



Office of Engineering
Project Development Division
Bridge Design Section
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John Bel Edwards, Governor
Shawn D. Wilson, Ph.D., Secretary
Christopher P. Knotts, Chief Engineer

MEMORANDUM

TO: ALL BRIDGE DESIGNERS - IN-HOUSE AND CONSULTANTS

FROM: ZHENGZHENG "JENNY" FU, P.E.
BRIDGE DESIGN ENGINEER ADMINISTRATOR

SUBJECT: BRIDGE DESIGN TECHNICAL MEMORANDUM NO. 81.1 (BDTM.81.1)
ACCESS SYSTEM DESIGN

DATE: July 19, 2022

Effectively immediately, this BDTM revises BDTM 81 and is to be implemented in accordance with the Bridge Design and Evaluation Manual (BDEM), Preface, section "Implementation Policy of BDEM and Revisions."

Summary of BDTM 81.1 Revisions to BDTM.81:

- BDTM 81.1 allows stainless steel and aluminum material for Ladder Safety System fall arresters. This is due to recently discovered difficulty in procuring completely stainless steel ladder safety systems required by BDTM.81.
- Minor wording/organization modifications.

Access System - General:

An Access System is fabricated and constructed to provide DOTD access to bridges for the purpose of inspection, operation and/or maintenance. An Access System includes one or more of the following components:

- Ladders
- Stairs
- Landings
- Platforms
- Walkways
- Working surfaces
- Edge and fall protection
- Other elements as required

Design Access Systems in accordance with OSHA 1910 Subpart D.

In the construction contract, require Access Systems to comply with the design provisions mentioned in this BDTM.

When a protective coating is specified for walking surfaces, which includes, but is not limited to, top surfaces of ladder rungs, stairs, landings, platforms, walkways, working surfaces, and other walking surfaces, specify in the contract to provide a compatible skid-resistant additive in the top coat.

At the earliest available milestone, and at 95% Final Plans, plan sheets for Access Systems shall be reviewed by the LA DOTD Mechanical Design Section.

Bridge Access Systems are to be paid for under the 807-03 series Structural Metalwork (Access System) pay item.

Ladders:

Cages and/or well systems are not permitted on bridge ladders.

Design ladders in accordance with ANSI A14.3 in addition to the above OSHA design provisions.

Ladder Safety Systems are required when ladders extend more than 24 feet above a lower level. When Ladder Safety Systems are required, specify them in the contract by including the following plan note:

Furnish and install a complete Ladder Safety System that complies with OSHA and ANSI A14.3 for each ladder run, consisting of a stainless steel vertical rail that affixes to the ladder rungs with stainless steel clamps and fasteners. A cable-based ladder safety system is not acceptable. Ladder Safety System shall come complete with an end stop, and a fall arrestor made from stainless steel or a combination of stainless steel and aluminum that slides within the vertical rail and can be installed or removed from the rail at any location. Furnish and supply a minimum of four (4) compatible safety harnesses with Ladder Safety System.

See attached sample Ladder Safety System.

Stairs:

On all new bridges, and where feasible to retrofit on existing structures, designers shall provide details and notes specifying stairs or alternating tread stair systems to minimize the need for ladders for access.

This technical memorandum is posted on the LA DOTD Website under *Inside La DOTD > Divisions - Engineering > Bridge Design > Technical Memoranda – BDTMs.*

Please contact Kelly Kemp (kelly.kemp@la.gov or 225-379-1809) if you have questions or comments.

ZZF/kmk

Attachment

c: Christopher P. Knotts (Chief Engineer)
Chad Winchester (Deputy Chief Engineer)
Peggy Paine (Critical Projects Division Administrator)

David Smith (Project Development Division Chief)
Michael T. Donmyer (Assistant Secretary of Operations)
David Miller (Chief Maintenance Administrator)
Nick Fagerburg (Bridge Maintenance Administrator)
Michael Vosburg (Chief Construction Division Engineer)
Brian Owens (Construction Engineer Administrator)
Chris Nickel (Pavement and Geotechnical Engineer Administrator)
Robert Isemann (Road Design Engineer Administrator)
Mark Chenevert (Contract Services Administrator)
Art Aguirre (FHWA)
District Administrators and ADAs of Engineering and Operations
District Bridge Engineers and Area Engineers

Attachment - Sample Ladder Safety System (For Information Purposes Only)

