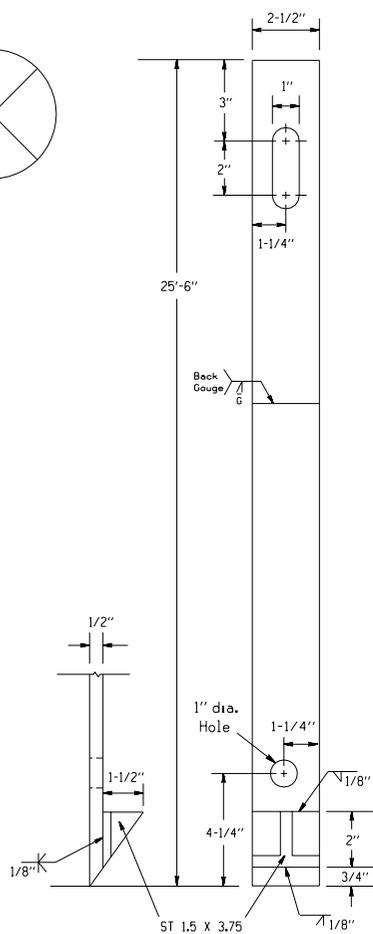
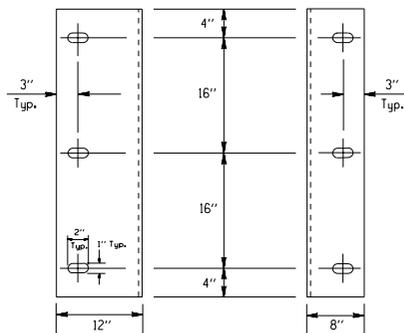


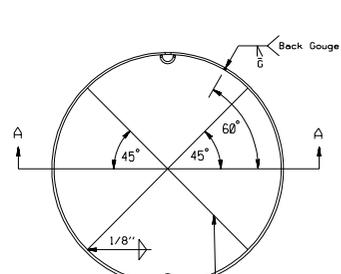
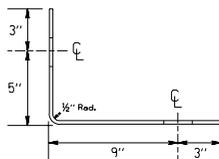
CYLINDER ARRANGEMENT



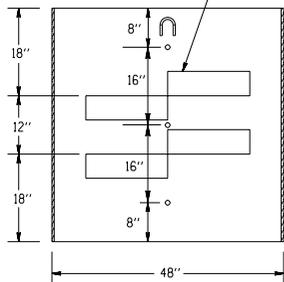
SKID RAIL
2 Required



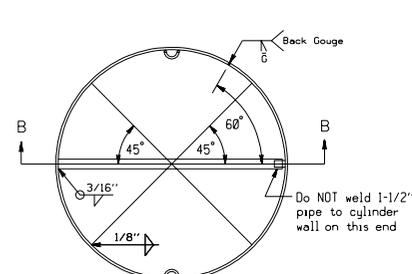
L - BRACKET
(1/4" Thick)
2 Required



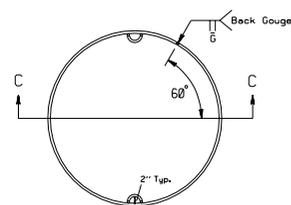
5" X 1/8" Steel Tension Straps, Typical



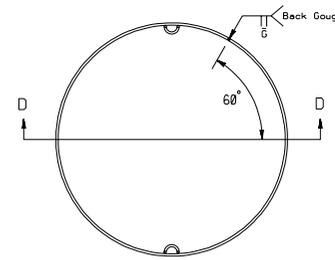
SECTION A - A
CYLINDERS A, B, C



SECTION B - B
CYLINDERS D, E, F, G



SECTION C - C
CYLINDERS L, M



SECTION D - D
CYLINDERS H, I, J, K, N

GENERAL SPECIFICATIONS

- All steel used in the fabrication of the CIAS shall be produced in the United States.
- Steel Specifications:
 - All steel plates, bars, and structural shapes shall conform to the requirements of ASTM A36.
 - All steel sheets and strips shall conform to the requirements of ASTM A569.
 - All steel pipe shall conform to the requirements of ASTM A53, Grade B.
- All welding shall be performed by ConnDOT certified welders, and shall conform to the requirements of the most recent edition of the State of Connecticut, Department of Transportation, Standard Specifications. Welding electrodes shall be approved by the Engineer before work begins.
- All edges shall be machined in a workmanlike manner and shall be free of burrs and sharp edges. All holes shall be drilled or machine cut.
- All complete CIAS units shall be assembled in their entirety, inspected and approved by ConnDOT prior to shipping.
- Each steel cylinder shall:
 - have the following wall thickness. No substitutions in wall thickness sizes will be accepted:
A, B, C = 1/4" D, E = 3/8" F, G, H, I, J, K, N = 3/8" L, M = 8 gage
 - have a single electrically welded seam, cut square;
 - be ± 1/2" of the specified diameter, measured across any diameter of the cylinder;
 - have 1"-diameter holes drilled 8" from the top and 8" from the bottom at all locations where the cylinders touch each other in the arrangement shown. Cylinders A, B, C shall have 1"-diameter holes drilled at the rear of the system as shown in Section A-A;
 - have two rings welded to the inner face for lifting purposes as shown. The lifting rings shall be made from 1/2" round bar stock, and;
 - be permanently labeled on the inside wall with its individual letter designation shown.
- Stiffeners:
 - Cylinders D, E, F, G shall each have two compression pipe stiffeners installed as shown. The pipes shall be fabricated from 1-1/2" ID, Schedule 40 steel pipe. Each of these internal stiffening pipes shall be welded to the cylinder wall on ONE END ONLY. The free end shall rest on a pipe retainer as shown. The retainers shall be 3" in length, and fabricated from 1" ID, Schedule 40 steel pipe. The retainers shall be welded to the cylinder wall as shown, but NOT welded to the 1-1/2" ID stiffening pipe.
 - Cylinders A, B, C, D, E, F, G shall each have four tension straps installed as shown. Tension straps shall be 5" X 1/8", and shall be cut to the proper length and welded to the cylinder wall at the orientation and height shown.
 - When the CIAS is assembled, the stiffeners (compression pipes and tension straps) shall be oriented to the Systems' centerline as shown on the Cylinder Arrangement detail. All cylinder sections (A-A thru D-D) are taken perpendicular to the Systems' centerline.
- Connections:
 - Each complete CIAS unit shall be supplied with fifty (50) 2"-long X 3/8"-diameter bolts conforming to ASTM A307. Each bolt shall be provided with two (2) washers and one (1) nut. All bolts, nuts, and washers shall be galvanized in accordance with ASTM A153.
- Skid Rails and L-Brackets:
 - Each complete CIAS unit shall be provided with two (2) skid rails fabricated from 2-1/2" X 1/2" bar stock, 25'-6" long. The rear end of each rail shall have a slot as shown, and the front end of each rail shall be beveled, have a wedge shaped ST 1.5 X 3.75 section welded to it, and have a 1" diameter hole as shown.
 - Each complete CIAS unit shall be provided with two (2) 12" X 8" X 1/4" L-Brackets, 40" long with six (6) 1" X 2" bolt slots as shown.
- Protective Coating:
 - Surface Preparation - All steel parts, with the exception of the connectors, shall be prepared for painting by sandblasting in conformance with Steel Structures Painting Council, SP-6, "Commercial Blast Cleaning." All blasted surfaces shall be approved prior to coating.
 - Prime Coat - All prepared surfaces shall be shop coated with an approved zinc-rich urethane primer. The prime coat shall be free of sags and runs and have a uniform dry film thickness of 3 - 5 mils. All primed surfaces shall be approved before the final coat is applied.
 - Final Color Coat - All primed surfaces shall be shop coated with an approved high-build aliphatic urethane, Federal Color No. 13538. The final coat shall be free of sags and runs with a uniform dry film thickness of 3 - 5 mils.

1	5/97	L-Brackets Center Hole added to rear of Cylinders A, B, & C.	
REV.	DATE	DESCRIPTION	SHEET NO.
		REVISIONS	

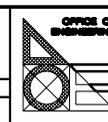
NOT TO SCALE

DESIGNER: John F. Carney III	6/83
DRAWER: E-M: G. Lohrey	11/98
Michael M. Kasznikas	11/98
CHECKED BY: L. A. Storon	11/86
DATE CHECKED:	

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

ENGINEER: OFFICE OF ENGINEERING

APPROVED BY: _____ DATE: _____



PROJECT TITLE:	TOWN:
CADD	PLOTTED

DRAWING TITLE: CONNECTICUT IMPACT ATTENUATION SYSTEM (CIAS) SHOP FABRICATED DETAILS
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PROJECT NO.:
DRAWING NO.:
MDS-
SHEET NO.: