

ANTI-ICING SYSTEM PHASE I

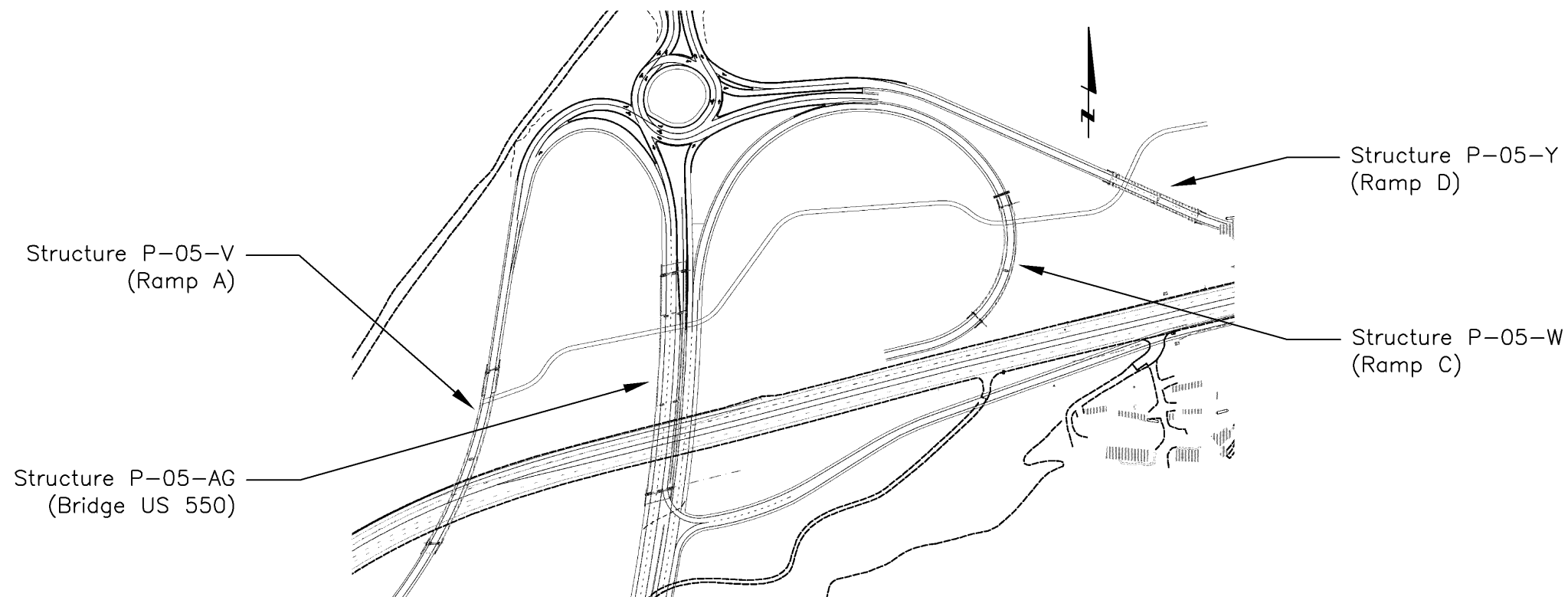
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GENERAL NOTES

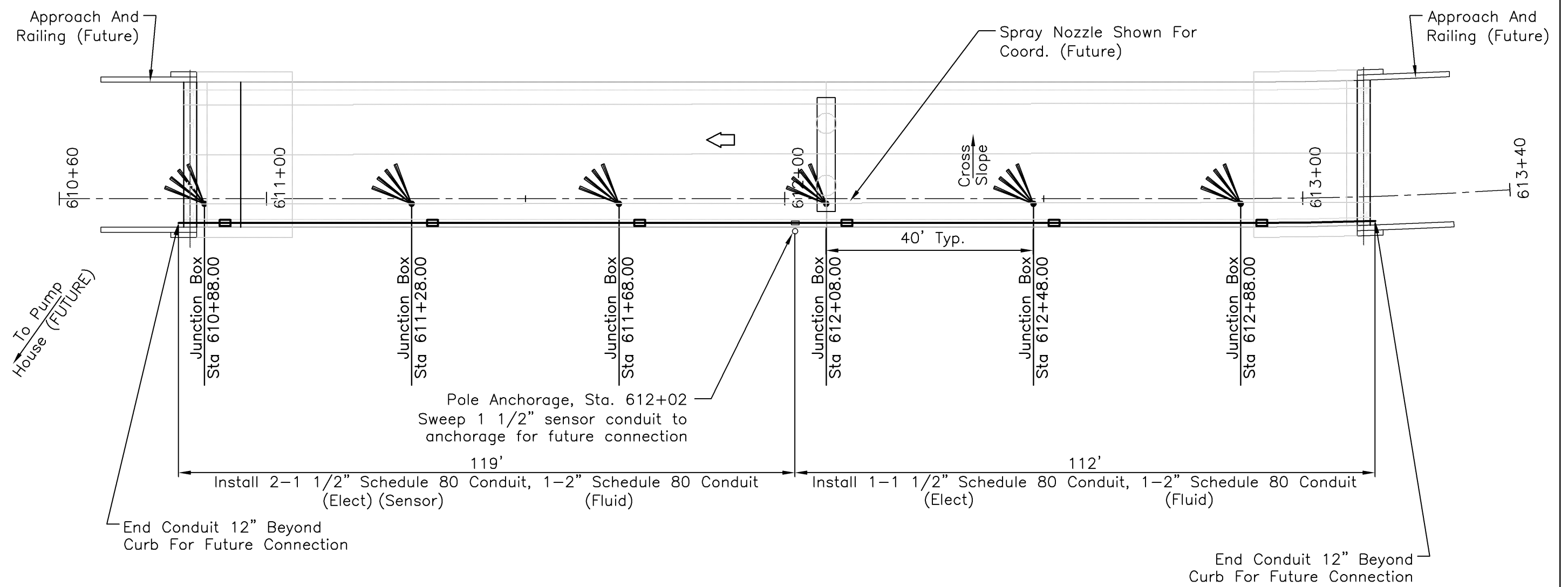
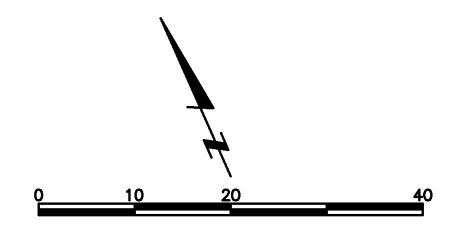
1. The Anti-Icing System Phase I construction drawings include information for the installation of the basic components and shall include conduits, junction boxes, and sensor anchorage to accommodate the future components of an operational system.
2. Conduit shall have a high point placed at the midpoint of the junction boxes to facilitate drainage of the conduits.
3. Spray nozzle and spray pattern on layout are for information only.
4. Pucks shall be placed on the upstream side of super elevation or normal cross slope.

Structure P-05-Y RAMP D OVER WILSON GULCH RELEASED FOR CONSTRUCTION



Design		Detail		Quantities	
INITIAL	DATE	INITIAL	DATE	INITIAL	DATE
JMH	07/08	RJK	07/08	XXX	MM/YY
XXX	MM/YY	XXX	MM/YY	XXX	MM/YY
Designed By	Checked By	Detailed By	Checked By	Quantities By	Checked By

Print Date: Wednesday, September 01, 2010		Sheet Revisions			Colorado Department of Transportation		As Constructed		Project No./Code	
File Name: 0208005.08P101-RAMP D.DWG		Date:	Comments	Init.	3803 North Main Avenue Suite 200 Durango, CO 81301 Phone: 970-385-1440 FAX: 970-385-8365		No Revisions: 11/1/09		NH 1602-114	
Horiz. Scale: As Noted Vert. Scale: As Noted		<input checked="" type="checkbox"/>			Region 5 EJA		Revised:		GENERAL NOTES	
Unit Information Unit Leader Initials		<input type="checkbox"/>					Void:		Designer: Daniel Hull Structure P-05-Y	
Lamp, Rynearson & Associates, Inc. 1140 20th Avenue, Suite F1, Greeley, Colorado 80639		<input type="checkbox"/>							Detailer: Rick Keller Numbers	
ENVIROTECH BUSINESS INC.		<input type="checkbox"/>							Sheet Subset: Anti-Icing Subset Sheets: AIS1 of AIS5	
		<input type="checkbox"/>							Sheet Number	



NOTE: See Bridge Cross Section For Junction Box Installation

Design		Detail		Quantities	
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Checked By	Checked By	Checked By	Checked By	Checked By	Checked By
XXX	MM/YY	XXX	MM/YY	XXX	MM/YY

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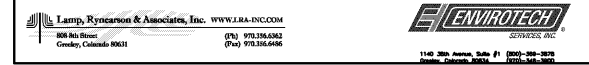
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BRIDGE LAYOUT			
Designer:	Daniel Hull	Structure Numbers	P-05-Y
Detailer:	Rick Keller		
Sheet Subset:	Anti-Icing	Subset Sheets:	AIS2 of AIS5

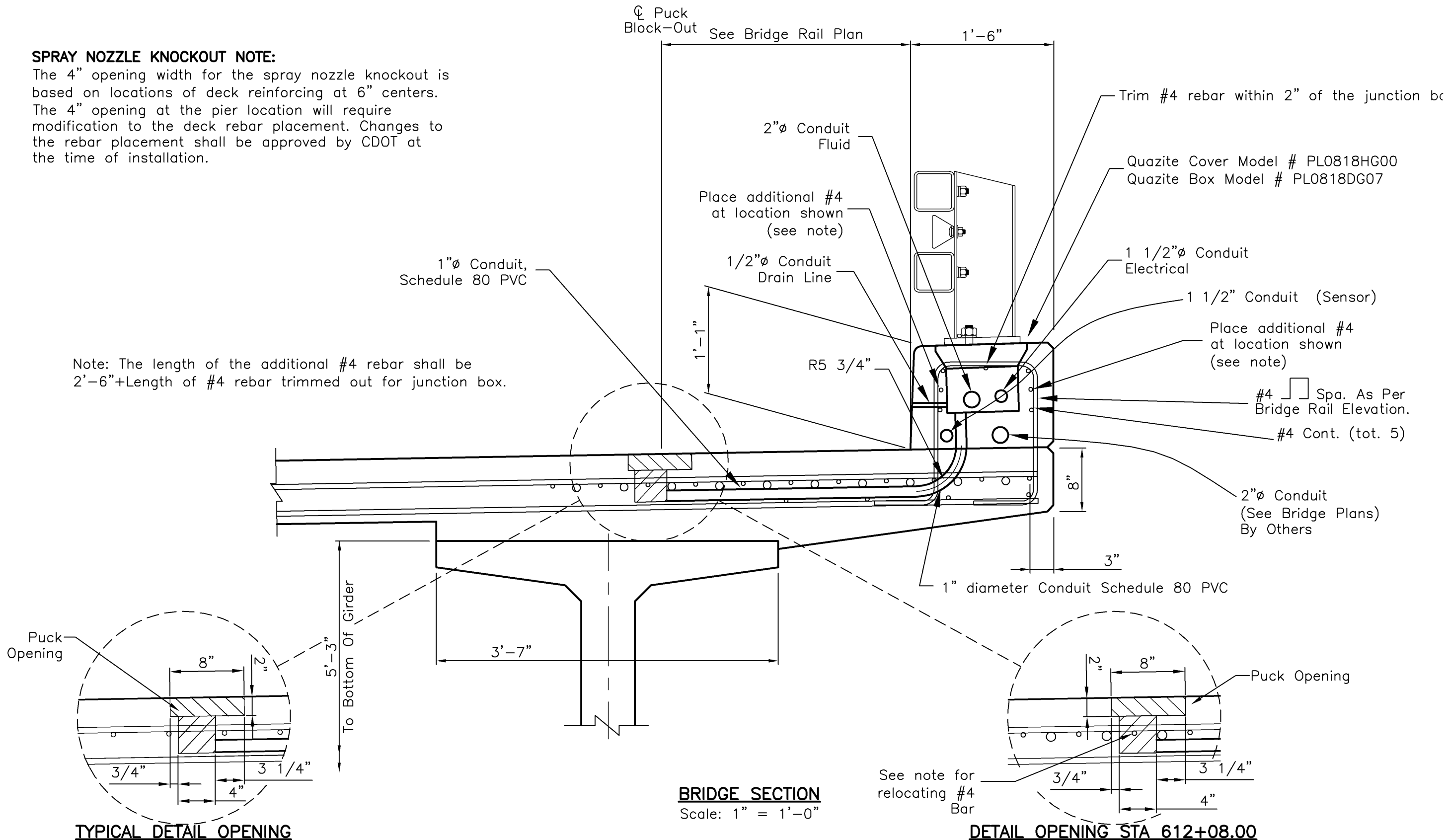
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SPRAY NOZZLE KNOCKOUT NOTE:

The 4" opening width for the spray nozzle knockout is based on locations of deck reinforcing at 6" centers. The 4" opening at the pier location will require modification to the deck rebar placement. Changes to the rebar placement shall be approved by CDOT at the time of installation.

Note: The length of the additional #4 rebar shall be 2'-6"+Length of #4 rebar trimmed out for junction box.



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Checked By	MM/YY	XXX	MM/YY	Checked By	XXX

TYPICAL DETAIL OPENING

BRIDGE SECTION

Scale: 1" = 1'-0"

DETAIL OPENING STA 612+08.00

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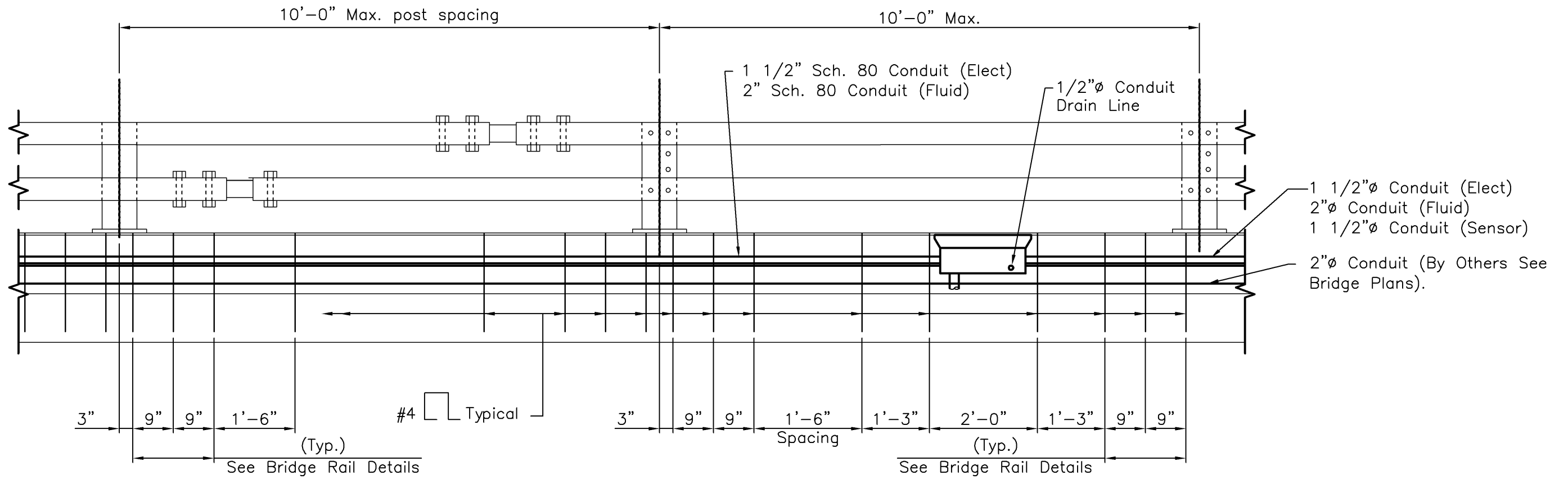
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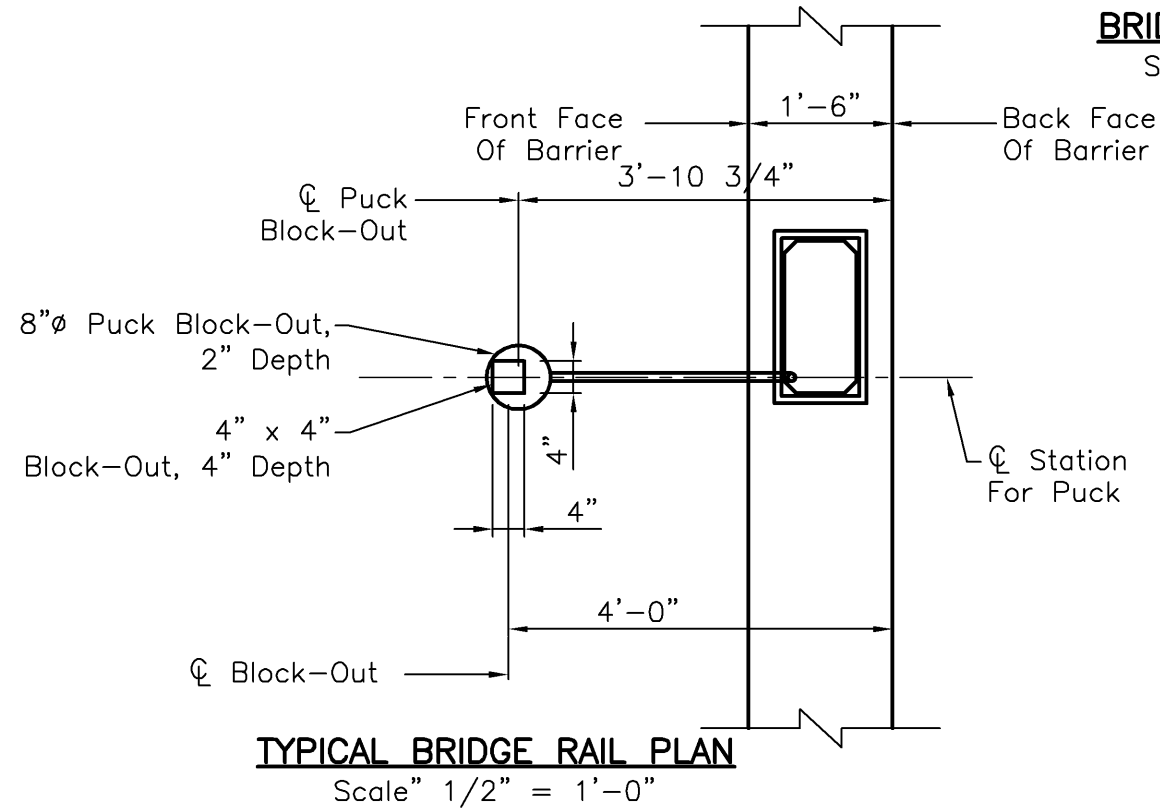
As Constructed
No Revisions: 11/1/09
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BRIDGE CROSS SECTION			
Designer: Daniel Hull	Structure: P-05-Y		
Detailer: Rick Keller	Numbers:		
Sheet Subset: Anti-Icing	Subset Sheets: AIS3 of AIS5		

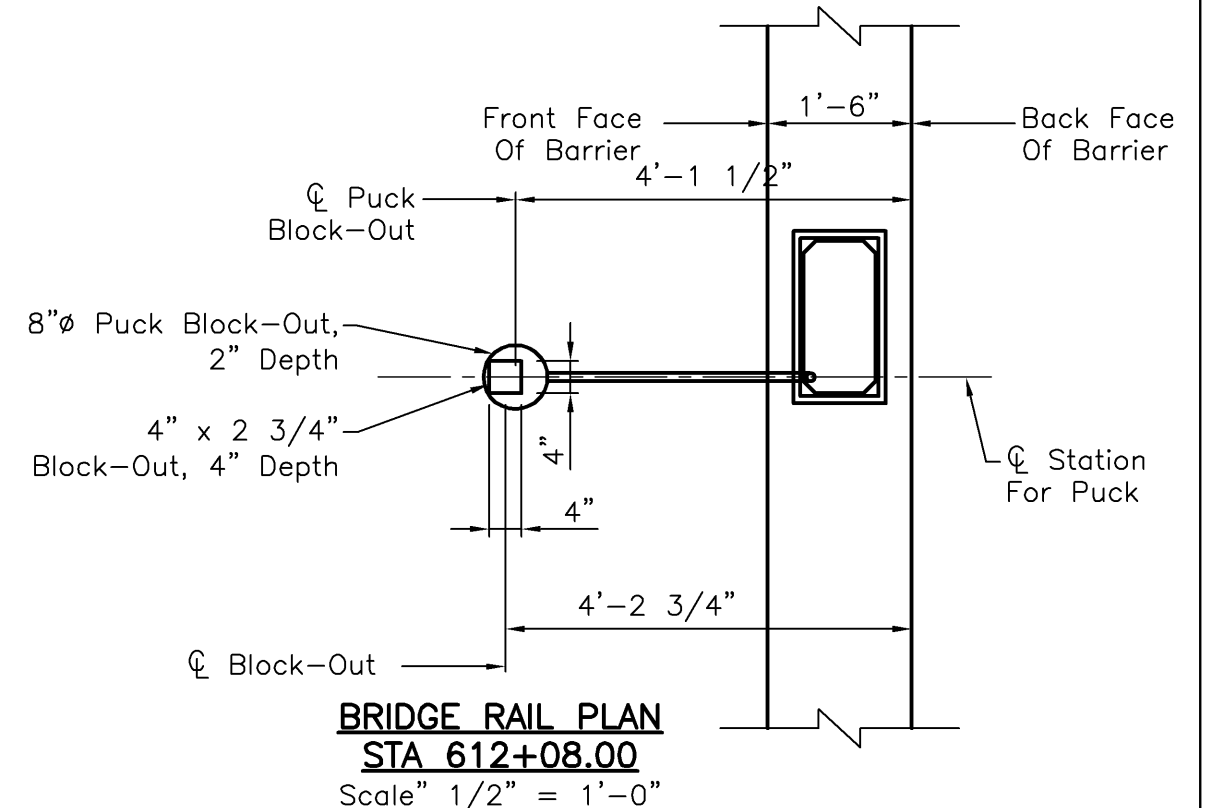
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Sheet Number



BRIDGE RAIL ELEVATION
Scale" 1/2" = 1'-0"



TYPICAL BRIDGE RAIL PLAN
Scale" 1/2" = 1'-0"



BRIDGE RAIL PLAN
STA 612+08.00
Scale" 1/2" = 1'-0"

Design	INITIAL	DATE	QUANTITIES	INITIAL	DATE
	Designed By	07/08	By	Checked By	MM/YY
Detail	INITIAL	DATE	QUANTITIES	INITIAL	DATE
	Detailed By	07/08	By	Checked By	MM/YY

Print Date: Wednesday, September 01, 2010	Unit Information
File Name: 0208005.08P101-RAMP D.DWG	Unit Leader Initials
Horiz. Scale: As Noted	Vert. Scale: As Noted

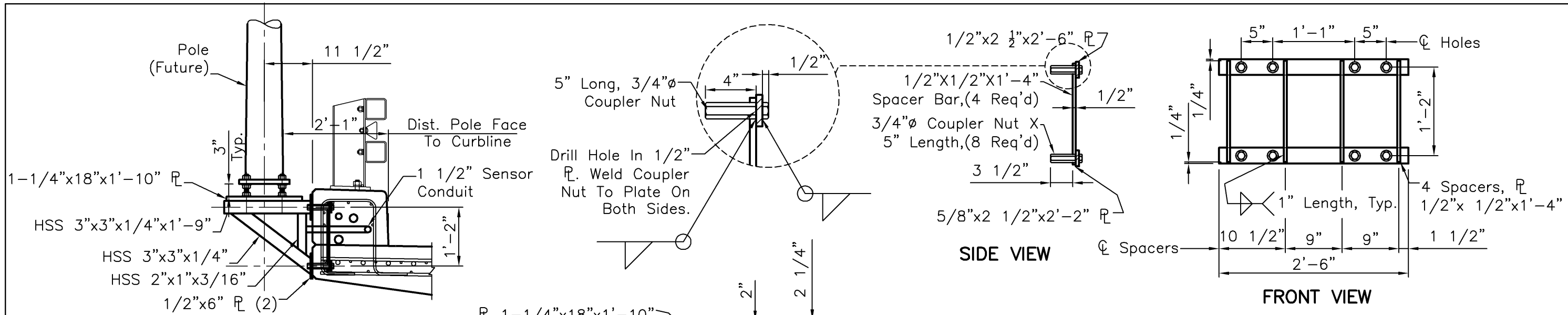
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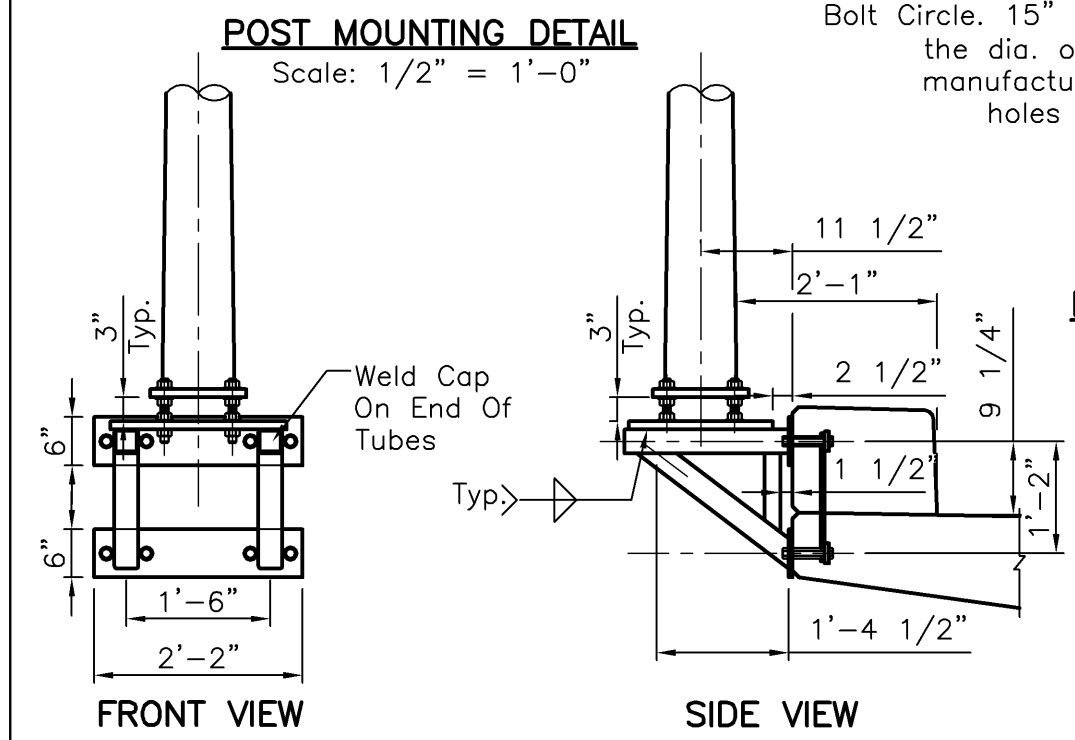
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Void:

BRIDGE RAIL ELEVATION			
Designer: Daniel Hull	Structure Numbers	P-05-Y	
Detailer: Rick Keller			
Sheet Subset: Anti-Icing	Subset Sheets: AIS4 of AIS5		

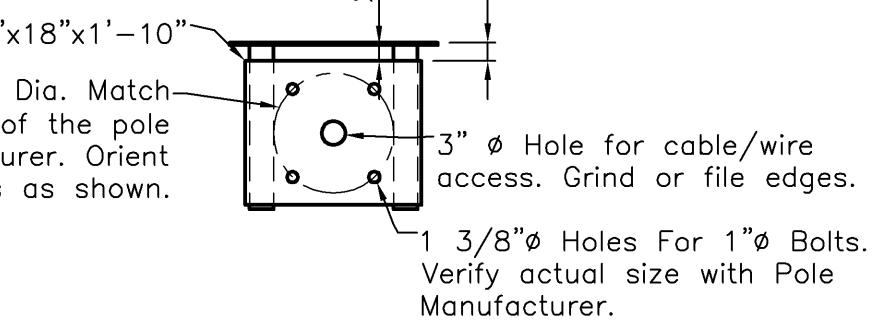
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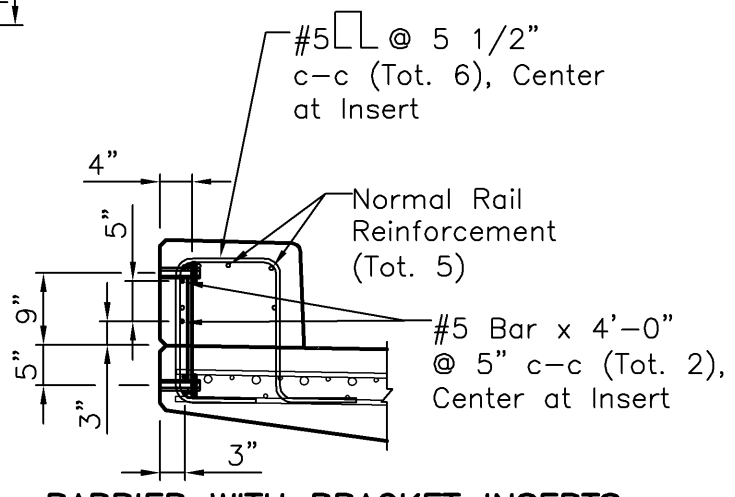
BARRIER INSERT DETAIL
Scale: 3/4" = 1'-0"



OUTSIDE MOUNTING BRACKET
Scale: 1/2" = 1'-0"



PLAN VIEW OF MOUNTING BRACKET
Scale: 1/2" = 1'-0"



BARRIER WITH BRACKET INSERTS
Scale: 1/2" = 1'-0"

STRUCTURAL STEEL AND METAL EMBEDMENTS FOR CONCRETE STRUCTURES

- Miscellaneous steel items in the structures shall be fabricated from structural steel conforming to ASTM A36 or A572. Welding shall meet requirements of AWS D1.1. The finished fabrication shall be hot-dip galvanized in accordance with ASTM A123.
- All Bolts, Nuts and Washers shall be A325, and shall be galvanized.
- All HSS Round or Rectangular Sections shall conform to ASTM A500, Grade B or C structural tubing.
- All welds shall be 1/4" minimum effective throat welds, or to the thickness of the smaller material being welded, whichever is smaller, based on 70 ksi electrode strength. HSS members may require flare bevel welds.
- 3/4" Coupler Nuts shall be 5" minimum in length, and shall meet the requirements of A325.
- Bolts to connect the Bracket to the barrier shall be 3 1/2" in length with washers.
- Pole Mounting Bracket is designed for following conditions:
 - Maximum wind velocity of 100 mph.
 - Maximum height of pole not to exceed 30 feet from top of mounting bracket plate.
 - Top of pole shall not exceed 100 feet as measured above the local ground elevation.
 - Horizontal projected area of installed equipment shall not exceed 4.5 SF mounted at 27 Feet above the top of the mounting plate (or equivalent produced moment).
 - Base of the pole shall not exceed 8" diameter, Bolt circle shall not exceed 15".

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