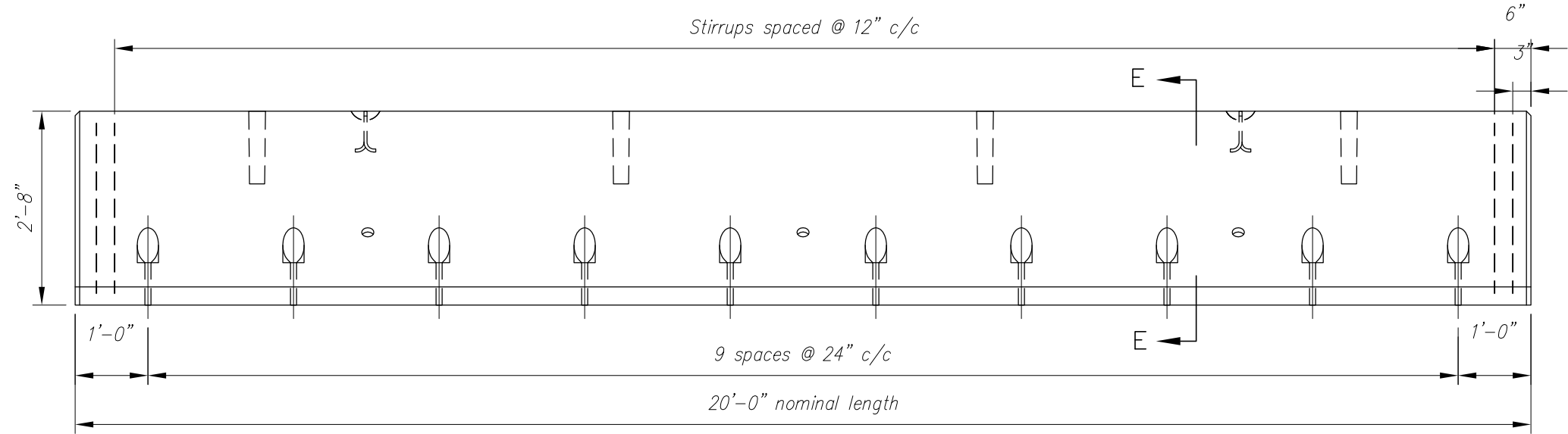
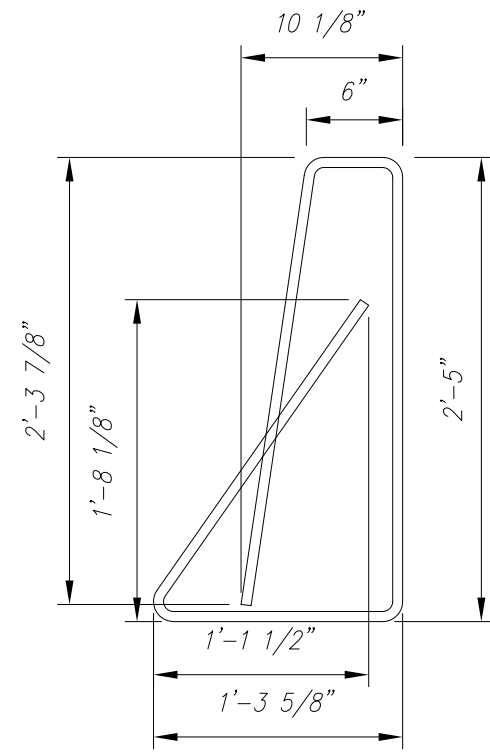


TOP VIEW

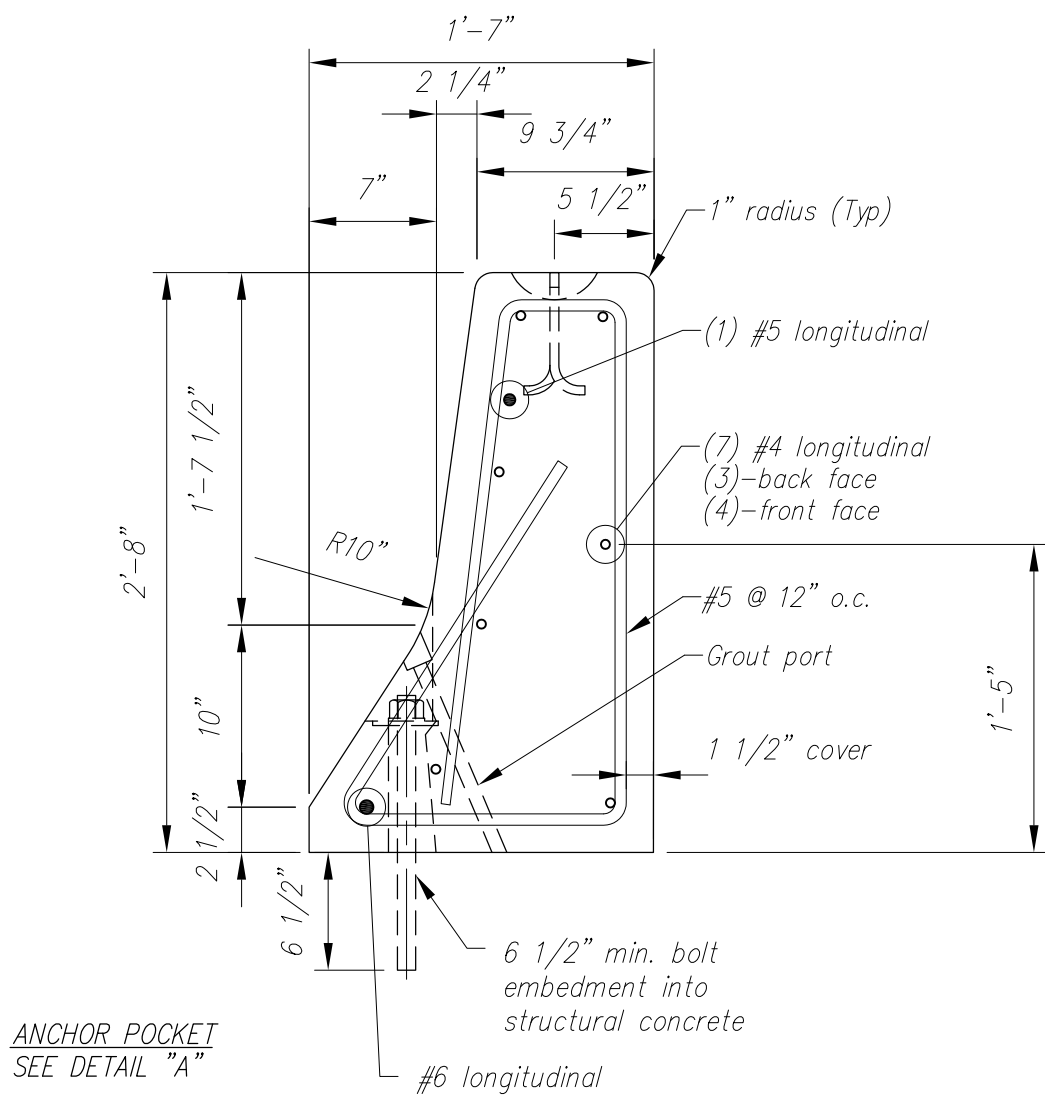
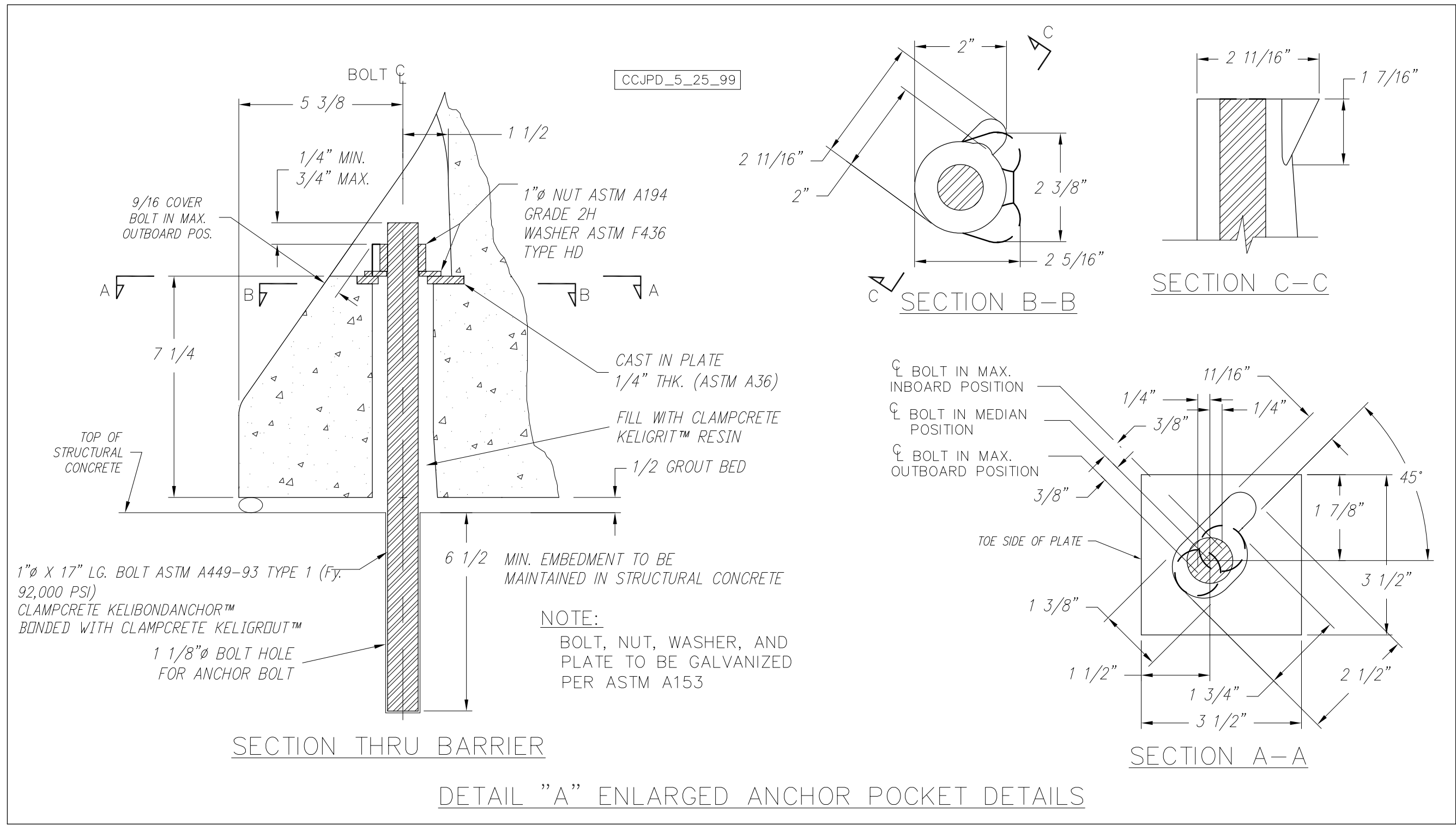


ELEVATION - TRAFFIC SIDE

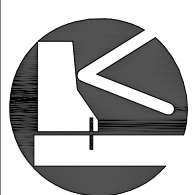


BAR BEND DETAILS

- GENERAL NOTES:
- Barrier to be built in accordance with the barrier specifications and contract documents.
 - Anchors to be Clampcrete 1" Kelband Anchors™, anchored to a minimum depth of 6 1/2" in structural concrete of road deck with Clampcrete Keligrout™ resin and drilled and set in accordance with the manufacturer's instructions.
 - All reinforcing bars to be AASHTO M31 (ASTM A615) grade 60 epoxy coated.
 - Removable type anchor bolts, washers and nuts shall be galvanized per ASTM A153. Bearing plates shall be galvanized per AASHTO M270 (ASTM A207) grade 50.
 - Concrete to have a minimum strength of 5,000 psi air entrained 4.5% to 7.5%.
 - Barrier shall be precast in steel forms and shall have a smooth finish.
 - Anchor bolts shall be 1" Kelband Anchors™, ASTM A449-93 Type 1, ty 92,000 psi; nuts shall be ASTM A194 grade 2H; washers shall be ASTM F436, HD type.
 - Before the installation begins (2), or more if needed for a representative sample, 1" Kelband Anchors™ should be installed and bonded with the Clampcrete Keligrout™ into the concrete deck where the barriers are to be installed (Refer to note #10, #11 and #12 below). Perform the non-destructive proof-load tests in accordance with the ASTM E-488 Standards to confirm that the minimum pullout requirement of 36 Kips can be achieved.
 - Immediately prior to placement, the deck where the barrier will be placed must be air blown or swept clean. Place barrier per plans.
 - After barrier placement, the 1-1/2" holes for the anchors are drilled through the bearing plate to a probe depth of 6 1/2" into the road deck using a compressed air drill similar to Sullair model MRD30. Larger or smaller bit sizes MAY NOT be used. Electric hammer drills MAY NOT be used. Diamond core drills may be used only in combination with a scarifying bit. Contact Clampcrete for detailed instructions and information on purchasing the scarifying bit.
 - After the hole is drilled, place the undercut bit in the hole all the way to the bottom. Engage the drill and rotate the bit in a circular pattern to create a bulb at the bottom of the hole.
 - Holes are then blown dry with clean, dry air to provide a dust free surface to ensure full bond of the Clampcrete Keligrout™ to the concrete. Clampcrete Keligrout™ shall be mixed in accordance with the instructions provided and then measured and poured into the cleaned holes. The anchor is then inserted into the hole to depth and rotated to ensure full wetting. After the resin has set and if non destructive testing has been successfully completed in a representative sample of the deck to the satisfaction of the engineer per note #8 above, the bolts can be tightened snug tight plus 1/2 turn. Use Loctite or equivalent thread locker to insure nut stays snug. In lieu of non destructive testing, each anchor can be pre-loaded to 36 Kips by a method to be determined by the contractor.
 - The anchorage hole through the barrier shall be filled with contractor provided approved sealant when barrier is in short term temporary use.
 - Barrier weight - 0.23 tons per linear foot.
 - The standard 20' long barrier is shown. Other special barriers with lengths greater than 12' and shorter than 20' can be provided.



SECTION E-E



CLAMPCRETE
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Rev.	Date	DESCRIPTION	By	
		REVISIONS		

This drawing is based upon information provided from the following documents and/or sources:

Engineer:
Project No:
Drawings: N/A

Specifications: N/A

Other Sources:

CSI
Concrete Systems Inc.
AUTHORIZED MANUFACTURER
OF THE CLAMPCRETE CRASH
TESTED BARRIER SYSTEMS

STATE AGENCY
massDOT
Moving Massachusetts Forward
Highway
Drawn By: AAK
Checked By: AAK
Approved By: AAK
Date: 03/26/2013

D	CA/T 1932 A24 STANDARD 20' BARRIER 32"H W/FENCE HOLES	REV 0
	Drawing No. 1932-A24-20F	
Quantity:	Project No:	SHEET 1 OF 1

TL-4 CRASH TESTED
CLAMPCRETE BARRIER SYSTEM