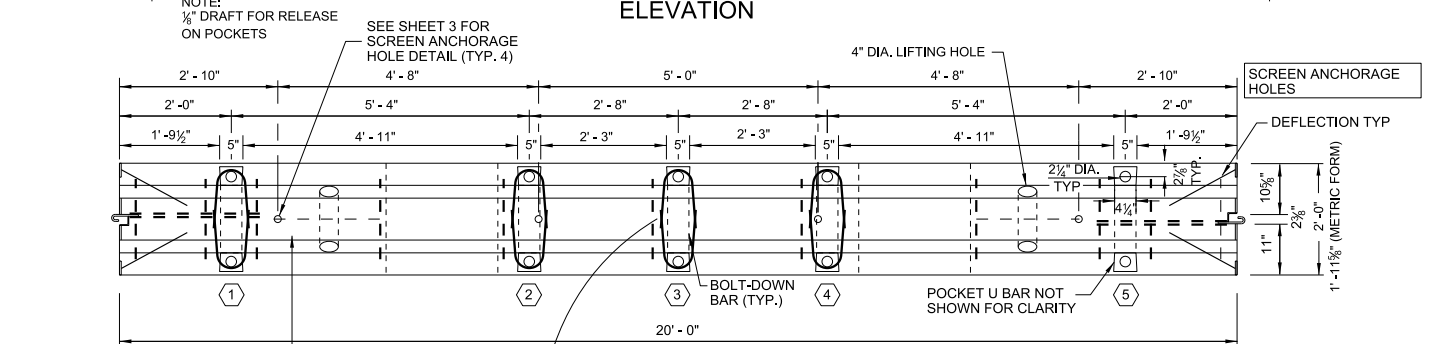
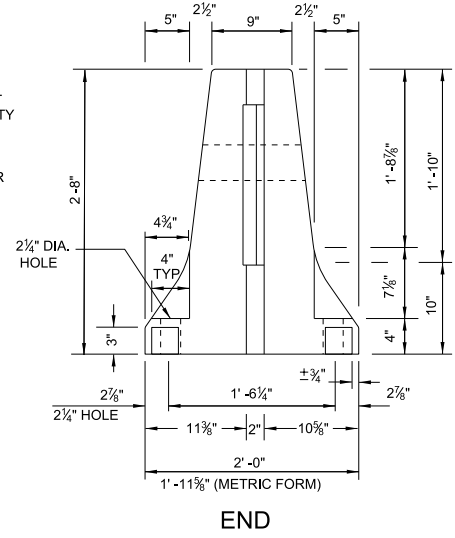
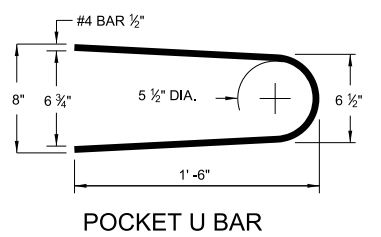
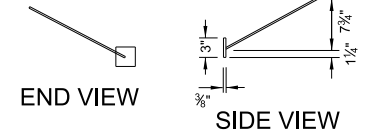
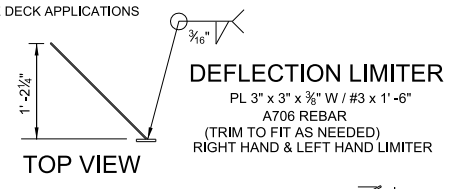
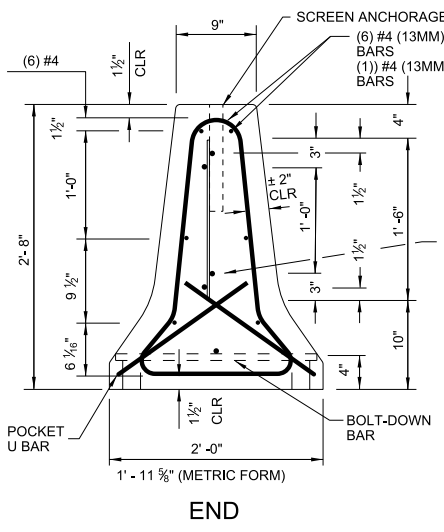
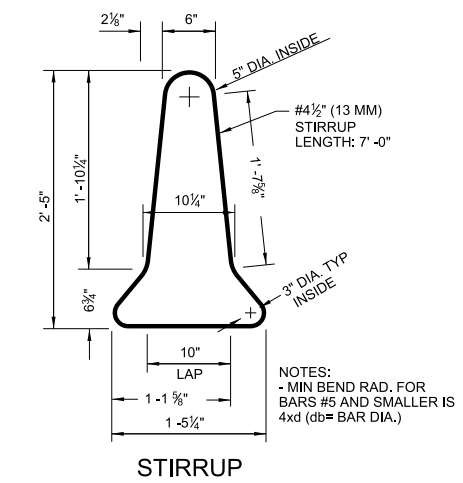


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GENERAL NOTES AND SPECIFICATIONS:

MATERIALS:
 CONCRETE: Class AA Concrete 4000 PSI (34 MPa) minimum compressive strength in 28 days.
 REINFORCING: ASTM A-706 (A-706M) Grade 60, rebar welded to steel connectors plates. All reinforcing steel will be grade 60, unless otherwise specified. All welder rebar is ASTM A706. Producers option to use of lifting devices, chairs, spacers, or miscellaneous rebar to secure cage in forms & handling.
 STEEL: ASTM A-36 (A-36M) (plain / mill finish), LIFTING DEVICES AND LOCATIONS WILL VARY BY MANUFACTURER / STATE DOT
 WELDING: AWS D1.1 structural welding code-steel, AWD D1.4 structural welding code - reinf. steel
 TOLERANCES:
 connector location +/- 1/16" (1.6mm)
 width of connector @ B + 1/32" (0.8mm)
 connector plate size + 1/8" (3.2mm)
 barrier length + 1/4" (6.4mm)
 DESIGN: MASH TL-3



Materials List

- (11) #4 Stirrups per barrier
- (3) Bolt down bars per barrier
- (10) U-Bars per barrier
- (4) Deflection limiters per barrier
- (2) J-J-Hooks assembly per barrier
- (8) #4 Horizontal bars 19'-7" lg

Concrete CY: 2.36
 Weight: 9,577 Lbs

Deflections:

Bolt-Down:

- Dynamic deflection = 5.9"
- Working width: 27.5"

Stake-Down:

- Dynamic deflection = 8.8"
- Working width: 32.0"

Free-Standing:

- Dynamic deflection = 62.9"
- Working width: 86.5"

NEVADA DEPARTMENT OF TRANSPORTATION

CHIEF ROAD DESIGN ENGR SIGNED ORIGINAL ON FILE

ADOPTED 10/2021

REVISED 10/2021

J-J HOOKS TEMPORARY CONCRETE BARRIER 20'-0" FREE-STANDING AND ANCHORED BARRIER DETAIL

SPEC. # 502

DETAIL NUMBER JJ02-R2

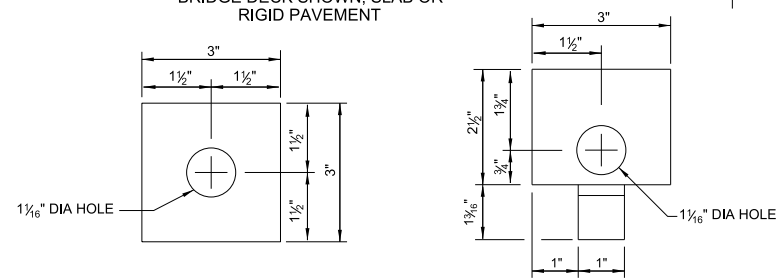
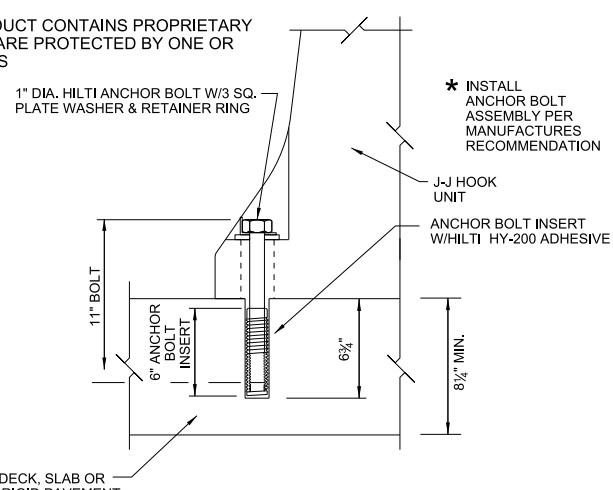
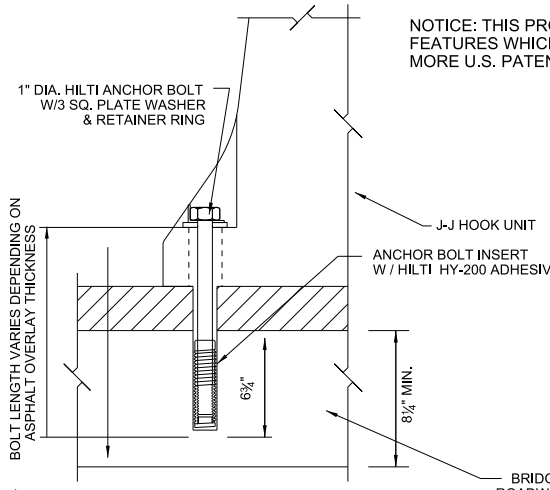
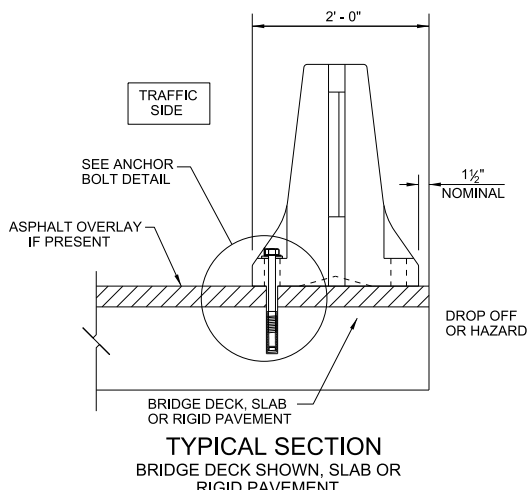


PLATE WASHER 3/8" THICK RETAINER RING 1/8" THICK

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. NOTE: CONSULT WITH DOT FOR BOLT-DOWN USE on bridge superstructure that contain post-tensioned tendons within the concrete deck (top flange of concrete box girders) or on bridge superstructures consisting of longitudinally prestressed, transversally post-tensioned, solid or voided concrete slab units and verify bridge deck thickness is 8 1/2" minimum for anchor bolt option.

ANCHOR BOLTS, ANCHOR BOLT INSERT, NUT AND WASHERS: Hilti Anchor Bolts shall be in accordance with ISO R898 Class 8.8 (minimum yield strength of 92,000 psi and minimum tensile strength of 120,000 psi) or equivalent material SAE J429 Grade 5 or ASTM A325 Bolt. Adhesive-Bonded Anchor Bolt Inserts shall be Hilti HRT-1 (1" x 6" in accordance with DIN / ISO 898-1. Flat washers shall be in accordance with ASTM F436 and Plate Washers (& Retainer Ring) shall be in accordance with ASTM A36 or ASTM A709 Grade 36. * ANCHOR BOLT "ASSEMBLY" INCLUDES THE FOLLOWING: HILTI ANCHOR BOLT, ANCHOR BOLT INSERT, PLATE WASHER, RETAINER RING, HILTI HY-200 ADHESIVE.

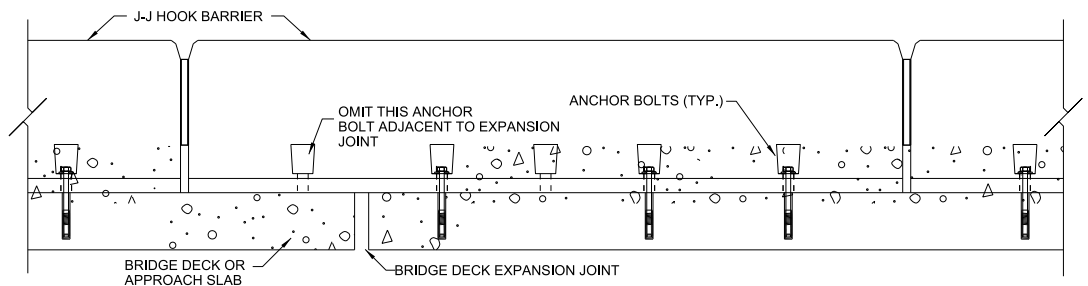
Install two (2) Anchor Bolt Assemblies per 12' - 6" J-J Hook Barrier or three (3) Anchor Bolt Assemblies per 20' - 0" section on the traffic side of the J-J Hook Barrier as shown. Do not drill into or otherwise damage the tops of supporting beams or girders, bridge deck expansion joints or drains.

Move one (1) Anchor Bolt to the center pocket within a single J-J Hook Barrier as shown in the Treatment at Bridge Deck Expansion Joint Schematic If the J-J Hook Barrier straddles a bridge deck expansion joint or drain. Maintain two (2) anchor bolts per 12' - 6" barrier section or three (3) anchor bolts per 20' - 0" barrier section. The adjacent J-J Hook Barrier must each be installed with the standard two (2) Anchor Bolts per 12' - 6" barrier section or three (3) Anchor Bolts per 20' - 0" barrier section.

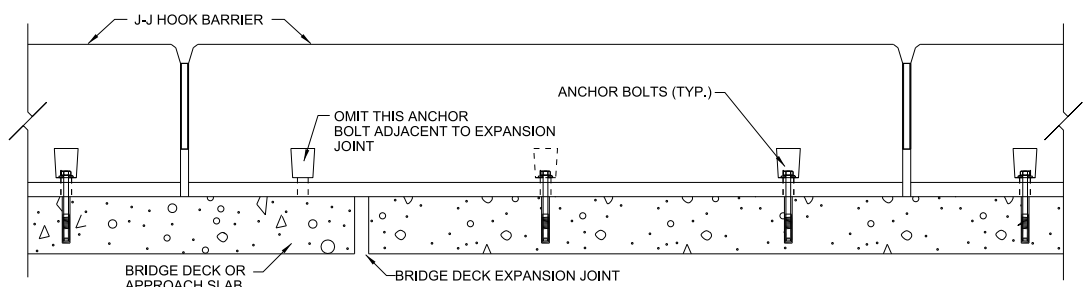
ADHESIVE- BONDING MATERIAL SYSTEM: Adhesive Bonding Material System for Anchor Bolts Inserts shall be Hilti HY-200 adhesive installed per manufacturers instructions.

REMOVAL OF ANCHOR BOLTS: Upon removal or relocation of J-J Hook Barrier, remove all Anchor Bolts and completely fill the remaining holes in bridge decks, approach slabs and road way 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.

WITH ASPHALT OVERLAY WITHOUT ASPHALT OVERLAY
 ADHESIVE BONDED ANCHOR INSTALLATION ON BRIDGE DECK, APPROACH SLAB OR RIGID PAVEMENT



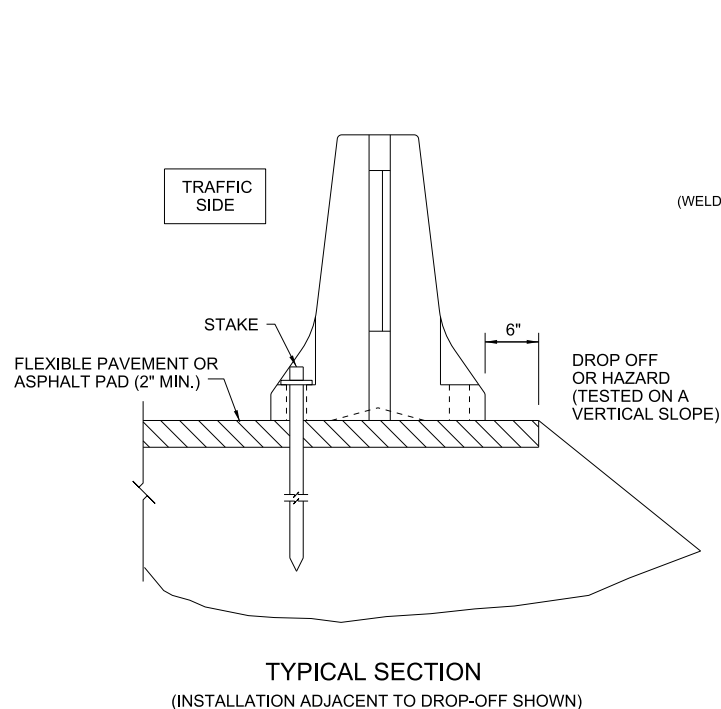
TREATMENT AT BRIDGE DECK EXPANSION JOINT SCHEMATIC (20' BARRIER)



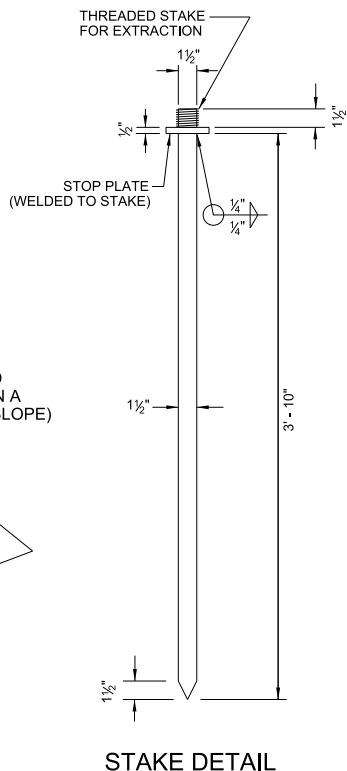
TREATMENT AT BRIDGE DECK EXPANSION JOINT SCHEMATIC (12.5' BARRIER)

BOLTED DOWN BRIDGE, APPROACH SLAB AND TRANSITION INSTALLATIONS

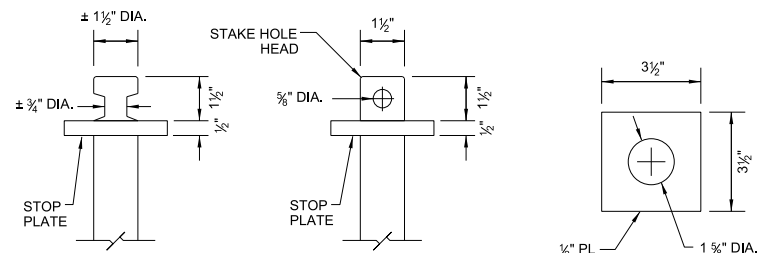
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TYPICAL SECTION
(INSTALLATION ADJACENT TO DROP-OFF SHOWN)



STAKE DETAIL



ALTERNATE STAKE EXTRACTION

STOP PLATE DETAIL

NOTES FOR STAKED DOWN ROADWAY AND TRANSITION INSTALLATIONS:

LIMITATION OF USE: This installation technique can be used on flexible pavement or Asphalt Pad as shown. Stakes may also be installed through an asphalt overlay into concrete pavement.

STAKES: Provide steel for stake assemblies in accordance with ASTM A36 or ASTM A709 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.

Once the barriers are placed, holes for receiving the 1 1/2" diameter pin, 48" long are drilled through each pocket into the roadway on the traffic side. Install (3) stakes on the traffic side of 12' - 6" J-J Hook Barrier sections. Install stakes so that the Stop Plate is snug against the bottom of the Anchor Blockout. Install (4) stakes on the traffic side of 20' - 0" J-J Hook Barrier Sections. Install stakes so that the top Stop Plate is snug against the bottom of the Anchor Blockout.

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

REMOVAL OF STAKES: Upon removal or relocation of J-J Hook Barrier, completely remove all stakes 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.

STAKE DOWN ROADWAY AND TRANSITION INSTALLATIONS