



Report Number: 0170  
Issued: 02/2010  
Expires: 02/2011

**DIVISION: 05 METALS**  
**Section: 05150 Wire Rope Assemblies**

**REPORT HOLDER:**

**CABLE-TITE**  
**430 CALVERT DR.**  
**GALLATIN, TN 37066**  
**(615)451-9080**

**EVALUTION SUBJECT:**

**1.0 EVALUATION SCOPE**

**1.1 Compliance with the following codes:**

- 2006 International Building Code® (IBC)
- 2007 Florida Building Code® (FBC)

**1.2 Evaluated in accordance with:**

- ICC AC 309 Approved February 2007
- ASCE 19-96, Structural Applications of Steel Cables for Buildings

**Property Evaluated:**

- Tension Load Strength and Elongation

**2.0 USES**

The assemblies in this report and attached drawings are used to resist tension loads in Seismic Design Categories A and B.

**3.0 DESCRIPTION**

Reference Figure 1 Cable-Tite Assembly. The Cable-Tite assembly consists of six parts:

**3.1 Anchor Nut (Figure 2):** The anchor nut is 2" tall and 1.50" in diameter and has 1.75" deep internal threads. The threads are either 5/8x11 UNC or 1/2x13 UNC to suit the appropriate diameter-anchoring bolt. The nut is made of industrial grade cast steel IC-4130, ASTM A-732 grade 7Q and is yellow zinc plated for anti-rust protection. During the manufacturing process, a 7/16" hole is created along the entire length of the

anchor nut. Counter boring is not permitted.

**3.2 Locking Cap (Figure 3):** The cap is 1.625" tall and 1.75" in diameter. It attaches over the nut, locks, and holds the bottom cable vise in place. The cap is made of industrial grade cast steel IC-4130, ASTM A-732 grade 7Q and is yellow zinc plated for rust protection.

**3.3 Top Cap (Figure 4):** The top cap is 3" square and 0.740" tall. It has knurling on the bottom side for gripping the wooden top plate. It holds the top cable vise in place. The top cap is made of industrial grade cast steel IC-4130, ASTM A-732 grade 7Q and is yellow zinc plated for rust protection.

**3.4 Cable Vise (Figure 5):** The cable vise is 4" long and 1" in diameter. There are two cable vises per assembly. Cable vises are installed facing opposite directions to hold the cable taut. The body of the cable vise is made of 6061-T6 aluminum. The gripping mechanism is made of yellow zinc plated steel.

**3.5 Cable (Figure 6):** The cable is 1/4" diameter grade EHS made in accordance with ASTM A-475 nominal diameter is 1/4" and the nominal diameter of the wire within the strand is 0.08". The cable is cut to length on site. See Table 1 for Cable details.

**4.0 INSTALLATION**

A hole is drilled in the horizontal top plate of the wall to allow passage of the top cable vise. The top cable vise is fit into the top plate and the assembly is mounted to top of the wall secured with screws or nails. The anchor nut is screwed onto the J-bolt and tightened wrench-tight. The cable is then cut on site using a RIGID #1380 cable cutter (or equivalent), and is inserted into two opposite facing cable vises. The end cuts are left raw and inserted minimum of 4" into the cable vise. The lower cable vise is inserted into the cap and the cap is installed on the anchor in the "UNLOCKED POSITION". While holding the lower

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cable vise in its extreme upward position with one hand, insert the cable into the lower cable vise with the other hand. Feed the cable into the lower cable vise so that the cap remains snug against the anchor in the unlocked position. Using the supplied wrench, turn the collar clockwise through 120 degrees until a "CLICK" is heard and felt. Measure the pre-stress in the cable. When the measured cable pre-stress is within the acceptable range as determined in section 5.3, the installation process is complete. If the cable does not have enough pre-stress unscrew the anchor nut from the anchor bolt until the system is free of pre-stress. Then uninstall the locking cap from the anchor nut and repeat the installation process. Installation instructions are included in every shipment.

## 5.0 CONDITIONS OF USE

**5.1** Design of connections and anchorages, including plates and hold-downs as well as other components needed to transfer the tension load between portions of the structure shall be determined in accordance with the applicable code for each project by the licensed design professional of record and submitted to the building official for approval.

**5.2** Cable-Tite assemblies are limited to Seismic Design Categories A and B.

**5.3** Acceptable pre-stress load range for applications of Cable-Tite Assembly shall be determined by the person responsible for the structural design, and shall be specified to accommodate the worst-case scenario for a particular building. The selection of the acceptable pre-stress load range shall consider: framing compression, expected building settlements, wood shrinkage, and cable assembly properties. The required pre-stress shall be field verified. If required, cable tension meter shall be used to adequately measure the tension in the cable.

**5.4** Use of Cable-Tite steel cable assemblies to compensate for localized wood compression is outside the scope of this report.

**5.5** All cable assemblies are intended for installation on the dry side of exterior walls.

**5.6** All components of a Cable-Tite assembly are made of steel or aluminum and are therefore non-combustible. The use of the cable assemblies within fire-resistance-rated construction is beyond the scope of this report.

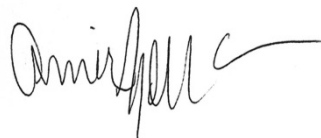
**5.7** Special inspection and structural observations shall comply with IBC sections 1704 and 1709 respectively.

## 6.0 EVIDENCE SUBMITTED

Data is in accordance to ICC-ES Acceptance Criteria for Steel Cable Assemblies (AC 369), approved February 2007. Test results are from laboratories in compliance with ISO/IEC 17025.

## 7.0 IDENTIFICATION

**7.1** The Cable Tite units are shipped in corrugated paper boxes. The product packaging is labeled with the manufacturer's name and address, product name Cable-Tite, the cable diameter, the maximum length of the cable assembly, date of manufacture or lot number traceable to production date, Smith Emery AA544, and the Evaluation Number (ER 0170). The logo and name are cast into each piece of the Cable-Tite assembly for part identification.

A handwritten signature in black ink, appearing to read "Dennis Hall".

Director of Evaluation Services

# EVALUATION REPORT



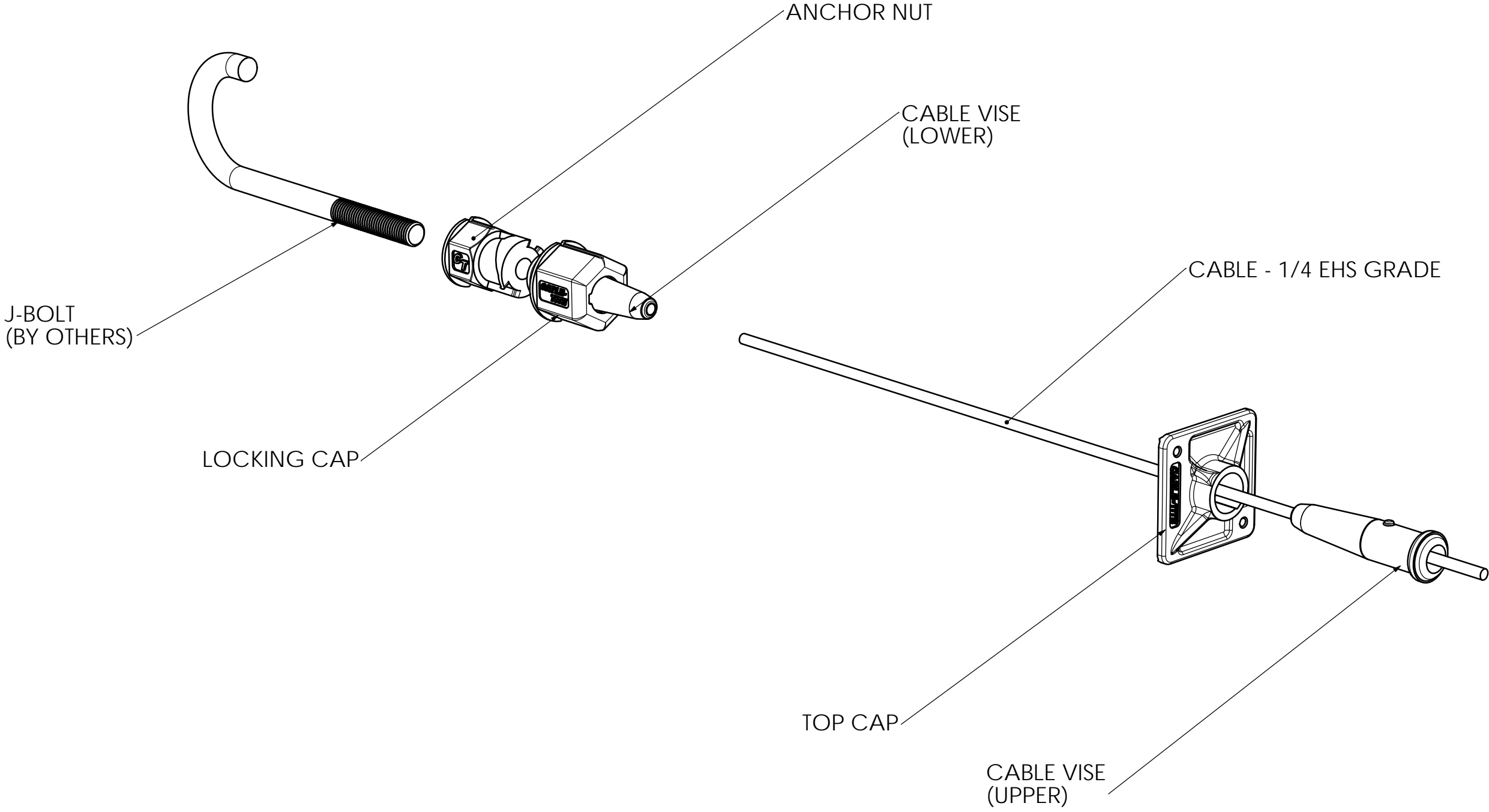
Report Number: 0170  
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**TABLE 1**  
(Cable Specifications)

<b>Item</b>	<b>SPECIFICATION</b>
Manufacturer	Emco Cables
Denomination	1/4" EHS
Standard Specification	ASTM A-475
Grade	Extra High Strength
Number of Wires	7
Diameter of Wires	7.99 E-2 in
Section of Strand	3.51 E-2 in <sup>2</sup>
Diameter of Strand	0.25 in
Weight	0.121 lb/ft
Breaking Strength	6,656 lbf
Allowable External Tension Force	3186 lbf
Lay of Strand	Left
Initial Modulus of Elasticity	25,579 to 28,421 kip/ in <sup>2</sup>
Expected elongation at allowable external tension force	4.5%
Class of Galvanization	A
Zinc Coating	3.74 E-2 lb/ft <sup>2</sup>
Constructive Stretch, Cs	0.0067 in/in
Stretch Modulus, Es	277.7 Kip/ in <sup>2</sup>
Relaxation Coefficient, Cr	12.5%
Residual Load at 0.078 in, Pr	161 lb
Initial Pre-stress tensile load	965 lb

REVISIONS				
REV.	DESCRIPTION	DATE	DWG NO	APPROVED

# FIGURE 1



**PROPRIETARY AND CONFIDENTIAL**

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF CABLE-TITE TIE-DOWN SYSTEMS. ANY REPRODUCTION OR DISTRIBUTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF CABLE-TITE TIE-DOWN SYSTEMS IS PROHIBITED

**UNLESS OTHERWISE SPECIFIED:**

DIMENSIONS ARE IN INCHES

**TOLERANCES (AS CAST):**

FRACTIONAL	± 1/32"
ANGLE	± 0.5°
LINEAR	±0.005" per Inch
ALL CORNER RADS	0.003" MIN

DATE:	2007.07.23	NAME:	A BUTLER	CUSTOMER:	CABLE-TITE
DRAWN:		PART NO:	ASSEMBLY	DESCRIPTION:	EXPLODED VIEW
CHECKED:		MATERIAL:		FINISH:	SEE PART DWGS
ENG APPR:		COMMENT:	EXPLODED VIEW OF CABLE-TITE ASSEMBLY		
MFG APPR:					
QA APPR:					

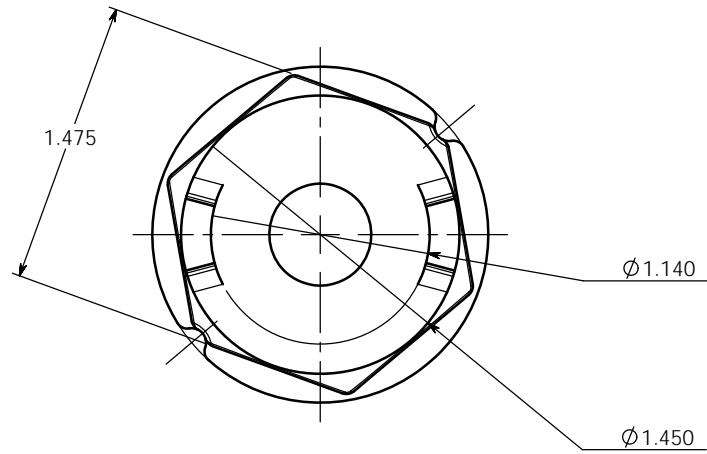
**CABLE-TITE**

DRAWING NO:  
**CT-C-05-REV C**

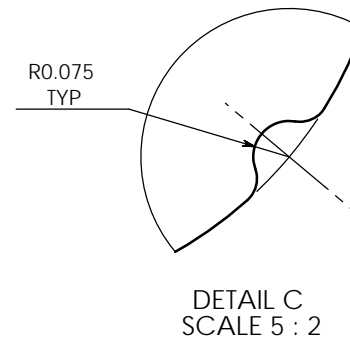
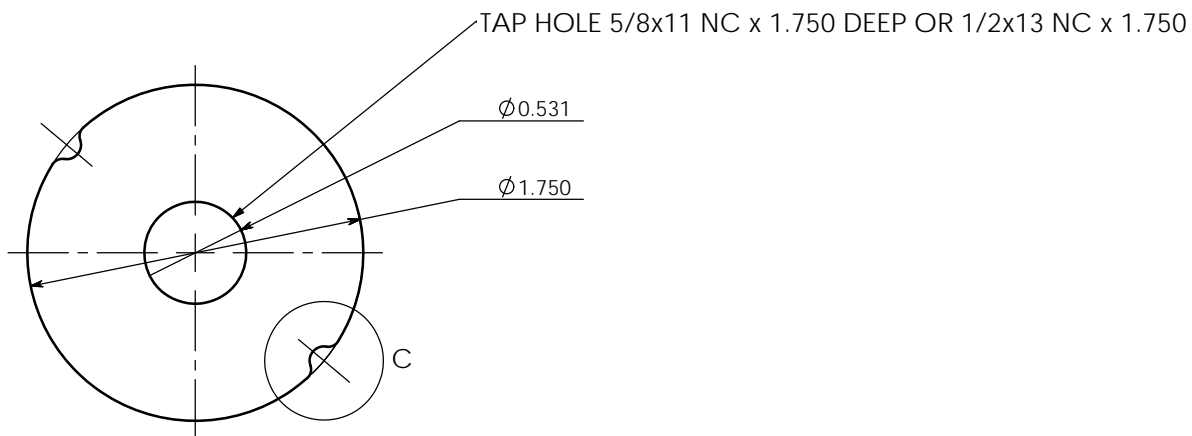
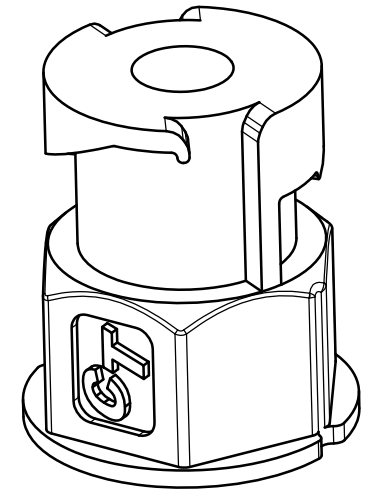
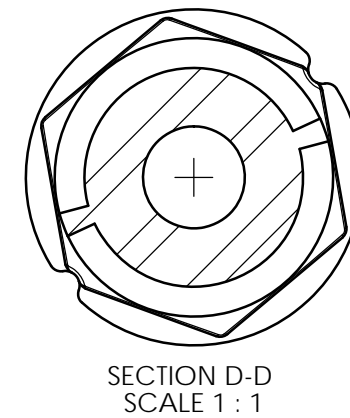
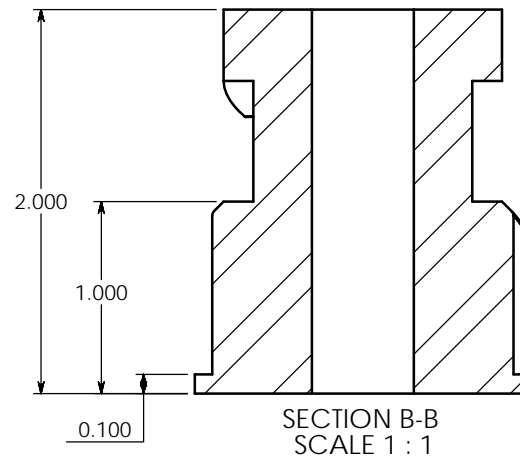
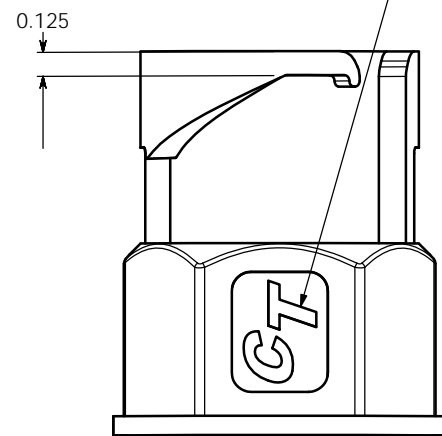
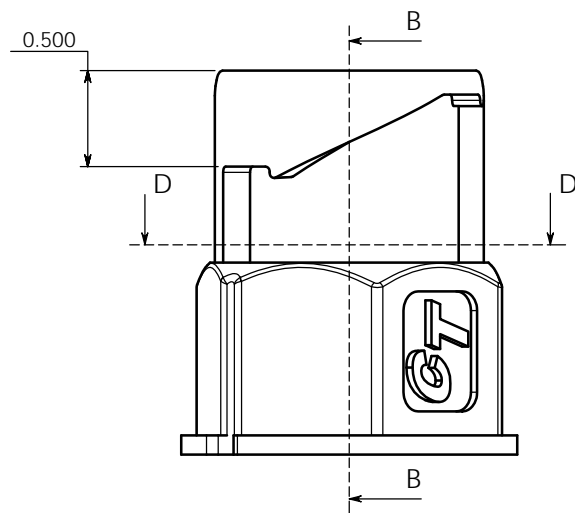
WEIGHT: LBS      ISSUED: 12/22/2009

# FIGURE 2

REVISIONS				
REV.	DESCRIPTION	DATE	DWG NO	APPROVED



LOGO ON BOTH SIDES OF PART  
FONT IS ARIAL BLACK ITALIC BOLD, 0.250 TALL



REFER TO THE SOLID MODEL FOR DIMENSIONS NOT FOUND ON THIS PRINT

IN CASE OF DISCREPANCY BETWEEN THE PRINT AND THE SOLID MODEL THE SOLID MODEL TAKES PRECEDENCE.

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DIMENSIONS ARE IN INCHES  
**TOLERANCES (AS CAST):**  
 FRACTIONAL ± 1/32"  
 ANGLE ± 0.5°  
 LINEAR ±0.005" per Inch  
 ALL CORNER RADS 0.003" MIN

DATE:	NAME:	CUSTOMER:	CABLE-TITE
DRAWN:	A BUTLER	PART NO:	01
CHECKED:		DESCRIPTION:	ANCHOR NUT
ENG APPR:		MATERIAL:	IC-4130 OR EQUIV
MFG APPR:		FINISH:	125 RMS
QA APPR:			
COMMENT:	INVESTMENT CASTING - YELLOW ZINC PLATED		

# CABLE-TITE

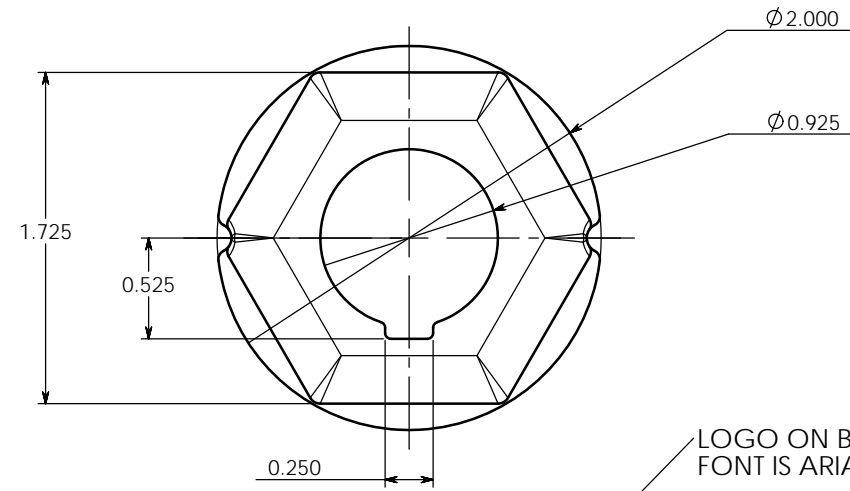
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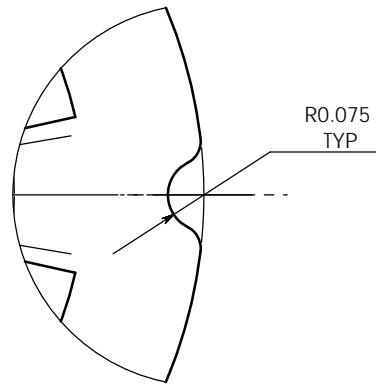
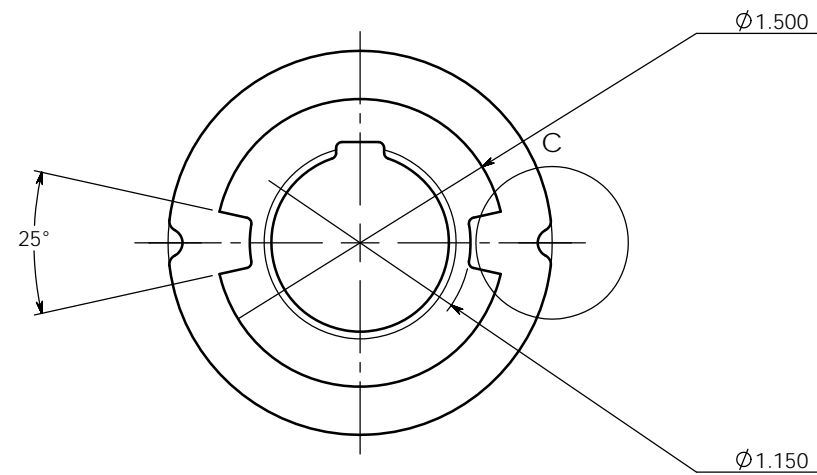
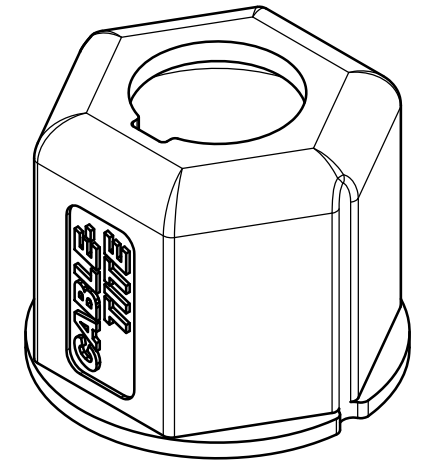
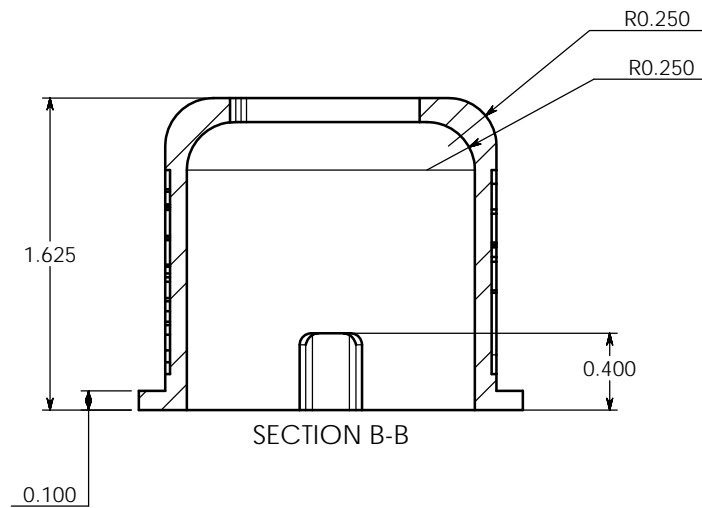
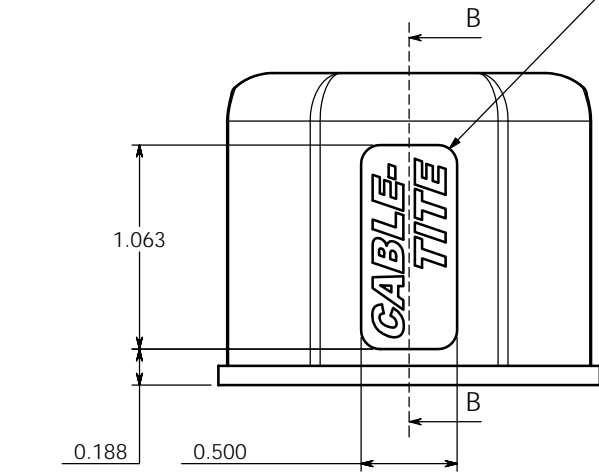
ISSUED: 12/22/2009

# FIGURE 3

REVISIONS				
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LOGO ON BOTH SIDES OF PART  
FONT IS ARIAL BLACK BOLD ITALIC, 0.160 TALL



DETAIL C  
SCALE 5 : 2

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**UNLESS OTHERWISE SPECIFIED:**

DIMENSIONS ARE IN INCHES	
<b>TOLERANCES (AS CAST):</b>	
FRACTIONAL	± 1/32"
ANGLE	± 0.5°
LINEAR	±0.005" per Inch
ALL CORNER RADS	0.003" MIN

DATE:	NAME:	CUSTOMER:	CABLE-TITE
DRAWN:	A BUTLER	PART NO:	02
CHECKED:		DESCRIPTION:	LOCKING CAP
ENG APPR:		MATERIAL:	IC-4130 OR EQUIV
MFG APPR:		FINISH:	125 RMS
QA APPR:			
COMMENT:	INVESTMENT CASTING - YELLOW ZINC PLATED		

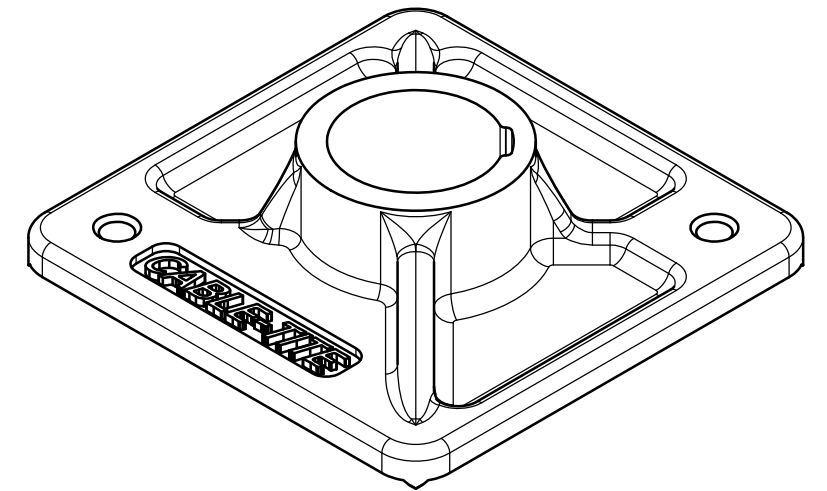
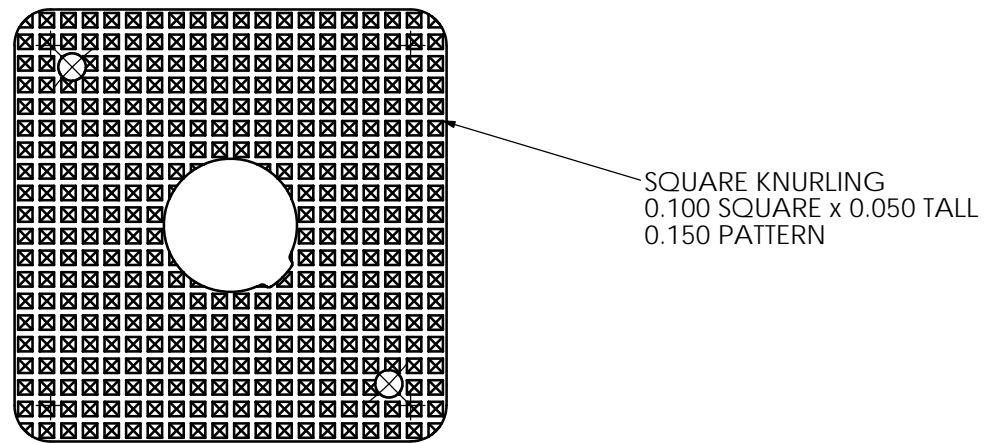
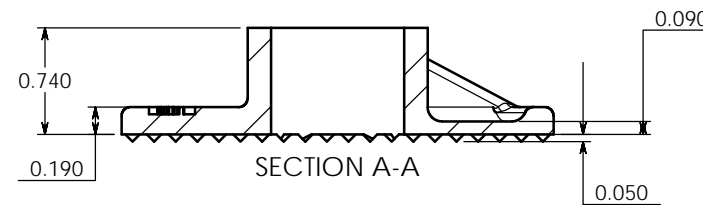
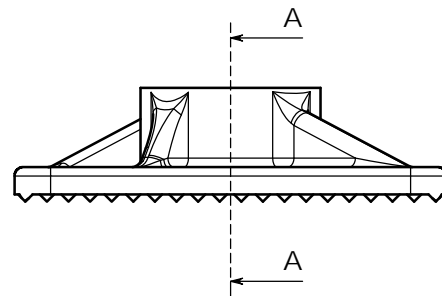
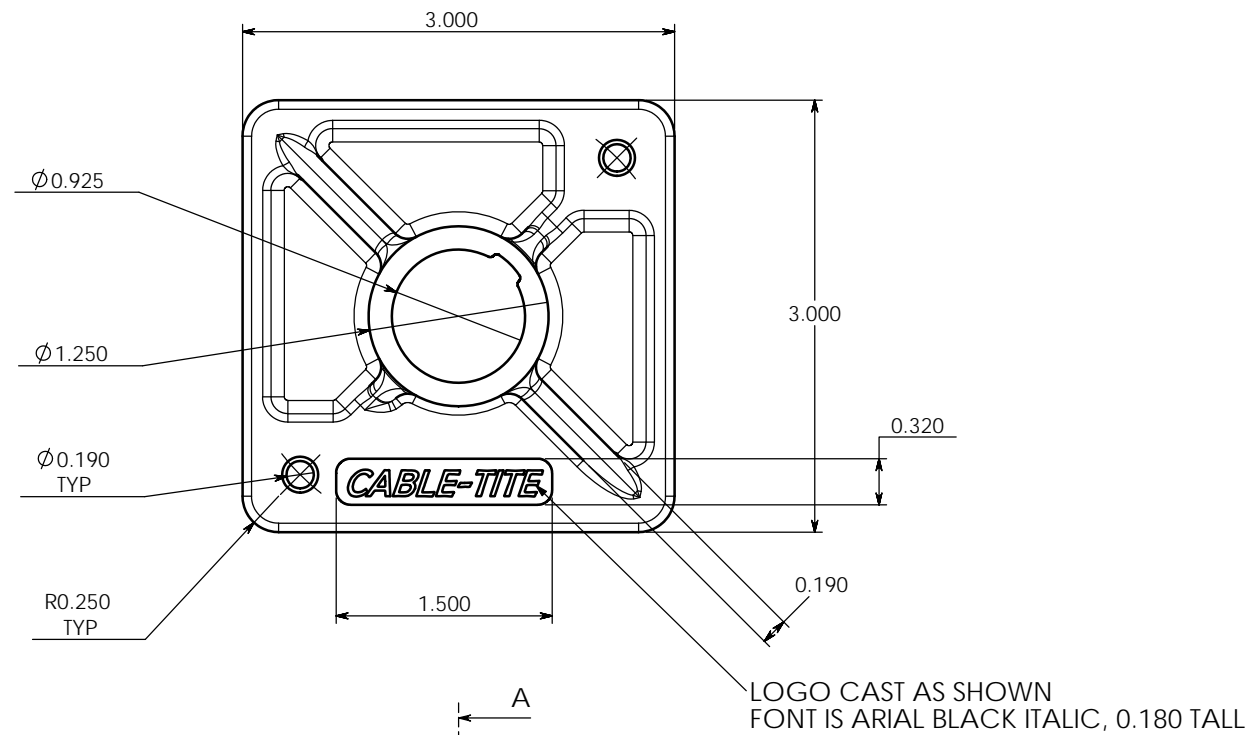
## CABLE-TITE

DRAWING NO:  
**CT-C-02-REV B**

WEIGHT: 0.393 LBS      ISSUED: 12/22/2009

# FIGURE 4

REVISIONS				
REV.	DESCRIPTION	DATE	DWG NO	APPROVED



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DIMENSIONS ARE IN INCHES  
TOLERANCES (AS CAST):  
 FRACTIONAL  $\pm 1/32"$   
 ANGLE  $\pm 0.5^\circ$   
 LINEAR  $\pm 0.005"$  per Inch  
 ALL CORNER RADS 0.003" MIN

	DATE:	NAME:	CUSTOMER:	CABLE-TITE
DRAWN:		A BUTLER	PART NO:	03
CHECKED:			DESCRIPTION:	TOP CAP
ENG APPR:			MATERIAL:	IC-4130 OR EQUIV.
MFG APPR:			FINISH:	125 RMS
QA APPR:				
COMMENT:	INVESTMENT CASTING - YELLOW ZINC PLATED			

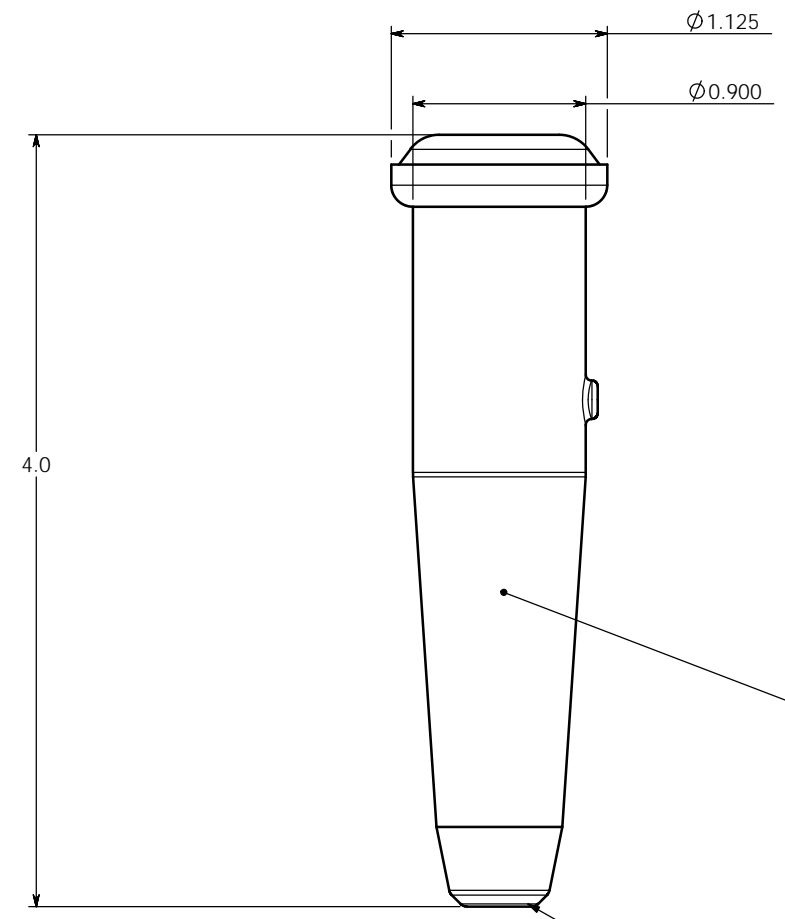
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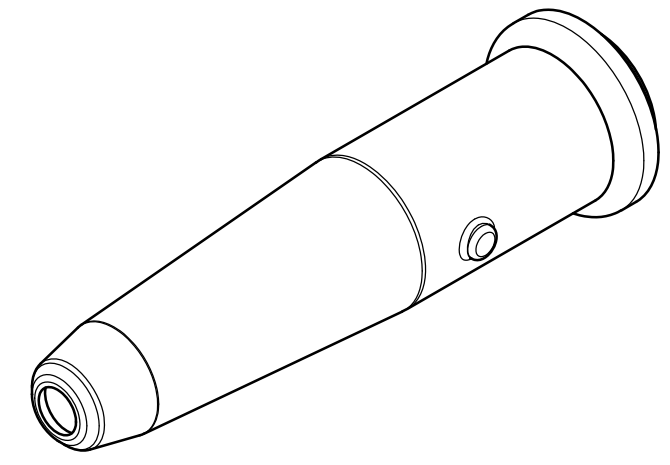
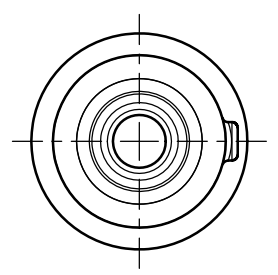
ISSUED: 12/22/2009

# FIGURE 5



PART IS MARKED WITH:  
 "1/4 STR.  
 6.6M STR.  
 MADE IN USA."  
 AND THE MACLEAN POWER SYSTEMS MARK  
 IN THE APPROXIMATE LOCATION SHOWN

OPENING TO SUIT 0.250 STRANDED CABLE



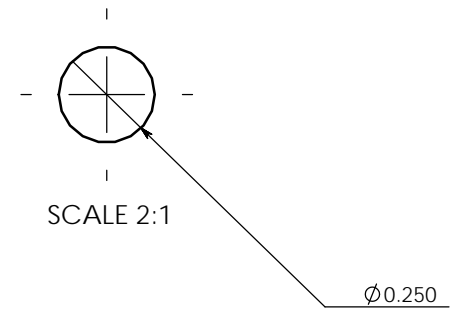
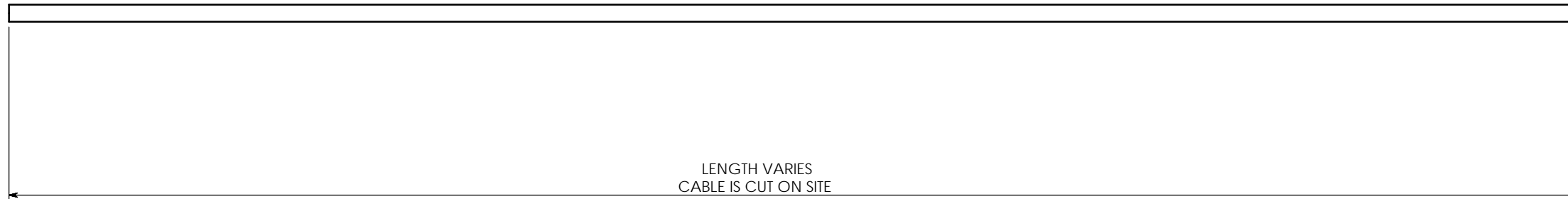
<p><b>PROPRIETARY AND CONFIDENTIAL</b></p> <p>THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF CABLE-TITE TIE DOWN SYSTEMS. ANY REPRODUCTION OR DISTRIBUTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF CABLE-TITE TIE DOWN SYSTEMS IS PROHIBITED</p>	<p><u>UNLESS OTHERWISE SPECIFIED:</u></p> <p>DIMENSIONS ARE IN INCHES</p> <p><u>TOLERANCES (AS CAST):</u></p> <p>FRACTIONAL           ± 1/32"</p> <p>ANGLE                   ± 0.5°</p> <p>LINEAR                 ±0.005" per Inch</p> <p>ALL CORNER RADS   0.003" MIN</p>	DATE:	NAME:	CUSTOMER: CABLE-TITE	<h2>CABLE-TITE</h2>		
		DRAWN:	2009.11.30	A BUTLER		PART NO: 06	
		CHECKED:				DESCRIPTION: CABLE VISE	
				ENG APPR:		MATERIAL: 6061-T6	DRAWING NO:
				MFG APPR:		FINISH: 125 RMS	<b>CT-C-06-REV 0</b>
				QA APPR:			WEIGHT: 0.188 LBS
				COMMENT:	MACLEAN POWER SYSTEMS P/N 416SR		ISSUED: 12/22/2009



# FIGURE 6

REVISIONS

REV.	DESCRIPTION	DATE	DWG NO	APPROVED
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		DRAWN:		CHECKED:		PART NO:	07		DRAWING NO:	
		ENG APPR:				DESCRIPTION:	CABLE		<b>CT-C-07-REV 0</b>	
		MFG APPR:				MATERIAL:	EHS CABLE IAW ASTM A475	WEIGHT: 0.318 LBS		
		QA APPR:				FINISH:	GALVANIZED	ISSUED:	12/22/2009	
		COMMENT:	SUPPLIED BY EMCO CABLES OR EQUIVALENT							