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ENGINEERING DIRECTIVES AND STANDARDS

Volume	Chapter	Section	Directive Number	Effective Date
II	3	1	4	5/30/2018

SUBJECT: GUARDRAIL, OTHER BRIDGE RAIL END TREATMENT, CURBS AND SIDEWALKS ON URBAN BRIDGES

- PURPOSE:** The purpose of this directive is to establish a policy for implementation of handling barrier rail end treatment, and sidewalk and curb placement for a variety of urban site conditions. This directive also establishes guidelines that may be used when conditions do not allow application of the most desirable practice.
- SCOPE:** This directive establishes LA DOTD policy for barrier rail end treatment, and sidewalk and curb placement on urban bridges with design speeds of 45 mph or less.
- POLICY:** The following guidelines and options will apply to the design of guardrail, curbs and sidewalks on urban projects. Any deviation from these guidelines shall require a DOTD Design Waiver approved by the Bridge Design Engineer Administrator unless noted otherwise in these guidelines.

I. General Criteria

- These criteria shall only apply to urban projects with design speeds of 45 mph or less.
- The DOTD Guardrail Standard Plan shall be used for all projects. For off-system bridge projects refer to the DOTD Guardrail standard plans.
- The standard guardrail length is 75 ft., and will be used on all urban bridges that utilize guardrail, and have sufficient room for standard installation.
- Guardrail will not be placed on the trailing ends of urban multi-lane bridges, but will be placed on the trailing ends of two-lane bridges.
- A decision should be made no later than plan-in-hand whether sidewalks should be included on the bridge. Refer to EDSM II.2.1.14 Complete Streets and the LA DOTD Road Design Manual for further information concerning the use of sidewalks.

II. Design Options

- Bridges without sidewalks (See attached Detail Nos. 1-2):
 - Detail No. 1 (standard guardrail length is 75 ft.): The barrier rail is offset 4 ft. from the edge of the travel lane, and the standard guardrail attached. The 4 in. curb is flared out from the 1 ft. roadway offset to connect to the barrier rail that is offset 4 ft. from the travel lane. (Guardrail placed behind the 4 in. curb shall follow the DOTD Guardrail standard plan details).
 - Detail No. 2 (insufficient room for standard guardrail): The following solutions are listed in priority order:
 - Use the T-Intersection guardrail configuration. (See DOTD Bridge Design Section Special details) A DOTD Design Waiver is required to use this special detail.
 - Use of an Impact Attenuator as per the requirements of the DOTD Bridge Design and Evaluation Manual. A DOTD design waiver is required to use this option.
 - Use a 40 ft. maximum or 10 ft. minimum tapered bridge barrier rail transition. A DOTD Design Waiver is required to use this special detail. (See DOTD Bridge Design Special detail)
 - Add sidewalk on bridge (see option II.B.2) and drop guardrail.

B. Bridges with sidewalks (See attached Detail Nos. 3-6):

Detail nos. 3- 4 show the placement of the sidewalks on the outside of the bridge barrier rail, while detail nos. 5-6 show it placed on the inside of the rail. It will often be acceptable to place the sidewalk on the inside of the barrier rail; however, there may be times where it is desirable to separate pedestrian traffic. Each project should be considered on a case-by-case basis with proper consideration for the following parameters in determining the sidewalk placement:

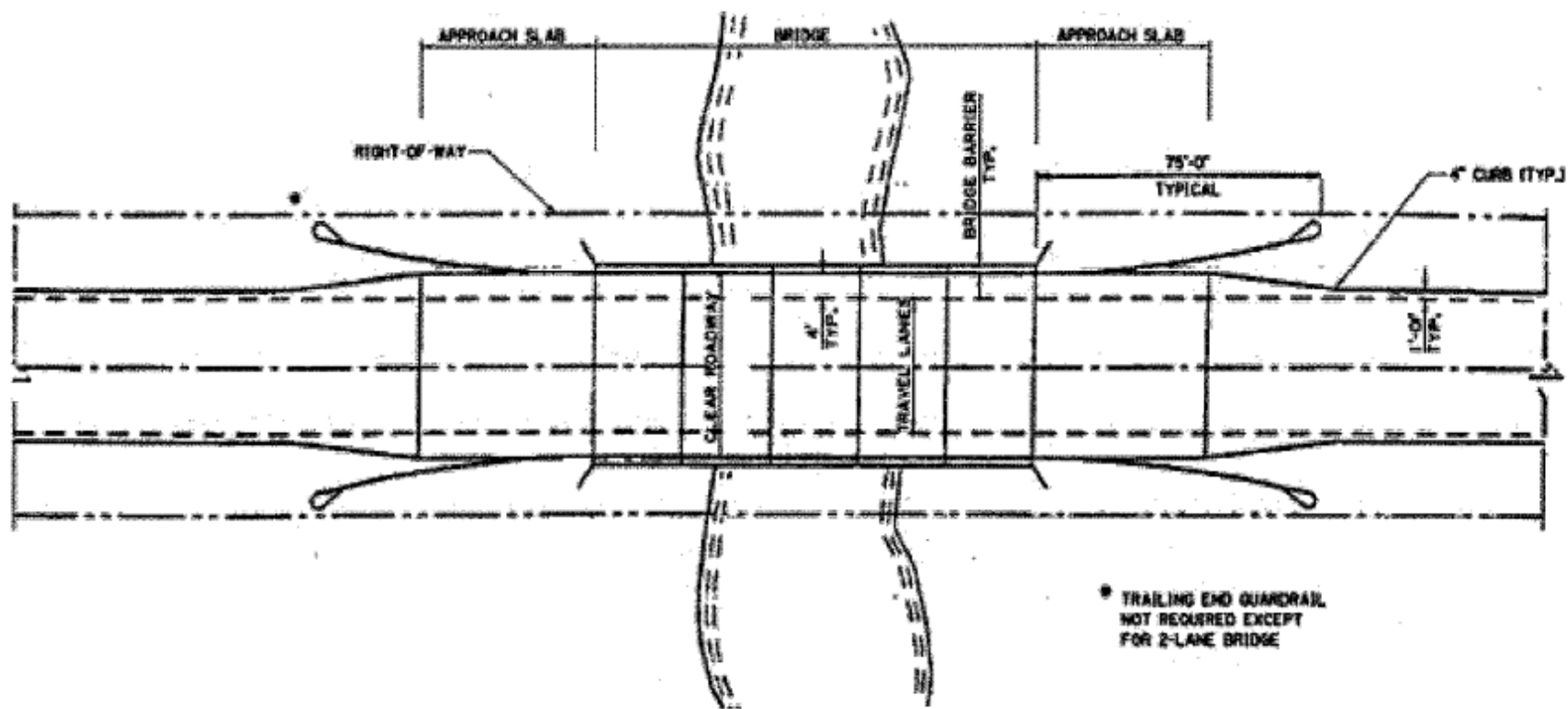
Bridge length, design speed, traffic volume, pedestrian volume, locations of schools, playgrounds, parks, etc. that may attract children, or any other pertinent information that may logically influence sidewalk placement. For example, on longer bridges such as urban overpasses, or on bridges that anticipate a heavy amount of pedestrians with significant vehicular traffic, it may be desirable to separate pedestrian traffic.

- 1) Sidewalks outside of barrier rail (Detail Nos. 3-4) (The following solutions are listed in priority order):
 - a) Use the 40 ft. maximum or 10 ft. minimum tapered bridge barrier rail transition (See DOTD Bridge Design special detail). A DOTD design waiver is required to use this special detail.
 - b) Place sidewalk inside bridge barrier rail (see option II.B.2)
- 2) Sidewalks inside of bridge barrier rail (Detail Nos. 5-6):
 - a) An 8 in. barrier curb is used to separate the sidewalk for the full length of the bridge and is then transitioned to a 6 in. barrier curb inside of the approach slabs (10 ft. transition typical). Sidewalks placed inside the barrier rail should preferably have a width based on the current DOTD Minimum Design Guidelines.

4. OTHER ISSUANCES AFFECTED: All directives, memoranda, or instructions issued in conflict with this directive are hereby rescinded.

5. EFFECTIVE DATE: This policy becomes effective immediately on all projects.

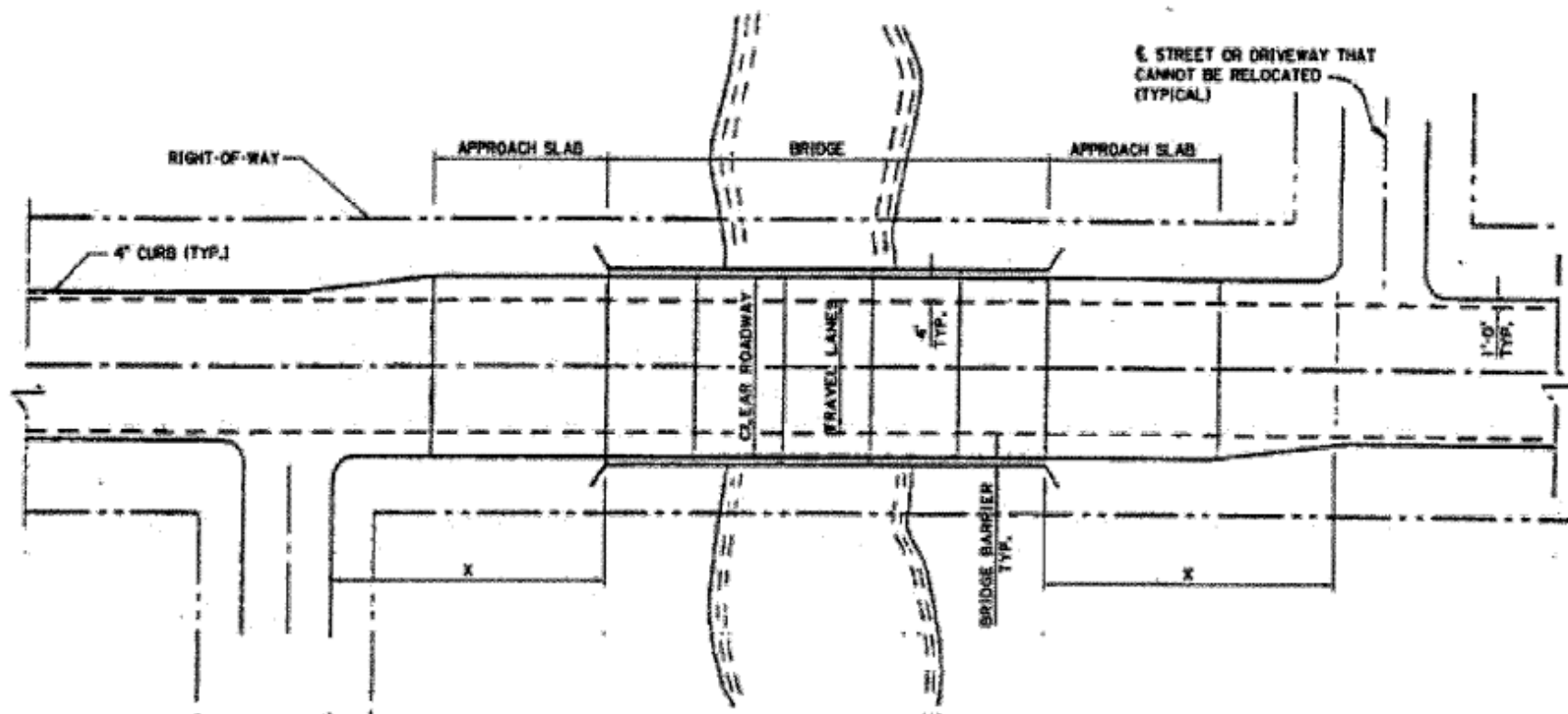
CHRISTOPHER P. KNOTTS, P.E.
CHIEF ENGINEER



DETAIL NO. 1. PLAN VIEW - NO SIDEWALKS

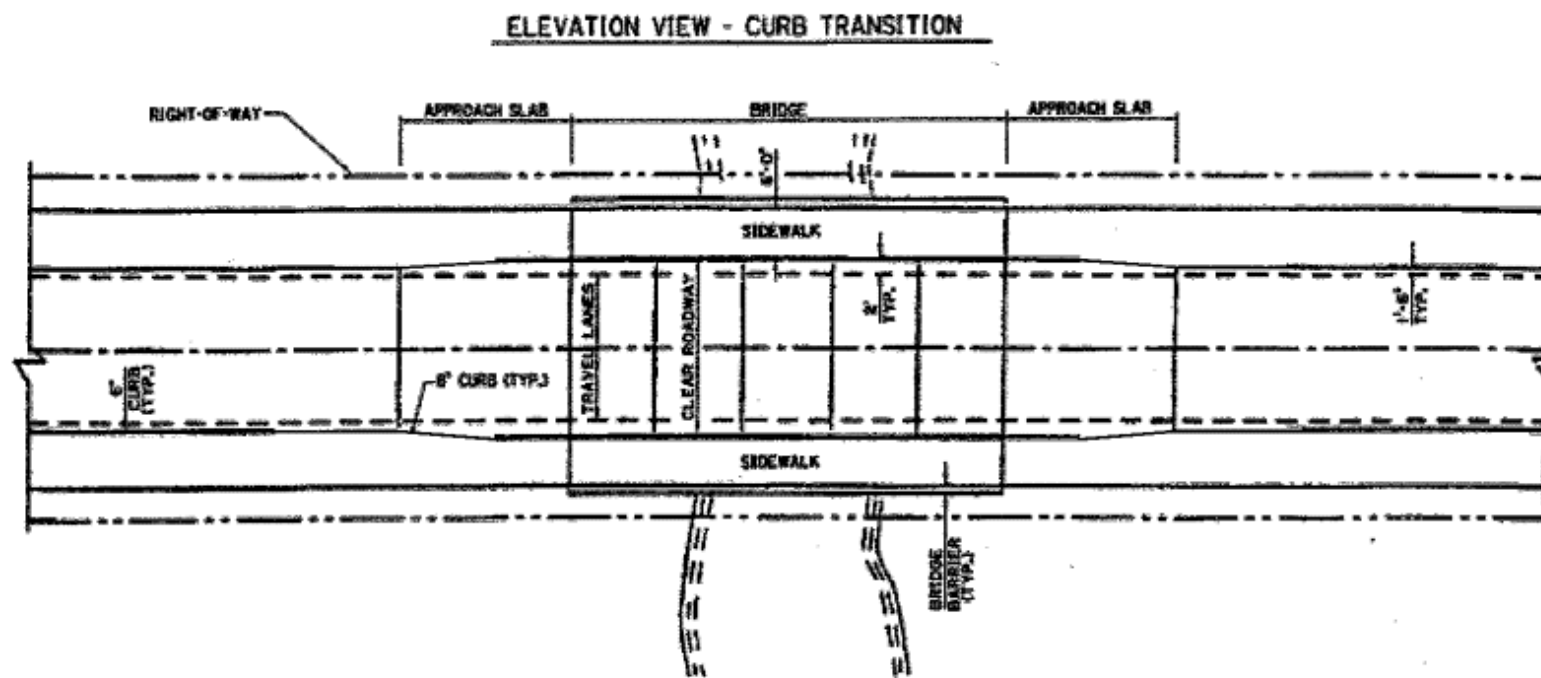
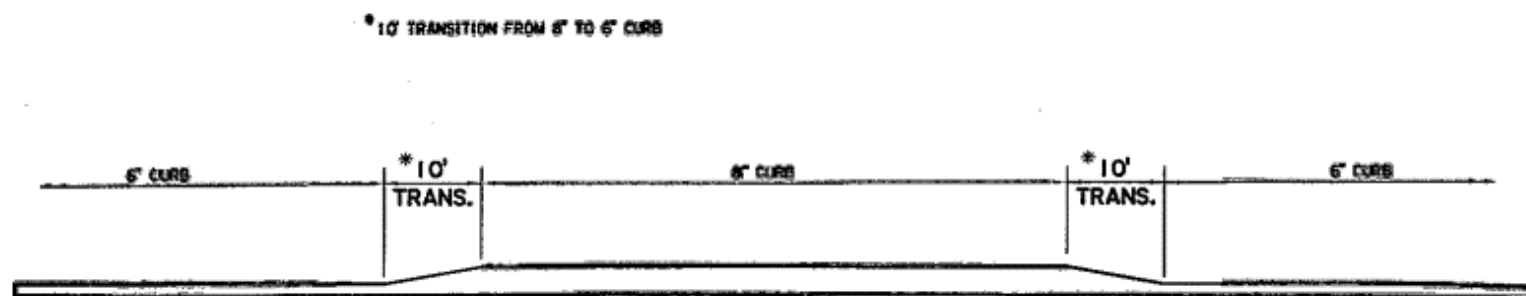
(WITH STANDARD GUARDRAIL LENGTH OF 75 FT.)

NO.	4
DATE	
BY	
CHECKED	
APPROVED	
DESIGNED	
DRAWN	
SCALE	
PROJECT	
DESCRIPTION	
DETAIL NO. 1	
GUARDRAIL, OTHER MAJOR RAIL, AND	
TRAILER, LIGHTING AND SIGNALS	
OF BRIDGES	
FORM NO. 71-31.1-A	
BRIDGE AND	
STRUCTURAL	
DESIGN	



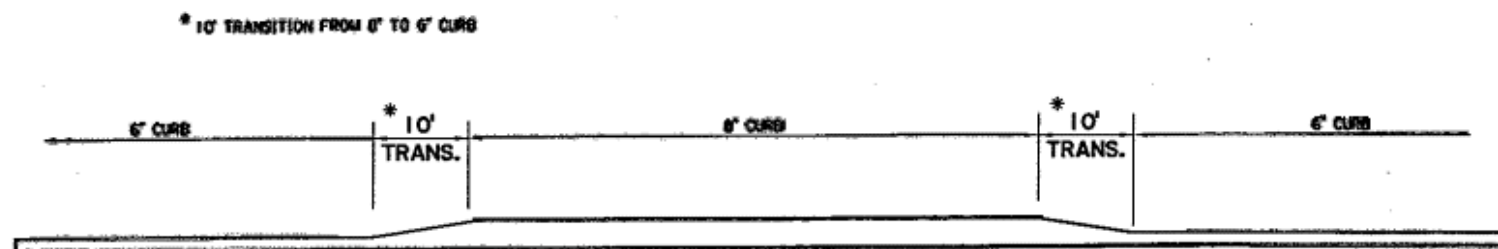
DETAIL NO. 2. PLAN VIEW - NO SIDEWALKS
 (INSUFFICIENT LENGTH "X" FOR STANDARD GUARDRAIL)

DATE	BY	CHECKED	APPROVED
DETAIL NO. 2 GUARDRAIL, OTHER BRIDGE RAIL, END TREATMENT, CURBS AND SIDEWALKS ON URBAN BRIDGES EDGM NO. 11.1.1.4			
BRIDGE AND STRUCTURAL DESIGN			

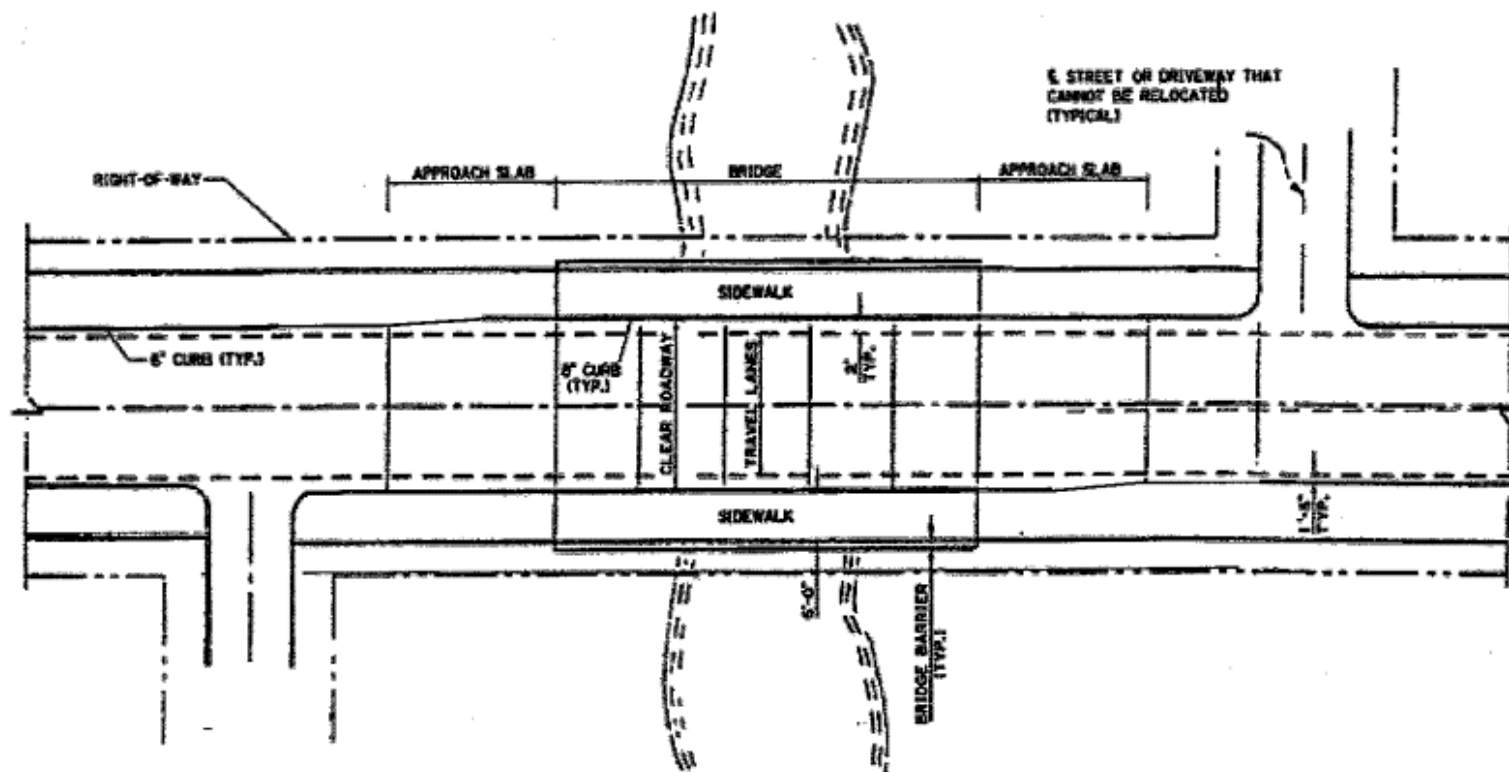


DETAIL NO. 5. PLAN VIEW - SIDEWALKS INSIDE OF BRIDGE RAIL
(WITHOUT SIDE STREETS OR DRIVEWAYS)

[illegible]



ELEVATION VIEW - CURB TRANSITION



DETAIL NO. 6. PLAN VIEW - SIDEWALKS INSIDE OF BRIDGE RAIL
(WITH SIDE STREETS OR DRIVEWAYS)

 DETAIL NO. 8 QUARTERMASTER'S OFFICE AND GENERAL STORE FOR THE USE OF THE ARMY AND NAVY WASHINGTON, D. C.																																													
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