

ORIGINATION FORM

Proposed Revisions to a Standard Plans Index
(Please provide all information – Incomplete forms will be returned)

Contact Information:

Date: September 5, 2017
Originator: **Richard Stepp**
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Email: richard.stepp@dot.state.fl.us

Standard Plans:

Index Number: **11870**
Sheet Number (s): 1,2,3
Index Title: Single Post Bridge Mounted Sign Support

Summary of the changes:

1. Update all concrete sections for new Single-Slope Traffic Railing.
2. For the through bolt option on Sheet 2, add nut countersink requirement in details and notes.



Commentary / Background:

This is part of the Index redevelopment project for Single-Slope Concrete Barriers and Traffic Railings.

Other Affected Offices / Documents: (Provide name of responsible personnel)

- | Yes | No | |
|-------------------------------------|-------------------------------------|--------------------------------------|
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | Other Standard Plans – Richard Stepp |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | FDOT Design Manual – |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Basis of Estimates Manual – |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Standard Specifications – |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Approved Product List – |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Construction – |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Maintenance – |

Origination Package Includes: (Email or hand deliver package to Derwood Sheppard)

- | Yes | N/A | |
|-------------------------------------|-------------------------------------|---|
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | Redline Mark-ups |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Proposed Standard Plan Instructions (SPI) |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Revised SPI |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Other Support Documents |

Implementation:

- Design Bulletin (Interim) DCE Memo Program Mgmt. Bulletin FY-Standard Plans (Next Release)

Contact the Roadway Design Office for assistance in completing this form

NOTES:

1. Work with Index 11860.
2. Shop Drawings: Not required.
3. Materials:
 - A. Steel Plate: ASTM A36 or ASTM A709 Grade 36
 - B. Steel Pipe (Support Post): ASTM A501 Schedule 40
 - C. Aluminum Pipe: ASTM B210 Alloy 6061-T6
 - D. Galvanized U-Bolts, Nuts and Plate Washer
 - a. U-Bolts: ASTM A449
 - b. Hex Nuts: ASTM A 536 Lock Nuts
 - c. Plate Washer: ASTM A 36 or ASTM A709 Grade 36 or 50
 - E. Galvanized Anchor bolts, Nuts and Washers:
 - a. Anchor Rod: ASTM F1554 Grade 55 fully threaded (for Adhesive Anchors)
 - b. Anchor Bolts: ASTM F1554 Grade 55 Grade A Hex
 - c. Nuts: ASTM A563 Heavy Hex Locking
 - d. Washers: ASTM F436
 - F. Adhesive Anchor Bonding Material: Specification Section 931 Type HV Adhesive.
 - G. Weld Material: E70XX
 - H. Snap-In Post Cap: UV and weather-resistant glass-filled polyester cap

4. Coating:

- A. U-Bolts, Threaded Rods, Nuts and Washers: ASTM F2329
- B. Other Steel: ASTM A123

5. Fabrication:

- A. Weld: Specification Section 460-6.4
- B. Hot dip galvanize after fabrication

6. Construction:

- A. Locate Sign Support a minimum of 5 feet from an open joint or transition (sign stationing may be adjusted to accommodate this requirement).
- B. Base plate must be flush with back of Traffic Railing
- C. Anchors in Traffic Railings:
 - a. Install Adhesive Anchors in accordance with Specification section 416 except perform field test on one anchor per sign support location.
 - b. Use templates and tie anchors as necessary to maintain correct placement of C-I-P Embedded Anchors
 - c. Do not drill into existing conduit
- D. Temporary Signs on Permanent Traffic Railings: Same as Permanent except Field testing of anchors is not required
- E. Temporary Signs on Temporary Railings/Barriers:
 - a. Install Sign Supports at the midpoint along the length of a single segment
 - b. Avoid drilling through existing reinforcement; use of metal detector not required
 - c. Field testing of anchors is not required

7. Removal of Temporary Signs on Permanent Traffic Railings:

- A. Cut anchor rods flush with the top of the traffic railing
- B. Coat anchors with Type F-1 epoxy to prevent corrosion
 - a. Extend coating 2 inches beyond edge of cut anchor rods
 - b. Epoxy coating 1/16" thick minimum

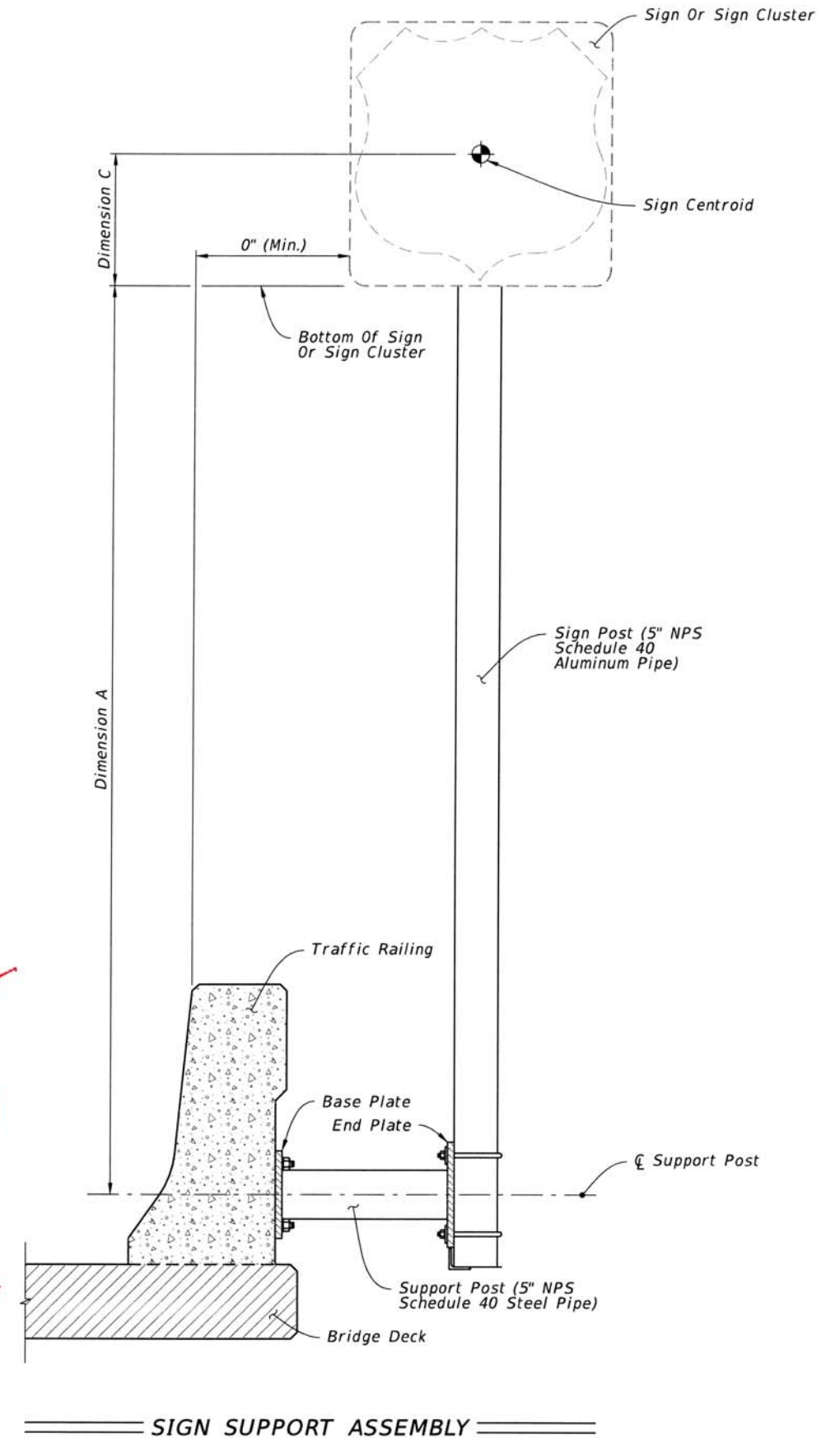
8. Payment:

Include the cost of all materials and labor in the cost of the single post sign assembly.

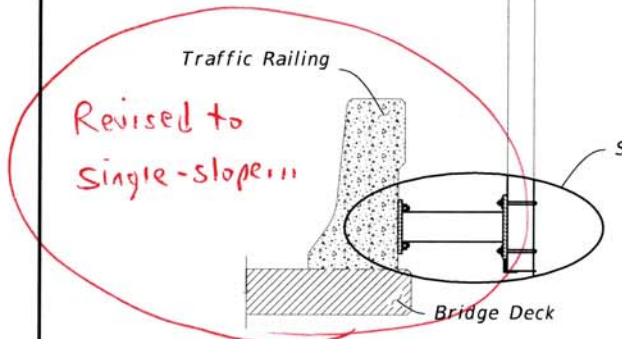
SIGN LIMITATIONS TABLE	
MAX. SIGN AREA (SF)	MAX. SIGN CENTROID HEIGHT (DIM. A + DIM. C)
25	9'-7"

Dimension A = Distance from centerline of the Support Post to the bottom of the sign or sign cluster.
 Dimension C = Vertical distance from the bottom of the sign or sign cluster to the Centroid of the sign or sign cluster.

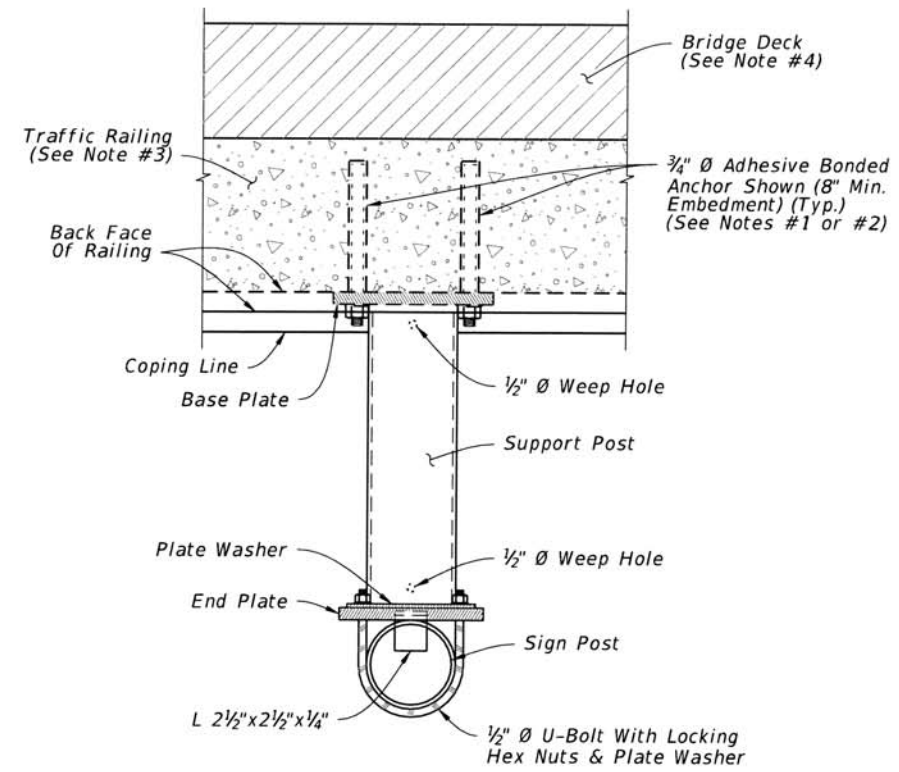
Revised to single-slope



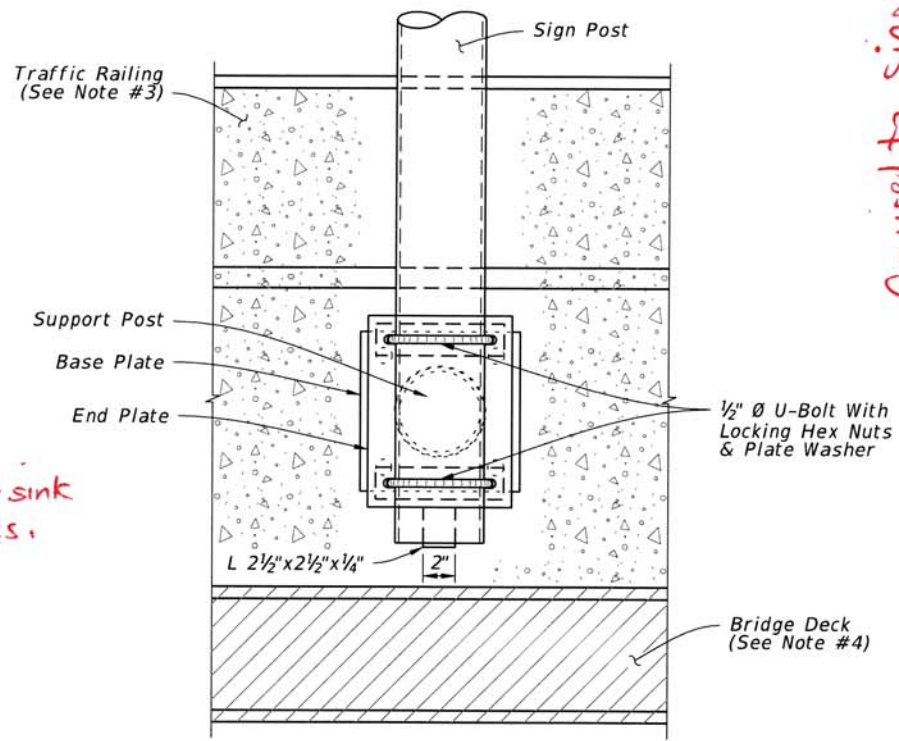
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SIGN SUPPORT ASSEMBLY



PLAN



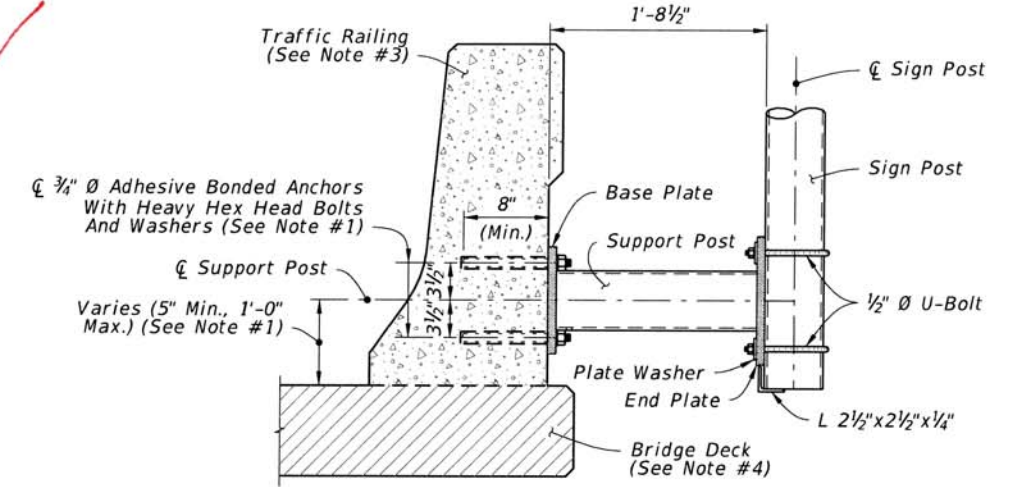
ELEVATION

SIGN SUPPORT BRACKET

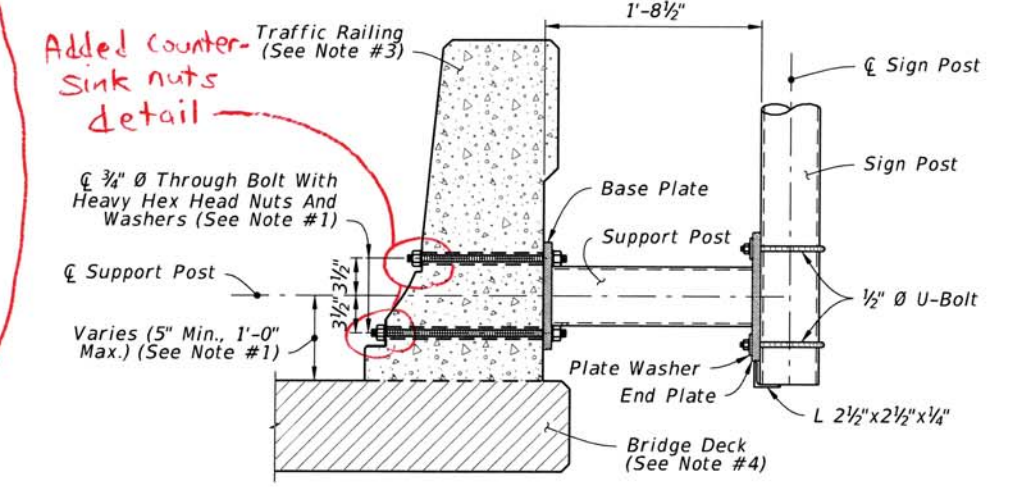
NOTES:

1. Existing Traffic Railings:
 - A. Locate existing conduit prior to drilling and adjust placement of base plate as necessary to avoid damaging existing conduit. Base plate must be flush with back of traffic railing. Maintain a minimum cover 2" from face of traffic railing to tip of Adhesive Anchor.
 - B. For concrete parapets less than 10" thick, through bolt 3/4" Ø Heavy Hex Head Bolts with Nuts and Washers in lieu of Adhesive Bonded Anchors. Bolt heads shall not protrude more than 1 1/2" beyond traffic face of railing.
 - C. For through bolting, cut front face of the traffic railing so that washer is flush with the concrete.
2. New Traffic Railings:
 - A. Optional Couplers are shown for slipforming; keep Anchor Bolt coupler threads free of concrete.
3. 32" F-Shape Traffic Railing shown, other Traffic Railings and Parapets are similar.
4. Bridge Deck shown, Approach Slab and Retaining Wall are similar.

← Added counter-sink notes.

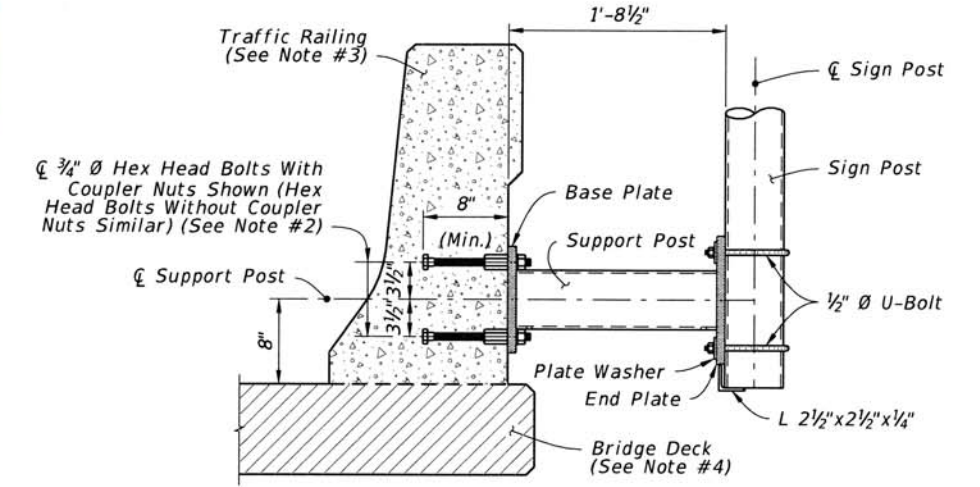


ADHESIVE BOND



THROUGH BOLTING

TYPICAL SECTION - EXISTING RAILING

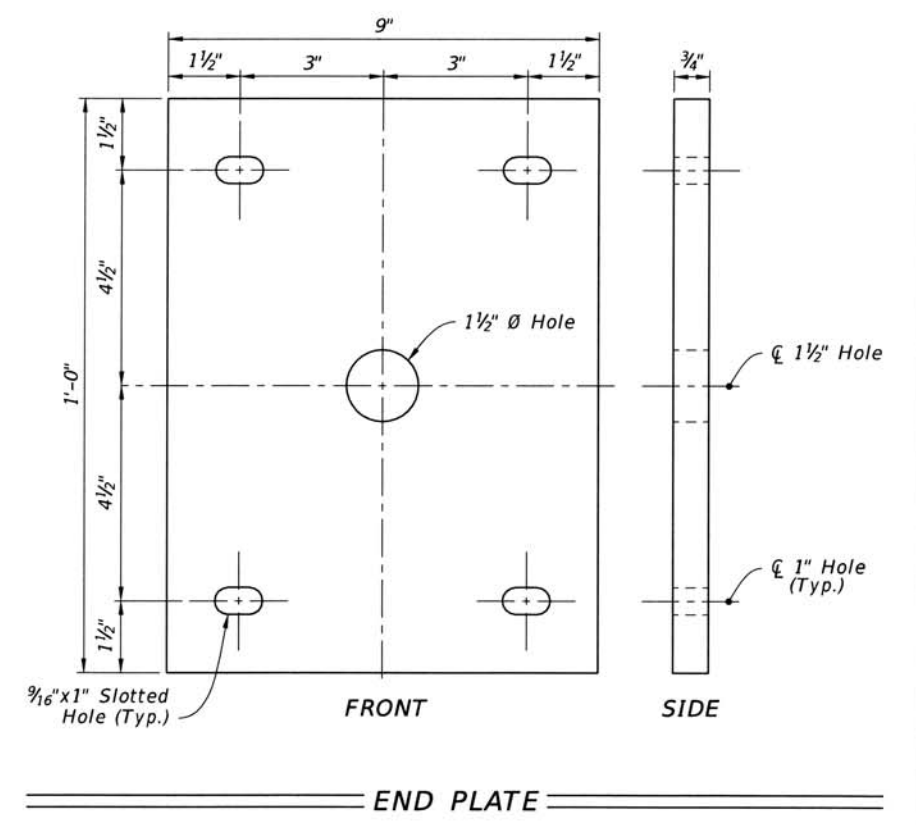
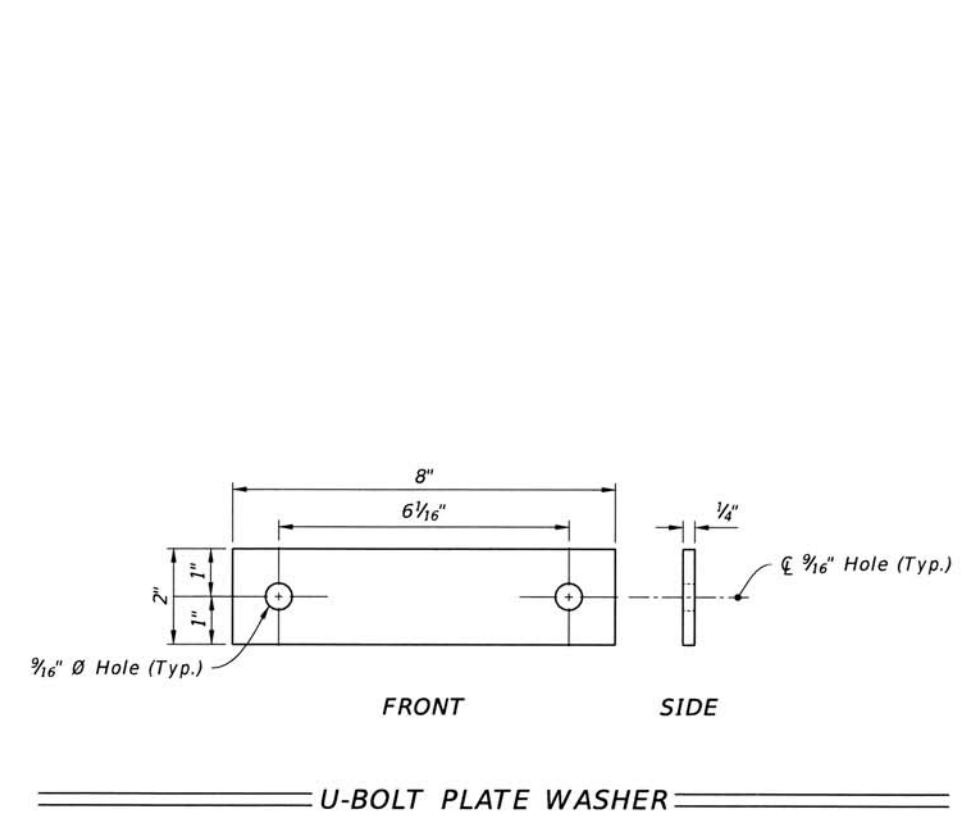
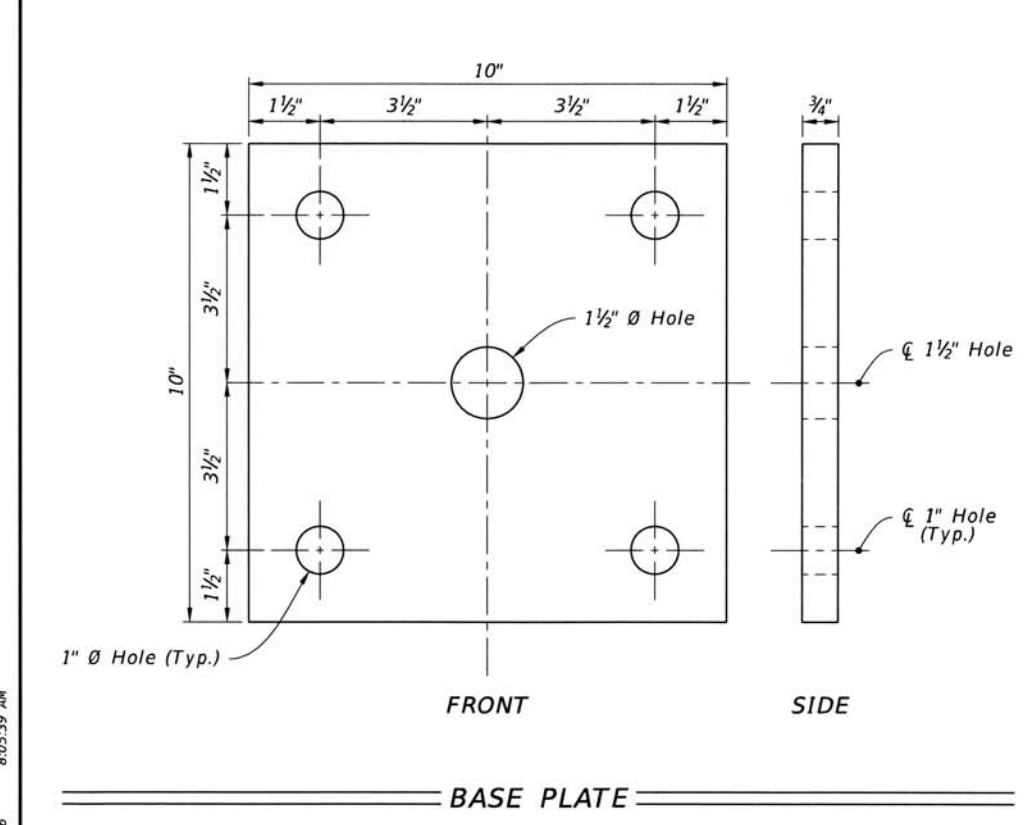
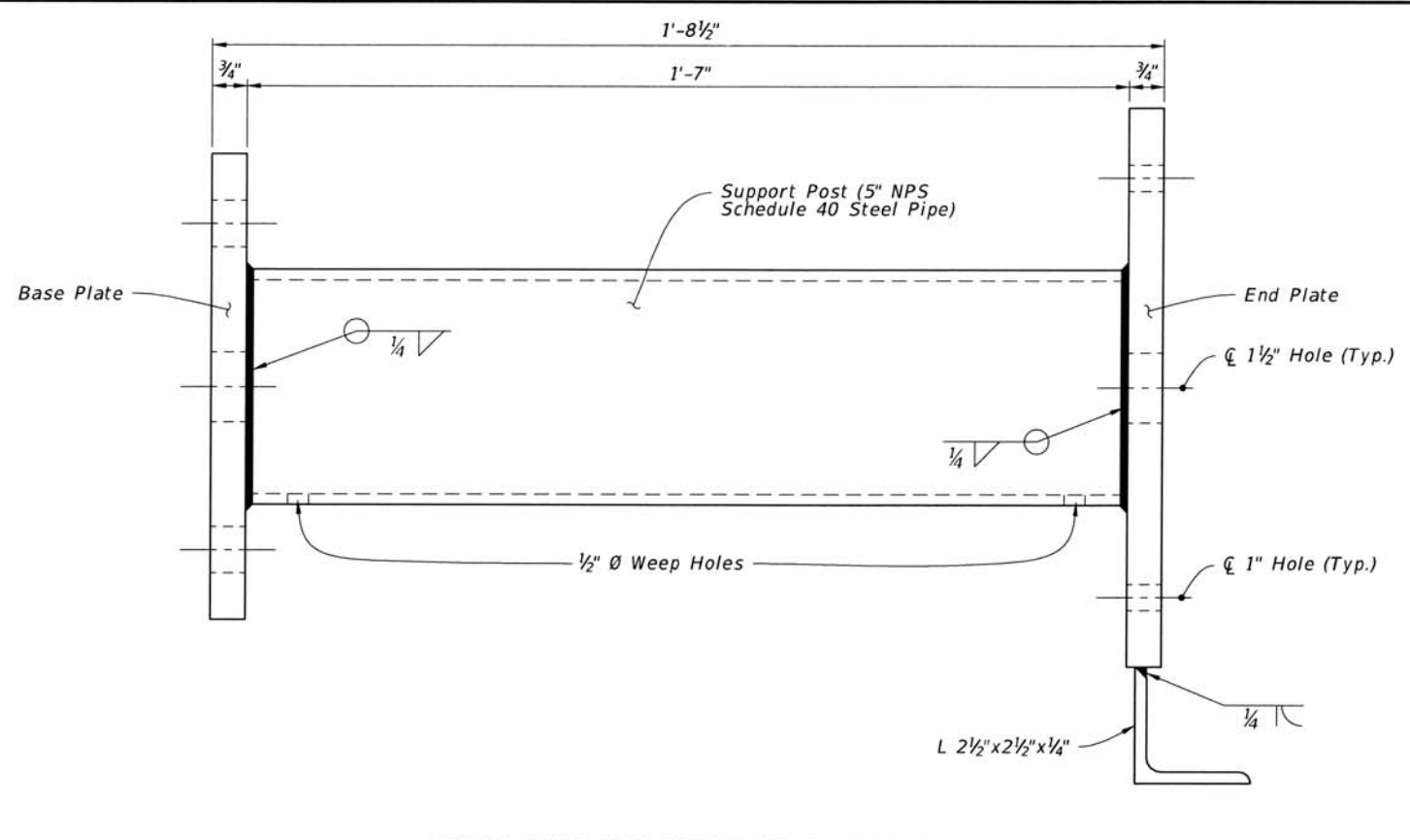
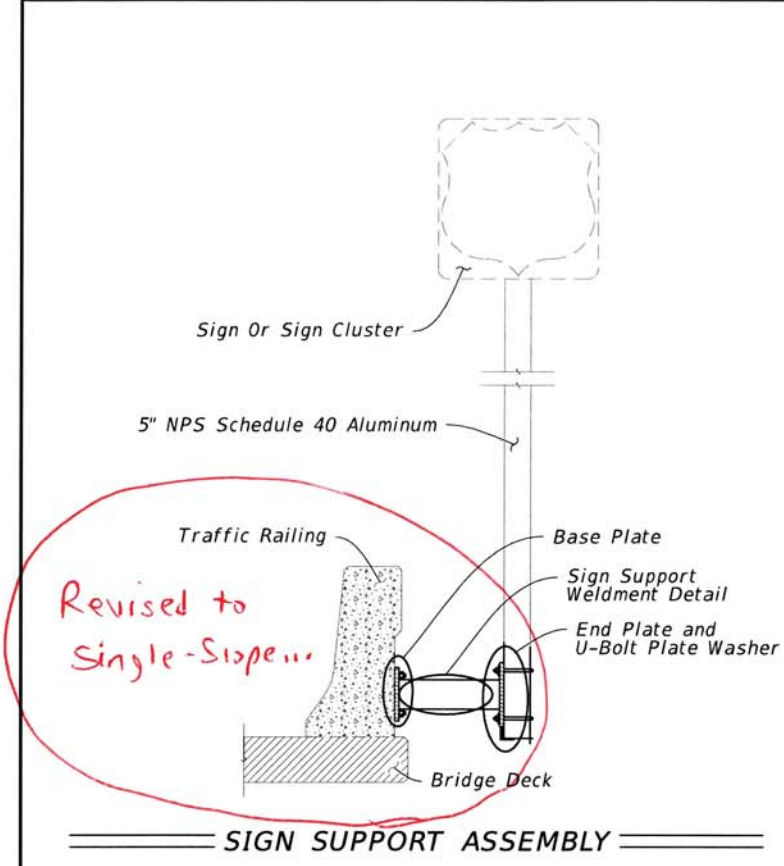


TYPICAL SECTION - NEW CONSTRUCTION

Revised to single-slope

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LAST REVISION 11/01/16	REVISION	DESCRIPTION:	 FY 2017-18 DESIGN STANDARDS	SINGLE POST BRIDGE MOUNTED SIGN SUPPORT 700-012	INDEX NO. 11870	SHEET NO. 2 of 3
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10/14/2016 8:05:39 AM

LAST REVISION 01/01/16	DESCRIPTION:	 FY 2017-18 DESIGN STANDARDS	SINGLE POST BRIDGE MOUNTED SIGN SUPPORT 700-012	INDEX NO. 11870	SHEET NO. 3 of 3
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NOTES:

1. Work with Index 700-010.

2. Shop Drawings: Not required.

3. Materials:

- A. Steel Plate: ASTM A36 or ASTM A709 Grade 36
- B. Steel Pipe (Support Post): ASTM A501 Schedule 40
- C. Aluminum Pipe: ASTM B210 Alloy 6061-T6
- D. Galvanized U-Bolts, Nuts and Plate Washer
 - a. U-Bolts: ASTM A449
 - b. Hex Nuts: ASTM A 536 Lock Nuts
 - c. Plate Washer: ASTM A 36 or ASTM A709 Grade 36 or 50
- E. Galvanized Anchor bolts, Nuts and Washers:
 - a. Anchor Rod: ASTM F1554 Grade 55 fully threaded (for Adhesive Anchors)
 - b. Anchor Bolts: ASTM F1554 Grade 55 Grade A Hex
 - c. Nuts: ASTM A563 Heavy Hex Locking
 - d. Washers: ASTM F436
- F. Adhesive Anchor Bonding Material: Specification Section 931 Type HV Adhesive.
- G. Weld Material: E70XX
- H. Snap-In Post Cap: UV and weather-resistant glass-filled polyester cap

4. Coating:

- A. U-Bolts, Threaded Rods, Nuts and Washers: ASTM F2329
- B. Other Steel: ASTM A123

5. Fabrication:

- A. Weld: Specification Section 460-6.4
- B. Hot dip galvanize after fabrication

6. Construction:

- A. Locate Sign Support a minimum of 5 feet from an open joint or transition (sign stationing may be adjusted to accommodate this requirement).
- B. Base plate must be flush with back of Traffic Railing
- C. Anchors in Traffic Railings:
 - a. Install Adhesive Anchors in accordance with Specification section 416 except perform field test on one anchor per sign support location.
 - b. Use templates and tie anchors as necessary to maintain correct placement of C-I-P Embedded Anchors
 - c. Do not drill into existing conduit
- D. Temporary Signs on Permanent Traffic Railings: Same as Permanent except Field testing of anchors is not required
- E. Temporary Signs on Temporary Railings/Barriers:
 - a. Install Sign Supports at the midpoint along the length of a single segment
 - b. Avoid drilling through existing reinforcement; use of metal detector not required
 - c. Field testing of anchors is not required

7. Removal of Temporary Signs on Permanent Traffic Railings:

- A. Cut anchor rods flush with the top of the traffic railing
- B. Coat anchors with Type F-1 epoxy to prevent corrosion
 - a. Extend coating 2 inches beyond edge of cut anchor rods
 - b. Epoxy coating 1/16" thick minimum

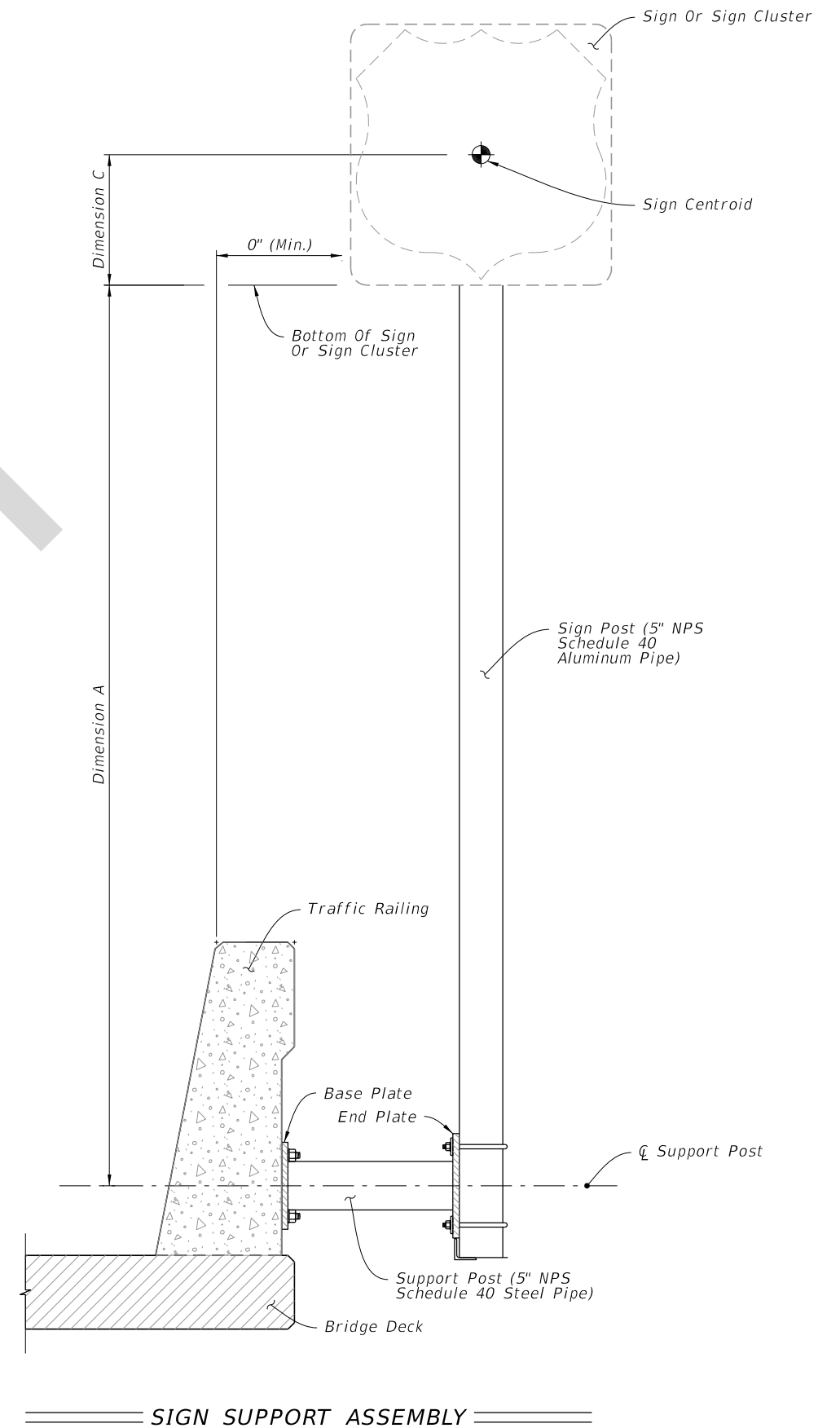
8. Payment:

Include the cost of all materials and labor in the cost of the single post sign assembly.

SIGN LIMITATIONS TABLE	
MAX. SIGN AREA (SF)	MAX. SIGN CENTROID HEIGHT (DIM. A + DIM. C)
25	9'-7"

Dimension A = Distance from centerline of the Support Post to the bottom of the sign or sign cluster.

Dimension C = Vertical distance from the bottom of the sign or sign cluster to the Centroid of the sign or sign cluster.



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LAST REVISION	DESCRIPTION:
11/01/17	

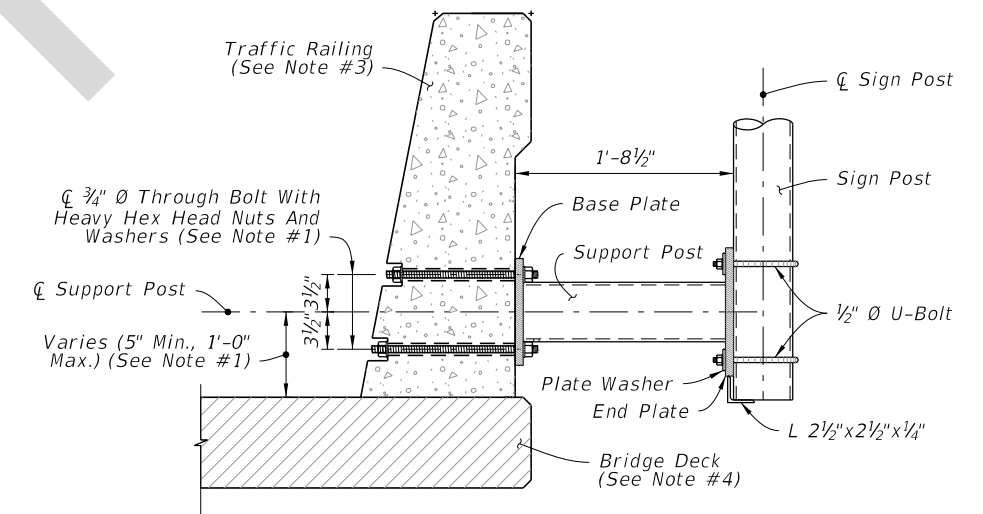
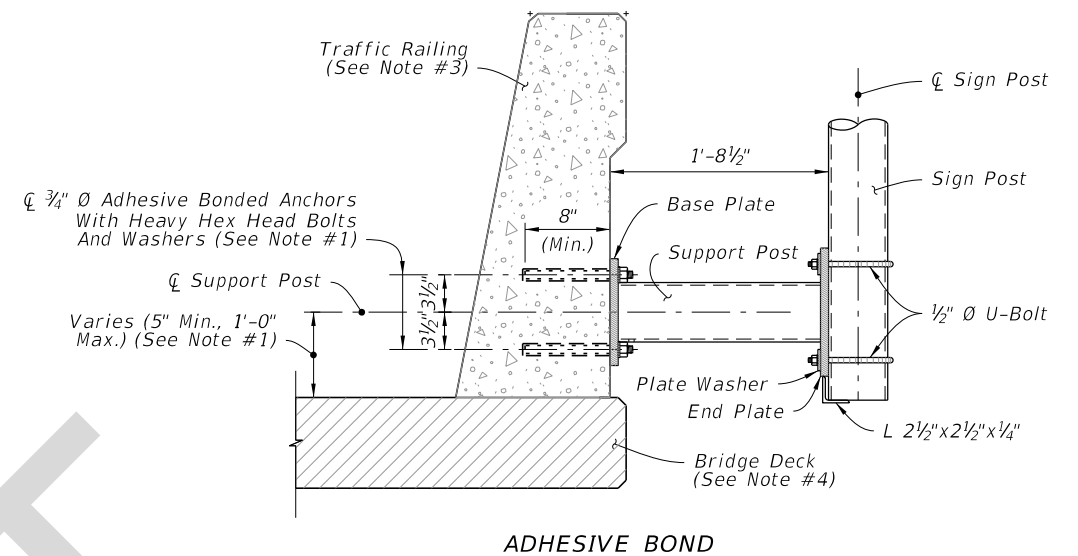
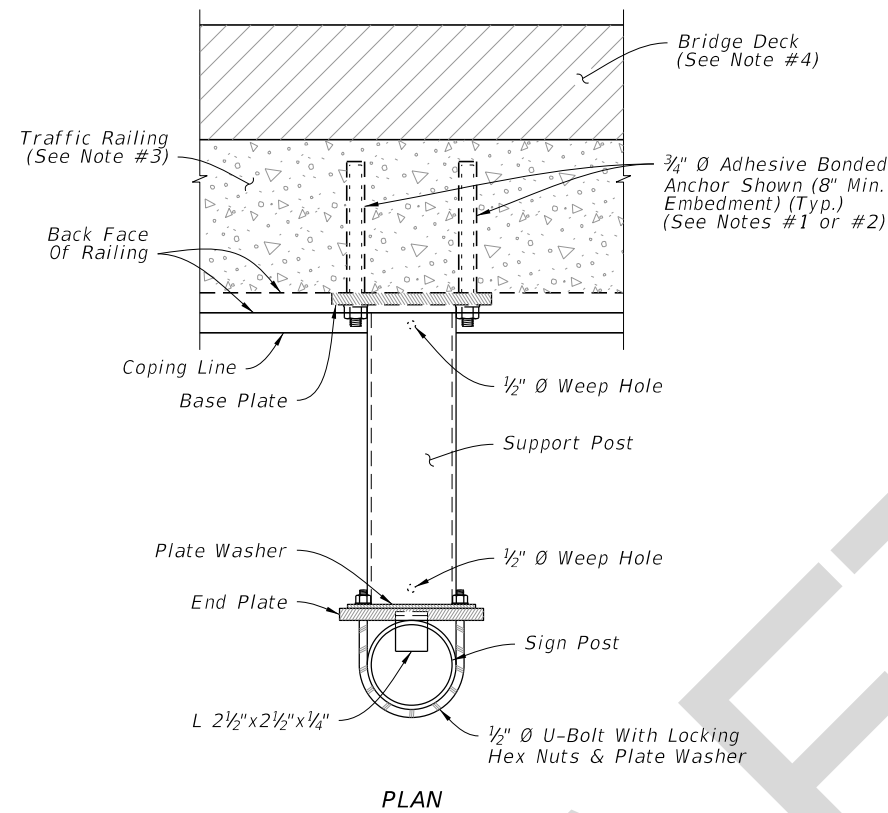
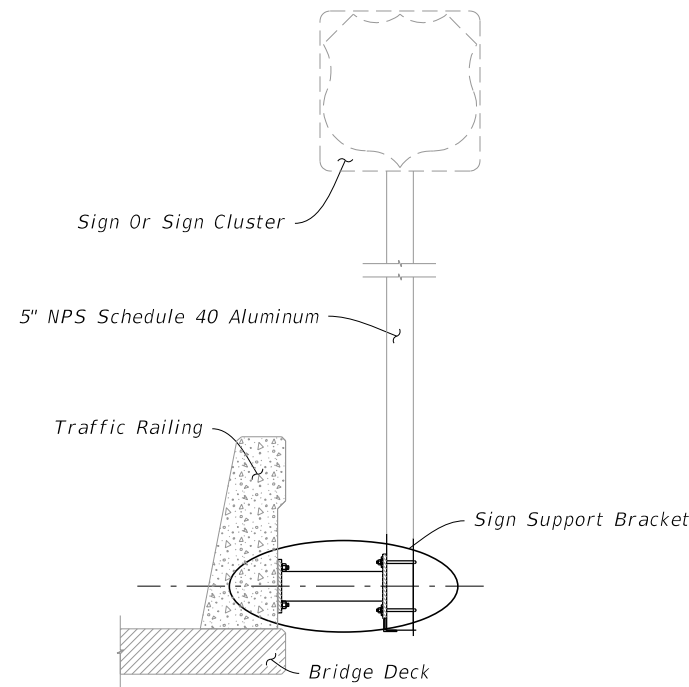


FY 2018-19
STANDARD PLANS

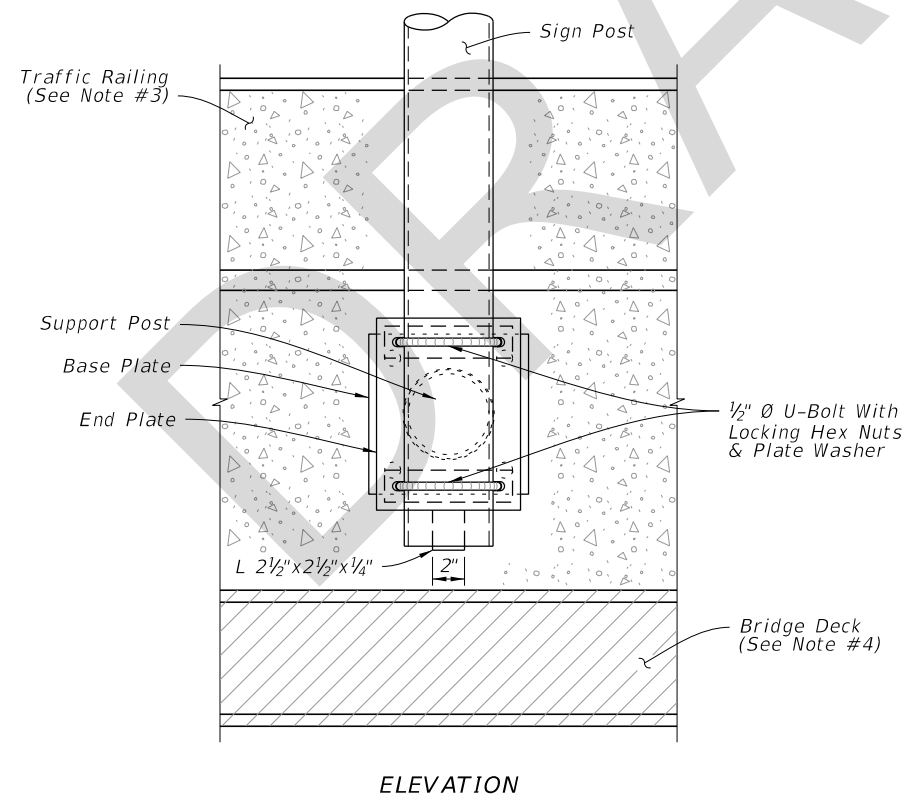
SINGLE POST BRIDGE MOUNTED SIGN SUPPORT

INDEX
700-012

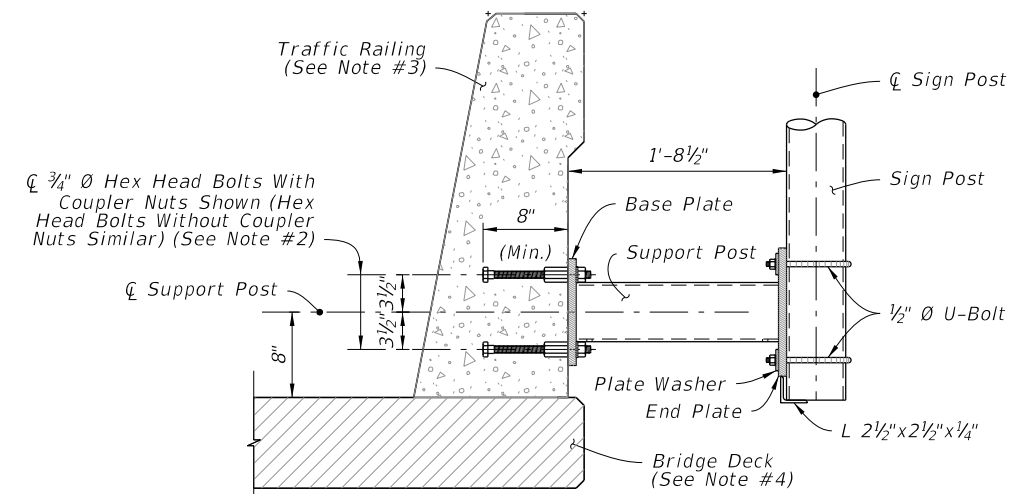
SHEET
1 of 3



TYPICAL SECTION - EXISTING RAILING



SIGN SUPPORT BRACKET



NOTES:

1. Existing Traffic Railings:

A. Locate existing conduit prior to drilling and adjust placement of base plate as necessary to avoid damaging existing conduit. Base plate must be flush with back of traffic railing. Maintain a minimum cover 2" from face of traffic railing to tip of Adhesive Anchor.

B. For concrete parapets less than 10" thick, through bolt 3/4" Ø Heavy Hex Head Bolts with Nuts and Washers in lieu of Adhesive Bonded Anchors. Bolt heads shall not protrude more than 1 1/2" beyond traffic face of railing.

C. For through bolting, countersink the nut and washer so that the bolt and nut does not extend beyond the face of the traffic railing. Do not exceed a countersink depth and diameter of 2 1/2".

2. New Traffic Railings:

A. Optional Couplers are shown for slipforming; keep Anchor Bolt coupler threads free of concrete.

3. 36" Single-Slope Traffic Railing shown, other Traffic Railings and Parapets are similar.

4. Bridge Deck shown, Approach Slab and Retaining Wall are similar.

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LAST REVISION	DESCRIPTION:
11/01/17	

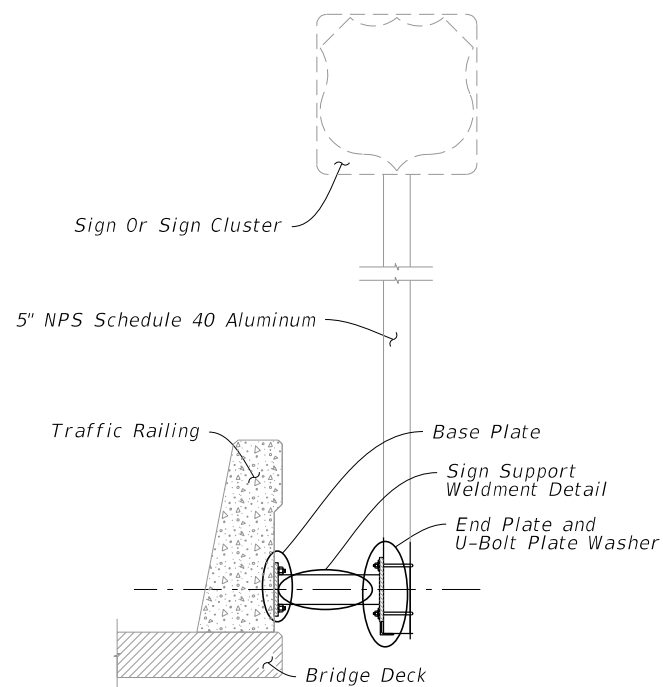


FY 2018-19
STANDARD PLANS

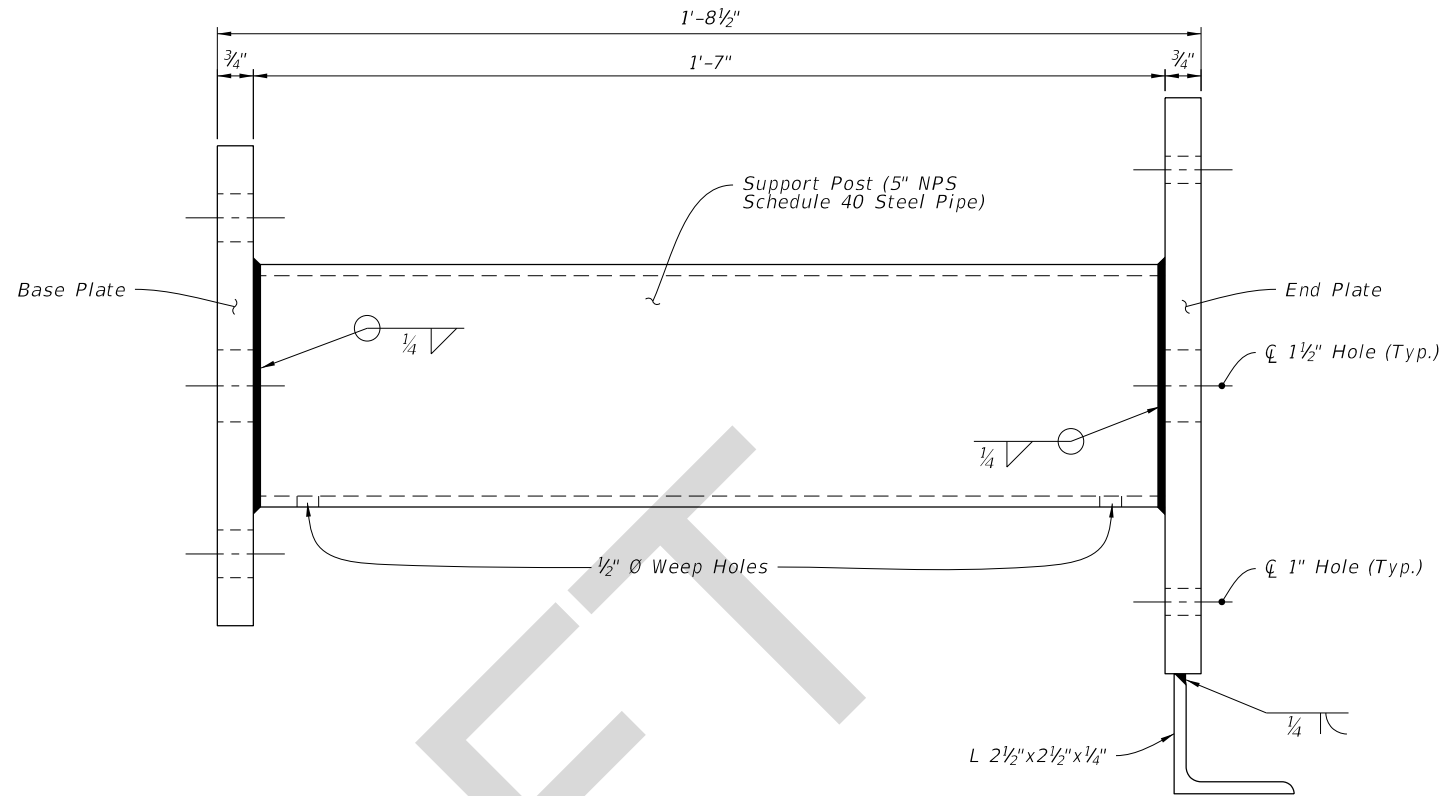
SINGLE POST BRIDGE MOUNTED SIGN SUPPORT

INDEX
700-012

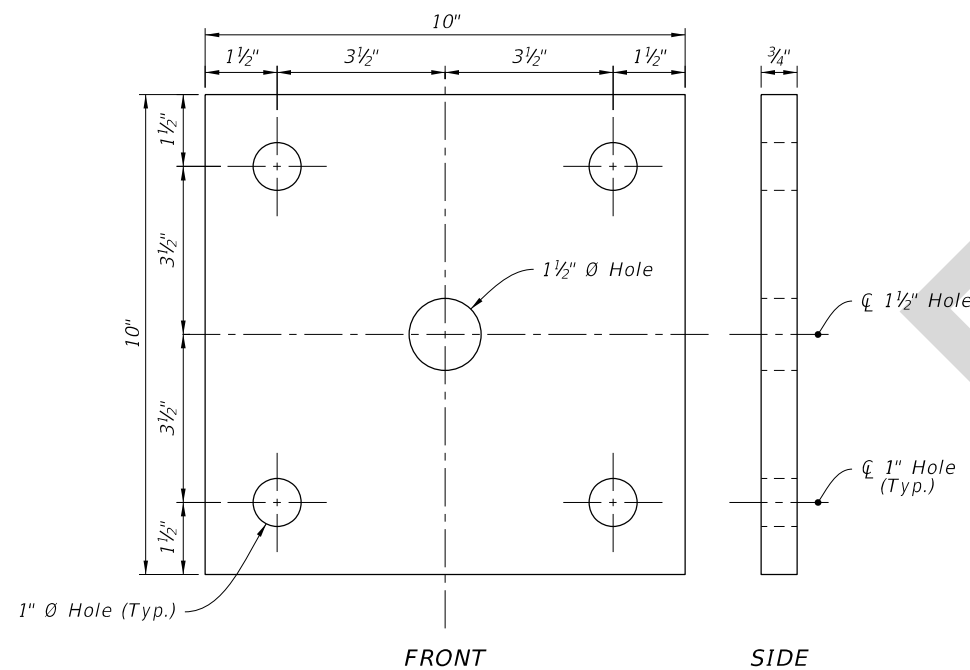
SHEET
2 of 3



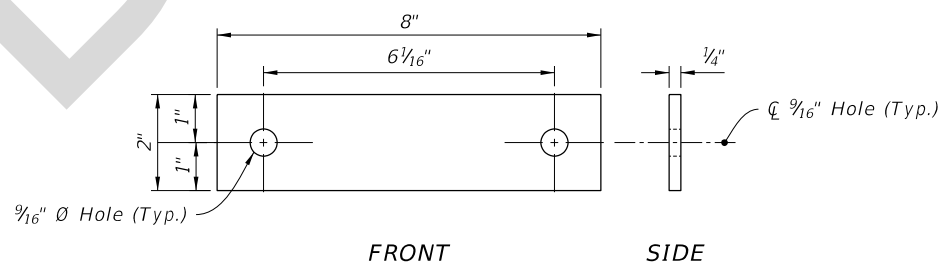
SIGN SUPPORT ASSEMBLY



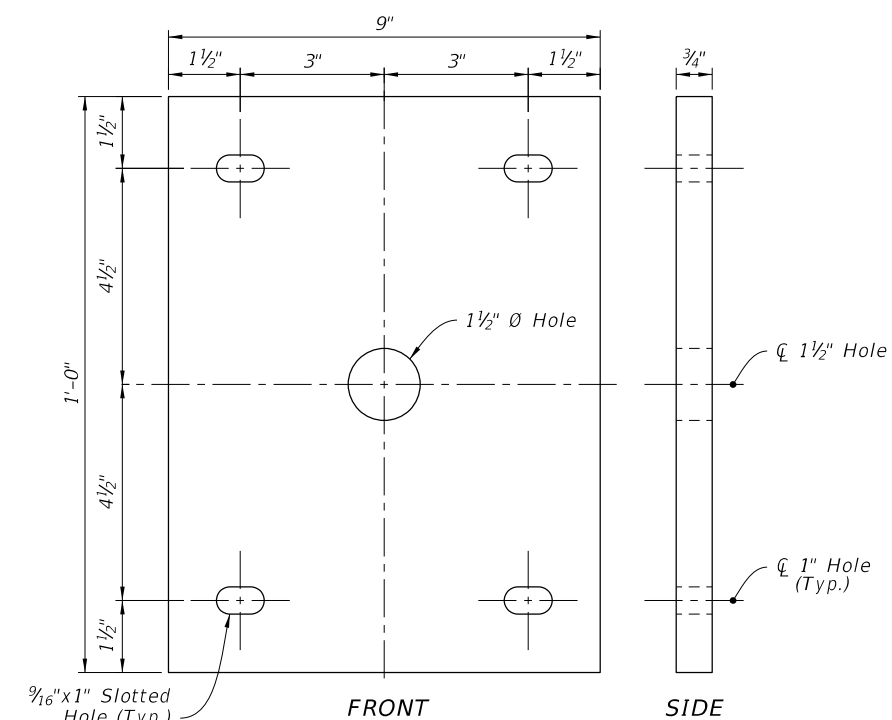
SIGN SUPPORT WELDMENT DETAIL



BASE PLATE



U-BOLT PLATE WASHER



END PLATE

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LAST REVISION 11/01/17

DESCRIPTION:



FY 2018-19 STANDARD PLANS

SINGLE POST BRIDGE MOUNTED SIGN SUPPORT

INDEX 700-012

SHEET 3 of 3