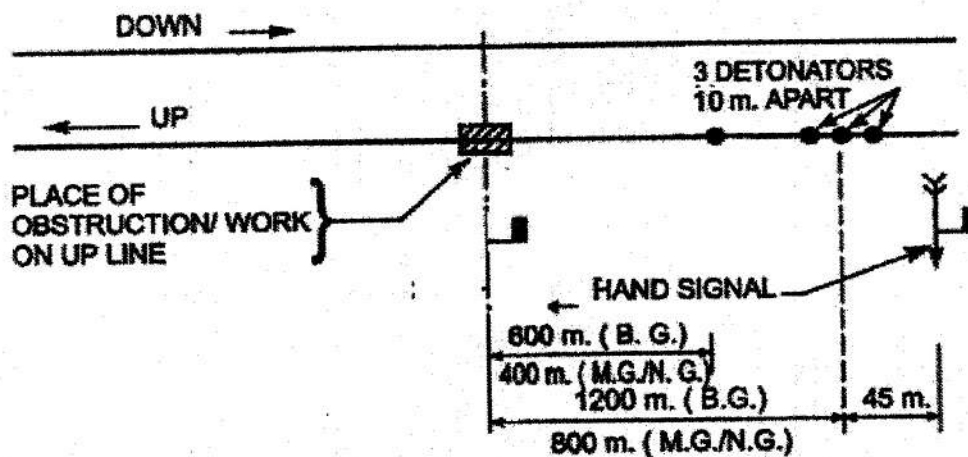
B) Provision of Barricading.



Elevation of Barricading

Annexure-III**A) Plying of Vehicles/Machinery between 3.5 Mts. to 6.0 Mts. from centre of track.****B) Plying of Vehicles/Machinery within 3.5 Mts. from centre of track.**

Work to be done as per para 806 and para 807 of IRPWM.

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Annexure IV**SINGLE LINE****DOUBLE LINE**

Annexure-V**CHECK LIST**
(Before starting the work)

Name of Work : _____ Location : _____

Duration of work : From _____ To _____

S.No.		Yes	No.
1.	Contractor's supervisor identified/selected. Who is going to be site incharge?		
2.	Training imparted to contractor's supervisor & Certificate issued.		
3.	Work site inspected by Construction's Supervisor/ other department's supervisors along with contractor's supervisor.		
4.	Precautions to be taken at site of work have been identified and listed.		
5.	Plan of work drawn out by contractor's supervisor in consultation with Railway's Supervisor		
6.	Plan of work, brought to the knowledge of Engineers/Supervisors/Incharge of section AEN/ IOW & PWI.		
7.	Before start of work, proper line marking/Barricading done at site of work.		
8.	Men deputed for protection of track along with safety equipments.		
9.	Caution order issued for the train drivers in case work is being done within 6 mts. of centre of running track.		
10.	Drivers of vehicles/machinery being used have been identified.		
11.	Driver of vehicles/machinery briefed about the safe working.		
12.	Sufficient lighting provided at site of work for night working.		
13.	Infringements checked.		
14.	Sectional (open line) Engineers & Superpvisors have satisfied themselves regarding safety arrangements.		
15.	Availability of Walkie-Talkie sets for communications.		
16.	Whether approved cable route plan is available		

Signature of Construction's/
Other department's SupervisorSignature of Open Line's
Supervisor
Date:.....

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Annexure-VI**CHECK LIST (While
work is in progress)**

Name of Work : _____

Location : _____

Duration of work : From _____ To _____

Date of Inspection : _____

S.No.		Yes	No
1.	Does the Railway's & contractor's supervisor have the certificate?		
2.	Does the knowledge of contractor's supervisor on safety of track & work site is upto the mark.		
3.	Is Railway's supervisor of Const. Organisation/ Other department's available at site?		
4.	Is knowledge of Railway's supervisor O.K.		
5.	Is lime marking/Barricading done?		
6.	Is adequate safety precautions taken at site of work.		
7.	Is communication facility (Walkie - Talkie sets) available at site.		
8.	Are only identified drivers driving the vehicles/machinery?		
9.	Is whole work site safe for working of men/vehicles & trains?		
10.	Are adequate lighting arrangements done at site?		
11.	Are adequate protection equipment available at site.		
12.	Is caution order to trains being issued?		
13.	Are train drivers following the enforced temporary speed restriction?		
14.	Has work permit been taken for working in Electrified territory/station yards (Points & Crossing areas)		
15.	Whether, work is being done as per approved cable route plan.		

Signature of Inspecting Officer

Designation _____

ANNEXURE - VII

Annexure - VII

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GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)

No.2003/Tele/RCIL/1 Pt.IX

New Delhi dated 24.06.2013

General Managers,
All Indian Railways,

Telecom Circular No. 17/ 2013

Sub: Procedure for undertaking digging work in the vicinity of Signaling,
Electrical and Telecommunication Cable.

JPO No. 1/Sig/2004 dated 16.12.2004 issued by Board on the subject matter was reviewed in consultation with Signal, Electrical, Civil Engineering and Works Directorates of Board.

2. The same has now been finalized and a copy of the Revised Joint Procedure Order duly signed by ED/TS, EDCE/P, ED/SD, ED/W and EDEE/M is attached for compliance.

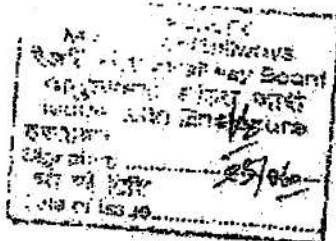
3. Please acknowledge receipt.

DA: 1 in 5 pages.

(Rakesh Ranjan)
Director (Telecom)

Copy to:-

- i) ED/TS, EDCE/P, ED/SD, ED/W and EDEE/M
- ii) CSTEs, All Indian Railways
- iii) CSTEs/Construction, All Indian Railways
- iv) ED/Tele, RDSO, Lucknow
- v) MD/RCIL, 143, Institutional Area, Sector 44, Gurgaon - 122003.Haryana.



Annexure to Telecommunication Circular No. 17/2013**JOINT PROCEDURE ORDER FOR UNDERTAKING DIGGING WORK
IN THE VICINITY OF UNDERGROUND SIGNALING, ELECTRICAL &
TELECOMMUNICATION CABLES.**

- A. A number of Engineering works in connection with gauge conversion/doubling/third line are in progress on various Railways, which require extensive digging work near the running track, in close vicinity of the working S&T cables carrying vital safety circuits as well as electrical cables feeding the power supply to cabins, ASM room, RRI Cabin, Intermediate Block Huts (IBH) etc. Similarly, S&T organisation under open line or construction units under CAO/C, are executing various Signaling and Telecom works requiring digging of earth for laying of cables or casting of foundations for the erection of signal posts etc. RailTel is also executing the work of laying of quad cable and OFC on various Railways as a part of sanctioned works for exclusive use of Railways for carrying voice and data i.e. administrative and control communication, PRS, FOIS etc. or shared by RailTel Corporation of India Ltd. On certain sections digging is also required for laying of electrical cable and casting of foundation for the erection of OHE masts by Electrical Deptt. Generally, these works are executed by contractors employed by these organisations.
- B. However, while carrying out these works in the vicinity of working signaling, telecommunication and electrical cables, at times, cable cuts take place due to JCB machines working along the track or during the digging work being done by contractors carrying out the Civil Engineering works. Similarly, such cable cuts are also resulting due to works undertaken by S&T or Electrical departments. Such cable faults results in the failure of vital signaling and telecommunication circuits & electrical installations.
- C. Henceforth, the following joint procedure shall be followed by Engineering, Electrical and S&T (and RailTel organisation, wherever such works are being done by them) officers of the respective divisions and by the construction organisation, while carrying out any digging work near to existing signaling & telecommunication and electrical cables, so that the instances of cable cut due to execution of works, can be controlled and minimized.
1. S&T department (and RailTel, where they have laid the cables) and Electrical department shall provide a detailed cable route plan showing exact location of cable at an interval of 200 m or wherever there is change in alignment so that the same is located easily by the Engineering official/contractor. In addition, S&T department and Electrical department shall also provide cable markers along the alignment of the cable. These cable route plans shall be made available to the Sr.DEN/DEN or Dy.CE/C, as the case may be, by Sr. DSTE/DSTE or Sr.DEE/DEE of the divisions or Dy. CSTL/C or Dy. CEL/C within 15 days in

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duplicate. Sr. DEN/DEN or Dy.CE/C will send copies to their field unit i.e. AEN/SE/P. Way & Works.

2. Before taking up any digging activity on a particular work by any agency, Sr. DSTE/DSTE or Sr.DEE/DEE of the section shall be approached in writing by the concerned Engg. or S&T or Electrical officer for permitting to undertake the work. Sr.DSTE/DSTE or Sr.DEE/DEE, after ensuring that the concerned executing agencies including the contractor have fully understood the S&T and Electrical cable route plan, shall permit the work in writing within 7 days of the request by concerned department.
3. After getting the permission from S&T or Electrical department as the case may be, the relevant portion of the cable route plan shall be attached to the letter through which permission is issued to the contractor by concerned Engg. official for commencement of work and ensuring that the contractors have fully understood the cable route plan and precautions to be taken to prevent damage to the underground cables. The contractor shall be asked to study the cable plan and follow it meticulously to ensure that the safety of the cable is not endangered. Such a provision, including any penalty for default, should form part of agreement also. It is advisable that a suitable post of SE/Sig or SE/Tele or SE/Electrical(TRD or G) shall be created chargeable to the estimates of doubling/gauge conversion, who can help Engg. agencies in the execution of the work. However basic responsibility will be of the department executing the work and the contractor. Creation of posts is not mandatory.
4. The SE/P.Way or SE/Works shall pass on the information to the concerned SE/Sig. or SE/Tele or SE/Electrical(TRD or G) about the works being taken up by the contractors in their sections at least 3 days in advance of the day of the work. In addition Engineering control shall also be informed by SE/P.Way or SE/Works, who in turn shall pass on the information to the test room/network operation center of RailTel/TPC/Electrical control.
5. On receiving the above information, SE/Sig or SE/Tele or SE/Electrical(TRD or G) shall visit the site on or before the date of taking up the work and issue permission to the contractor to commence the work after checking that adequate precautions have been taken to avoid the damage to the cables. The permission shall be granted within 3 days of submission of such requests.
6. The name of the contractor, his contact telephone number, the nature of the work shall be notified in the Engineering control as soon as the concerned Engineering officials issue the letter authorizing commencement of work to the contractor. Test room shall be given copies. Test room shall collect any further details from the Engineering control and shall pass it on to S&T/RailTel & Electrical officials regularly. In case the supervisors of concerned departments do not turn up on the day as advised in terms of para 4 and 5 above, the works of contractor should not be stopped on this account.

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7. In case of works being taken up by the State Government, National Highway Authority etc., the details of the permission given i.e. the nature of work, kilometer etc. be given to the Engineering control including the contact person's number so that the work can be done in a planned manner. The permission letter shall indicate the contact numbers of Test room/Network Operating Centre of RailTel/TPC/Elect. Control.
8. Where the nature of the work taken up by the Engineering department is such that the OFC or other S&T cables or Electrical cables is to be shifted and relocated, notice of minimum one week shall be given so that the Division/RailTel/Construction can plan the works properly for shifting. Such shifting works shall in addition, for security and integrity of the cables, be supervised by S&T supervisors/RailTel supervisors/Electrical supervisors.
9. 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 in view of their importance in providing communication during accident/emergency.
10. In case of minor nature of works where shifting of cable is not required, in order to prevent damage to the cable, the Engineering contractor shall take out the S&T or optical fibre cable or Electrical cable carefully from the trench and place it properly alongside at a safe location before starting the earthwork under the supervision of SE/Sig. or SE/Tele or SE/Electrical(TRD or G). The cable shall be reburied soon after completion of excavation with proper care including placement of the brick over the cable under the supervision of S&T or Electrical supervisors. However, the work will be charged to the concerned engineering works. The responsibility for ensuring availability of SE (Signal), SE (Electrical) as per para 4 and 5 above lies with the respective department. The contractor will go ahead with the shifting of cables as per the program decided and he will not be held responsible for any cable cut.
11. In all the sections where major project are to be taken up/going on RailTel/S&T department shall deploy their official to take preventive/corrective action at site of work. As regards Electrical Department, the official may be deputed on need basis.
12. No new OFC or quad cable shall be laid close to the existing track. It shall be laid close to the Railway boundary on one side of the Railway track to the extent possible to avoid any interference with the future works (doubling etc.). It shall be ensured in the new works of cable laying that the cable route is properly identified with electronic or concrete markers. Wherever multiple cables are laid in a trench, RFID markers may be provided for easy identification of the cable. Henceforth, wherever cable laying is planned, before undertaking the cable laying work, the cable route plan of the same shall be prepared by the Dy.CSTE/C or Dy.CEE/C

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and shall be got approved from the concerned Sr. DSTE/DSTE or Sr. DEE/DEE and also from the concerned Dy. CE/C for new lines and from the concerned Sr.DEN for all other projects including doubling GC etc., to avoid possible damage in future. Such approval shall be granted within 15 days of the submission of the request.

13. The works of excavating the trench and laying of the cable should proceed in quick succession, leaving a minimum time between the two activities.
14. In case damage is caused to OFC/Quad cable during execution of the work, the contractor is liable to pay a penalty for damaging the cable. Penalty shall not be levied in case of the following:-

- (i) Detailed cable route plan as per clause C-1 not provided by concerned department or cable is not protected as per laid down procedures.
- (ii) The alignment of the cable does not tally with the information provided to the contractor.
- (iii) The cable depth is found to be less than 800 mm from normal ground level.
- (iv) No representative of S&T department/Railtel was available at site guarding the cables on the fixed pre determined date and time.

15. 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

Necessary debit in this regard shall be raised on the department undertaking the work who shall in turn levy the penalty on the defaulting contractor. S&T department shall raise the debits in case of damage to OFC or Quad or Signaling cable and Electrical department shall raise the debits in case of damage to Electrical cable.

16. 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 in accordance with this JPO. Joint note by the supervisors of the concerned department shall be prepared and the responsibility of the cable cut should be decided without involving RPF. The joint note deciding the fact whether the contractor should be penalized shall be completed in a day's time from the occurrence of cable cut.

In all other cases, when the cable is cut by an agency that was not permitted to execute any work, FIR should be lodged with RPF.

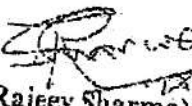
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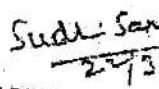
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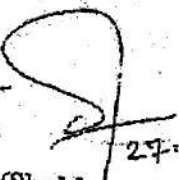
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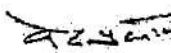
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17. While giving permission for taking up the works, concerned departments may note that earthwork by engineering contractors will normally be done by machines except in a few isolated locations where the quantity of earth work is very less.
18. Railways shall make necessary correction in their future contract so that this JPO can also be enforced contractually.
19. In case of damage to OFC, RailTel should be paid 5/6th of the penalty recovered. RailTel shall raise demands on the S&T department in this regard.
20. All types of signaling & OHE bonds i.e. rail bond, cross bond and structure bond shall be restored by the contractor with a view to keep the rail voltage low to ensure safety of personnel.
21. Above joint circular shall be applicable for construction as well as open line organisation of Engineering, S&T & Electrical.
22. S&T cable and electrical cable route plan should be prepared by the concerned S&T and Electrical officers respectively and get approved as stipulated in para C-12 before undertaking the work. The completion cable route plan should be finalized block section by block section as soon as the work is completed.
23. All cable laying works shall be executed as per laid down technical specifications, such as protection measures/protective cover, compaction of refilled material etc.


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