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CHAPTER 30

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* Indicates 11 x 17 sheet; all others are 8½ x 11.

INTRODUCTION

It is the intent of this chapter to establish the guidelines, procedures and practices of the Structure and Bridge Division for the use of fencing (pedestrian) on overpass structures. Other sources of information are also provided along with cross references to other Parts of this manual to assist in the use of fencing (pedestrian) and preparation of plans.

The practices and specific requirements contained in this chapter have been established based on the Structure and Bridge Division's experience, industry standards and recommendations.

Sources of information utilitized in the development of this chapter are as follows:

- AASHTO *Roadside Design Guide,* Section 10.5.1 – Protective Screening at Overpasses.

- A *Guide for Protective Screening of Overpass Structures*, prepared by the Force or Roadside Safety of the AASHTO Subcommittee on Design, November 1990. (Note: The material in this guide was in all likelihood adopted by the first reference.).

Damage and injury may be caused by objects thrown, dropped or discharged from an overpass structure. While there are no absolute warrants as to what types of fencing/screening should be installed, there is a general desire to preserve the clean lines of the structure while at the same time providing adequate protection but also within economical constraints.

Standard sheets and cell libraries dealing with the details in this chapter can be found in Part 3 - Current Details of this manual.

It is expected that the users of this chapter will adhere to the practices and requirements stated herein.

Several major changes and/or additions to the past office practice (Part 2) are as follows:

1. Maximum opening clarified.

2. Alternate Detail (top-mounted) fence detail for F-shape parapet removed.

NOTE:
Due to various restrictions on placing files in this manual onto the Internet, portions of the drawings shown do not necessarily reflect the correct line weights, line types, fonts, arrowheads, etc. Wherever discrepancies occur, the written text shall take precedence over any of the drawn views.

APPLICATIONS AND DOCUMENTATION

GENERAL INFORMATION:

APPLICATIONS:

Pedestrian fence shall be used for the following applications as protective screening:

On overpass pedestrian bridges.

On overpass structures in areas used by pedestrians or bicyclists. Included are structures with sidewalk(s), sidewalk space, bikeways, multi-use paths, etc.

On overpass structures over freeways (Interstate) if the overpass provides pedestrian access (sidewalk, bikeway, etc.). For overpass structures over other type of road classifications, fencing shall be considered on a case by case basis.

On overpass structures near (within 500 feet) a school, playground or where it would be expected that the overpass would frequently be used by children not accompanied by adults.

On overpass structures where private property is subject to damage, such as buildings, power stations, parks, etc.

On overpass structures where local regulations, laws or ordinances require pedestrian fencing.

Use of pedestrian fence on overpass structures over the mainline interstate and ramps, except the cases described above, shall be approved by the State Structure and Bridge Engineer.

For all other applications over primary and secondary roadways, pedestrian fence shall not be used unless approved by the District Structure and Bridge Engineer.

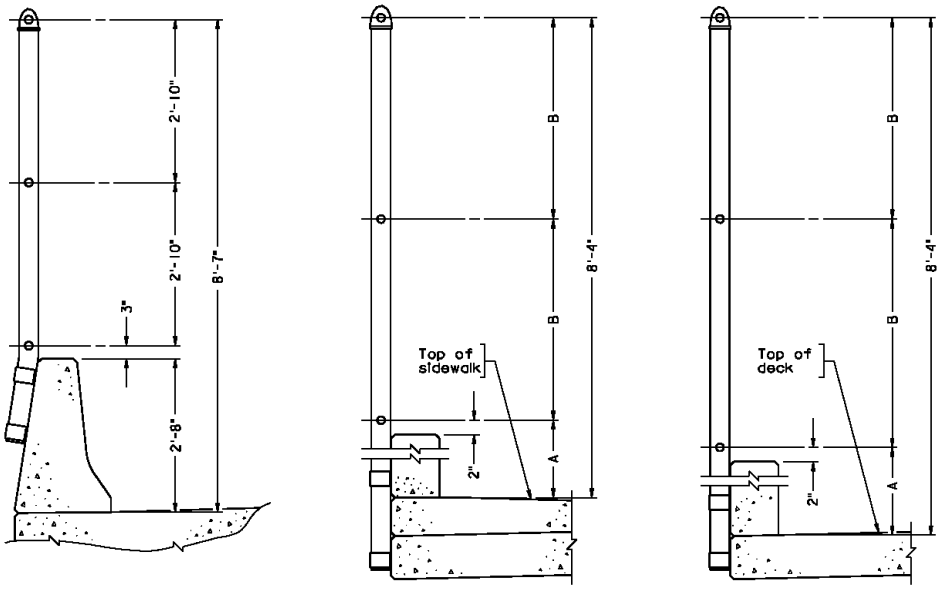
DOCUMENTATION:

Pedestrian fence requirements shall be discussed at the project scoping meeting and decisions to not use protective screening/fencing shall be adequately documented in the bridge project file (correspondence file), especially for railroad overpass where the VDOT Rail Section shall be consulted for the pedestrian fence requirements. The documentation shall be in the form of a Design Waiver approved by the District Structure and Bridge Engineer.

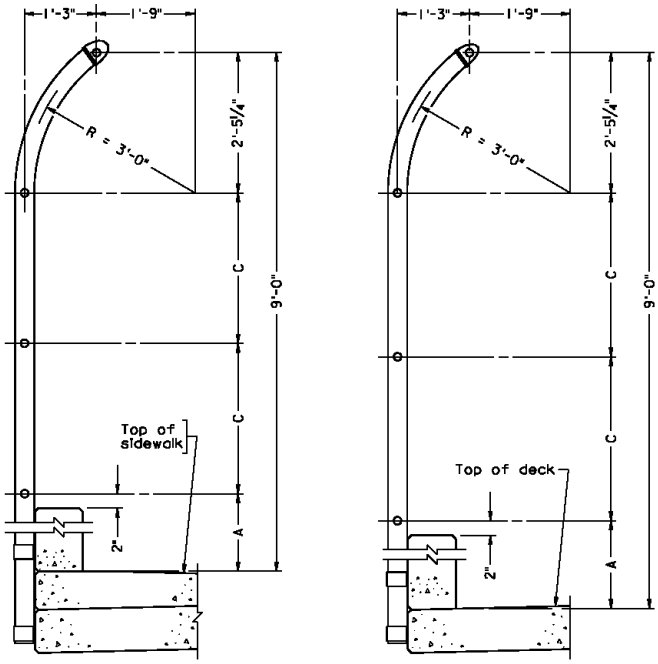
Overpass denotes a grade separation where the subject highway passes over an intersecting highway or railroad (from AASHTO *Transportation Glossary*, 4th Edition – 2009).

FENCING DETAILS:

Fencing details may be found in Part 3 of this manual, standard BPF-series. Vertical fencing shall be used for traffic barriers (parapets, rails, etc.) immediately adjacent to vehicular traffic. Vertical fencing with a curved top may be used in areas adjacent to sidewalks, bikeways, etc. when there is minimal likelihood of the fencing being damaged by trucks, etc.



VERTICAL FENCING



VERTICAL FENCING WITH CURVED TOP

PEDESTRIAN FENCE **FENCING DETAILS AND FENCE OPENINGS** **FENCE DETAILS**	PART 2 DATE: 18May2016 SHEET 1 of 2 FILE NO. 30.02-1

FENCE OPENINGS:

All VDOT fencing standards illustrated on File No. 30.02-1 utilize chain link fabric. In accordance with AASHTO LRFD specifications Article 13.8.1, mesh size in chain link or metal fabric fence should have openings no larger than 2”.

Chain link mesh size shall not exceed 2” by 2”. Decorative fencing may be considered for specific applications, but the metal fabric mesh opening area shall not exceed 3 square inches (e.g., 3” x 1”, 4” x 0.75”, etc.). Decorative fencing with openings larger than those indicated above are not sufficient for protective screening and considered decorative railing. Decorative railing may be used where protective screening is not required. Decorative railing shall not exceed the clear opening between elements required in Section 13 of the AASHTO LRFD specifications. Decorative railing may also be used where screening is required with chain link or metal fabric behind the railing.

LIMITS OF FENCING:

Pedestrian fence shall be provided the full length of the overpass structure for the following applications:

Pedestrian bridges

Both sides of overpass structures within 500 feet of schools, playgrounds, etc.

Overpass structures used by pedestrians and bicyclists: On side(s) having sidewalk, sidewalk space, bikeway, multi-use path, etc.

Overpass structures where local regulations, law or ordinances require pedestrian fencing.

Pedestrian fence shall be provided partial length of the overpass structure for the following applications:

Overpass structures over freeways (Interstates): The lesser of the full length of the bridge or the distance between outside edge of the freeway's shoulders plus 100 feet on either side of the edge of the shoulder.

Overpass structures where private property is subject to damage, such as buildings, power stations, parks, etc.: The lesser of the full length of the bridge or the length across the property plus 100 feet on either side of the property.

Overpass structures over railroad facilities: The lesser of the full length of the bridge or the length of the area covering the right-of-way limits of the railroad plus 100 feet on either side of the right-of-way limits.

Aesthetics, in conjunction with financial restraints, shall be considered in determining whether an overpass structure shall have fencing the full or partial length.