

**Public Utilities Commission of the
State of California**

**RULES GOVERNING THE CONSTRUCTION AND MAINTENANCE OF CROSS-
INGS AT GRADE OF RAILROADS WITH PUBLIC STREETS, ROADS AND
HIGHWAYS IN THE STATE OF CALIFORNIA**

Adopted May 22, 1973. Effective June 21, 1973.
(Decision No. 81410, Case No. 9454)

Amended September 25, 1990; Effective October 25, 1990
Resolution No. SR 21 *

Amended April 10, 1991; Effective April 10, 1991
Resolution No. SR 25 +

IT IS ORDERED by the Public Utilities Commission of the State of California, that the following rules governing construction standards and maintenance responsibilities at railroad grade crossings with public streets, roads and highways are approved for use in this State, unless otherwise ordered or directed by the Commission:

I *Purpose of Rules:*

The purpose of these rules is to formulate in the State of California, uniform standards for grade crossing construction in the interests of greater safety to the public.

II *Scope of Rules:*

These rules are not intended as complete construction or maintenance specifications but embody requirements which are most important from the standpoint of public safety. Construction should be according to accepted good practice for the given local conditions in all particulars not specified herein.

III *Width of Public Crossings:*

Grade crossings shall be a width not less than the traveled approach portions of the adjacent sections of the road, highway or street, including usable shoulders and sidewalks, if any. If both approaches are widened the crossing shall also be widened. If only one approach is widened, an appropriate taper shall be constructed to channelize traffic over the crossing. Political bodies shall not widen any approach to a grade crossing beyond the width of existing pavement at the rails without permission of the Commission.

IV *Minimum Width:*

Unless the Commission otherwise authorizes, public crossings hereafter constructed shall be not less than twenty-four (24) feet in effective roadway width measured at right angles with the center line of the roadway.

+ (Corrected SR 21)

V *Deceleration and Acceleration Lanes:*

Deceleration and Acceleration Lanes for vehicles required to stop at railroad grade crossings should be provided where public agencies determine such lanes are necessary.

VI *Rail Joints in Crossing Area:*

Whenever practicable, rails, switches and frogs should be so placed or relocated as to avoid switch points, frogs and switches or bolted rail joints in the paved area of a crossing.

VII *Maintenance of Crossing in Track Area:*

It shall normally be the responsibility of each railroad corporation to maintain the crossing area between lines two (2) feet outside of the rails of each track. When two or more tracks are involved, the railroad shall maintain the area between the tracks where the distance between the center lines of tracks is fifteen (15) feet or less measured at the center line of the road or highway normal to the tracks.

VIII *Maintenance of Approaches:*

It shall ordinarily be the responsibility of the political subdivision having jurisdiction over the roadway to maintain the approaches and those portions of the crossing not included under railroad responsibility above.

IX *Work in Track Area:*

All work in connection with the construction or alteration of a crossing at grade between lines two (2) feet outside of the outside rails shall be performed under the supervision of the railroad.

X *Surface of Crossings:*

At the time of construction the surface of the highway shall be installed to conform substantially to the plane of the rails for the entire area between rails and between tracks and to lines two (2) feet outside the rails. The alignment and profile of each grade crossing shall be substantially maintained as constructed.

Where crossings involve two or more tracks, the top of rails for all tracks shall be brought to the same plane where practicable. The surface of the highway shall be at the same plane as the top of rails for a distance of at least two feet outside of rails for either multiple or single-track crossings. The top of rail plane shall be connected with the grade line of the highway each way by vertical curves of such length as is required to provide riding conditions and sight distances normally applied to the highway under consideration.

Unless special conditions so require, such as curvature and/or train speeds, the rails of spur or secondary tracks shall not be substantially superelevated within the limits of the crossing.

XI Approach Grades:

In general, approach grades not in excess of six percent are desirable, but where not reasonably obtainable due to local topographical conditions the gradients in the vicinity of the rails shall be kept as low as feasible.

XII This Order shall not be Retroactive:

This Order shall not be retroactive with respect to grade crossings lawfully existing on its effective date, except that the Commission reserves the right to require, by appropriate proceedings, alterations or improvements at any such grade crossing.

XIII Illustrations:

The illustrations attached hereto are hereby declared to be a part of this General Order and shall be known as Commission Standards.

XIV Exemptions:

In a particular case, a written request may be made for an exemption from any of the requirements or standards herein. Such a request should be accompanied by a full statement of the conditions existing and the reasons relied on to justify the exemption. It is to be understood that any exemption so granted shall be limited to the particular case covered by the request.

Nothing herein shall be construed as limiting the trial installation of experimental types of grade crossing construction, provided the Commission has approved such plan in advance of the time the crossing is constructed.

The Commission reserves the right to modify any of the provisions of these rules in specific cases, when, in the Commission's opinion, public interest or safety would be served by so doing.

Compliance with these rules shall not relieve a railroad from any statutory requirement.

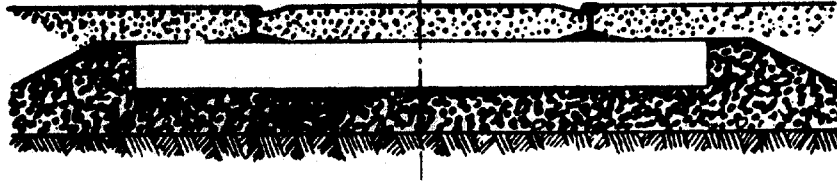
This order shall be effective on and after the 21st day of June, 1973.

Approved and dated at San Francisco, California, this 22nd day of May, 1973.

PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

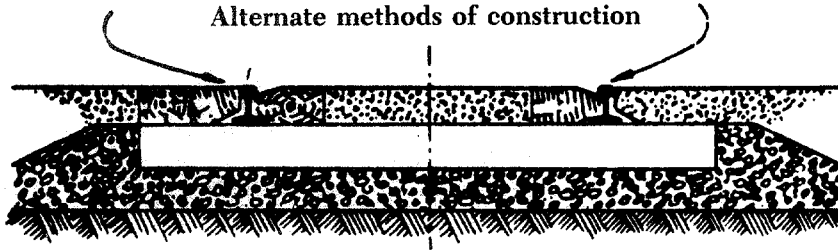
By WILLIAM R. JOHNSON, *Secretary*

STANDARD NO. 1



Filling Material: Asphaltic concrete or other equally suitable paving material, laid flush with top of rails and of thickness corresponding to height of top of rail above the crossties.

STANDARD NO. 2 Alternate methods of construction



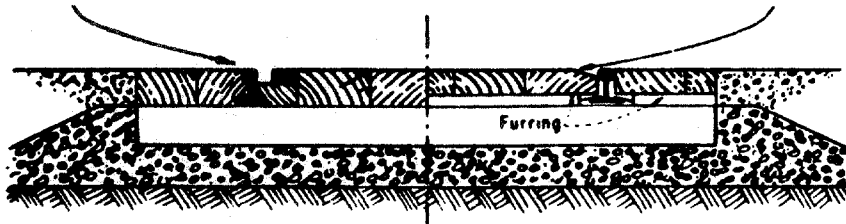
Filling Material: Asphaltic concrete or equally suitable paving material.

Planking: Vertical grain timber of good wearing and decay resisting qualities shall be used, laid with grain vertical.

Planks at ends of crossing to be beveled.

Planks to be substantially secured to ties.

STANDARD NO. 3 Alternate methods of applying planking providing flangeway

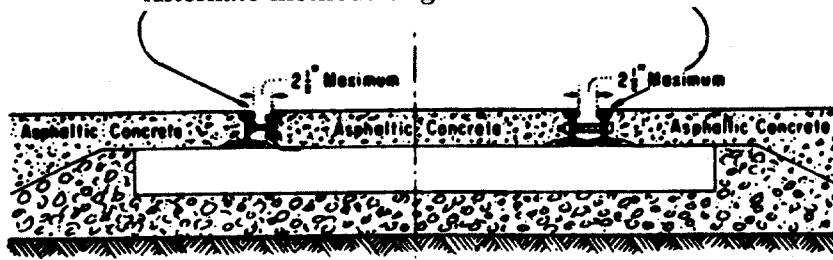


Planking: Vertical grain timber of good wearing and decay resisting qualities shall be used, laid with grain vertical.

Planks at ends of crossing to be beveled.

Planks to be substantially secured to ties.

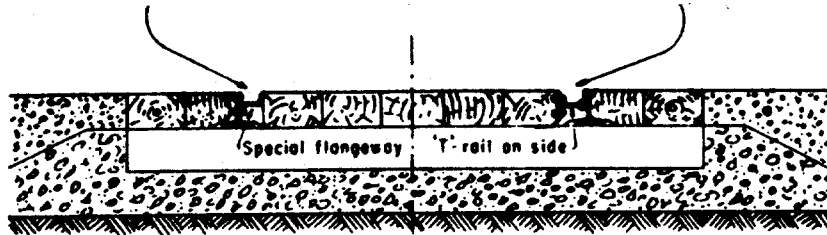
STANDARD NO. 4-A
Alternate methods of guard rail installation



Filling Material: Asphaltic concrete or other equally suitable paving material.

Guard Rail: Tee rail secured to rail or ties by proper fastening forming a flangeway not exceeding 2½ inches in width. Above diagram illustrates suggested methods of installation only.

STANDARD NO. 4-B
Alternate methods of guard rail installation



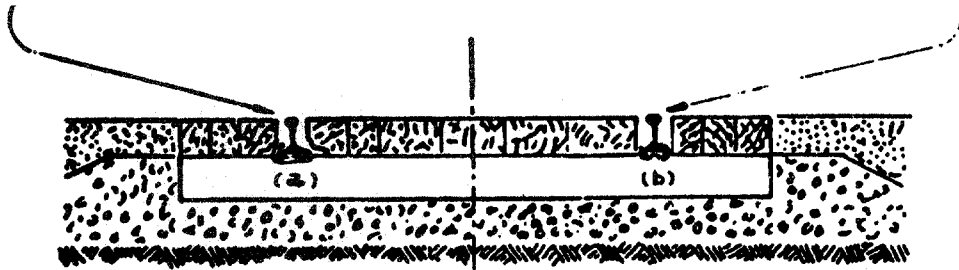
Planking: Vertical grain timber of good wearing and decay resisting qualities shall be used, laid with grain vertical.

Planks at ends of crossing to be beveled.

Planks to be substantially secured to ties.

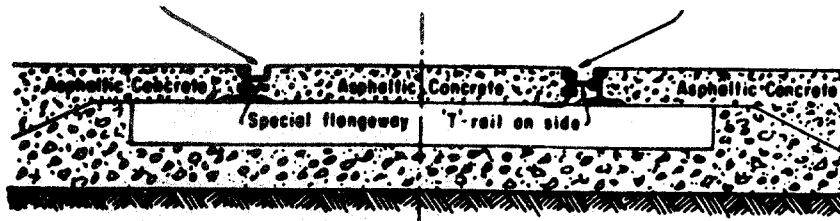
Guard Rail: Special rolled guard section or lightweight Tee rail laid on side to provide flangeway not more than 2½ inches wide. Top of flangeway to be substantially same height as top of running rail. Guard rail to be secured to rail or ties by proper fastening.

STANDARD NO. 4-C
Alternate methods: use of steel (a) or rubber (b) tie plates



Planking: Vertical grain timber of good wearing and decay resisting qualities shall be used, laid with grain vertical.
Planks at ends of crossing to be beveled.
Planks to be substantially secured to ties.

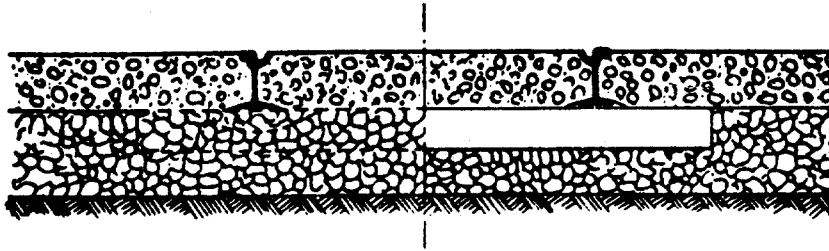
STANDARD NO. 4-D
Alternate methods of guard rail installation



Filling Material: Asphaltic concrete or equally suitable paving material.

Guard Rail: Special rolled guard section or lightweight Tee rail laid on side to provide flangeway not more than 2½ inches wide. Top of flangeway to be substantially same height as top of running rail. Guard rail to be secured to rail or ties by proper fastening.

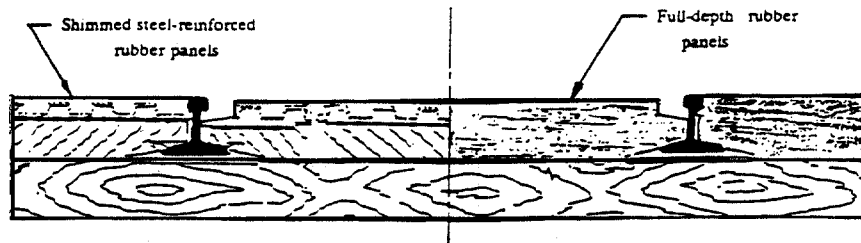
STANDARD NO. 5



Girder Rail Construction

For use in municipalities requiring girder rail construction. Pavement between rails and two feet outside to be consistent in type with adjacent pavement or as specified by local authorities.

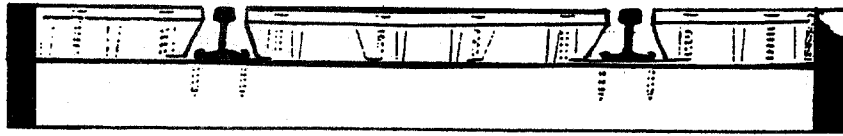
STANDARD NO. 6 *



TYPICAL CROSS SECTION

Rubber Panels: This type of crossing surface consists of molded rubber panels usually shimmed, steel-reinforced and with a patterned surface, but some are full depth rubber. The panels can be removed and/or replaced for track maintenance. Flangeway shall not be more than two and one-half (2½) inches wide.

STANDARD NO. 7 *



TYPICAL CROSS SECTION

High Density Polyethylene Modules: This type of crossing surface consists of molded panels, usually with recesses to serve as openings for lag screws or drive spikes. Panels are usually full depth, but some require wood shims. Flangeway shall not be more than two and one-half (2½) inches wide.

STANDARD NO. 8 *



TYPICAL CROSS SECTION

Concrete Slabs: This type of crossing surface consists of precast or cast in place reinforced concrete panels that may be removed and reinstalled for maintenance and replacement purposes. These panels are usually placed and removed by powered mechanical equipment because of their weight. Flangeway shall be not more than two and one-half (2½) inches wide.

STANDARD NO. 9 *



TYPICAL CROSS SECTION

Steel Sections: This type of crossing surface consists of prefabricated steel sections of an open grating type that may be installed and removed individually for maintenance and replacement purposes. Flangeway shall not be more than two and one-half (2½) inches wide.

