

**COLORADO DEPARTMENT OF TRANSPORTATION
PRE-APPROVED PRODUCT EVALUATION REQUEST & SUMMARY**

APL Reference No.

Product Evaluation Coordinator
Colorado Department of Transportation
4670 North Holly Street, Unit A
Denver, Colorado 80216

Material code:

Material code description full name:

FOR INTERNAL CDOT USE

PART 1

Product name:	Product category:
Product Representative (name & address): Attn:	Manufacturer (name & address): Attn:
Phone: E-mail:	Phone: E-mail:
Web-site address:	Web-site address:

Description of the product: (Include specific quantifiable details from tech data sheet. Advertising generalities are not appropriate.)

Restrictions, (installation and/or use):

Use of the product, (be specific to CDOT highway activities only):

Benefits to CDOT, (how will your product enhance quality, improve safety, save money, be a better value than other manufacturer's products):

Specifications: (listing those applicable is required)

- CDOT :
- ASTM :
- AASHTO:
- FHWA :
- other :

Certificate of Compliance (COC) provided

Certificate of Verification (COV) provided for select categories ONLY

Product Testing: (National/independent laboratories or universities with Report Date.) **Certified Test Report (CTR)** provided to validate all claims.

- NTPEP-AASHTO:
- FHWA :
- other :
- other :
- other :

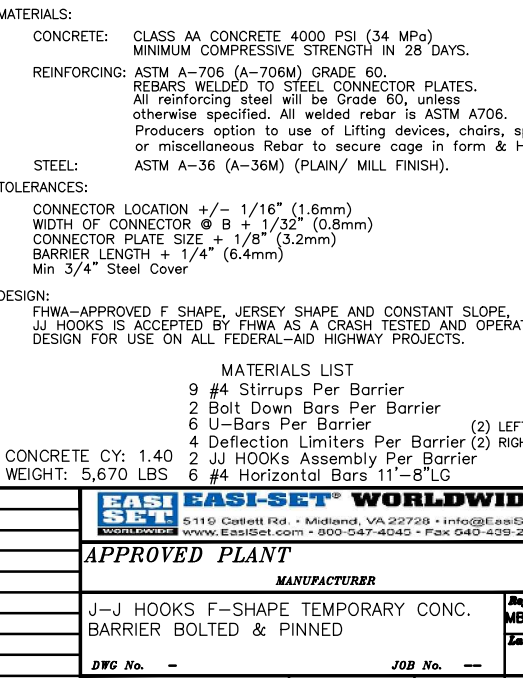
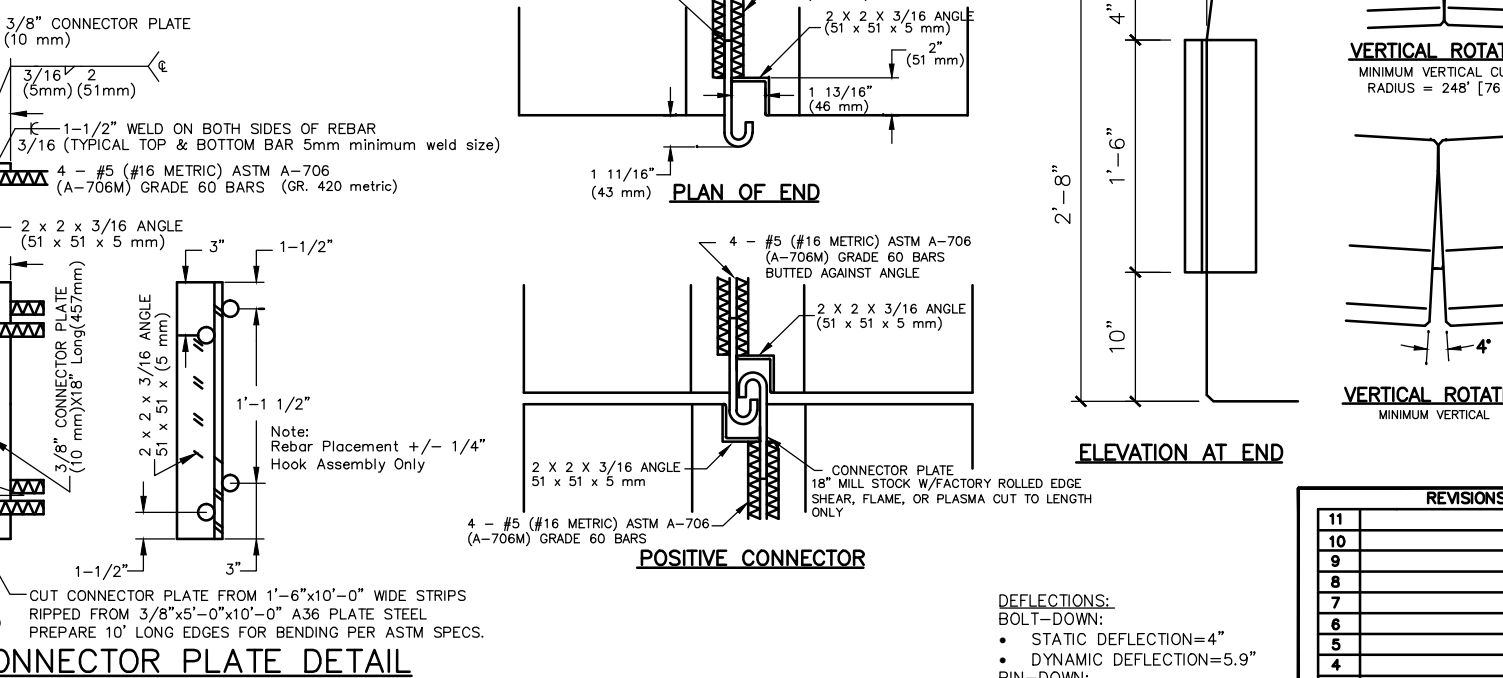
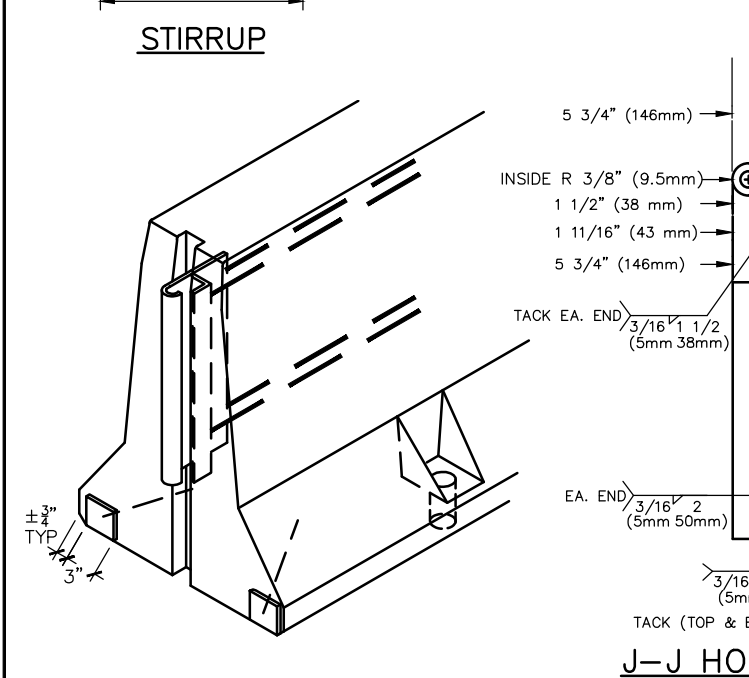
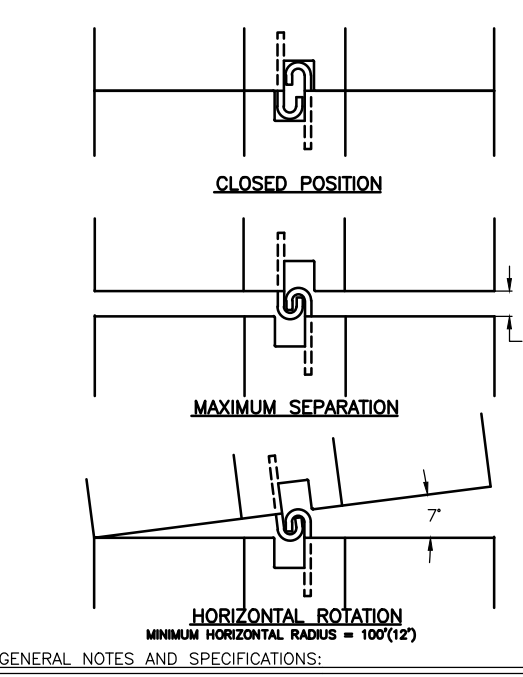
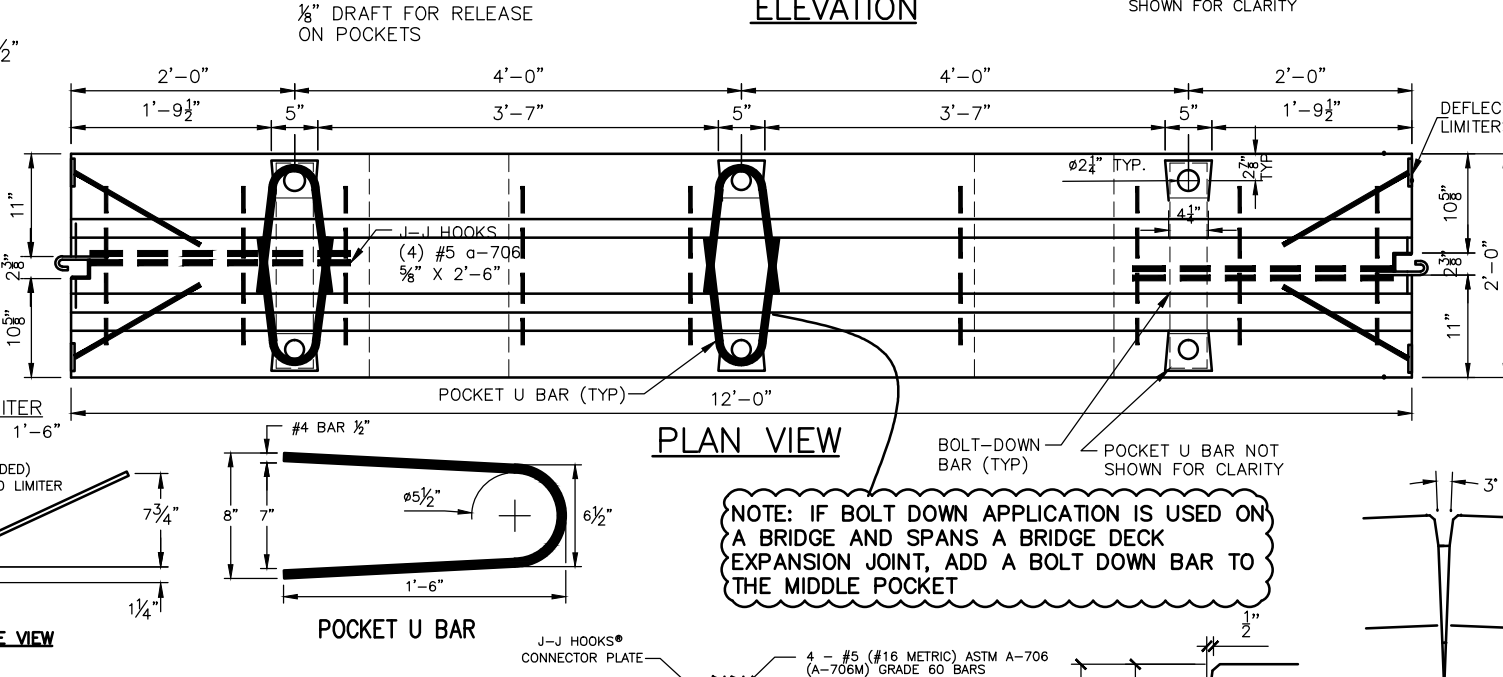
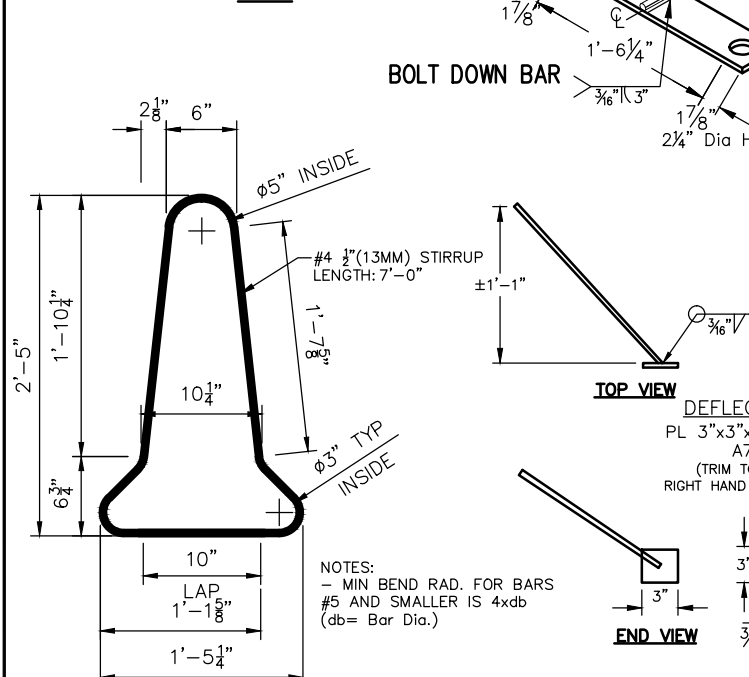
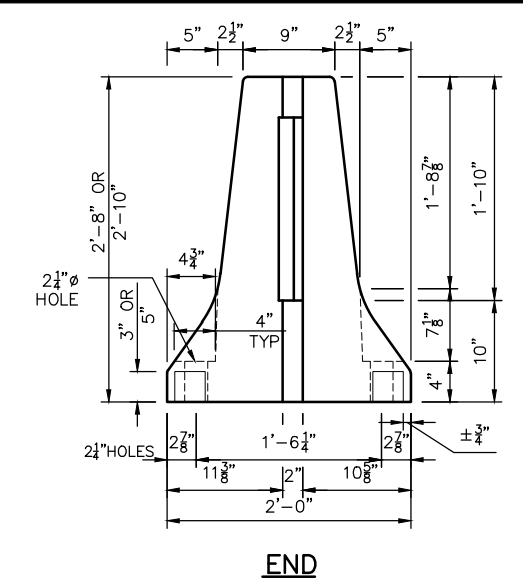
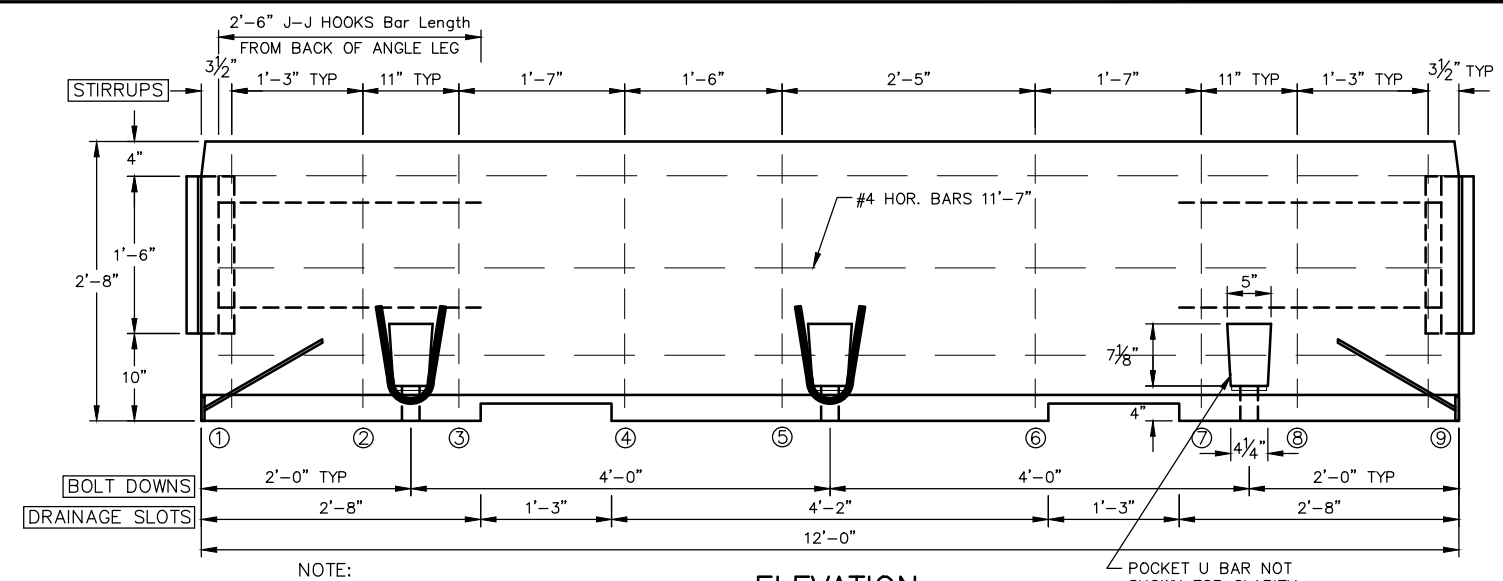
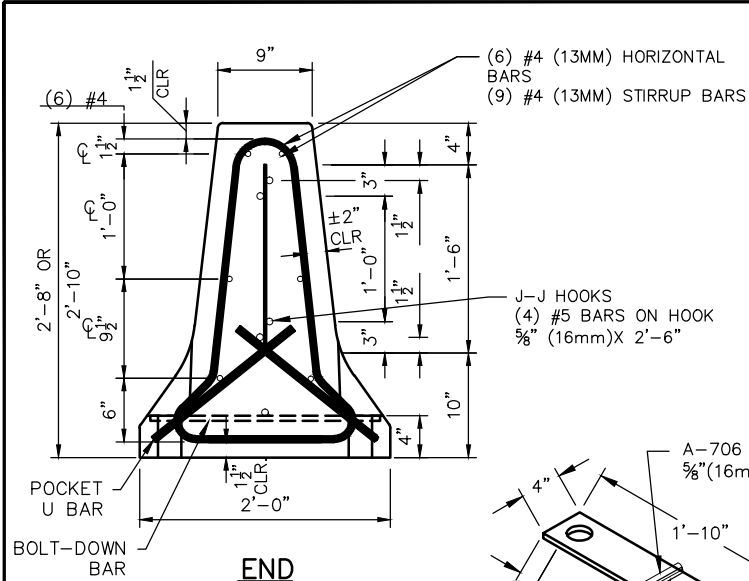
State DOT Approvals, (current documentation required):

Expiration Date

Sample submitted: yes no n/a Safety Data Sheets (SDS): yes no n/a

Alternate Product Category:

Additional Comments:



NOTES:
- MIN BEND RAD. FOR BARS #5 AND SMALLER IS 4xdb (db= Bar Dia.)

NOTE: 1/8\"/>

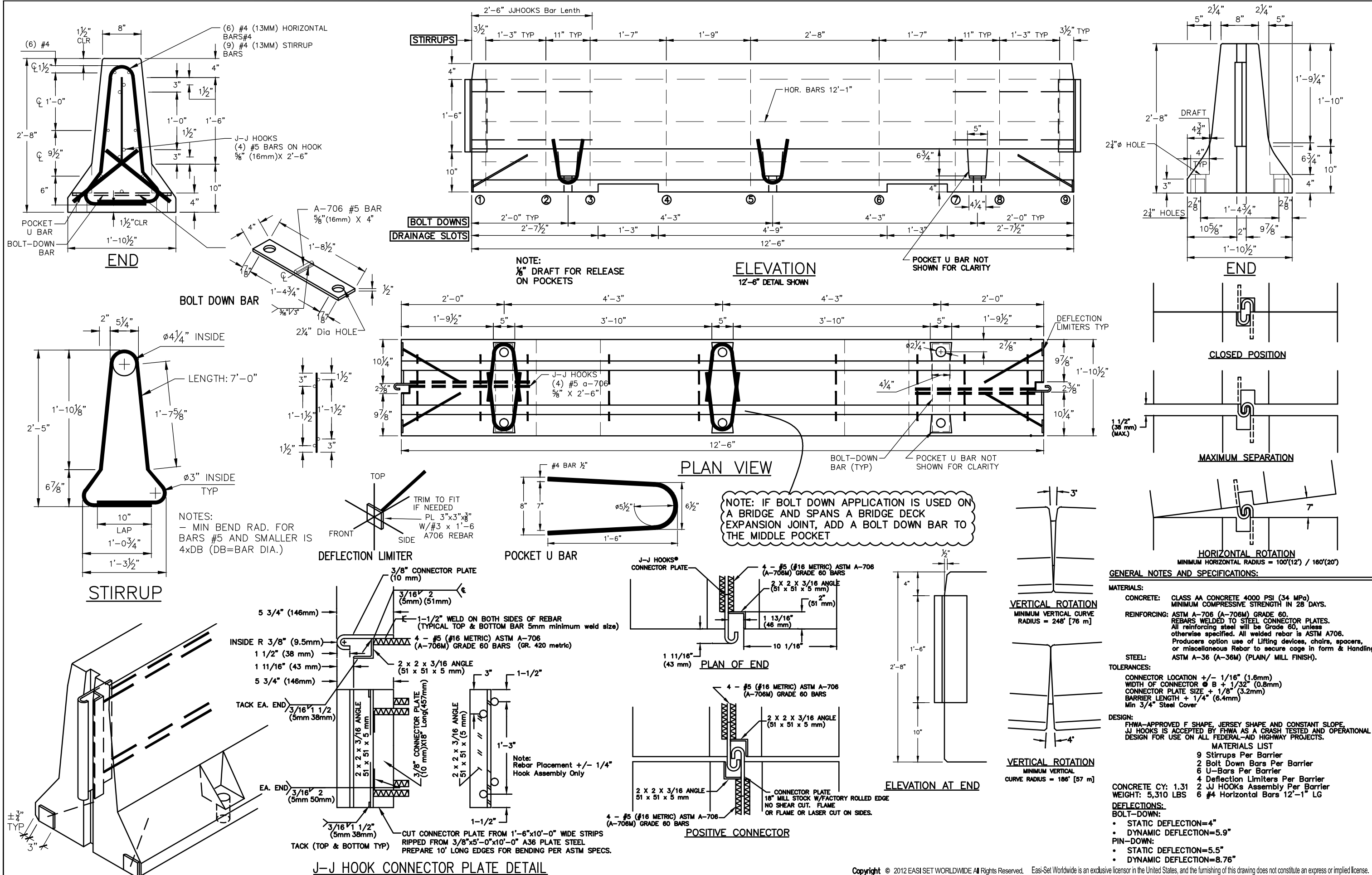
GENERAL NOTES AND SPECIFICATIONS:
MATERIALS:
CONCRETE: CLASS AA CONCRETE 4000 PSI (34 MPa) MINIMUM COMPRESSIVE STRENGTH IN 28 DAYS.
REINFORCING: ASTM A-706 (A-706M) GRADE 60. REBARS WELDED TO STEEL CONNECTOR PLATES. All reinforcing steel will be Grade 60, unless otherwise specified. All welded rebar is ASTM A706. Producers option to use of lifting devices, chairs, spacers, or miscellaneous rebar to secure cage in form & Handling ASTM A-36 (A-36M) (PLAIN/ MILL FINISH).
STEEL:
TOLERANCES:
CONNECTOR LOCATION +/- 1/16\"/>

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DEFLECTIONS:
BOLT-DOWN:
• STATIC DEFLECTION=4\"/>

REVISIONS	
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EASISSET WORLDWIDE	
5119 Goffett Rd. • Midland, VA 22728 • info@easi-set.com	
www.easi-set.com • 800-547-4045 • Fax 540-439-2041	
APPROVED PLANT	
MANUFACTURER	
J-J HOOKS F-SHAPE TEMPORARY CONC.	Ref. No. MB-MASHF
BARRIER BOLTED & PINNED	Last Rev. -
DWG No. -	JOB No. --
DRAWN BY: WCR	DATE: 2-7-14
CHECKED BY: MT	DATE: 2-7-14
APPROVED BY: -	DATE: -
SHEET 1/1	



GENERAL NOTES AND SPECIFICATIONS:

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STEEL:

TOLERANCES:

CONNECTOR LOCATION $\pm 1/16"$ (1.6mm)
 WIDTH OF CONNECTOR $\phi B + 1/32"$ (0.8mm)
 CONNECTOR PLATE SIZE $+ 1/8"$ (3.2mm)
 BARRIER LENGTH $+ 1/4"$ (6.4mm)
 Min 3/4" Steel Cover

DESIGN:

FHWA-APPROVED F SHAPE, JERSEY SHAPE AND CONSTANT SLOPE. JJ HOOKS IS ACCEPTED BY FHWA AS A CRASH TESTED AND OPERATIONAL DESIGN FOR USE ON ALL FEDERAL-AID HIGHWAY PROJECTS.

MATERIALS LIST

9 Stirrups Per Barrier
 2 Bolt Down Bars Per Barrier
 6 U-Bars Per Barrier
 4 Deflection Limiters Per Barrier
 2 JJ HOOKS Assembly Per Barrier
 6 #4 Horizontal Bars 12'-1" LG

CONCRETE CY: 1.31
WEIGHT: 5,310 LBS

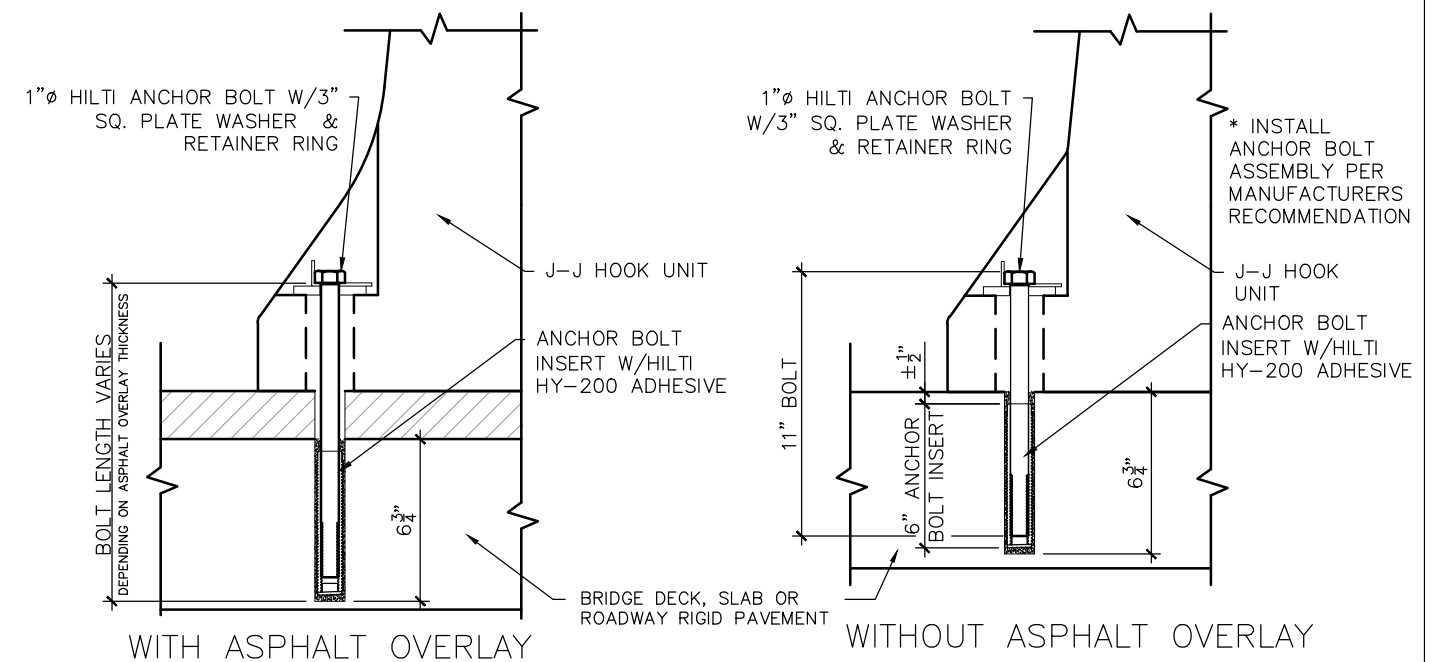
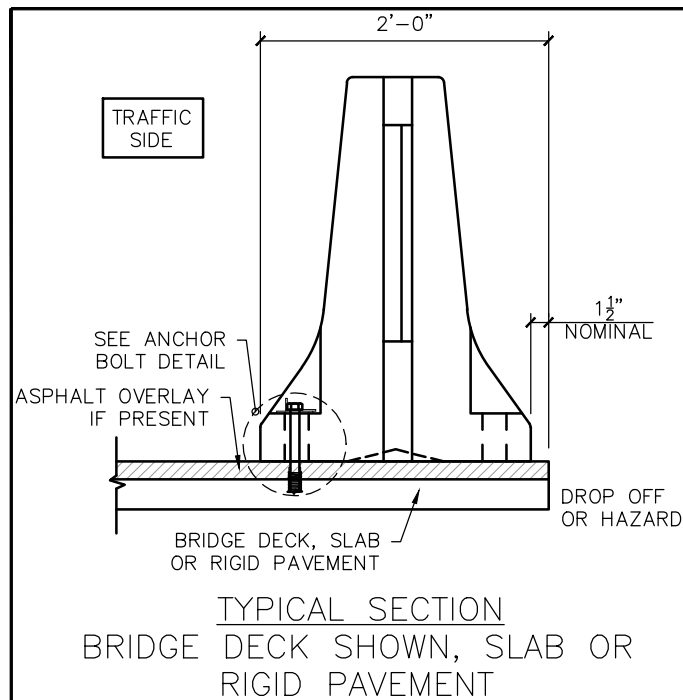
DEFLECTIONS:

BOLT-DOWN:

- STATIC DEFLECTION=4"
- DYNAMIC DEFLECTION=5.9"

PIN-DOWN:

- STATIC DEFLECTION=5.5"
- DYNAMIC DEFLECTION=8.76"



NOTES FOR BOLTED DOWN BRIDGE, APPROACH SLAB, ROADWAY AND TRANSITION INSTALLATIONS:

LIMITATION OF USE: This installation technique can only be used on rigid pavement and concrete bridge decks as shown. J-J Hook Barriers shall not be bolted down on bridge superstructures that contain post-tensioned tendons within the concrete deck (top flange of concrete box girders) or on bridge superstructures consisting of longitudinally prestressed, transversely post-tensioned, solid or voided concrete slab units.

ANCHOR BOLTS, ANCHOR BOLT INSERT, NUTS AND WASHERS: Hilti Anchor Bolts shall be threaded rods in accordance with ASTM A193 Grade B8. Adhesive-Bonded Anchor Bolt Inserts shall be Hilti HRT-I (1"x6") in accordance with DIN/ISO 898-1. Flat Washers shall be in accordance with ASTM F 436 and Plate Washers shall be in accordance with ASTM A 36 or ASTM A 709 Grade 36. *ANCHOR BOLT "ASSEMBLY" INCLUDES THE FOLLOWING: HILTI ANCHOR BOLT, ANCHOR BOLT INSERT, PLATE WASHER, RETAINER RING, HILTI HY-200 ADHESIVE.

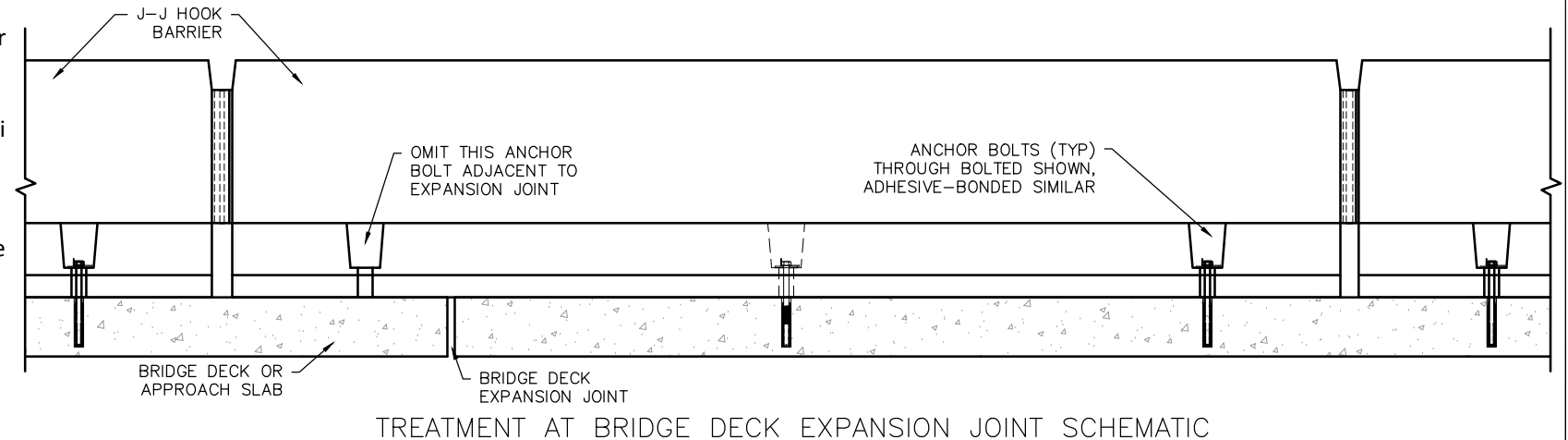
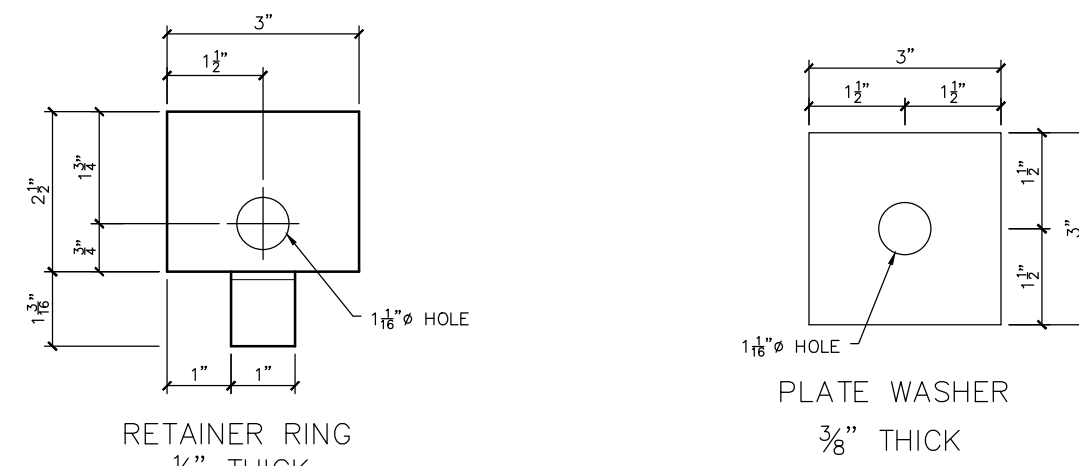
Install two (2) Anchor Bolt Assemblies per 12' J-J Hook Barrier section and three (3) Anchor Bolt Assemblies per 20' J-J Hook Barrier section on the traffic side of the J-J Hook Barrier as shown. Do not drill into or otherwise damage the tops of supporting beams or girders, bridge deck expansion joints or drains.

Move one (1) Anchor Bolt to the center pocket within a single J-J Hook Barrier if a conflict exists between the Anchor Bolt location and a bridge deck expansion joint or drain. Maintain two (2) anchor bolts per 12' barrier section and three (3) anchor bolts per 20' barrier section. The adjacent J-J Hook Barrier must each be installed with the standard two (2) Anchor Bolts per 12' barrier section or three (3) Anchor Bolts per 20' barrier section.

Move one (1) Anchor Bolt to the center pocket within a single J-J Hook Barrier as shown in the Treatment at Bridge Deck Expansion Joint Schematic if the J-J Hook Barrier straddles a bridge deck expansion joint. Maintain two (2) anchor bolts per 12' barrier section and three (3) anchor bolts per 20' barrier section. The adjacent J-J Hook Barrier must each be installed with the standard two (2) Anchor Bolts per 12' barrier section or three (3) Anchor Bolts per 20' barrier section.

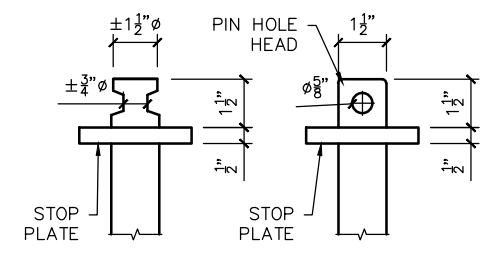
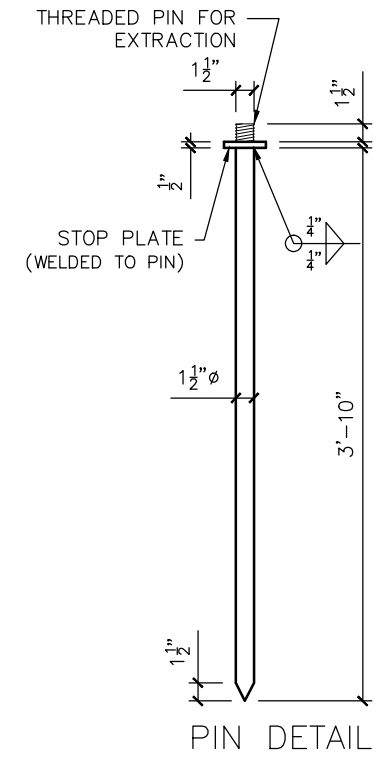
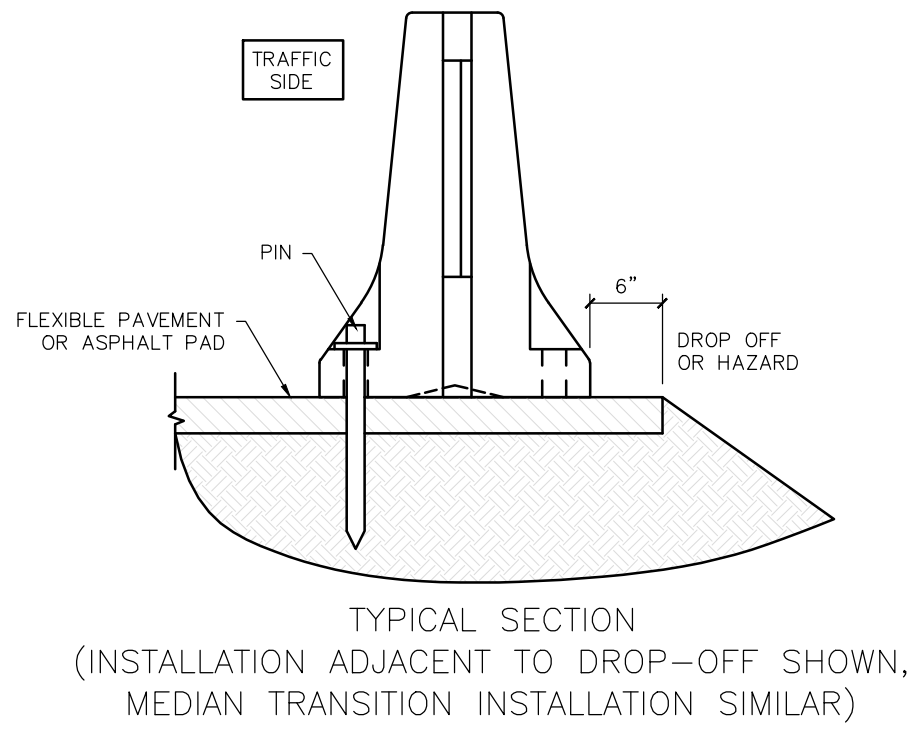
ADHESIVE-BONDING MATERIAL SYSTEMS: Adhesive Bonding Material Systems for Anchor Bolt Inserts shall be Hilti HY-200 adhesive installed per manufacturers instructions.

REMOVAL OF ANCHOR BOLTS: Upon removal or relocation of J-J Hook Barriers, remove all Anchor Bolts and completely fill the remaining holes in bridge decks, approach slabs and roadway rigid pavements that are to remain. If a flexible pavement overlay is present and is to remain, completely fill the remaining holes in the flexible pavement with hot or cold patch asphalt material.

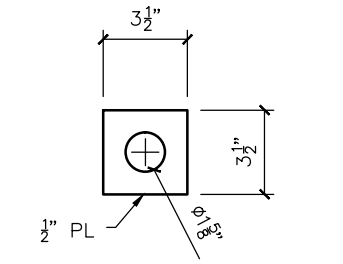


BOLTED DOWN BRIDGE, APPROACH SLAB AND TRANSITION INSTALLATIONS

EASI SET WORLDWIDE 5119 Catlett Rd. • Midland, VA 22728 • info@EasiSet.com www.EasiSet.com • 800-547-4045 • Fax 540-439-2541	REVISION	DESCRIPTION: J-J HOOKS BOLT DOWN TEMPORARY CONCRETE BARRIER	DRAWN BY: WCR CHECKED BY: MT APPROVED BY: -	DATE: 02-07-14 DATE: 02-07-14 DATE: -	SHEET 1/2
	1	1	1	1	1
	1	1	1	1	1



ALTERNATE PIN EXTRACTION DETAILS



STOP PLATE DETAIL

NOTES FOR PINNED DOWN ROADWAY AND TRANSITION INSTALLATIONS:

LIMITATION OF USE: This installation technique can be used on flexible pavement or an Asphalt Pad as shown. Pins must not be installed on both sides of the J-J Hook Barriers.

PINS: Provide steel for Pin assemblies in accordance with ASTM A 36 or ASTM A 709 Grade 36. All welding shall be in accordance with the American Welding Society Structural Welding Code (Steel) ANSI/AWS D1.1 (current edition). Weld metal shall be E60XX or E70XX. Nondestructive testing of welds is not required. Install (3) Pins on the traffic side of 12' J-J Hook Barrier sections and (4) Pins on the traffic side of 20' J-J Hook Barrier sections. Install Pins so that the Stop Plate is snug against the bottom of the Anchor Blockout.

BURIED UTILITIES: Prior to installation of Pins verify locations of all adjacent buried utilities, drainage structures, pipes, etc.

REMOVAL OF STAKES: Upon removal or relocation of J-J Hook Barriers, completely remove all Pins and completely fill the remaining holes in flexible pavement that is to remain with hot or cold patch asphalt material.

REUSE OF STAKES: Stakes may be reused if they have the structural integrity of new stakes.

==== PINNED DOWN ROADWAY AND TRANSITION INSTALLATIONS =====