भारत सरकार (GOVERNMENT OF INDIA)

रेल मंत्रालय (MINISTRY OF RAILWAYS)

रेलवे बोर्ड (RAILWAY BOARD)

No. 2023/CE-II/TK/FencingPolicy New Delhi, Dated: 23.04.2025

General Managers,
All Zonal Railways.

Sub: Policy guidelines for providing safety fencing along the track.

Ref: Board's letter of even no. dated 16.02.2023

Please connect Board's letter dated 16.02.2023 under reference on the subject. It has been decided to modify Para 6(a) of the letter as under:

> *RDSO has issued drawing for different type of boundary walls. Additionally, based on discussion with industries, various other options as listed below for providing fencing are available:*
> - *NHAI anti crash barrier type*
> - *Fencing made of seasoned and Creosote oil treated bamboos coated with HDPE*
> - *Fixed knot fence made from high tensile steel wire coated with suitable protective coating as per relevant IS Codes*
> - *Fencing using weld mesh coated with suitable protective coating as per relevant IS Codes*
> - *Composite reinforced UPVC fencing*
>
> *Above list is not exhaustive, as many new products and technologies are evolving.*
>
> *Zonal Railways should select suitable type of fencing such as NHAI crash barrier type design (Schematic diagram of WR) suitably modified and designed or any other fencing based on the requirements of the sections and particular locations. However, it should be ensured that the fencing provided should prevent cattle and vehicle entry on the track.*

The other contents of the letter remain unchanged.

This issues with the approval of Competent Authority.

SAURABH JAIN 2025.04.23 12:29:50 +05'30'

Director, Civil Engg. (Plg.)
Railway Board

भारत सरकार(GOVERNMENT OF INDIA)
रेल मंत्रालय(MINISTRY OF RAILWAYS)
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No. 2023/CE-II/TK/FencingPolicy

New Delhi, dated: 16.02.2023

General Managers
All Zonal Railways

Sub: Policy guidelines for providing safety fencing along the track

Ref: (i) Board's letter no. 2014/CE-II/TSC/1 Pt.-I dated 08.09.2016
(ii) Board's letter no.2017/CE-IV/RUB/88 dated 22.04.2020 and 09.09.2022.
(iii) Board's letter no.2019/CE-II/TK/160/NDLS-Howrah dated 17.11.2022
(iv) WCR letter no. W-HQ/W-4/Track/18-0/Umbrella work/6-XXII PH-64 dated 19.10.2022
(v) CR letter no. W.226/Raising of speed/130 kmph dated 23.12.2022
(vi) NCR letter no. 334-W/3/Drg/NCR/TP/Pt-II dated 27.12.2022

1. Track structure for operation of Passenger trains beyond 110 Kmph was issued vide letter under reference(i) above with the provisions as:

- **Speed above 110 kmph and upto 130 kmph:**
  - Need based fencing as minimum requirement, and
  - Fencing all along the track, as recommended requirement, to be achieved within a time period of 3 years after increase in sectional speed

- **Speed beyond 130 kmph:**
  - Fencing all along the track as minimum requirement.

Recommended requirement is also stipulated in Para 202 of IRPWM 2020.

At present, boundary wall is being constructed at Railway boundary, mainly, to prevent encroachment of Railway land, which is also serving the purpose of fencing as it prevents the entry of animals and vehicular traffic.

2. **Objective**

Railway Track at many locations intersects several villages along the alignment, hence crossing of track by pedestrians, cattle, vehicles etc is observed at several locations. Therefore, fencing is required to prevent such crossings and safeguard the trains running at speed more than 110 kmph. However in long run, Pedestrian sub ways are required to be provided for crossing the railway alignment, which can also be used by two wheelers.

Further, access of track through cess is also required for men, machinery and material for maintenance of track. Thus, fencing should permit such access.

3. **Elements of effective fencing:** As per present practice, different type of boundary wall is being provided at Railway boundary, which may at many locations, be at significant distance from centre line of nearest track. Boundary wall at a large distance from track may not, at times, be effective in stopping cases of cattle, humans, vehicles crossing the track. Therefore, in order to prevent crossings of cattle and vehicles, effective fencing needs to be provided having following elements for deciding about the type:

- Economical
- Strong enough for intended purpose.
- Easy for installation and faster to construct
- Sufficient life and easily repairable
- Should not be theft prone
- Less expenditure during relocation
- Should not be medium of induction current due to OHE.

The fencing should be provided in such a way that:

- It completely seals against any trespassing by animals/vehicles at level crossings, ROB/RUB, hydraulic bridges and other similar locations with access control features such as provision of gates for access to maintenance/emergency vehicles.(Shown in schematic diagram in Annexure-1)
- Closer to track with adequate space left for offloading trolley, DRT machines, equipments and space for workmen.
- Distance of above fencing from centre line of nearest track should be decided keeping in view the site conditions, keeping space for loading/unloading of Rails, sleeper and other materials, requirement of service road for any maintenance/renewal works, multi tracking works, level of trespassing and overall effectiveness of proposed fencing etc.
- Fencing should have suitable pedestrian access provision at required locations to facilitate crossing by railways and other personnel; by making suitable overlap arrangement.

4. **Elements of Pedestrian Subway:** In order to facilitate crossing of railway alignment by cattle, pedestrians and smaller vehicles, adequate Pedestrian subways are required to be constructed. Such subways should be designed and provided with elements:

a) **Site Specific:**

i. Layout plan should cater to various local needs
ii. Water submergence free and dry
iii. Minimum clear height of Subway shall be 2.5 m.
iv. Pedestrian Subways should be located considering nearby habitation and need of crossing track by local habitants.
v. The subway should cater to:
   - Raised Pedestrian Footpath
   - Provision of Cable ducts and Hollow Section for utilities crossings under the footpath
   - Facilitate crossing of Two wheelers

b) **Design:**

i. As far as possible, RCC construction should be joint free. In exceptional cases, joints, if required should be designed to be water proof.

ii. Construction should be as far as possible with precast components for water proof construction, whenever subway is going below GL.

iii. Adequate/Proper Block to be arranged for insertion of Subway below track to ensure good quality of work.

iv. Guidelines issued for RUB/subways vide Board's letter no. 2017/CE-IV/RUB/88 dated 22.04.2020 and 09.09.2022 should be followed.

v. Feasibility of subway should be examined specifically with reference to drainage arrangement/ water proof construction during service.

vi. Approach can be stepped or ramp/sloped depending on the requirements.

c) **General:**

i. Pedestrian subway should be planned in consultation with local authorities/ municipality/ panchayats/ State Govt etc.

ii. Villagers should be counseled for use of Subway.

iii. Maintenance of road surface, approach structures and other structures shall be vested with local authorities/ municipality/ panchayats/State Govt etc.

iv. A committee should be formed at division level to identify such locations with state authorities, wherever such subways are to be constructed.

v. GAD of the fencing including locations of subways, access control feature such as provision of gate etc should be made duly signed by concerned branch officers and approved by DRM of the division.

vi. Schematic diagram of pedestrian underpass is enclosed as Annexure-2 for guidance.

5. Vide letter under reference (iii) above, instructions regarding fencing were issued to NCR and WR and a schematic/tentative drawing for W-Beam type metal fencing based on NHAI crash barrier proposed by Western Railway was issued by Railway board on 22.11.2022. (Annexure-3)

6. References have been received from Zonal Railways (WCR, CR and NCR) vide reference (iv) to (vi) above seeking clarifications on fencing from Board. The matter has been further deliberated in Board and the following has been decided:

(a) RDSO has issued drawings for different type of boundary walls. Additionally, based on discussion with industry, various other options as listed below for providing fencing are available:

- NHAI anti crash barrier type
- Fencing made of seasoned and Creosate oil treated Bamboos coated with HDPE.
- Fixed Knots Fence made from high tensile steel wire coated with Bezinal 2000
- Fencing using Weld mesh
- Composite reinforced UPVC fencing

The above list is not exhaustive, as many new products and technologies are evolving.

Zonal Railways should select suitable type of fencing such as NHAI crash barrier type design (schematic diagram of WR) suitably modified and designed or any other fencing based on the requirements of the section and particular location. However, it should be ensured that the fencing provided should prevent cattle and vehicle entry on the track.

(b) Type of fencing being adopted should completely seal the track against any trespassing at level crossings, ROB/RUB, bridges etc and should have access control feature by providing gates in fencing for maintenance and emergency vehicles.

(c) Fencing is required to prevent animal and two wheeler crossings with suitable pedestrian access provision at required locations to facilitate crossing by railways and other personnel; by making suitable overlap arrangement and safeguard the running oftrains. However in long run, Pedestrian sub ways are required to be provided for crossing the railway alignment, which can also be used by two wheelers.

(d) Distance of fencing from centre line of nearest track should be decided by Railways keeping in view the site conditions, requirement of service road for any maintenance/renewal works, keeping space for material loading/unloading, multi tracking works, level of trespassing and overall effectiveness of proposed fencing etc.

(e) GAD of the proposed fencing should be prepared and approved by DRM as per instructions mentioned.

(f) The boundary wall at Railway Boundary should be provided as per present practice in inhabited areas, encroachment prone and other vulnerable locations.

(g) Other issues, if any, including contractual, to be decided by Zonal Railways as per extant instructions keeping in view the options available and railways' interest.

This is issued with the approval of Board (MI).

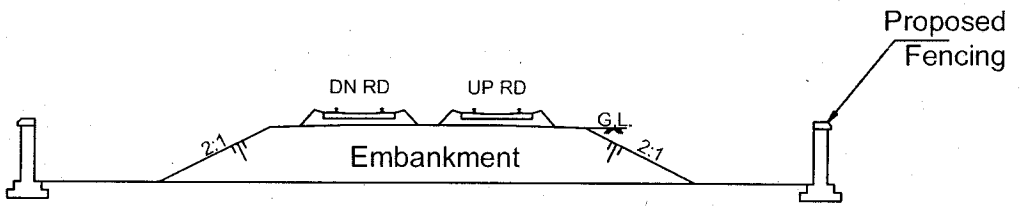
DA: As above

16/02/23.

(Atul B. Khare)
Principal Executive Director
Civil Engg.(Plg.)
Railway Board

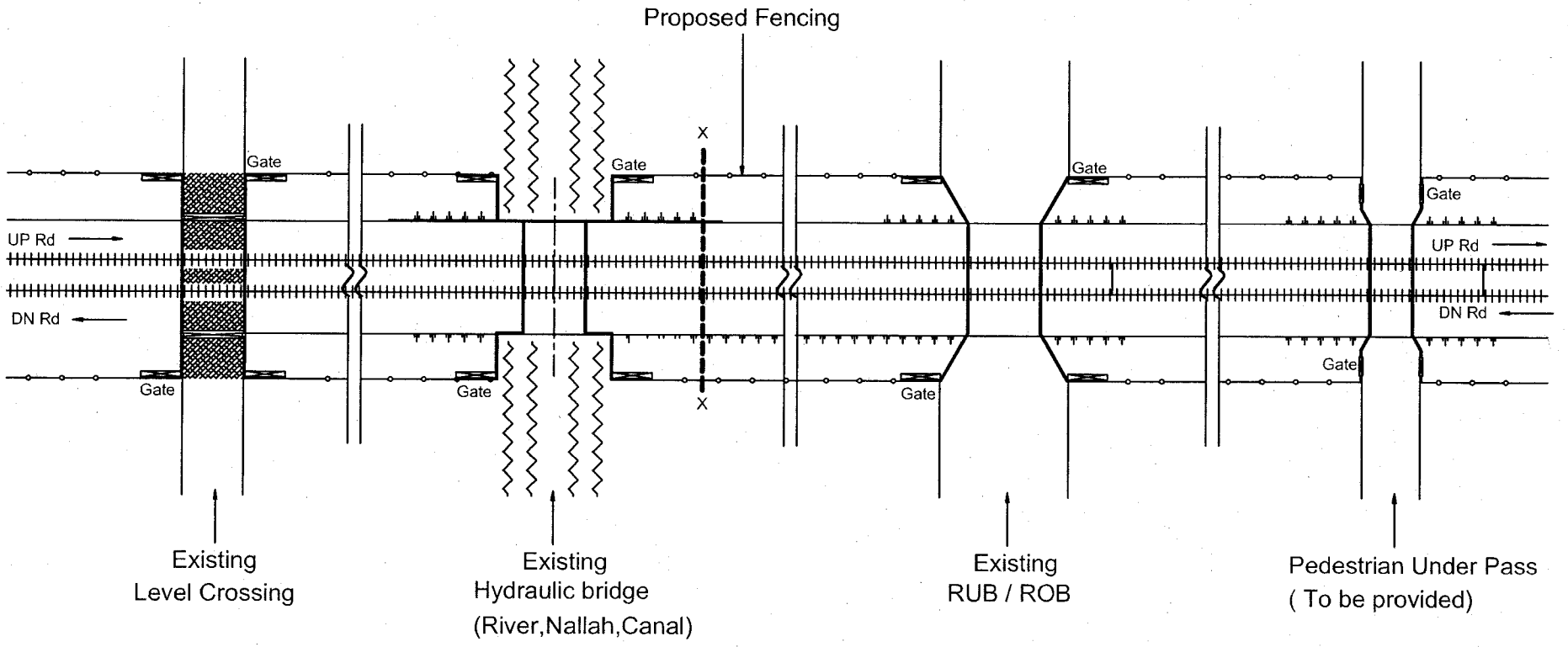
Annexure-1

Schematic Layout of Safety Fencing

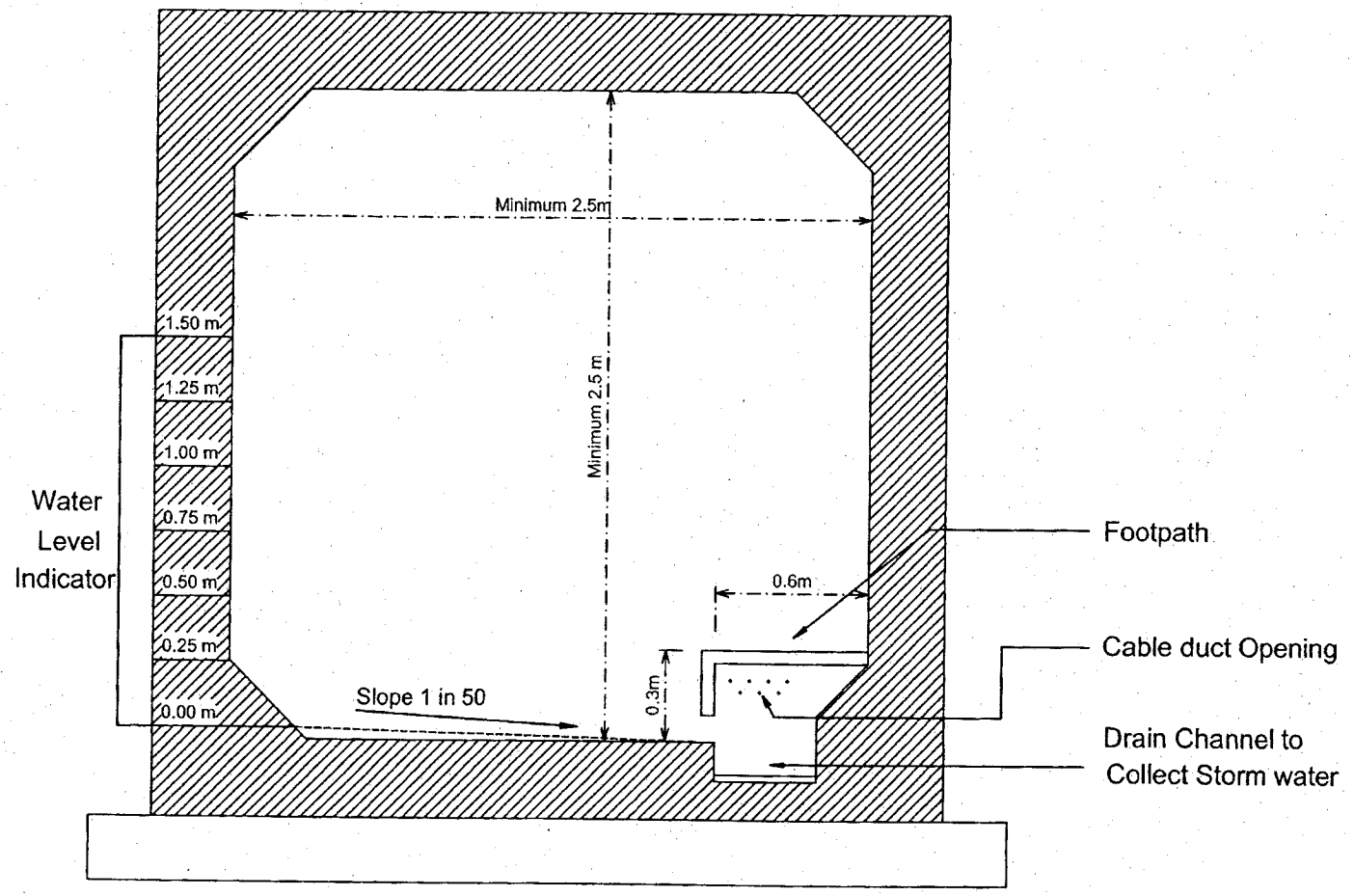


Cross Section X-X

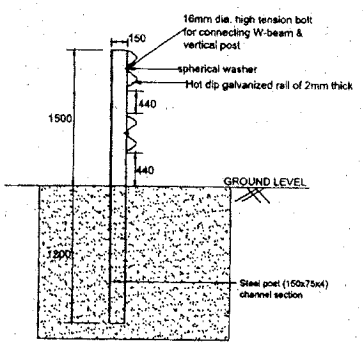
1 - Pedestrian / Animal / 2-Wheeler under pass
2 - Sealing of safety fencing to be done at LCs, ROB/RUB existing bridges and pedestrian underpasses to be provided at suitable location.
3 - Locked gates for maintenance/ emergency vehicles.
4 - Key with SSE/(P.way, Signal, TRD) and Gate Keeper (in case of LC)

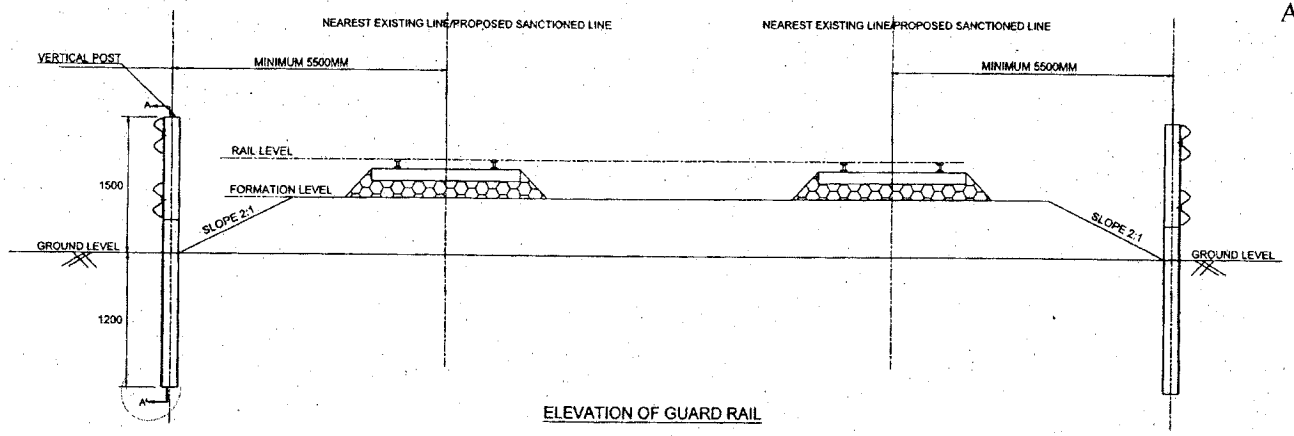


Typical Cross Section - Pedestrian Underpass



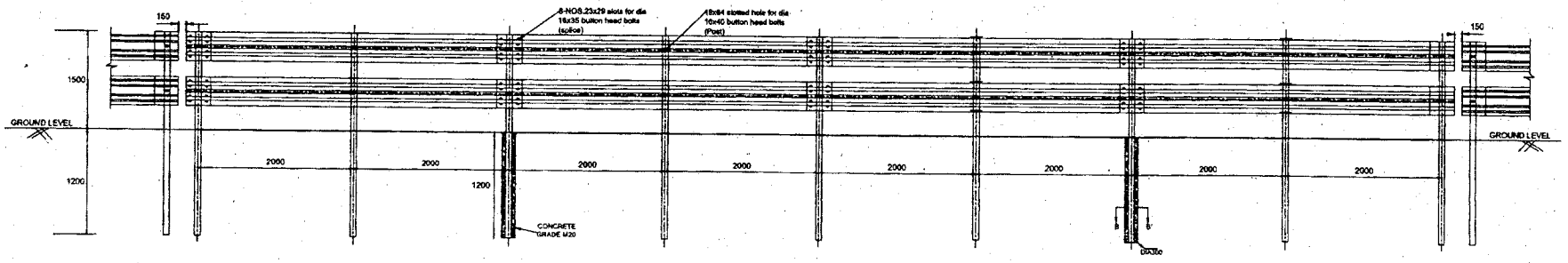
Annexure-3



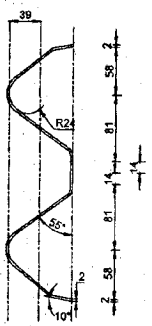


ELEVATION OF GUARD RAIL

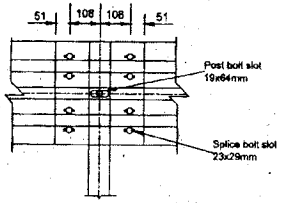
DETAILS OF POST



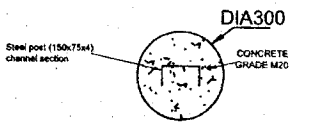
SECTION A-A'
(TYPICAL ARRANGEMENT FOR 16M LENGTH)



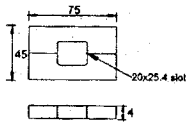
TYPICAL CROSS-SECTION OF GUARD RAIL BEAM



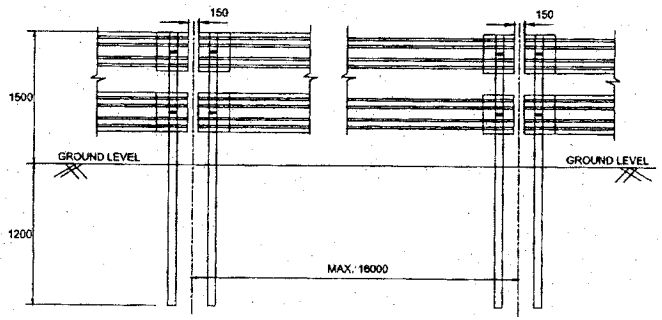
BEAM SPLICE



SECTION B-B'



SPLICE WASHER



TYPICAL ARRANGEMENT "A"
ELECTRICAL ISOLATION AT EVERY 16M

GENERAL NOTES:

1. ALL DIMENSIONS ARE IN MM UNLESS NOTED OTHERWISE.
2. ALL PUNCHING DIMENSIONS UNLESS OTHERWISE STATED ± 1MM.
3. FOR GUARD RAIL BEAMS, POSTS & SPACER MATERIAL SHALL CONFORM TO IS:10748, GRADE-II, IS:808, IS: 2062 & IS 8986.
4. THE OVER LAPPING OF THE GUARD RAIL BEAM SHALL BE ACHIEVED USING SUITABLE SIZE WASHERS.
5. W-BEAM GUARD RAIL ARE TO BE FABRICATED & INSTALLED AS PER SECTION 811 OF MORTH SPECIFICATION FOR METAL BEAM CRASH BARRIER.
6. THE 'W' BEAM, THE POST, THE FASTENERS SHALL BE GALVANIZED AS PER IS 4759 BY HOT DIP PROCESS(ZINC COATED WITH 0.55 KG/ PER SQUARE METER, MINIMUM, SINGLE SPOT).
7. THE GALVANIZING ON ALL OTHER STEEL PARTS SHALL CONFORM TO IS: 4759.
8. MINOR VARIATION IN C/C DISTANCE OF POST & DEPTH BELOW GROUND AS PER SITE CONDITION MAY BE APPROVED BY ENGINEER REPRESENTATIVE/ENGINEER-INCHARGE.
9. DRILLING FOR CONCRETING OF TWO PILLAR IN TYPICAL 16 PILLAR ARRANGEMENT AS SHOWN IN SECTION A-A' SHALL BE DONE BY AUGER BORING.
10. ARRANGEMENT OF FIXING OF BEAM & PILLAR SHOULD BE MADE ANTI-THEFT.
11. GAP OF 150MM TO BE PROVIDED AT 16M FOR ELECTRICAL ISOLATION AS SHOWN IN TYPICAL ARRANGEMENT "A".THE LENGTH MAY VARY AS PER SITE CONDITIONS SUBJECT TO MAXIMUM OF 16M.

TYPICAL DETAIL OF W-BEAM TYPE METAL FENCING		
PEDICE(P) RB	ATUL S KHARE	
DIR CE(PLG.) RB	PRADEEP NAGAR	
DYCE-DESIGN-CCG WR	HIMANSHU SHARMA	
XEN-DESIGN-CCG WR	TANUJ GUPTA	
SSE-DESIGN-CCG WR	SHAILESH SHEKHAR SHETTY	
DRG NO. TP BR- 95 / 2022-RB		