Index 21210 Conduit Details

Design Criteria

NFPA National Electric Code; ***Structures Detailing Manual (SDM)***; ***AASHTO LRFD Bridge Design Specifications***, 6th Edition and ***NCHRP Report 350*** Test Level 4 Criteria (for traffic railing installations)

Design Assumptions and Limitations

This standard can be used for electrical service for highway or navigation lighting or ITS applications.

The details as shown for installing two 2" diameter conduits and associated pull boxes in traffic railings have been determined to be crashworthy in accordance with the requirements of ***NCHRP Report 350*** and the ***AASHTO LRFD Bridge Design Specifications***.

Plan Content Requirements

Provide supplemental designs, notes, details, wiring diagrams and wiring specifications in the plans as required to complement this Standard.

Coordinate with the highway lighting designer and/or navigation lighting designer as appropriate to determine the present and future electrical service requirements at the project location.

In the Structures and/or Retaining Wall Plans:

For Pull Boxes located within Traffic Railings, specify in the plans the type of Pull Boxes required: Pull Box "A" - multiple raceways; Pull Box "B" - single raceways. Generally, multiple raceway Pull Boxes can be used where services contained within individual raceways (conduits) can share a common Pull Box. Single raceway Pull Boxes should be used where it is desirable or required that services contained within individual raceways (conduits) be isolated from each other.

At locations where conduit exits the bridge or retaining wall and is designated for future use, specify in the plans the termination location for conduit. Evaluate the accessibility of the conduit termination points and, if necessary or even questionable, specify in the plans an in-ground Pull Box per Index 17700 in lieu of a driven Steel Pipe marker as shown in Index 21210.

Specify the type of fittings required at Expansion Joint locations on bridges: Expansion Fittings or Expansion / Deflection Fittings. Generally, Expansion Fittings can be typically used for bridges on tangent or large radius curved alignments where little or no transverse movement is expected at Expansion Joints. Expansion / Deflection Fittings are typically required for bridges on curved alignments or combined curved and tangent alignments where transverse movement is expected at Expansion Joints.

For electrical service, specify the use of THWN or XHHW conductors only.

Payment

Generally the cost of furnishing and installing Conduit, Pull Boxes, Expansion and Expansion / Deflection Fittings and all associated hardware required to complete the installation is included in the cost for the Traffic Railing or Pedestrian Railing (Parapet) that the conduit is installed in.

However, there may be special cases where other arrangements have been made.