



WESTERN RAILWAY
Headquarter Office,
Churchgate, Mumbai-20

No. T5/18/29/O (POLICY) Vol. III

Date: 13.03.2018

CAO(C)-CCG

DRM--BCT/BRC/RTM/ADI/RJT/BVP

Sub:- PROCEDURE ORDER FOR ENSURING SAFETY AT WORK SITE

Ref:- Compendium of instructions on safety at work site.

A number of Engineering, S&T and Electrical works in connection with gauge conversion, doubling, third line, dedicated freight corridor, Railway Electrification, yards remodelling and traffic facilities, RUBs etc. are progressing on various divisions which require excavation / digging, movement of vehicles / equipment near the running tracks.

While carrying out these works in the vicinity of running tracks, there is always a danger of disturbance to existing embankment, track geometry, damage to electrical / S&T cables, and other utilities and above all infringement of moving dimensions which may result into disruption of traffic, and other repercussions on safety as well..

The work sites shall also include all works and activities in proximity of existing running tracks, in which any incident at the work site may lead to implications on safety of trains e.g. delivery of scrap close to track, unloading of P.Way materials from road vehicles i.e. ballast, sleepers, earth or any other materials.

Hence forth, the following instructions shall be followed by all the executing agencies like Open Line, Construction, R.E., RVNL, MRVC, DFCCIL other SPV/PSUs, etc. while planning and carrying out such works

In view of above, following guidelines are issued in supersession of compendium issued earlier vide letter No. T5/18/29 Safety Vol-XVIII dated 30 /04/2008. These are divided in various groups as under:-

A. Undertaking Any Type Of Work Adjoining The Running Tracks.

1. Before undertaking any work/ activities adjoining the running track, Engineer Incharge of executing agency shall advise in writing to the respective Open Line SSE (P.Way), sectional ADEN, sectional Sr.DEN before start of the work clearly indicating the following details.
 - a. Nature of work, location and Name of the executing agency.
 - b. Approximate duration of work.
 - c. Sequence of work
 - d. The list of type of vehicles and approx. Number of vehicles to be deployed.
 - e. Details of location where vehicles are likely to work.
 - f. Detailed planning of work including protection of track and safety measures proposed to be adopted i.e. safety protocol should be given in detail.

g. Certification regarding.

- I. Availability of Railway's Supervisor and Competent authorised supervisor of the contractor.
- II. Training to supervisor and driver (staff) of contractor and Competency certificate issued as per Para 826 (IV) Annexure 8/5, of IRPWM by Assistant Engineer/ executive engineer in charge of the site, wherever applicable.
- III. Driving licenses are available, and record, of the drivers and vehicles are kept.
- IV. Imposition of speed restriction and other Caution orders, OEHS, WF instructions etc.
- V. Giving information to concerned departments supervisors i.e. Eng., Elect, and S&T of open line.
- VI. All safety measure for protecting the existing embankment such as shoring, micro piles etc. must be ensured wherever required as per site condition/approved GAD/Plans..
- VII. No work shall be started without approved plans, L-sections, ESP, GADs etc. as required. Plans should be cleared by open line with in time line given vide Railway Board vide letter No-2017/CE-I/CT/13 Procedure Simplification dated 20.10.2017.

2. While executing the work of excavation adjoining the track, the Engineer In charge of executing agency shall ensure following.

- a. The excavation does not cause any damage to existing formation/cess, disturbance or settlement to the running track, or obstruction to the drainage.
- b. There is no infringement to the maximum moving dimensions.
- c. There is no damage to equipment & cables or any other installation.
- d. In case of deployment of mass labour, the caution order of, observe engineering hand signals & whistle freely (OEHS & WF) shall be issued for the duration of the work, apart from other precautions.
- e. The concerned Open Line supervisors (i.e. Engineering, S&T, TRD, etc.) shall be advised to depute their staff as and when required.
- f. The supervisor of contractor and railway's Supervisor Incharge of work of executing department should visit the site to assess the precautions to be taken while working. The detailed planning of work including protection of track and safety measure proposed to be adopted for ensuring safe running of trains, should be listed out.
- g. A register shall be maintained at the site regarding "Safety Measure", to be taken at site and all the precaution being taken shall be logged." Inspecting Officials, shall check various safety measures being taken during their inspections and record their observations.
- h. Contractor's certified supervisor shall not be changed without prior permission of Engineer in charge. Necessary provisions should be available in the contract.
- i. Before the start of work, the land strip adjacent to running track where road vehicle/machinery are to ply for the work shall be prominently demarcated by a thick line in advance at an appropriate distance from the center of existing track in consultation with railway supervisor of open line as per sketches given in **Annexure I**.
- j. Barricading of corrugated PPGI sheets of 0.45 mm thick/barbed wire fencing as per drawing and design given in **Annexure I**, shall be provided in the complete length of the work area along the track, and also watchmen shall be posted by the executing department.

3. The supervisors at all work site, irrespective of whether the work is being done under traffic blocks or without traffic blocks shall inform to the respective Eng. Control Office of the division giving confirmation of the compliance of the precaution stipulated for protection at the work site including requiring traffic block or C.O. as per provisions of IRPWM.

B. Measures for Carrying out Earth Work in Embankment, Digging / Excavation Involving Movement / Operation Of Vehicles / Equipment's.

After ensuring the above, the Engineer In charge of the executing department shall ensure following Site Preparations, before permitting the execution of works.

1. The engineer in charge of the work shall personally examine and certify the road vehicle / equipment, counselling of the drivers, Protection men & supervisors and shall give written permission to Contractor giving number and types of road vehicle, drivers and supervisors to be deployed on the work location, period and timing of the work. The contractor shall not be allowed to work at site without prior written permission from the Engineer Incharge.
2. Contractor shall depute trained and competent supervisors at work sites duly certified by Engineer Incharge of the work. Drivers of vehicle shall be briefed about the safety precautions to be observed while moving/working close to traffic and their assurance obtained.
3. Contractor shall be allowed to ply road vehicles **Only between Sunrise and Sunset**. In case of emergency where it is necessary to work beyond sunset, sufficient illumination shall be ensured in the entire work area. Also necessary additional staff shall be posted for night working including information to the respective Eng. Control Office of the division giving confirmation of the compliance of the precaution stipulated for protection at the work site including compliance of provisions as per provisions of IRPWM.
4. Check list given in **Annexure - II** shall be used to check that all the requisite measures have been ensured before start of the work.
5. The engineer in charge of the work shall ensure following site preparation as applicable.
 - a. Where, work is planned to be executed beyond 6.0 mts. from center line of the nearest running track the adjacent land strip where road vehicle/machinery are to ply for the work shall be prominently demarcated by 150 mm wide line with lime in advance, at a distance of 6.0 mts from the centre of existing track and acknowledge by the contractor so that the vehicle/machinery do not cross this line and come toward the track.
 - b. Where, work is planned to be done between 6.0 mtrs to 3.5 mtrs. from centre line of tack, it shall be ensured that:
 - I. **Clear demarcation of the area is done by erecting a continuous barricading of corrugated PPGI sheets of 0.45 mm thick/barbed wire fencing on 1200 mm high concrete posts fixed at a spacing of 2.5 mt at minimum distance of 3.5mt form centreline of nearest running track as per sketch shown in Annexure - I.**
 - II. An authorised railway's representative must be present to closely supervise plying of vehicles or working of machinery. *dr*

- III. Suitable caution order to whistle freely is issued to Loco Pilots of approaching train about road vehicles plying or machineries working near the running tracks. Whistle boards shall be provided for the train drivers. .
 - IV. Wherever provided, engineering indicator boards shall retro-reflective type only.
 - V. Look out man shall be deputed along the track at a distance of 1200 M from the location of work with red flag, detonators and whistle to warn the road vehicles regarding approaching trains and for protection in case of necessity.
- c. Where, work is planned to be done within 3.5 m of centre line of running track, it shall be ensured that the work is allowed, under block protection only, and all the necessary safety precautions for protection or track as per Para No. 806 and 807 of IRPWM (copies are enclosed as **Annexure - IV, V** for ready reference) are taken.
- d. The presence of competent Railway's supervisor shall be ensured at work site. Competency certificate given by Concern Dy. Chief Engineer (Construction) has to be ensured at the site of work.
- e. The worksite shall be suitably demarcated to keep public and passengers away from work area. Necessary signage boards such as "Work in Progress" etc. shall be provided at appropriate locations to warn the public / passengers.
6. In unusual circumstances, where operator apprehends infringement to track while working the trucks or any other machinery near running track, following action shall be taken:
- I. The contractor / Supervisor / Vehicle operator must immediately advise the situation to railway official at site and assist him in protecting the track.
 - II. Protection shall be done as per Para 806 & 807 of P.Way Manual and para 15.09 of G & SR, as the case may be.
7. No vehicle or any other machinery shall be left unattended near the track. If it is unavoidable and become necessary to stable the road vehicle/ machinery & plant near the running track, these shall be properly secured against any likely roll-off towards running track there shall always be manned except during non-working hours.
8. When a road vehicle is reversed, do ensure the following:
- I. The location where vehicle is to take a turned/reversed, are clearly and prominently demarcated.
 - II. The road vehicle driver should always face the railway track during the course of turning or reversing the vehicle.
 - III. Presence of an authorised railway's representative must be ensured at such location.
9. While inspecting the worksite, checklist given in **Annexure III** shall be used to ensure that all the requisite measures have been taken during the execution of work.
- d

C. Undertaking the Work on the Running Track / Existing Lines or Requiring Traffic Block.

1. Any work, which may infringe the moving dimensions, shall be started only after traffic block is imposed and track is protected as per Para 806 & 807 of P.Way Manual and para 15.09 of G & SR, as the case may be.
2. Wherever, the Engineering work such as insertion of turnout sleeper, laying of glued joints, etc., is done on the running tracks, such portion of the track shall be taken over temporarily by the Engineer In charge of the work executing organisation and the same shall be handed over back to the sectional engineer In charge of open line in good fettle after relaxing the caution order. During this period, the Engineer In charge of work site shall ensure safety of the track. The Engineer In Charge shall ensure that the work is executed strictly as per approved ESP and plan and in accordance with CRS's sanction.
3. At locations where working night is unavoidable, proper illumination must be ensured.
4. Before closing the work the released sleepers, fittings and all other materials shall be properly stacked away from the track and kept clear of moving dimensions in such a manner that these cannot shift towards track and cause infringement to moving dimension.
5. Block shall be cleared only when all the temporary arrangements, machineries, tools, plant etc have been kept clear of moving dimensions.

D. Additional Precautions to Be Taken While Working In Or On Top Of Cutting.

1. Shifting of machine within Railway Boundary should be carried out under Railway supervision, with proper track protection / traffic block wherever required.
2. No movement of earth handling machine, tippers, dumpers, trucks etc. should be permitted once the train enters the block section and till the train passes the work site.
3. No loose boulders on slope, having potential of slipping down shall be allowed to be left before permitting the train to pass the work spot.

E. Safety Aspects to Be Observed While Working In OHE Area.

1. No electrical work close to running track shall be carried out without permission of railway representative.
2. A minimum distance of 2.0 m has to be maintained between live OHE wire and body part of worker or tools or metallic support etc.as per para 183 (2) (I) of IRPWM
3. No electric connection etc. can be tapped from OHE.
4. Authorized OHE staff should invariably be present when relaying work or any other major work is carried out.
5. Power block is correctly taken and "Permit to work" is issued.
6. Structure boards, track bonds, cross bonds, longitudinal rail bonds etc. are not disturbed, and if disconnected for the work they are reconnected properly when the work is completed.
7. The track level is not raised beyond the permissible limit during the work.

F. Stacking Of Material Along Railway Track

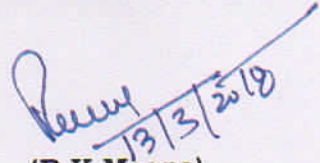
1. The site for material stacking shall be selected in advance ensuring that no part of the material would infringe the standard moving dimensions. A plan of proposed stacking locations be made and signed jointly by an authorized Railway representative and the contractor's representative.
2. The selected locations shall be prominently marked by lime in advance.
3. The material shall be stacked to such a height that it does not load to infringement of SOD in case of accidental roll off.

This super cedes all the earlier instructions issued in this regards.

DA: Annex I, II, III, IV & V


(M. K. Gupta)

Chief Administrative Officer/Const.


(R.K.Meena)

Principal Chief Engineer/WR

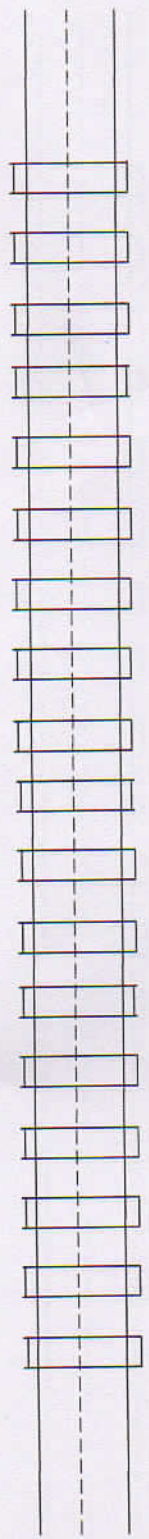
C/- CSO for kind information

C/- PCEE, PCSTE, PCME for information and necessary action please.

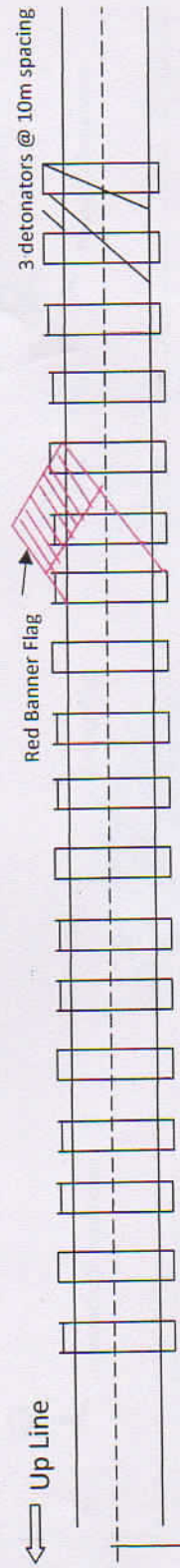
C/- Secy. to GM for kind information of GM.

A-Playing of vehicles / Machinery within 3.5m from track centre

Dn Line →



← Up Line



Man with Red Flag

Man with Red Flag

Man with Red Flag

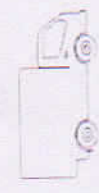


45 m

1200 m

30 m

600 m



Railway's Supervisor

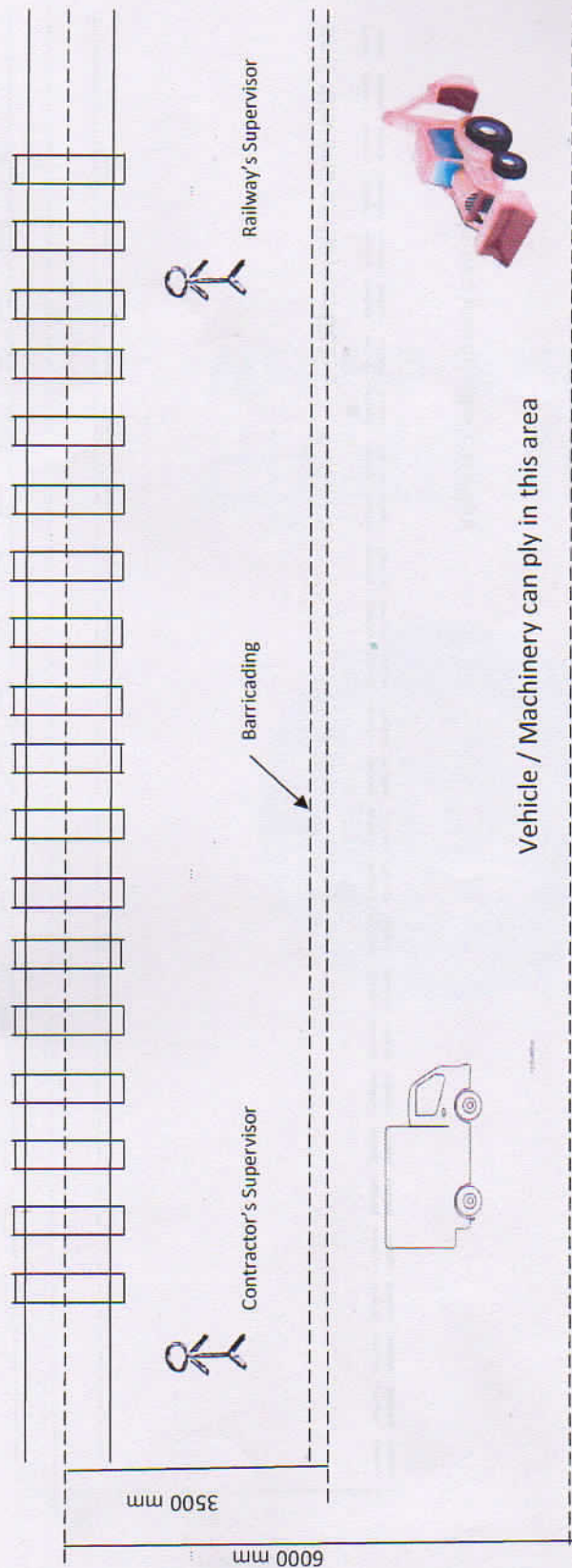


Contractor's Supervisor

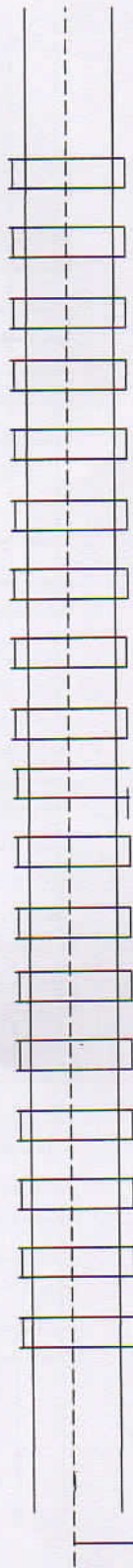
3500 mm

2

B-Playing of vehicles / Machinery between 3.5m to 6.0m from track centre



C-Plying Vehicle / Machinery beyond 6m away from track

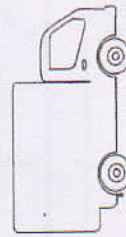


60000 mm

150 mm white line with lime



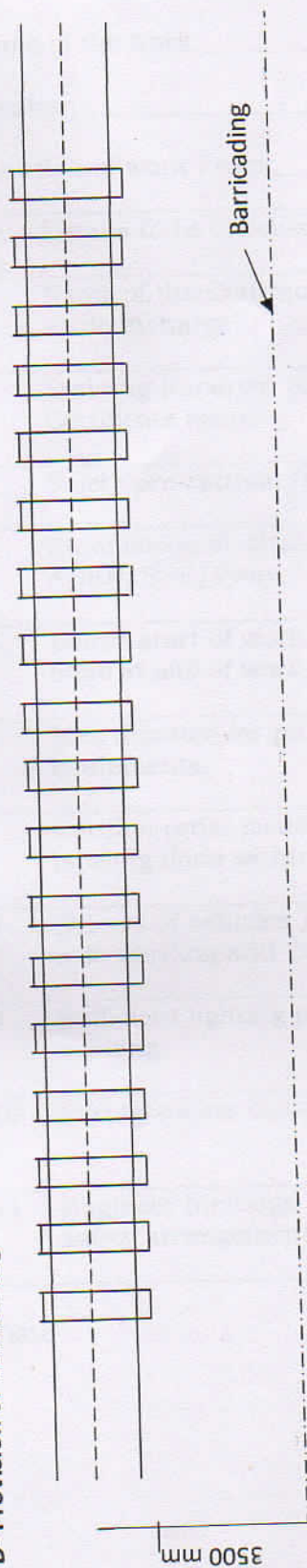
Vehicle / Machinery can ply in this area



Contractor's
Supervisor

ad

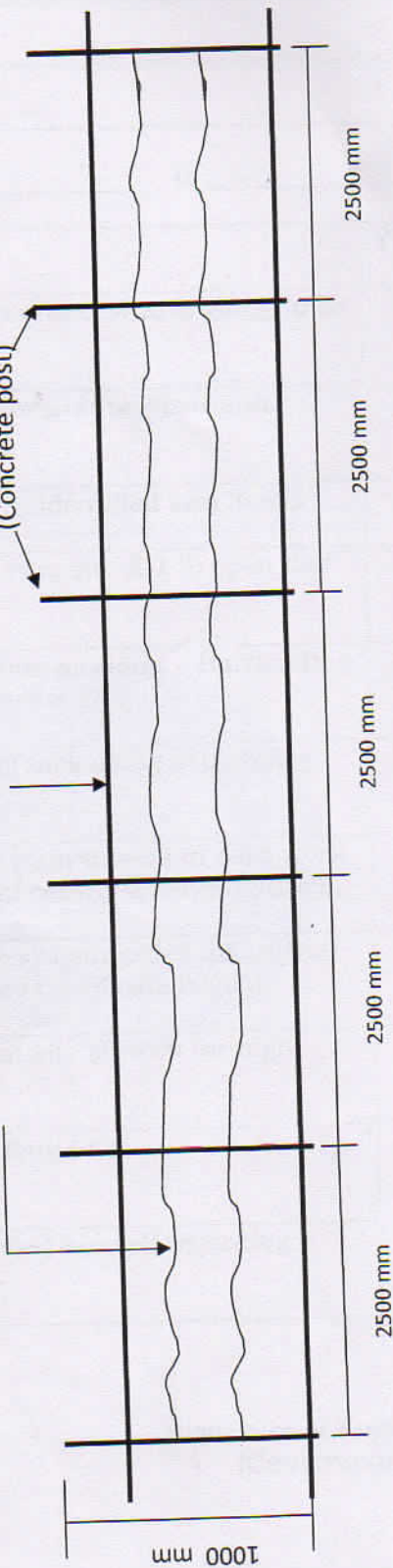
D- Provision of Barricading



Barricading

Corrugated PPGI sheet of 0.45mm Thickness /barbed wire fencing

(Concrete post)



ELEVATION OF BARRICADING

2

ANNEXURE - II**CHECK LIST TO BE FILLED BFORE STARTING THE WORK**

Name of the work _____

Location _____

Duration of work From _____ to _____

| Sr. No. | Details to be checked | YES | NO |
|---------|---|-----|----|
| 1 | Name of the Contractor's supervisor, who is going to be a site incharge? | | |
| 2 | Training imparted to contractor's supervisor and Certificate issue. | | |
| 3 | Safety pre-caution to be taken, identified and listed. | | |
| 4 | Submission of details as per Para No. A.1 to open line ADEN, SSE/Pway. | | |
| 5 | Before start of work, proper line marking / Barricading done at site of work as per para A.2(k) | | |
| 6 | Men deputed for protection of tack along with safety equipments. | | |
| 7 | Caution order issued for the train drivers in case work is being done within 6 mts. of centre of running track. | | |
| 8 | Drivers of vehicles / machinery counselled about the safe working and Competency Certificate issued. | | |
| 9 | Sufficient lighting provided at site of work for night working. | | |
| 10 | Infringements checked and found OK. | | |
| 11 | Engineer Incharge has satisfied himself regarding safety arrangements. | | |

Date _____

Signature of Engineer Incharge of the site
(Construction / Other Departments)

11 06 15

2

ANNEXURE - III**CHECK LIST TO BE FILLED WHILE WORK IS IN PROGRESS**

Name of the work _____

Location _____

Duration of work From _____ to _____

Date of Inspection _____

| Sr. No. | Dues the contractor's has the valid permit to work at this site? | YES | NO |
|---------|---|-----|----|
| 1 | Does the Contractor's has the valid permit to work at his site? | | |
| 2 | Does the Contractor's supervisor has the valid competency certificate ? | | |
| 3 | Does the knowledge of contractor's supervisor on safety of track and work site upto the mark. | | |
| 4 | Is Railway's Supervisor of Concern executing department's available at site. | | |
| 5 | Is knowledge of Railway's Supervisor O.K? | | |
| 6 | Is line marking / barricading done as per para A.2(k) | | |
| 7 | Is adequate safety precaution taken as per the list? | | |
| 8 | Is communication facility (Walkie-Talkie sets) available at site? | | |
| 9 | Does the driver of Vehicles / machinery aware about safety precaution? | | |
| 10 | Is whole work site safe for working of men / vehicles and trains? | | |
| 11 | Adequate lighting arrangements done at site? | | |
| 12 | Adequate protection equipments available at site? | | |
| 13 | Is caution order to trains being issued? | | |
| 14 | Are train drivers following the enforced temporary speed restrictions? | | |
| 15 | Has work permit been taken for working in Electrified territory / station yards (P&C areas) | | |

Remarks, if any _____

Date _____

Signature of Inspecting Officer _____

Designation _____

Para 806 of IRPWM.

Works of short duration – Protection in block section and procedure for passing of trains
 – Before commencing any work of such category the Permanent Way Inspector or authorised Railway servant should issue a notice to the Station Master/ Block hut in-charge at each end of the Block section and obtain their acknowledgment. Depending as to whether the train is to be passed through the work site, after stopping or at a restricted speed, the line should be protected in the following manner :–

(1) *When the train is required to stop at the site of work (in Block section) –*

(a) Post a flagman with hand signals at a distance of 30 metres in rear of the place of obstruction, to show stop hand signals.

(b) Post a flagman with hand signals and place a banner flag across the track at a distance of 600 metres on Broad Gauge and 400 metres on Metre Gauge and Narrow Gauge in rear of the work. The flag man will show stop hand signals

(c) Post a flagman with hand signals and detonators at a distance of 1200 metres in the case of Broad Gauge and 800 metres in the case of Metre and Narrow Gauge in rear of the work. The flagman shall fix three detonators on the line 10 metres apart and take stand at a place not less than 45 metres from the three detonators, from where he can obtain a clear view of the approaching train. He will show stop hand signals.

Note – In M.G. Sections with trains running at a maximum speed of more than 75 km.p.h. the distances (b) and (c) shall be as specified under approved special instructions.

(d) The man at the site of obstruction shall give proceed hand signal to indicate to the Driver, when he may resume normal speed after the train has been hand signalled past the obstruction **Annexure 8/1).**

(2) *When the train can pass over the workspot at restricted speed in Block section –* Keeping in view the provisions in para 1501.1(C) /GR.1976 the following protections should be adopted in the above cases :–

(a) Post a flagman exhibiting caution hand signals at a distance of 30 metres from the place of obstruction.

(b) Post a flagman exhibiting caution hand signals at a distance of 1200 metres for Broad Gauge and 800 metres for Metre Gauge and Narrow Gauge from the place of obstruction.

(c) Post a intermediate flagman with hand signals at a distance of 600 metres for Broad Gauge and 400 metres for Metre Gauge and Narrow Gauge from the place of obstruction. He will also place a banner flag across the track. The intermediate banner flag must be kept across the line until the speed of the train has been reduced, after which the banner flag shall be removed and the train hand signalled forward.

In Metre Gauge sections with trains running at a maximum speed of more than 75 km.p.h. the distance in (b) & (c) shall be increased as specified under approved special instructions.

(d) The railway servant at the site of work should give proceed hand signals to indicate to the Driver, that he may resume normal speed after the train has been signalled past the site of work- **(Annexure 8/2).**

(3) The following points should be kept in view, while protecting the track in the cases mentioned in sub-para (1) and (2) above :–

(a) On single line, the line must be so protected on both sides of the work.

(b) At places where there are curves or falling gradients and at times of poor visibility the distances laid down in sub-para (1) and (2) above may be suitably increased wherever necessary and intermediate flagman posted to relay hand signals.

(c) The location of the banner flag, detonators and hand signals should be so selected as to avoid stopping of trains, as far as possible, on continuous steep rising gradients.

(d) If in an emergency, it becomes necessary to carry out such works at night, the provisions for protection of line as detailed in sub-para (1) and (2) must be complied with except that red light must be exhibited in the direction of approaching trains in place of red hand signaling flags and banner flags.

(e) In an Emergency, when it is necessary on considerations of safety, the Permanent Way Inspector, or authorised railway servant may commence such work after protecting the line before issuing notice to the Signaller. If the work is likely to be prolonged he should notify the Signaller as soon as possible.

(4) Works to be carried out in station limits –

(a) No work should be commenced on running line at a station without the written permission of the Station Master and until the relevant signals have been placed at 'ON'.

(b) Before commencing a work on a line which can be isolated from the other running lines, the Permanent Way Inspector should ensure that the line has been isolated and retain the keys of locking device in his possession. Where isolation is effected by the setting of points, they must be locked by means of clamps or bolts and cotters.

(c) Before commencing work on a line which cannot be isolated from other running lines the Permanent Way Inspector should provide the prescribed hand signals, detonators and banner flags as detailed in **para 806**.

(5) Works in Automatic Territory – In automatic territory, if the distance from the place of works/ obstruction to the automatic signal controlling entry of a train into the signalling section is less than 1200 metres on Broad Gauge and 800 metres on Metre Gauge/Narrow Gauge and the automatic signal is secured at 'ON' the banner flag and three detonators may be provided at 90 and 180 metres respectively.

807. Works of long duration**(1) Preliminary arrangements —**

(a) For doing such works the Engineering Department will arrange with the Operating Department for the issue of the circular notice as per extant instructions.

(b) The concerned Divisional Engineer will be responsible for obtaining the sanction of Commissioner of Railway Safety wherever necessary and sending Safety Certificate on completion of such works.

(c) The Permanent Way Inspector should obtain permission to commence work from D.E.N.I A.E.N. and should arrange to block the line when work is proposed to be done under block with the permission of the Controller/Chief Controller on the day of block and issue a notice to the Station Master on either side.

(d) Caution orders will be issued by the Station Masters concerned as necessary.

(e) The necessary temporary Engineering fixed signals as prescribed should be provided.

(f) In an emergency, when it is necessary on considerations of safety, the Permanent Way Inspector, or Authorised Railway servant may commence such work before issuing the notice, under the protection of hand signals and banner flags. As soon as possible, he should issue the notice and replace the hand signals and banner flags by temporary engineering fixed signals.

2) Protection of line in block section —

(a) In case where stop dead restriction is to be imposed when restriction is to last for more than a day, the following temporary Engineering indicators should be exhibited at the appropriate distance :—

- (i) Caution indicator.
- (ii) Stop indicator.
- (iii) Termination indicators.

(b) In case where the train is not required to stop (non-stop restriction) and the restriction is likely to last for more than a day the following temporary Engineering indicators should be exhibited at the appropriate distances

Caution indicator.

- (ii) Speed indicator.
- (iii) Termination indicators_

Note — (i) Annexure 8/3 and 8/3 A indicate the distances at which these are to be fixed.

(ii) When during the course of the work, on consideration of safety it is not desirable to pass trains over the site of work for the time being, the track should be further protected by hand signals and banner flags, by the authorised Railway servant.

(3) *Protection of line in station limits—* Special instructions will be issued by the Divisional Railway Manager (Operating) after consultations with Divisional Engineer and Divisional Signal and Telecommunication Engineer in regard to the use of temporary Engineering signals in conjunction with station fixed signals. In urgent cases these will be issued by the Station Master at the request of Permanent Way Inspector.