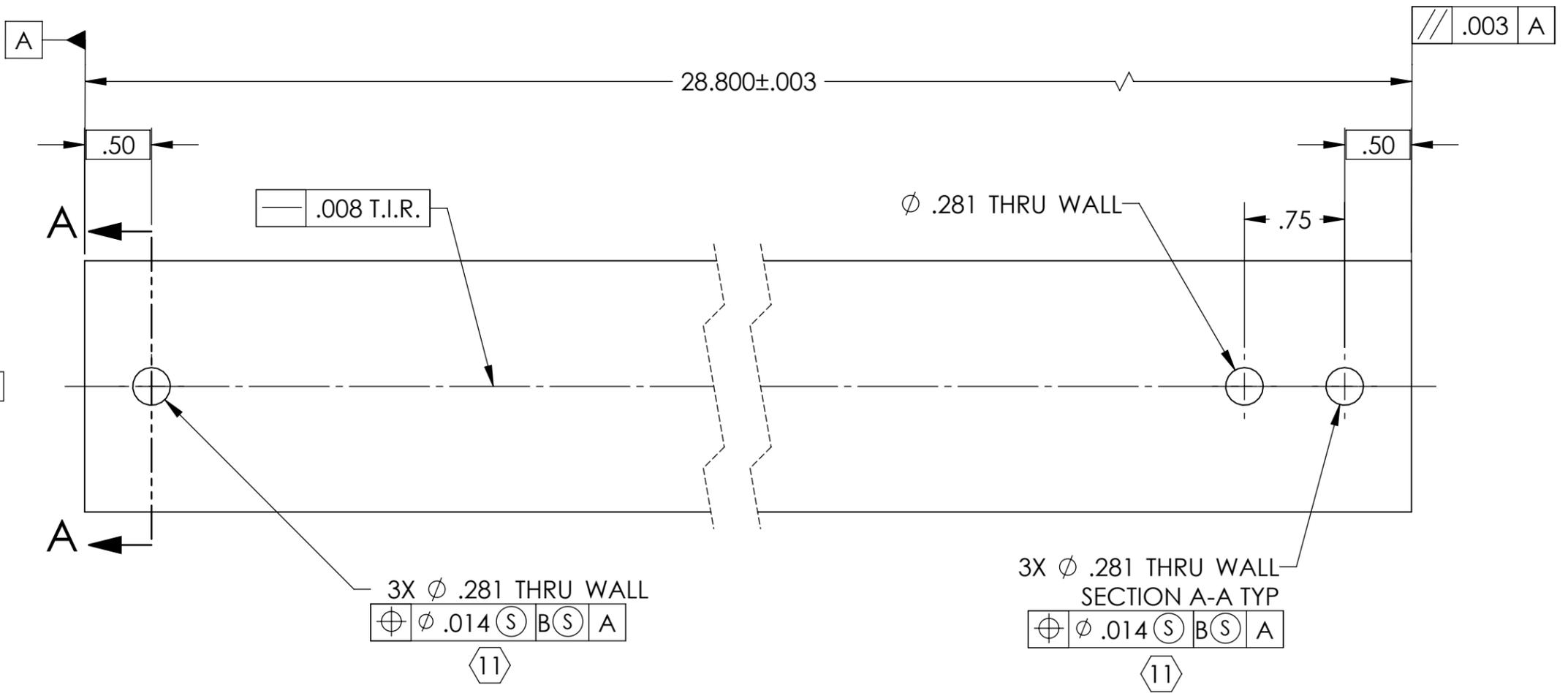
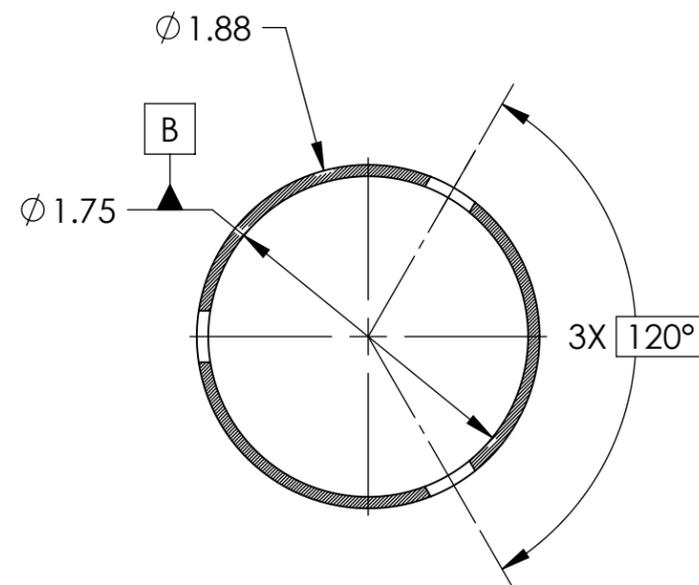
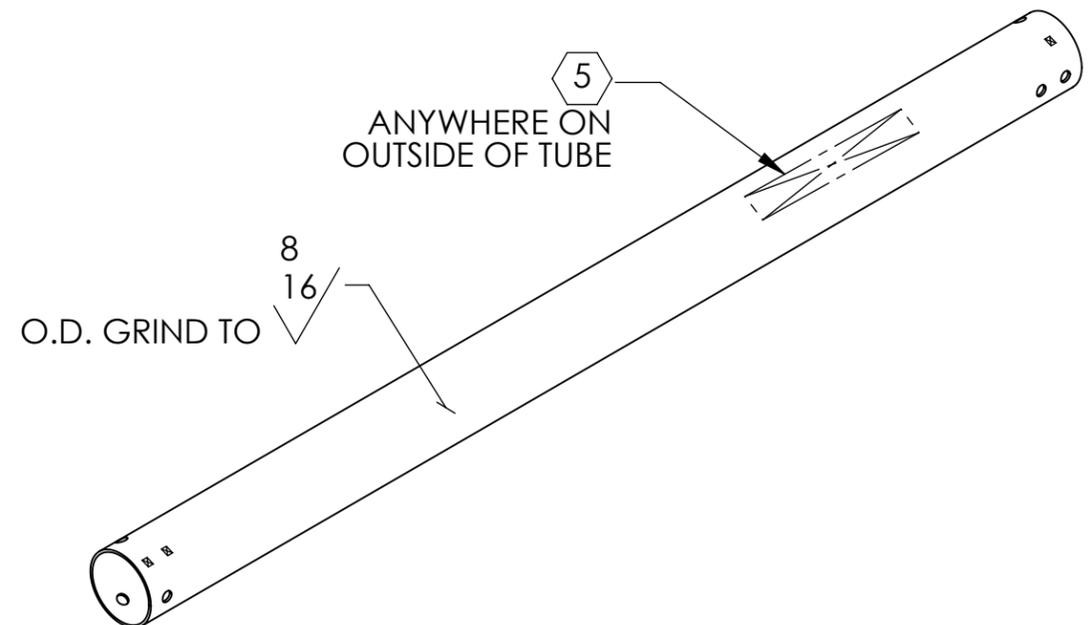


**NOTES CONTINUED:**  
 5. SCRIBE, ENGRAVE (A VIBRATORY TOOL MAY BE USED), LASER MARK OR MECHANICALLY STAMP (NO INKS OR DYES) DRAWING PART NUMBER, REVISION (AND VARIANT OR "TYPE" IF APPLICABLE) ON NOTED SURFACE OF PART FOLLOWED ON THE NEXT LINE WITH A THREE DIGIT SERIAL NUMBER. SERIAL NUMBERS START AT 001 FOR THE FIRST ARTICLE AND PROCEED CONSECUTIVELY. USE MINIMUM 0.12" HIGH CHARACTERS, UNLESS THE SIZE OF THE PART DICTATES SMALLER CHARACTERS. EXAMPLE: DXXXXXX-VY, TYPE-XX, S/N XXX

- 6. MASS/WEIGHT: 2.975 LB [1.349 KG].
- 7. MACHINE ALL SURFACES TO REMOVE OXIDES AND MILL FINISH. USE OF ABRASIVE REMOVAL TECHNIQUES IS NOT ALLOWED.
- 8. ALL PARTS SHALL BE MANUFACTURED IN ACCORDANCE WITH LIGO SPECIFICATION E0900364.
- 9. ALL MATERIAL IS TO BE VIRGIN MATERIAL (i.e. NOT WELD REPAIRS OR PLUGS UNLESS APPROVED IN ADVANCE IN WRITING BY LIGO, REFER TO LIGO-E0900364.
- 10. NO REPAIRS SHALL BE MADE UNLESS APPROVED IN ADVANCE, AND IN WRITING, BY LIGO LABORATORY. IN GENERAL WELD REPAIRS AND PRESS FIT INSERT REPAIRS ARE NEVER ACCEPTABLE; THE MATERIAL SHOULD BE MADE WITH VIRGIN MATERIAL. SPECIAL CIRCUMSTANCES CAN BE REVIEWED IF / WHEN BROUGHT TO THE ATTENTION OF LIGO CONTRACTING OFFICER'S REPRESENTATIVE (COTR) THROUGH A MATERIAL REVIEW BOARD (MRB) PROCESS, REFER TO LIGO-E0900364.
- 11. ALIGNMENT OF HOLE PATTERN AT SECTION A-A WITH HOLE PATTERN AT OPPOSITE END IS NOT REQUIRED.
- 12. MAKE FROM: 2" DIA INVAR 36 BAR STOCK.
- 13. GUN DRILL I. D.
- 14. ELECTROPOLISH PER LIGO SPECIFICATION E0900364, SECTION 5.2.2 (APPLIED TO INVAR 36). MACHINED ENDS TO BE 63 μINCH R<sub>a</sub> BEFORE ELECTROPOLISHING.

REV.	DATE	DCN #	DRAWING TREE #
v1	03 SEPT 2010	E1000365	-
v2	16 NOV 2010	E1000688	-
v3	14 SEP 2011	E1100351	-



D1000072 ADLIGO\_ETM\_TUBE, PART PDM REV: X-044, DRAWING PDM REV: X-021

**NOTES AND TOLERANCES: (UNLESS OTHERWISE SPECIFIED)**

DIMENSIONS ARE IN INCHES

TOLERANCES:  
 .XX ± .01  
 .XXX ± .005  
 ANGULAR ± 0.5°

1. INTERPRET DRAWING PER ASME Y14.5-1994.  
 2. REMOVE ALL SHARP EDGES, R.02 MIN.  
 3. DO NOT SCALE FROM DRAWING.  
 4. ALL MACHINING FLUIDS MUST BE FULLY SYNTHETIC, FULLY WATER SOLUBLE AND FREE OF SULFUR, SILICONE, AND CHLORINE.

MATERIAL 12 FINISH 63 μinch Ra 14

CALIFORNIA INSTITUTE OF TECHNOLOGY MASSACHUSETTS INSTITUTE OF TECHNOLOGY		PART NAME	
ADVANCED LIGO		ADLIGO ETM TELE TUBE	
DESIGNER	KMAILAND	08-10-2009	SIZE DWG. NO.
DRAFTER	I ROMERO	04 MAY 2010	B D1000072
CHECKER	SEE DCN		REV. v3
APPROVAL	SEE DCN		SCALE: NONE PROJECTION:
NEXT ASSY	D1000243		SHEET 1 OF 1