



पश्चिम मध्य रेल  
WEST CENTRAL RAILWAY

General Manager's Office  
Engineering Branch  
Jabalpur - 482001

No. W-HQ/W-4/Track/PCE/CIR/4

Dated 30.3.2016

**PCE'S CIRCULAR NO. 17/2015-16**

**SUB.: WORK SITE PRECAUTIONS**

**1. Preamble:**

Instruction for ensuring adequate safety precaution at work sites have been laid down in Chapter VIII of IRPWM and Chapter XV of GR as well as part of Supplementary Rules. Specific instructions also exist for ensuring safety for Works under execution by contractors in Para 826 of IRPWM and correction Slip No. 69. Besides these, there are a few number of instructions issued through Circulars by Board as well as parent railways from time to time.

**2. General Safety Precautions:-**

**A) Works being carried out by departmental gangs:**

Elaborate deliberations on methodology of work and related safety precautions needed are enumerated in IRPWM, GR/SR and respective Manuals for each and every type of tracks works. Detailed safety instructions exist in chapter VIII of IRPWM and chapter XV of GR which cover by and large wide spectrum of works. The basic issue is therefore, enforcement of these provisions. Ensuring their compliance can only be possible by exercising checks at various levels during course of work and by surprise inspections. Needless to emphasize that properly trained staff both by Railway and contractual agency be deployed at worksites. Short cut methods should be curbed and dealt with heavy hand. These will automatically achieve deserved level of safety confidence.

**B) Work being carried out by contractual agencies:-**

Para 826 of IRPWM along with correction Slip No 69 lay down specific instructions for this group of works. 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) It should be made obligatory on the part of contractor to depute competent supervisor only and to that effect, necessary provision need to be made in the contract agreement. Supervisors' knowledge should be checked and certified by the sectional Sr. DEN/DEN or Engineer-in-charge of the work particularly in regard to his safety knowledge. A competency certificate to the contractor's supervisor as per Performa given in Annexure-I shall be issued
- ii) Adequate labor strength needs to be maintained at worksite all the time to complete the work within a reasonable time and avoid long duration working on track which eventually enhances proneness to unsafe working. It would not only avoid its undue effect on operation but will also reduce safety hazards.
- iii) The methodology of works shall be spelt out in writing for every work by the engineering-in-chief, laying down all safety provisions to be adopted. Track machines, vehicles and their drivers, communication facilities etc to be made available at site for undertaking the work and communicated in the prescribed Performa. This document should be available at site and preferably displayed.
- iv) Works should be started only after EWP has been issued and should be continued till it is valid. No work shall be executed beyond Sun set. If need for working at night special arrangement shall be made.
- v) The works under execution by contractors should be checked at every stage during inspections by open line officials. Items to be given special attention are enumerated check list placed at Annexure-II.
- vi) 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.
- vii) 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.
- viii) 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.

- ix) Supplementary site specific instructions, wherever considered necessary, shall be issued by the Engineer in Charge.

### 3.0 Safety precautions while working vicinity to the track:-

#### A) While works being done within 3.5 meters from centre of track:

- (i) All works planned within 3.5 meters from centre of running line or which involve continuous working of machineries and vehicles within this zone, are to be done essentially under block protection and safety precautions are to be taken as Para 806 and 807 of IRPWM.
- (ii) For occasional plying of vehicles/machineries for short duration, block protection may not be insisted upon but due protection has to be done as shown in sketch at Annexure-IIIA.

#### B) While works being done between 3.5meters and 6 meters from centre of track:

Following precautions be taken when works are required to be done between 3.5 meters to 6 meters from track centre or machines/vehicles are required to work/ply within this zone.

- (i) Before start of work, by 150 mm white line of lime, demarcation should be done approximately parallel to running track at a distance of 3.5meters from centre of tracks in advance as per sketch placed at Annexure-IIIB. Alternatively, ribbon should be provided by erecting stakes.
- (ii) During actual working between 3.5meters and 6meters, barricading has to be done as per sketch given at Annexure-IIIC.
- (iii) In case vehicles have to ply or machineries have to work within this zone, railway's and contractor's supervisors be positioned as shown in sketch at Annexure-IIID.
- (iv) Additional staff needs to be posted where turning of vehicles is required during working e.g. earth work, bridge work, ballast etc. Locations for reversing vehicles should be nominated and it should be selected in such a way that there is no danger to running trains such a location.
- (v) Look out men should be posted along the track at a distance of 800meters from location of work with red flag and to whistle in face of road vehicle and approaching train.
- (vi) In addition to look out men, caution order need to be issued to trains and speed restrictions imposed wherever considered necessary to look out of any obstruction at the place of work and should be prepared to apply brakes if any danger is apprehended.
- (vii) Arrangements should be made to protect the entire track in case of emergency at work site.
- (viii) All temporary arrangements required during execution should be done in a manner that moving dimension is not infringed.

- (ix) Individual vehicle/machinery shall not be left unattended at site of work. If it is avoidable and essential to stable it near running track, it shall be properly secured and manned even working hours with all arrangements to protect the track from infringement.
- (x) Any materials unloaded or shifted along the track should be kept clear of moving dimensions and stacked at a specified distance from running track.
- (xi) Movement of vehicle/working of machineries should be prohibited at night. However, in case of emergency when night working is unavoidable, adequate lighting should be ensured.
- (xii) The work site should be suitably demarcated to keep public and passenger away from work site. Necessary signage, board, such as "work in progress" etc should be provided at appropriate location to warn public/passengers.
- (xiii) Contractor's drivers/operators vehicles/machineries shall be issued a permit railway's supervisor after educating them about safety norm and after taking the assurance in writing for working within vicinity of railway's track.
- (xiv) In unusual circumstances when operator apprehends infringement to track while work with truck/machineries near running line, following action shall be taken:-
  - a) Contractor's supervisors/vehicle operator should immediately advise the situation to railway officials and assist him in protecting the track.
  - b) Protection of track shall be done as per G&SR and similar to emergencies.

**C) Works being done beyond 6 meters from centre of track.**

No precautions are needed except in cuttings or where the work can affect train running in any way.

**4. Special/additional safety precautions:-**

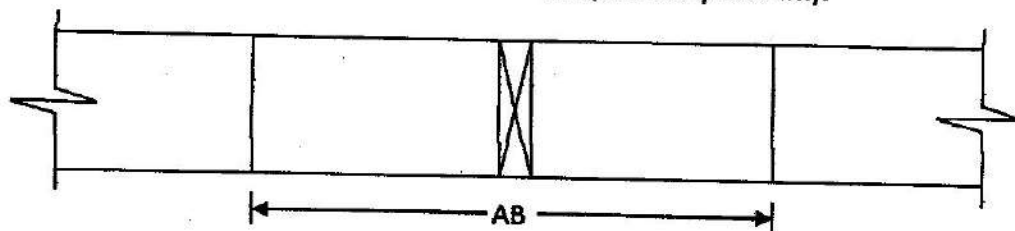
Some important works are specialized in nature and require special/additional safety precautions during works.

**A) Precautions during temporary repair/rail replacement:**

Following should be ensured:

- (i) To follow adequate precautions for Rail Changing, viz. caution order to Control by in charge Supervisor at site.
- (ii) Full time availability of lookout man (minimum 02 nos.) and banner flag use at all such locations, where rail cut is done with or without block and use of Banner Flag with flagmen at work site to slow down the train, in case of higher speed approaching train.
- (iii) Proper clamping of 1m or joggle Fish Plate with minimum 04 clamps after rail cut.
- (iv) On the running main line and loop, rail cut should be of minimum length of 04m as far as possible.

- (v) Provisions of P-Way Manual and LWR Manual for adjustment of closure at the LWRs END to be followed, with all the precautions in terms of securing by 1m long fish plate/Joggle fish plate and tightening of clamps after passing of each train.
- vi) During temporary repair the fracture shall be repaired by using a cut rail (not less than 4 meter long) and clamped/bolted as per arrangement shown in Fig. 4.4.3 (a) & (b) or (c) of LWR Manual (enclosed as Annexure-IV). The repair steps are as follows:-
- A traffic block shall be taken as soon as possible, preferably when the rail temperature is within the range specified for  $t_d$ .
  - (a) Two points on either sides of the fracture shall be marked on the rail such that the length of closure rail (not less than 4 meter) to be inserted is equal to the total length of the rail pieces removed from the track minus allowances for two welds and saw cut (normally 51 mm).



AB = Rail piece to be removed from track

AB = Length of closure (not less than 4m) + 51 mm (Gap between two weld joints + gap for 2 saw cuts)

**Fig. No. 1**

- Alternately two points on either side of the fracture shall be marked on the rail at a distance equal to the length of the available closure rail. The length of closure rail should not become less than 4 meter at the time of permanent repairs.

#### **B) Precautions during BCM working:**

Track Machine working is likely to produce a dusty atmosphere and/or heavy noise pollution. Hence, extra care is necessary at site to ensure safety of workers. For this, the following steps should be taken: (Para 4.6.8 of IRTMM)

- Hooters should be provided on the track machines. These hooters should preferably have remote control operation so that the lookout man standing around 150 m away from the track machine can operate the hooter to warn the staff working on/around the track machine about train approaching on the adjoining track.
- Temporary Whistle Board should be fixed on the adjoining track, which can be moved along with track machine worksite.

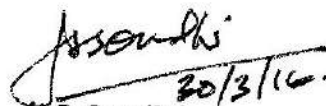


- (iii) It is necessary that all trains passing on the adjoining track should be issued a caution order "OBSERVE HAND SIGNAL, WHISTLE FREELY AND STOP, IF REQUIRED". Such caution order on the adjoining track is necessary due to high noise level caused by track machine and large concentration of staff working around it.
- (iv) Ramp at Close of Work: Proper ramp to be provided at the beginning and at the end of the day's work. A ramp of 1 in 1000 shall be given before closing the day's work and obligatory point. The next day's work shall begin from the point of commencement of previous day's ramp.

**C) Precautions while working at Earthwork/Boulder cuttings sections:**

While working on cutting with the machineries or when there is movement of vehicles above cutting, if there is a possibility of any of the following circumstances, work has to be done under block protection.

- i) Any possibility exists for machinery/vehicle after toppling/due to loss of control come over track or infringe it.
- ii) Chance of machineries/vehicles to come within 3.5 meters from track centre though working beyond it.

  
(J.S. Sondhi)

Principal Chief Engineer/WCR

**Copy to-**

- i. CAO/Con./WCR
- ii. All HODs of Engineering department.
- iii. CE/C-I/C-II & C-III WCR
- iv. Sr.DEN(Co)/JBP, BPL, KOTA
- v. Dy.CE(TM)/BPL & Dy.CE(TMC)/HQ

**ANNEXURE-I****COMPETENCY CERTIFICATE**

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.

**ADEN****DEN/SR. DEN**

**ANNEXURE-II**

**West Central Railway**  
**CHECK LIST OF SAFETY PROVISIONS**

(Date and time of inspection.....)

Name of work .....

Location .....

Name of Railway Supervisor .....

Name of agency .....

Name of Contractor's supervisor .....

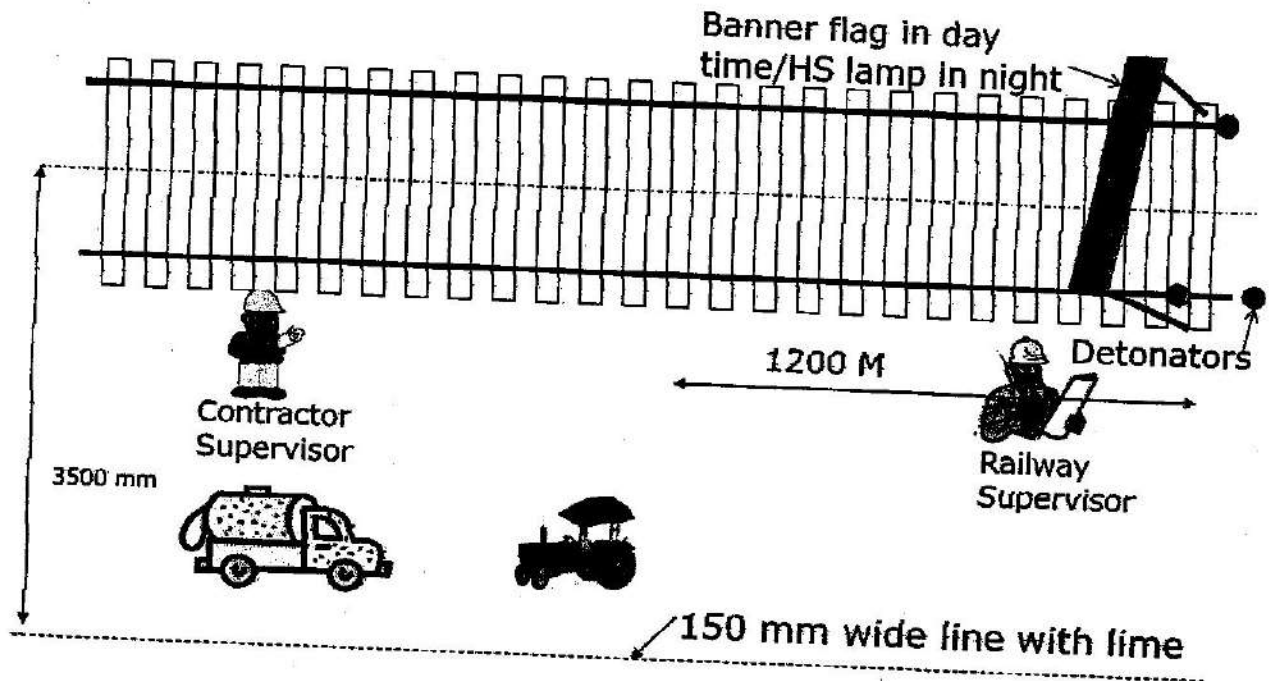
Sr. No.	Details of item	Discrepancies noted
1	(i) Whether Engineering work permit available for doing the work? (ii) Has work permit been taken for working in electrified territory/station yards (P&C areas)?	
2	(i) Is Railway's competent supervisor of Construction Organisation / other department available at site during the work? (ii) Is knowledge of the Railway's supervisor OK.	
3	(i) Has the Contractor's supervisor been issued certificate & he possesses due competency certificate. (ii) Is knowledge of contractor's supervisor on safety of track for the work site upto the mark?	
4	Are adequate man powers available at site for completing the work in time?	
5	Are drivers driving the vehicles/machineries with due license & permit and are they aware	



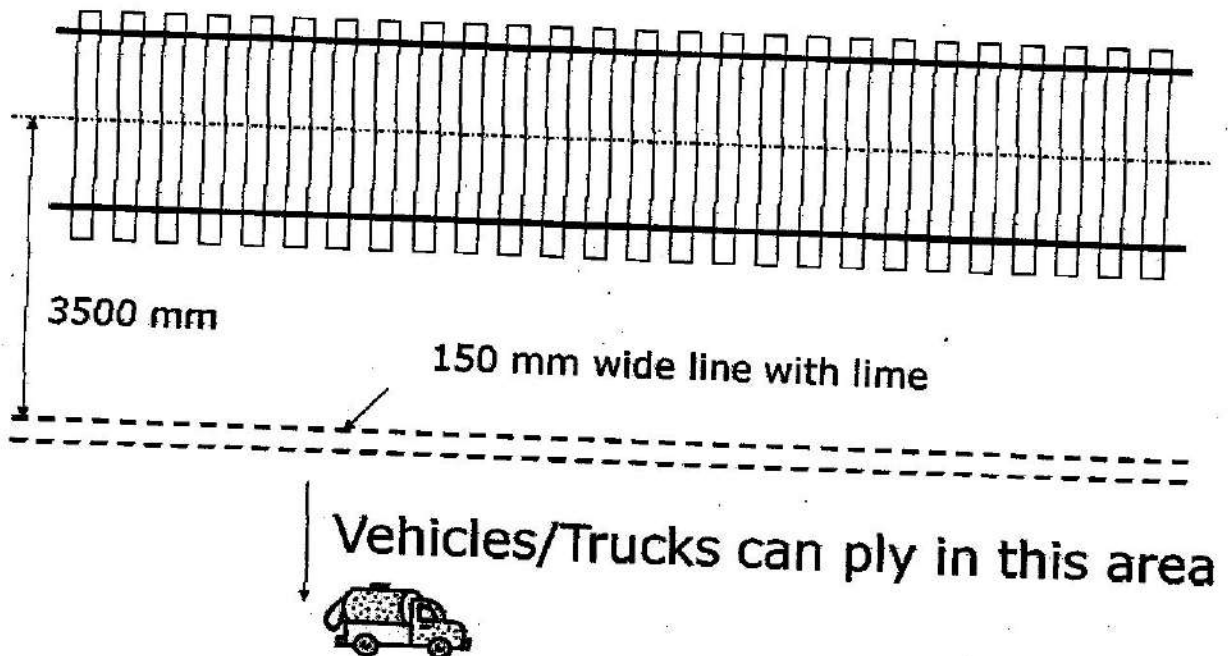
	of relevant safe working methods for the site.	
6	Have adequate men been deputed for protection of track along with safety equipments.	
7	What is the communication facilities available- (i) Mobile phones (ii) Walkie Talkies (iii) Control phone	
8	(i) Has caution order been issued for the train drivers (if required) (ii) Are trains Drivers following the enforced temporary speed restriction? (if imposed).	
9	Is whole worksite safe for working of men/vehicles & trains?	
10	Has any infringement been seen at site?	
11	Has sufficient lighting been provided at site of work for night working?	
12	Status of other safety stipulations indicated in the approved scheme. (i) (ii) (iii) (iv) (v) (vi) (viii)	

**ANNEXURE-IIIA**

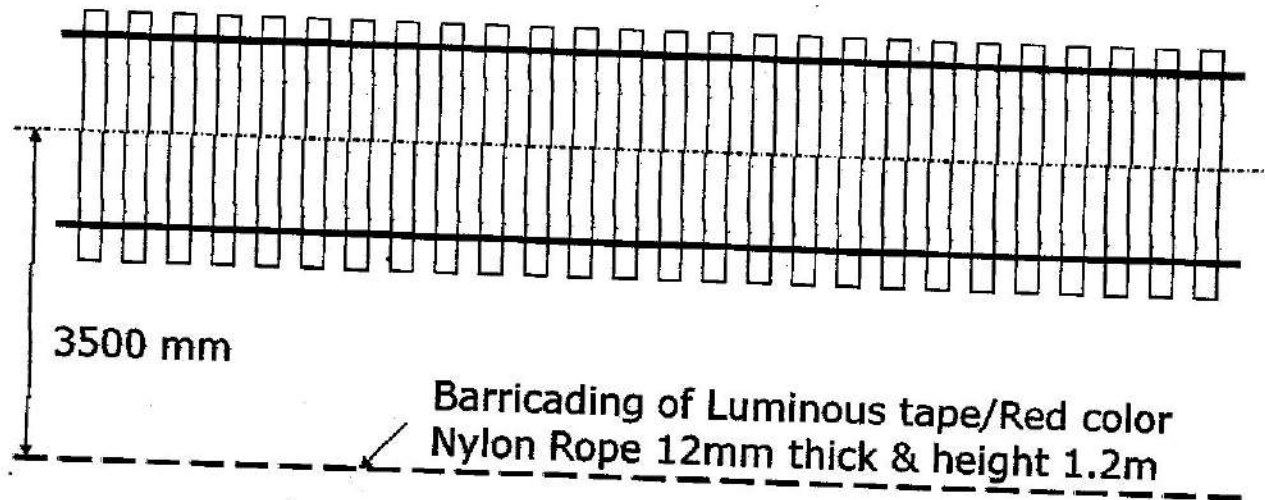
- A) Plying of vehicles within 3.5 M from Center of Track: Under block protection with banner flag and detonators.**

**ANNEXURE-IIIB**

- B) Marking of White Line with Lime**



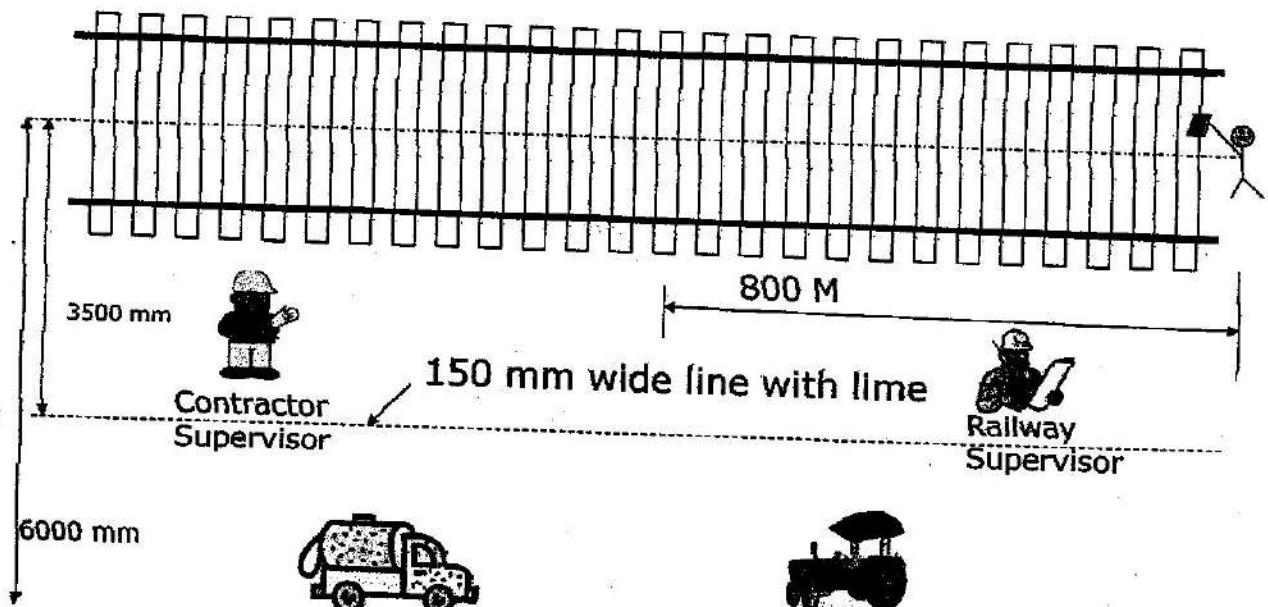
## C) Provision of Barricading

ANNEXURE-III C

When vehicles ply in this area

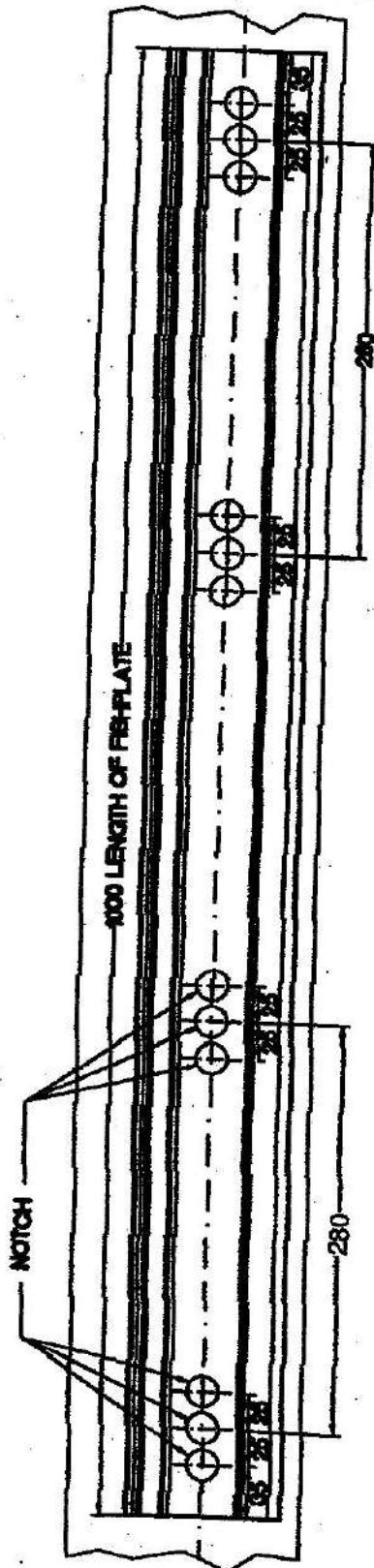
ANNEXURE-III D

- D) Plying of vehicles between 3.5 M and 6 M from Center of Track: Required (OEHS+WF+SIR) caution order to train and lookout man on track.



N:B: TRUCKS / VEHICLES AFTER WORK SHALL BE PARKED

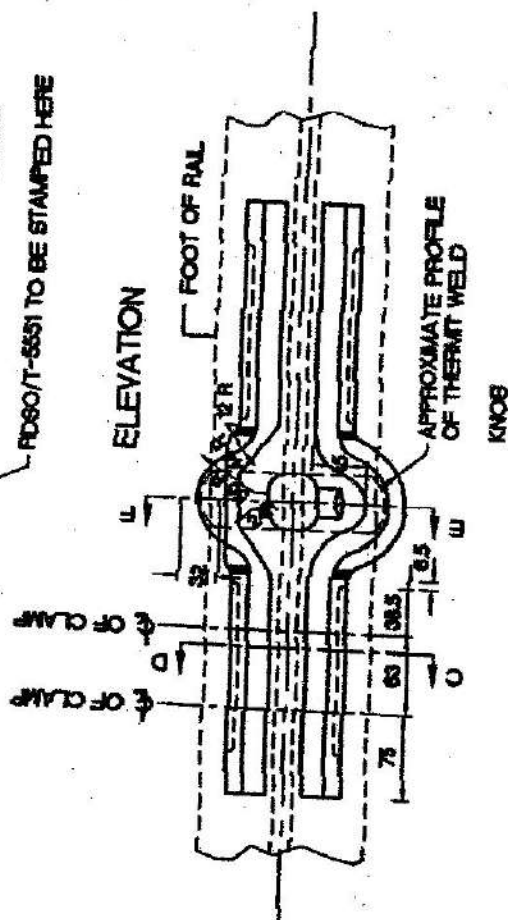
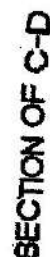
# 1 m LONG SPECIAL FISHPLATE FOR CLAMPED JOINTS (BQ)



DRQ. No.	RAIL SECTION	DIMENSION 'A'	FISHPLATE SECTION AS PER DRQ. No.
EDO/T-2165	60 kg IIC	76.25	FD60 T-908
EDO/T-2166	62 kg	84.80	T-000 (M)
EDO/T-2167	90 R	60.00	T-1 (M)

2 CLAMPS TO DRQ. No. EDO/T-2166 SHALL BE USED WITH THESE FISH PLATES.  
1 ALL DIMENSIONS ARE IN MILLIMETRES.





**NOTE:**

1. ALL DIMENSIONS ARE IN MILLIMETERS
2. LATEST ALTERNATIONS SHALL BE CHECKED BEFORE PLACING ORDERS
3. THE SPEED RESTRICTION OF 20km/h SHOULD BE IMPOSED WHEN THESE JOGGLED FISHPLATES AND CLAMPS ARE USED
4. FOR THE PURPOSE OF TEMPORARY JOINING RAILS WITHOUT ANY WELD ORDINARY FISHPLATES WITH M.R. CLAMPS MAY BE USED
5. THE JOINT SLEEPER SPACING MAY BE SUITABLY ALTERED TO ACCOMMODATE THE CLAMPS





WEST CENTRAL RAILWAY

G.M. Office,  
Engg. Branch,  
Jabalpur.

No.: W-HQ/W-4/Track/PCE/Cir.74/4

Date:-27-02-2018.

**Correction Slip No.1 to  
PCE's Circular No. 17/2015-16**


Sub.: Correction Slip No.1- PCE's Circular No. 17/2015-16 -  
"Work site Precaution".

\*\*\*\*\*

- 1) Para 3.0 (B) (ii) – Annexure – III (C) in the second line to be read as Annexure - III (C) (R).
- 2) Annexure – III (C) to be deleted and Annexure-III (C) (R) may be inserted.

This has the approval of competent authority.

**Encl:** Annexure-III C (R).

  
(Rajesh Arora)  
Chief Track Engineer  
WCR / JBP

Copy to –

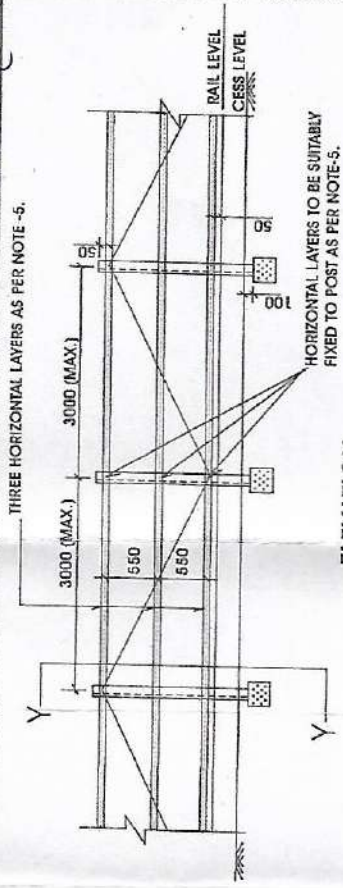
1. CAO/Con./WCR
2. All HODs of Engineering department.
3. CE/C-I, CE/C-II & CE/C-III/WCR.
4. Sr. DEN (Co) JBP, BPL & KOTA.
5. Dy. CE (TM) BPL & Dy. CE (TM) HQ.

  
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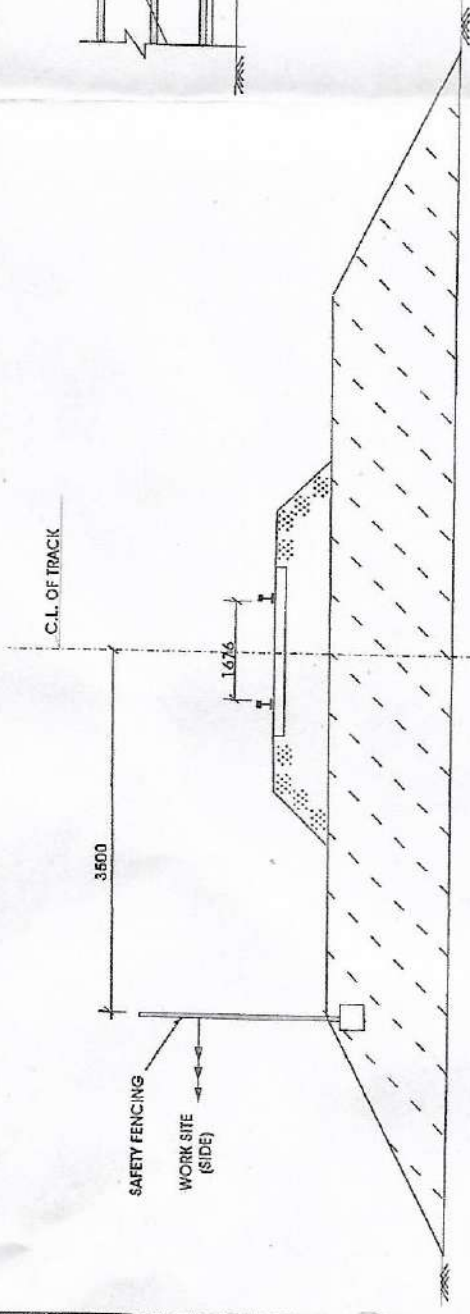
# ANNEXURE-III (C) (R)



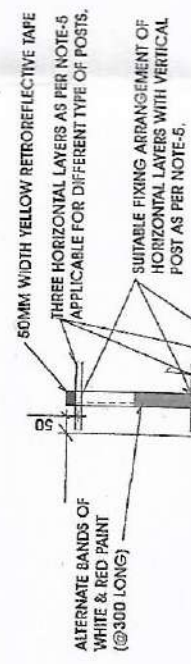
**ELEVATION**

## NOTES

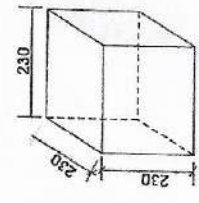
1. ALL DIMENSIONS ARE IN MM OR OTHERWISE SPECIFIED.
2. THE FENCING POST SHALL BE MINIMUM 1.2M. HIGH OVER RAIL LEVEL AND MINIMUM 330MM BELOW CESS LEVEL. OVER ALL LENGTH OF POST MAY BE SUITABLY INCREASED IN CASE OF CC BLOCK (1:2:4 AND SIZE 230MM x 230MM x 230MM) BEING FOUND IN LOW CESS OR SLOPING GROUND.
3. VERTICAL POST TO BE PROVIDED WITH 50MM DEEP YELLOW COLOUR RETRO REFLECTIVE STRIP ALL AROUND. POST TO BE PAINTED WITH ALTERNATE BANDS OF WHITE AND RED COLOUR. EFFECTIVENESS OF STRIP AND COLOUR SHOULD BE MAINTAINED TILL FENCING IS IN SERVICE.
4. MATERIAL AND SPECIFICATIONS FOR VERTICAL POST MAY BE FOLLOWING:-  
(a) BALLI / BAMBOO POSTS OF 75MM DIA.  
OR  
(b) 60MMx60MMx6MM STRUCTURAL ANGLE POST.  
OR  
(c) PRECAST CC / RCC POSTS OF MINIMUM DIMENSION 100MM x 100MM.
5. MATERIAL AND SPECIFICATION OF HORIZONTAL MEMBERS MAY BE FOLLOWING:-  
(a) THREE HORIZONTAL LAYERS OF BAMBOO / BALLI OR HALF / FULL SECTION SHALL BE FIXED WITH G.I. STAPLES / BINDING WIRE / NAIL DRIVEN INTO THE POST  
OR  
(b) THREE HORIZONTAL LAYERS OF 12MM DIA BARS / RODS SHALL BE TACK WELDED TO THE POSTS. METAL MEMBERS SHALL BE PAINTED TO CURB CORROSION.  
OR  
(c) THREE HORIZONTAL LAYERS OF MS WIRE STRANDS / BARBED WIRE OR NYLON ROPES/JUTE ROPE DIA 12MM AND ONE CROSS WIRE STRANDS / ROPES (NYLON / JUTE 12MM DIA ONE AS SHOWN IN FIGURE ABOVE SHALL BE FIXED ALTERNATELY AT BOTTOM HORIZONTAL LAYER AT POST AND TOP HORIZONTAL LAYER AT NEXT POST AND SO ON IN JIGZAG STYLE.
6. FENCING ONCE ERRECTED, TO BE REMOVED ONLY AFTER PRIOR PERMISSION OF INCHARGE PWAY SUPERVISOR.
7. SAFETY FENCING SHALL BE PROVIDED BETWEEN RUNNING TRACK AND WORKING SITE.



**SECTION AT TRACK**

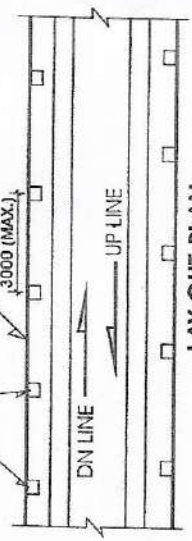


**SECTION OF ANGLE 50x50x6MM AT Y-Y**



**CEMENT CONCRETE BLOCK 1:2:4**

VERTICAL POST AS PER NOTE -4.  
THREE HORIZONTAL LAYERS WITH CROSS WIRE STRANDS / ROPES AS PER NOTE -5.



**LAY OUT PLAN**

WEST CENTRAL RAILWAY

## SAFETY FENCING ALONG THE RUNNING TRACK

SCALE :- NOT TO SCALE

19/9/17  
(J.P. SINGH)  
DY. CH. TRACK-II  
CTE / WCR

HQ. DRG. No. GM/W/WCR/JBP/0875

Drawn by  
(PHILIP BABA)  
SSE/DRG.