



SHEET NO. 8 OF 10 SHEETS

NOTES

Hollow structural sections shall conform to the requirements of ASTM designation A 500, Grade B, Structural Steel Tubing and shall meet the longitudinal CVN requirements of 15 ft-lbs at 0°F.

All other steel shapes and plates shall conform to the requirements of AASHTO M 270 Grade 36 except posts shall conform to AASHTO M 270. Grade 50.

Bolts, cap screws and nuts shall conform to the requirements of ASTM designation A 307 except that threaded rods, nuts and washers shall conform to AASHTO M 164.

All bolts, nuts, cap screws, washers and lock washers shall be galvanized according to AASHTO M 232.

All posts, railing, rail splices and anchor rods shall be galvanized after shop fabrication according to AASHTO M 111 and ASTM A 385. Galvanized rail shall not be painted.

Ralling shall be according to Section 509 of the Standard Specifications, except as noted, and will be paid for at the contract unit price per foot for Steel Bridge Rail.

All field drilled holes shall be coated with an approved zinc rich paint before erection.

Posts shall not be located closer than 1'-3" to an existing bridge expansion joint or end of bridge.

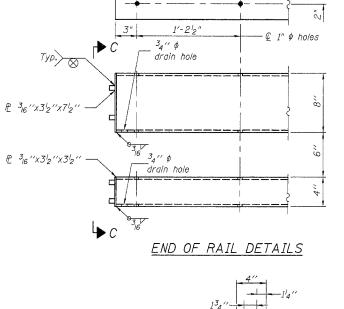
Steel Bridge Rail expansion joint shall be provided between any two (2) posts which span a bridge expansion joint. Bolts located at expansion joint shall be provided with locknuts and shall be tightened only to a point that will allow railing movement.

Provide one l_8 " and two l_6 " steel shims for 25% of the posts. Shims shall be similar to base plates in size and holes.

Expansion joint width shall be "D" at 50° F and shall be adjusted for other temperatures according to Article 503.10(c) of the Standard Specifications.

The Contractor shall use the capsule or the adhesive cartridge type anchor rods that have been previously tested and given a prior approval by the Department. The Contractor shall install these anchor rods in pre-drilled holes according to the manufacturer's recommendations and procedures. The capsule or the adhesive cartridge shall be sealed with pre-measured amounts of the adhesive chemical.

Nuts for I" \$\phi\$ threaded anchor rods connecting the base plate to the concrete shall be tightened to a snug fit and given an additional $l_{\it 8}$ turn.



12" ← ⁵_B " reduced base welded studs. Provide 4 - 58" washers and self-locking nuts or nuts Without Slot With Slot and jam nuts for or Recess quardrail connection shown on Std. 631032 VIEW B-B

DETAIL OF 5" \$ & 34" \$

ROUND HEAD BOLTS

-Locknut

³₄'' ∮ Holes in hollow

structural section

TOP RAIL

Locknut 1/8" x E Slotted Holes in hollow --

⁵8" Ø x 1³4" Cap Screw with flat washer & 34" \$ structural section X pipe spacer, $\frac{1}{2}$ " long.

VIEW C-C

RAIL SPLICE CONNECTION AT EXPANSION JT.

' at rail splice D at exp. jt. at 50° F. Hollow structural section 2½" Top <u>Rail</u> 2½" Bott. Rail

PLAN-BOTT. SPLICE PL *TYPICAL*

BILL OF MATERIAL

Item	Unit	Quantity
Steel Bridge Rail	Foot	103.6

SPLICE DIMENSIONS

T	D	Α	В	С	E
≤4′′	22"	1'-8''	2"	4''	25"
>4"\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	334''	2'-0"	2/2"	5/2"	312"
>6½"≤9"	5"	2'-4"	312"	6/2"	9"
>9"≤13"	7''	2'-10''	42"	8/2"	11''
Rail Splice	4"	1'-8''	2"	4′′	_

T = Total movement at expansion joint as shown on the design plans.

STEEL BRIDGE RAIL CURB MOUNTED F.A.P. ROUTE 714 - SECTION 134B
CHRISTIAN COUNTY STA. 432+32 S.N. 011-2505

⁵8″ ¢ x 1³4″ Ca<u>p Screw</u> ³₄′′ ¢ Holes in hollow ⁵8″ ¢ x 1³4″ Cap Screw structural section with flat washer with flat washer BOTTOM RAIL

SECTIONS AT RAIL SPLICE

2-34" \$\phi x 6" Round Head Bolts

with locknut and flat washer.

SECTION A-A

P 38" x 22" x A Top & Bottom

P 38" x 678" x A

Each Side

-Top of Pavement

in the field.

(With slot or approved recess in head.)

 $7_{8}^{\prime\prime}$ ϕ Holes in tubing and posts. Holes in hollow structural section may be drilled

2- ½" ∮ x 6" Round Head

locknut and flat washer.

-Base ₧ 1′′ x 12′′ x 1′-1′′

Bolts (With slot or approved recess in head.) with

⁵8″ ¢ Holes in hollow structural

section and post. Holes in hollow

structural section may be drilled

HENDERSON & ASSOCIATES, INC.

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W6x25-

l_B'' Fabric Brg. Pad

4-1" \$\phi\$ H.S. Threaded Anchor Rods with hex nuts and lock

10-31-02

Notes) Cost included with

railing.

R-31

washers, Epoxy grouted. (See

P 1" x 12" x 1'-1"

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BASE PLATE DETAIL

Slotted Holes

-HSS 8" x 4" x ⁵16"

-HSS 4" x 4" x 4

Top of Three Sided Structure

SECTION AT RAIL POST

 P_{8}^{3} " \times 2^{l_2} " \times ATop & Bottom

 P_{8}^{3} × 2^{7} × A

(6'-3" Maximum Post Spacing)

Each Side