

**NOTES:**

1. A Pull Post Assembly is required at maximum intervals of 500'-0". See Sheet Nos. 3 of 4 or 4 of 4.
2. Brace rails are only required for vertical fence installations on Traffic Railing Barriers.
3. Provide horizontal rails for vertical fence installations on Concrete Parapets in lieu of tension wire. Locate horizontal rails as shown in the Typical Section for Concrete Parapets at right.

**FENCING NOTES**

**FENCE INSTALLATION:**

Install posts plumb (within a tolerance of  $\pm 1\frac{1}{2}$ " ). Use shim plates as required to achieve plumb. The required quantity and thickness of shim plates will be determined in the field. Install chain link fence in accordance with ASTM F 567 as applicable.

**TRAFFIC RAILING BARRIER DETAILS:**

See Superstructure Sheets for Traffic Railing Barrier details.

**CONCRETE PARAPET DETAILS:**

See Index No. 820 - Pedestrian/Bicycle Railing for Concrete Parapet details. Provide fencing in lieu of aluminum bullet railing as shown on Index No. 820.

**LIMITS OF FENCING:**

Limits of fencing are from begin of approach slab at Begin Bridge to end of approach slab at End Bridge, unless otherwise shown in the plans.

**PAYMENT:**

Payment will be made under Fencing, Type R. Payment includes posts, horizontal and expansion rails, brace rails and bands, rail ends, combination rail ends, boulevard clamps, chain link fabric, tension wire, ties, hog rings, tension bars and bands, post and loop caps, pipe clamps, base plates, anchor rods, bolts, nuts, washers, shim plates, spacers, neoprene pads, miscellaneous fence fittings and hardware and all incidental materials and labor required to complete installation of the fence.

**CROSS REFERENCE:**

For Table of Fence Components, Table of Post Attachment Components, View A-A and Detail "A" see Sheet No. 2 of 4.  
For Pull Post Assembly Detail for Traffic Railing Barriers see Sheet No. 3 of 4.  
For Pull Post Assembly Detail for Concrete Parapets and Detail "B" see Sheet No. 4 of 4.



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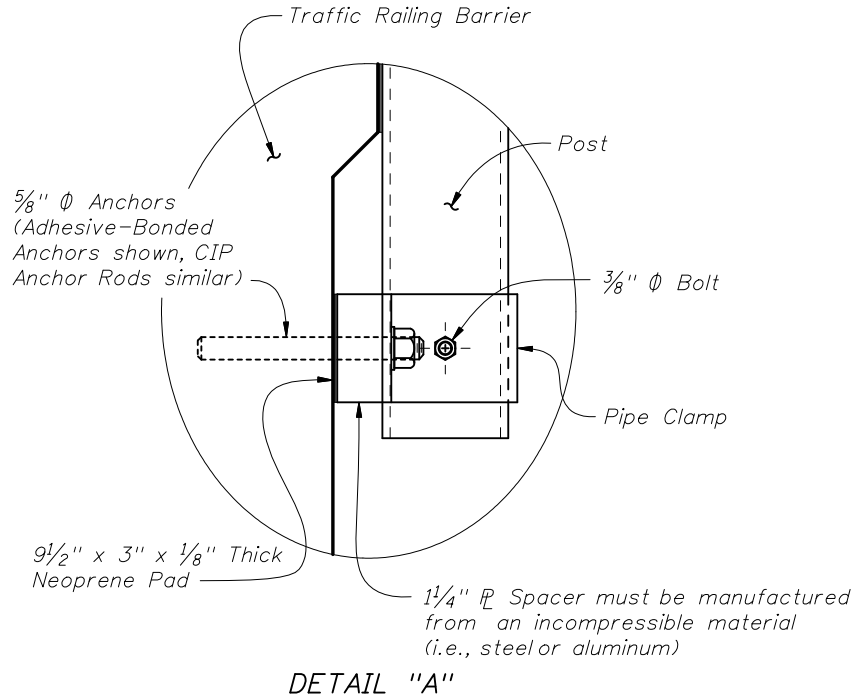
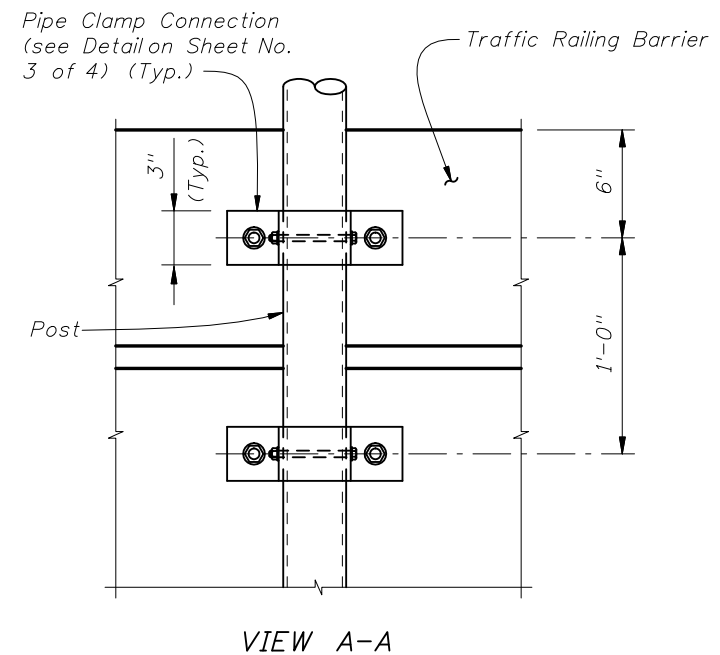
**BRIDGE FENCING (VERTICAL)**

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TABLE OF CHAIN LINK FENCE COMPONENTS			
COMPONENT	ASTM DESIGNATION	COMPONENT INFORMATION	
Traffic Railing Barriers and Concrete Parapets	Posts	Galvanized Steel Pipe - 3" NPS, Schedule 40 (3.500" Outside Diameter, 0.216" Wall Thickness)	
	Chain Link Fabric (2" mesh with twisted top and knuckled bottom selvage)	A 392	Zinc Coated Steel - No. 9 gage (coated wire diameter), Class 2 Coating
		A 491	Aluminum Coated Steel - No. 9 gage (coated wire diameter)
		F 668	Polyvinyl Chloride (PVC) Coated Steel - No. 9 gage Zinc Coated Wire (metallic-coated core wire diameter) ~ Specify the color of the polymer coating in the General Notes
	Tie Wires	F 626	Zinc Coated Steel Wire - No. 9 gage
	Brace Bands	F 626	No. 12 Gage (min. thickness) x 3/4" (min. width) Steel Bands (Beveled or Heavy)
	Tension Bars	F 626	3/16" (min. thickness) x 3/4" (min. width) x 5'-10" (min. height) Steel Bars
	Tension Bands	F 626	No. 14 Gage (min. thickness) x 3/4" (min. width) Steel Bands
	Miscellaneous Fence Components	F 626	Zinc Coated Steel ~ (includes post or loop caps, horizontal and brace rail ends, combination rail ends, boulevard clamps and all other miscellaneous fittings & hardware)
Concrete Parapets	Horizontal Rails	F 1083	Galvanized Steel Pipe - 2 1/2" NPS, Schedule 40 (2.875" Outside Diameter, 0.203" Wall Thickness)
	Expansion Rails	F 1083	Galvanized Steel Pipe - 2" NPS, Schedule 40 (2.375" Outside Diameter, 0.154" Wall Thickness)
	Bolts	A 307	1/4" $\Phi$ x 4 1/4" Hex Head Bolts for Expansion Rail Connections
	Nuts	A 563	Hex Nuts for Expansion Rail Connections
	Washers	F 436	Flat Washers for Expansion Rail Connections
Traffic Railing Barriers	Tension Wire	A 824 & A 817	Type II (Zinc Coated Steel Wire) - No. 7 gage, Class 4 Coating Type I (Aluminum Coated Steel Wire) - No. 7 gage
	Hog Rings	F 626	Zinc Coated Steel Wire - No. 12 gage
	Brace Rails	F 1083	Galvanized Steel Pipe - 1 1/4" NPS, Schedule 40 (1.660" Outside Diameter, 0.140" Wall Thickness)

TABLE OF POST ATTACHMENT COMPONENTS			
COMPONENT	ASTM DESIGNATION	COMPONENT INFORMATION	
Pipe Clamps	A 36 or A 709 Grade 36	1/4" Steel $\mathbb{P}$	
Base Plates	A 36 or A 709 Grade 36	3/4" Steel $\mathbb{P}$	
Shim Plates	A 36 or A 709 Grade 36 or B 209 Alloy 6061-T6 or B 221 Alloy 6063-T5	Plate thicknesses as required; Holes in shim plates will be 3/4" $\Phi$	
Spacers	-	1 1/4" $\mathbb{P}$ for all materials	
Pipe Clamp Connection	Adhesive Anchor Rods	F 1554 Grade 36	Fully threaded Headless Anchor Rods ~ 5/8" $\Phi$ x 6" (no spacer) or 5/8" $\Phi$ x 7 1/4" (with spacer)
	CIP Anchor Rods	F 1554 Grade 36	Hex Head Anchor Rods ~ 5/8" $\Phi$ x 6" (no spacer) or 5/8" $\Phi$ x 7 1/4" (with spacer)
Base Plate Connection	Adhesive Anchor Rods	F 1554 Grade 36	Fully threaded Headless Anchor Rods ~ 7/8" $\Phi$ x 14 1/2"
	CIP Anchor Rods	F 1554 Grade 36	Hex Head Anchor Rods ~ 7/8" $\Phi$ x 14 1/2"
Bolts	A 307	3/8" $\Phi$ x 4 3/4" Hex Head Bolts for Pipe Clamp Connections to Posts	
Nuts	A 563	Hex Nuts for Pipe Clamp and Base Plate Connections	
Washers	F 436	Flat Washers for Pipe Clamp and Base Plate Connections	
Neoprene Pads	-	In accordance with Specification Section 932	

LEGEND: NPS = Nominal Pipe Size



**POST ATTACHMENT NOTES**

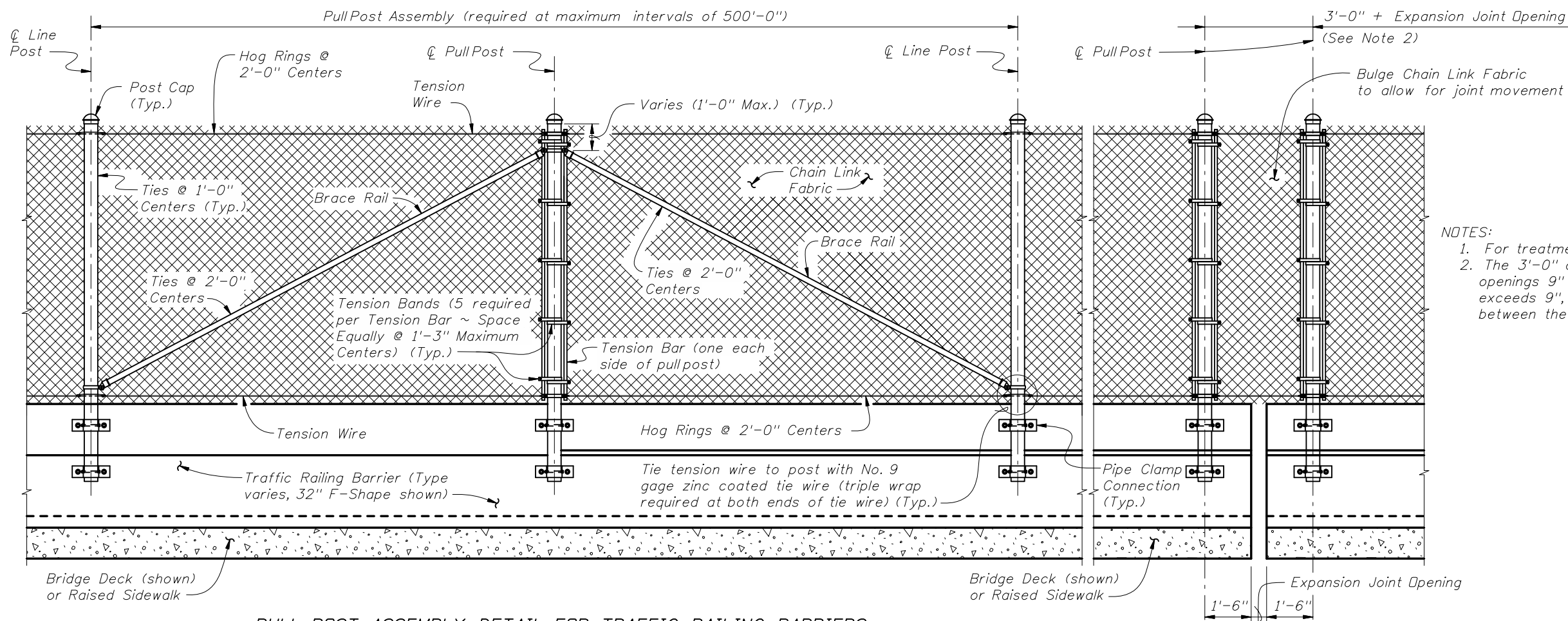
**ANCHOR RODS, NUTS AND WASHERS:**  
After the nuts have been tightened, distort the Anchor Rod threads to prevent removal of the nuts. Coat distorted threads and exposed trimmed ends of anchors with a galvanizing compound in accordance with Specification Section 971.

**COATINGS:**  
Hot-dip galvanize all Nuts, Washers, Bolts, CIP Anchor Rods, Adhesive Anchors and Fence Framework (Posts, Internal Sleeves, Shim Plates, Base Plates, Pipe Clamps and Spacers) in accordance with Specification Section 962. Hot-dip galvanize Fence Framework after fabrication.

**ADHESIVE-BONDED ANCHORS AND DOWELS:**  
Adhesive Bonding Material Systems for Anchors and Dowels will comply with Specification Section 937 and be installed in accordance with Specification Section 416. Cutting of reinforcing steel is permitted for drilled hole installation.

**WELDING:**  
All welding will be in accordance with the American Welding Society Structural Welding Code (Steel) ANSI/AWS D1.1 (current edition). Weld metal will be E60XX or E70XX. Nondestructive testing of welds is not required.

**CROSS REFERENCE:**  
For location of View A-A and Detail "A" see Sheet No. 1 of 4.

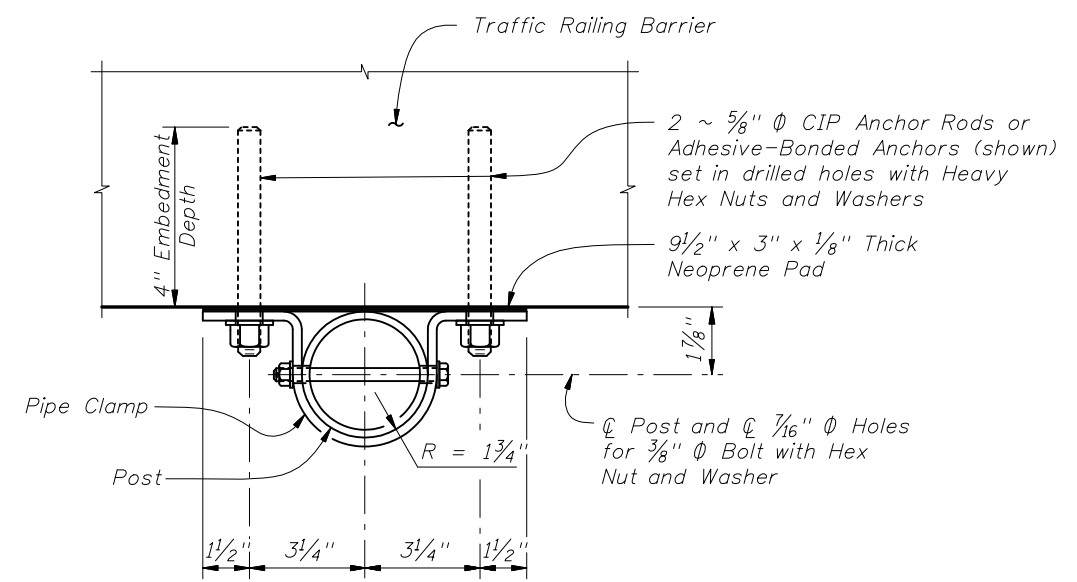


NOTES:  
 1. For treatment at bridge ends, see Sheet No. 1 of 4.  
 2. The 3'-0" dimension shown is for expansion joint openings 9" or less. If the expansion joint opening exceeds 9", increase this dimension by the difference between the expansion joint opening and 9".

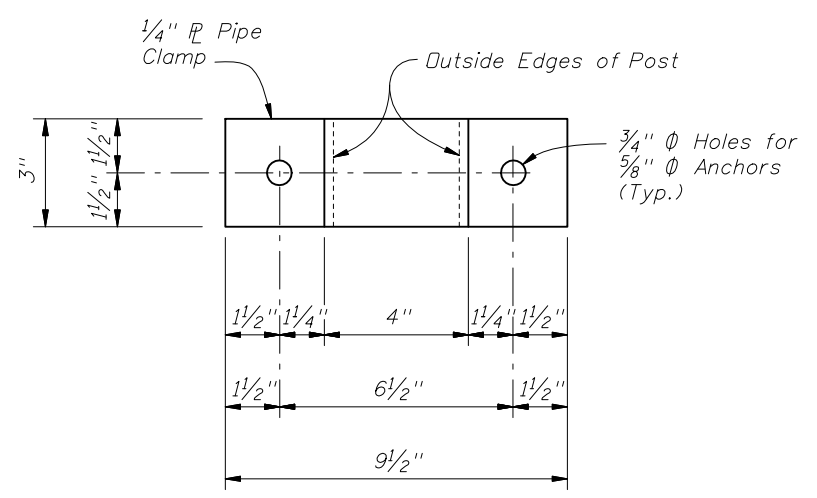
PULL POST ASSEMBLY DETAIL FOR TRAFFIC RAILING BARRIERS

EXPANSION ASSEMBLY DETAIL

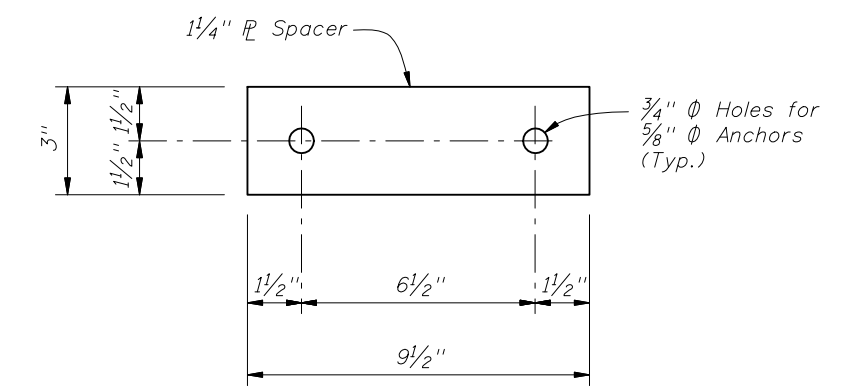
(Required only at expansion joint locations where total movement exceeds 6")



PIPE CLAMP CONNECTION DETAIL  
 (Connection without spacer shown, Connection with spacer similar)



PIPE CLAMP DETAIL



SPACER DETAIL

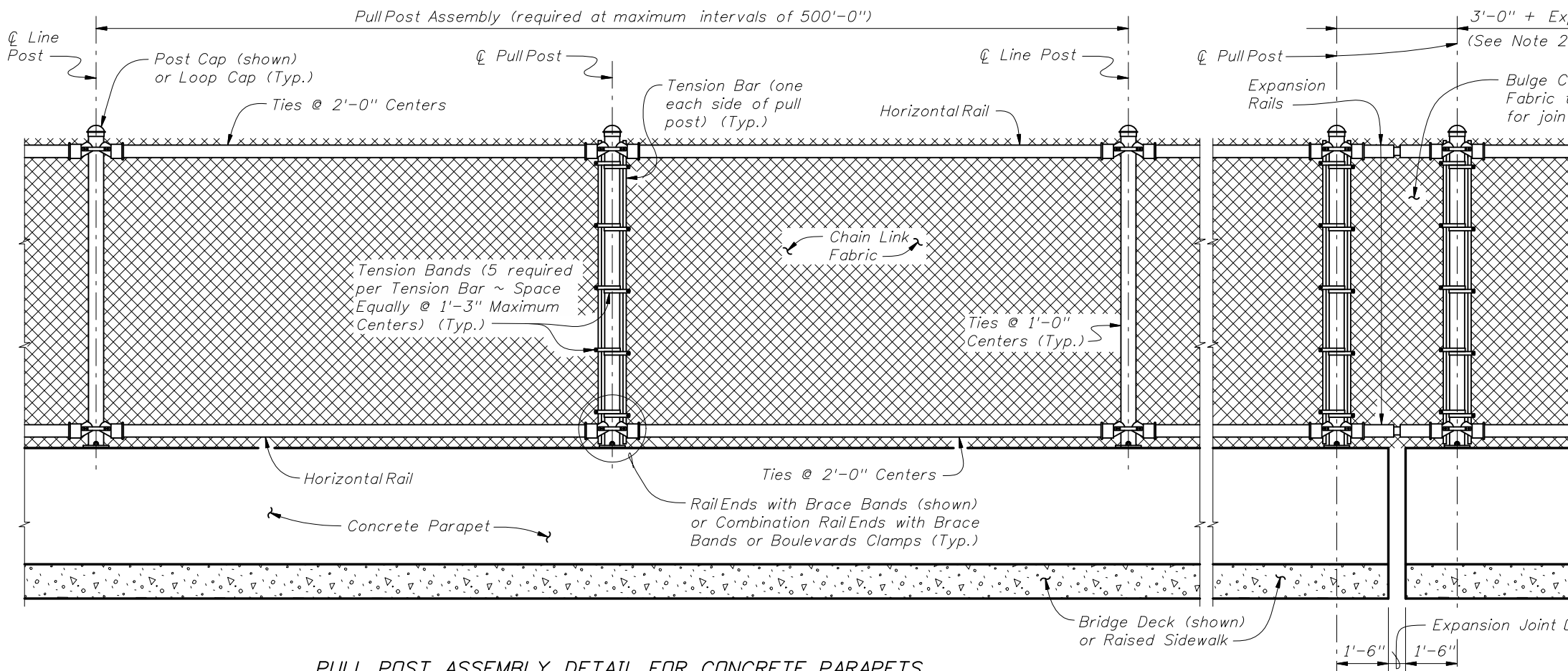
(Must be manufactured from an incompressible material (i.e., steel or aluminum))



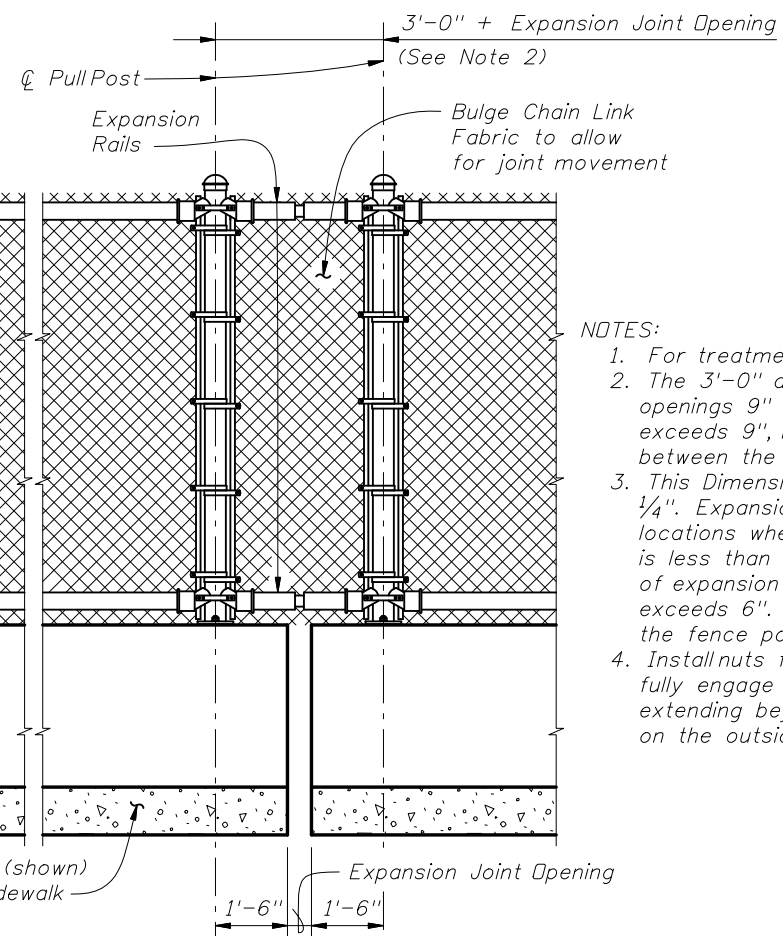
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PULL POST ASSEMBLY DETAIL FOR CONCRETE PARAPETS



EXPANSION ASSEMBLY DETAIL

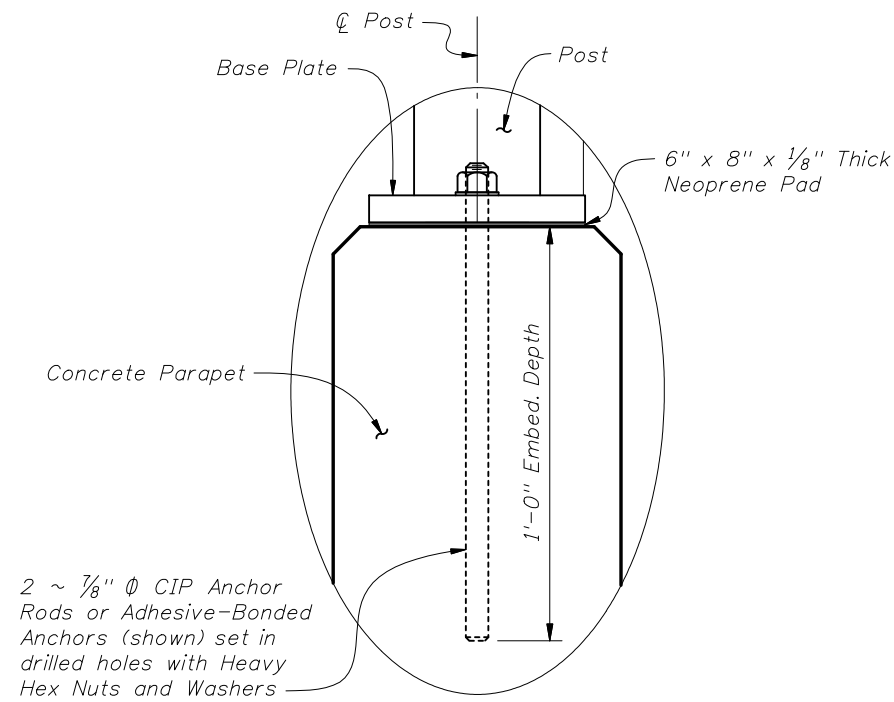
(Required only at expansion joint locations where total movement exceeds 6")

NOTES:

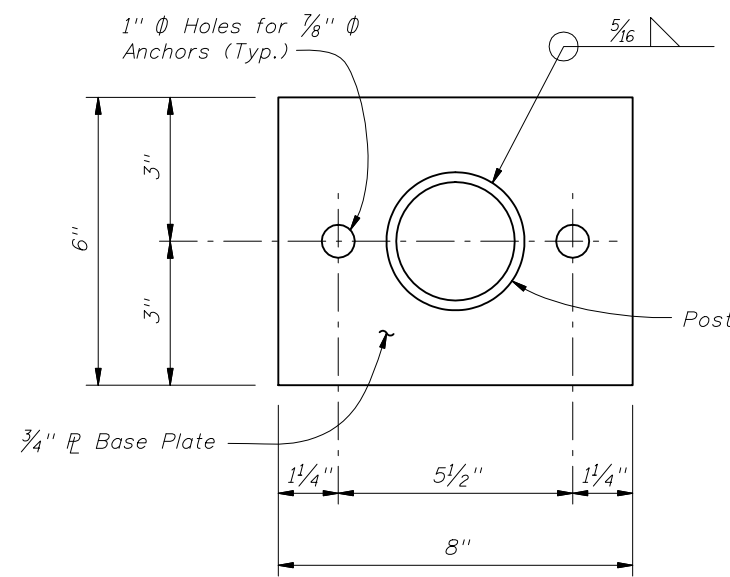
1. For treatment at bridge ends, see Sheet No. 1 of 4.
2. The 3'-0" dimension shown is for expansion joint openings 9" or less. If the expansion joint opening exceeds 9", increase this dimension by the difference between the expansion joint opening and 9".
3. This Dimension is the expansion joint opening plus 1/4". Expansion rails are required at expansion joint locations where the total movement exceeds 1", but is less than or equal to 6". Expansion rails are part of expansion assemblies when the total movement exceeds 6". Install expansion rails midway between the fence posts spanning the expansion joint.
4. Install nuts for expansion rails finger-tight. Nuts will fully engage bolts with a minimum of one bolt thread extending beyond the nuts. Distort the first thread on the outside of the nut to prevent loosening.

CROSS REFERENCE:

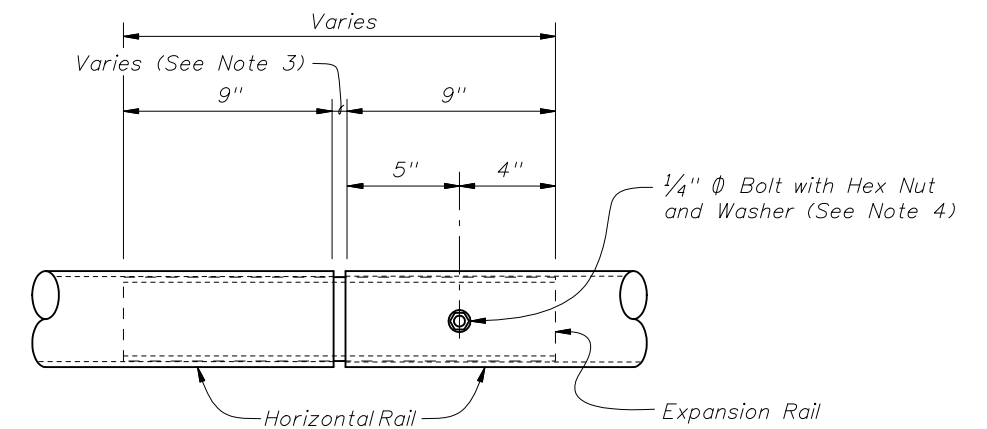
For location of Detail "B" see Sheet No. 1 of 4.



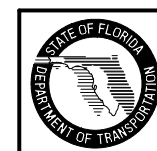
DETAIL "B"



BASE PLATE DETAIL



EXPANSION RAIL DETAIL



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