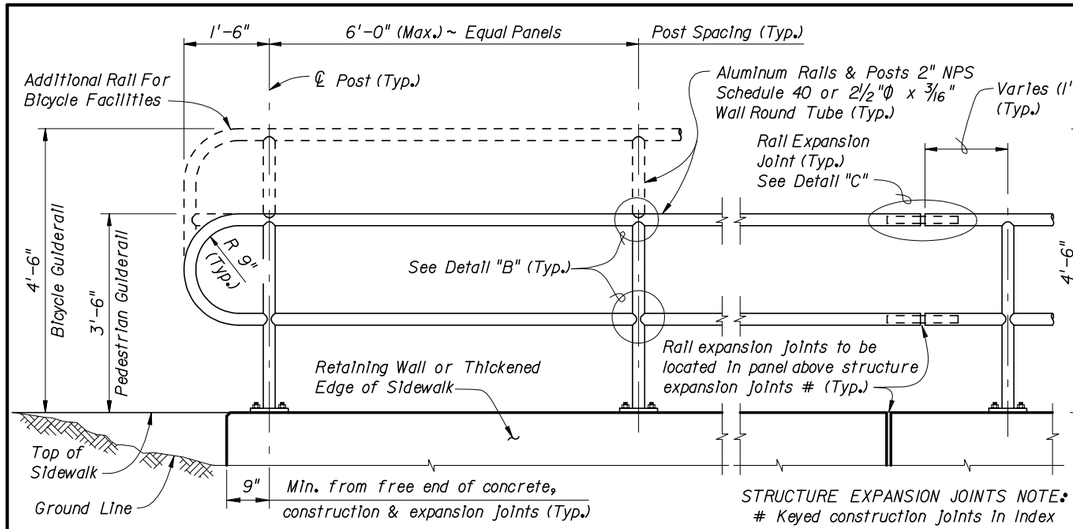
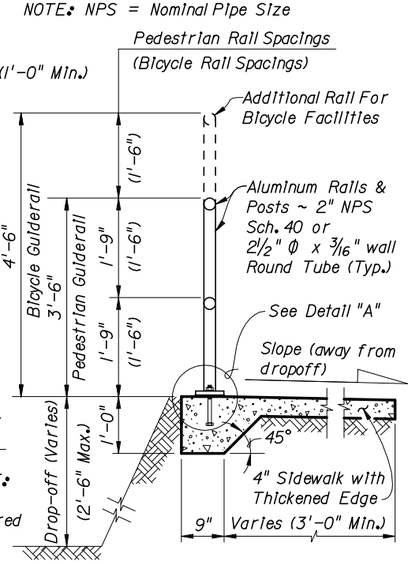


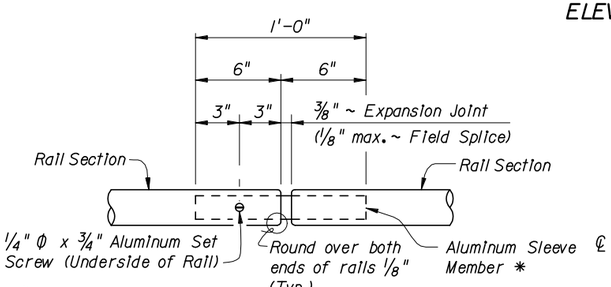
ELEVATION

STRUCTURE EXPANSION JOINTS NOTE:
Keyed construction joints in Index No. 520 Gravity Wall are not considered to be expansion joints.

NOTE: NPS = Nominal Pipe Size

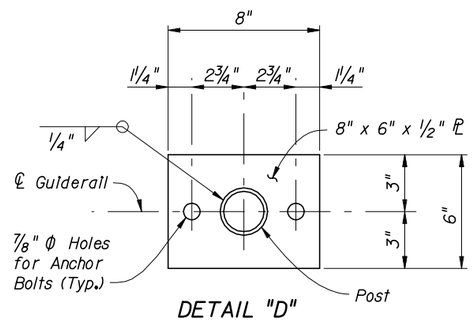


TYPICAL SECTION THRU RAILING
(Sidewalk Shown, Retaining Wall Similar)

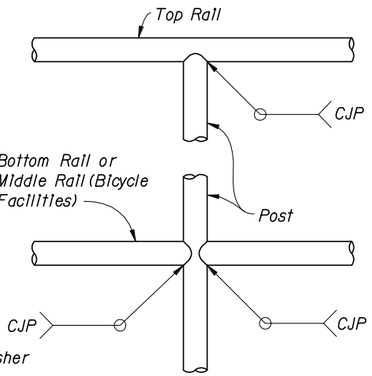


*Sleeve Member Sizes:
2½" Ø x 3/16" wall Tube Rail – 2" Ø x 3/16" wall Tube Sleeve
2" NPS Sch. 40 Pipe Rail – 1½" NPS Sch. 40 Pipe Sleeve

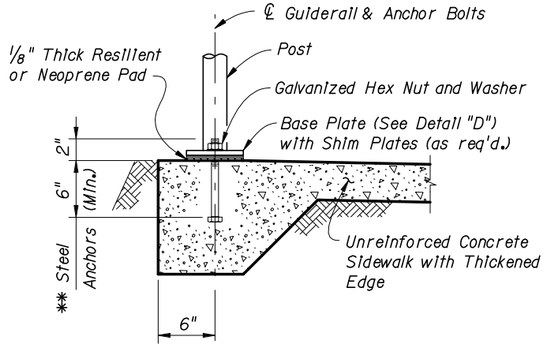
DETAIL "C" – EXPANSION JOINT
(FIELD SPLICE SIMILAR)



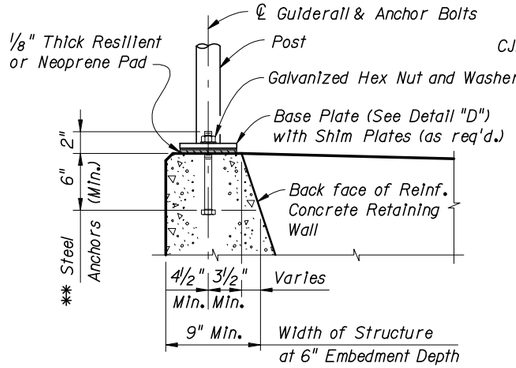
DETAIL "D"
BASE PLATE DETAIL



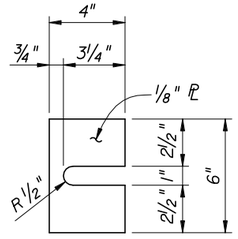
DETAIL "B"
RAIL TO POST CONNECTIONS



CONCRETE SIDEWALK MOUNTED



RETAINING WALL MOUNTED



SHIM PLATE DETAIL

** 2 ~ 1" Ø x 8" Steel Anchors: Galvanized Steel Bolts (As Shown) (CIP); Galvanized U-Bolts Permitted (CIP); Galvanized Adhesive Anchors Permitted (***); Expansion Anchors Not Permitted.

*** Adhesive anchors shall be fully threaded headless anchor bolts set in drilled holes (manufacturer recommended diameter) with an Adhesive Bonding Material System in accordance with Specification 416 and 937. The minimum embedment is 6".

DETAIL "A"

ALUMINUM PIPE GUIDERAIL NOTES

GENERAL SPECIFICATIONS:
The Florida Department of Transportation "Standard Specifications for Road and Bridge Construction".

DESIGN LIVE LOADS:
The Pedestrian Guiderail was tested by the FDOT Structural Research Center and found to resist an equivalent Service Loading of 50 lbs/ft acting simultaneously in the transverse and vertical direction when applied at the height of the Top Rail.

PAYMENT:
Guiderail shall be paid for under the contract unit price for Pipe Guiderail (Aluminum), LF (Item No. 515-1-2). Payment for the Guiderail will be plan quantity measured as the length along the center line of the top rail, and includes rails, posts, pickets, rail splice assembly, base plates, anchor bolts, nuts, washers and all incidental materials and labor required to complete installation of the Guiderail.

APPLICABILITY NOTE TO DESIGNER:
This Guiderail is not applicable for shielding drop-off hazards for vehicular traffic. This Guiderail is applicable for mounting on walls and other roadway structures subject to pedestrian or bicycle use where drop-off hazards do not exceed 2'-6". Also applicable for select uses on sidewalks, within service areas and similar locations where foundation support and anchorage are adequate or can be provided. For drop-off hazards exceeding 2'-6", Pedestrian/Bicycle Railings for customary applications are provided in Index No's. 850 or 860. For unusual site conditions a site specific railing is to be designed by the responsible engineer. Refer to the FDOT Plans Preparation Manual (Volume I), Chapters 4 & 8 for the definition of vehicular, pedestrian and bicyclist "drop-off hazards".

ADA REQUIREMENTS:
The Guiderail shown on this drawing does not conform with the requirements of the Americans with Disabilities Act (ADA) for ramps steeper than a 5% grade or stairways.

ALTERNATE DESIGN:
Manufacturers seeking approval of proprietary railing systems for inclusion on the Qualified Products List as pre-approved alternate designs must submit application along with design documentation showing the proprietary railing system is designed to meet the geometric requirements specified herein, provides a minimum 50 year design life and that deflections due to the Design Live Loads do not exceed 1½" at midspan of the top rail for the Pedestrian Guiderail and 2½" at midspan of the top rail for the Bicycle Guiderail. All fixed joints are to be either welded or commercially designed fixed joint systems. Each field section of railing must be identified with a permanently affixed label with the manufacturer's name and the FDOT QPL approval number. Labels must be a maximum of ½" by 3" and located at the base of a post within the field section. Project specific shop drawings are required for QPL approved railings, see Shop Drawings note.

PIPE RAILING & POSTS:
Structural Tube and Pipe shall be in accordance with ASTM B221 or ASTM B429, Alloy 6061-T6. End Panel 90° Bends and corner bends with a maximum 4'-0" post spacing, may be Alloy 6063-T6. Posts shall be fabricated and installed plumb, ± 1" tolerance when measured 3'-6" above the foundation.

BASE PLATE:
Base plate shall be in accordance with ASTM B209, Alloy 6061-T6.

SHIM PLATES:
Shim plates shall be in accordance with ASTM B209, Alloy 6061-T6 and shall be used for foundation elevation adjustments greater than ¼" or localized irregularities greater than ⅛". Field trim shim plates when necessary to match foundation contours. Beveled shim plates may be used in lieu of trimmed flat shim plates shown.

ANCHOR BOLTS, NUTS & WASHERS:
Galvanized Anchor Bolts shall be in accordance with ASTM F1554 Grade 36, Galvanized Nuts shall be in accordance with ASTM A563 or ASTM A194 and Galvanized Washers shall be in accordance with ASTM F436. After the nuts have been tightened, the anchor bolt threads shall be distorted or the nuts and bolts spot welded and coated with a galvanizing compound in accordance with the Specifications.

RESILIENT PADS OR NEOPRENE PADS:
Resilient or Neoprene pads shall be in accordance with Specification Section 932, except that testing of the finished pads will not be required. Neoprene pads shall be durometer hardness 60 or 70.

JOINTS:
All fixed joints are to be either welded all around and ground smooth or commercially designed fixed joint systems (soldered, brazed, fused, bonded or shrink fitted) approved by the Engineer. Mechanical joints other than expansion joints are not permitted unless approved by the Engineer. Posts shall be connected to the base plate by welding only. Field splices similar to the expansion joint detail may be approved by the Engineer to facilitate shipping and handling, but rails must be continuous across a minimum of two posts. Expansion joints shall be spaced at a maximum of 30'-0".

WELDING:
All welding shall be in accordance with the American Welding Society Structural Welding Code (Aluminum) ANSI/AWS D1.2 (current edition). Filler metal shall be either ER5183, ER5356 or ER5556. Nondestructive testing of the welds shall not be required.

SHOP DRAWINGS:
Complete details addressing project specific geometry (line & grade) showing post and expansion joint locations must be submitted by the Contractor for the Engineer's approval prior to fabrication of the Guiderail. Shop drawings shall be in accordance with the Specifications.

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

2006 FDOT Design Standards

ALUMINUM PIPE GUIDERAIL

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