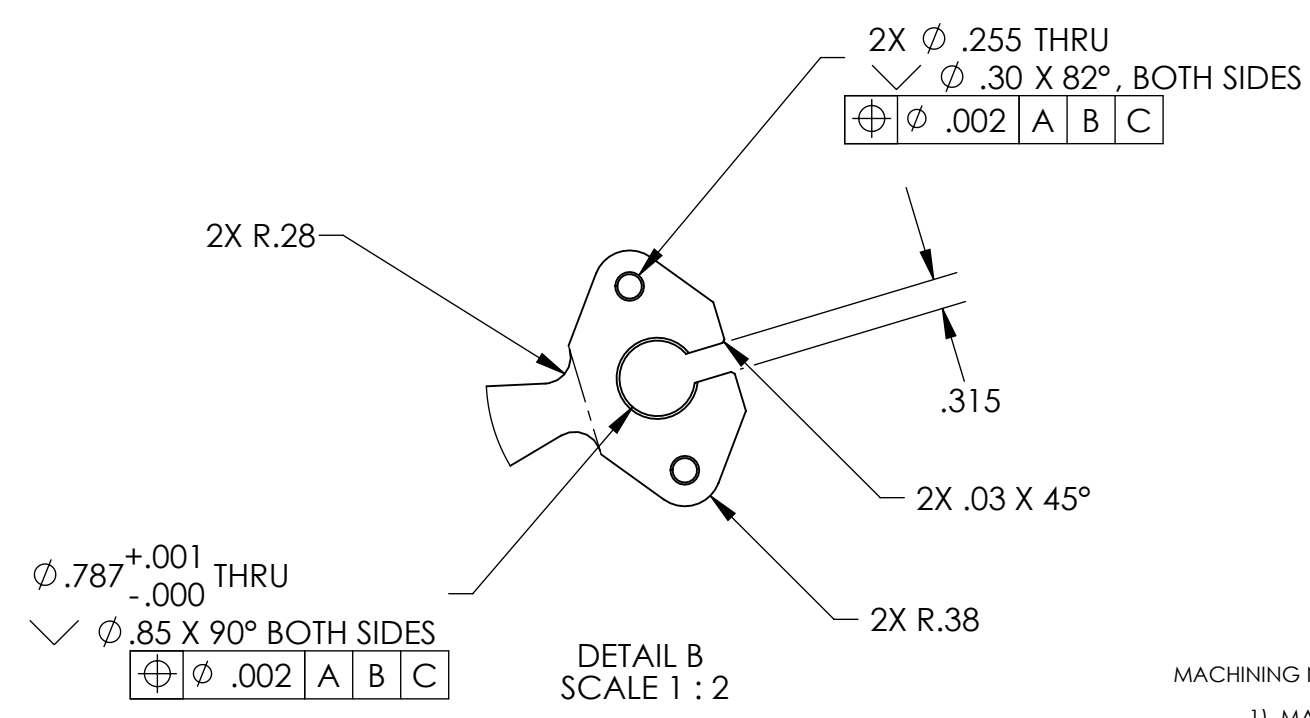
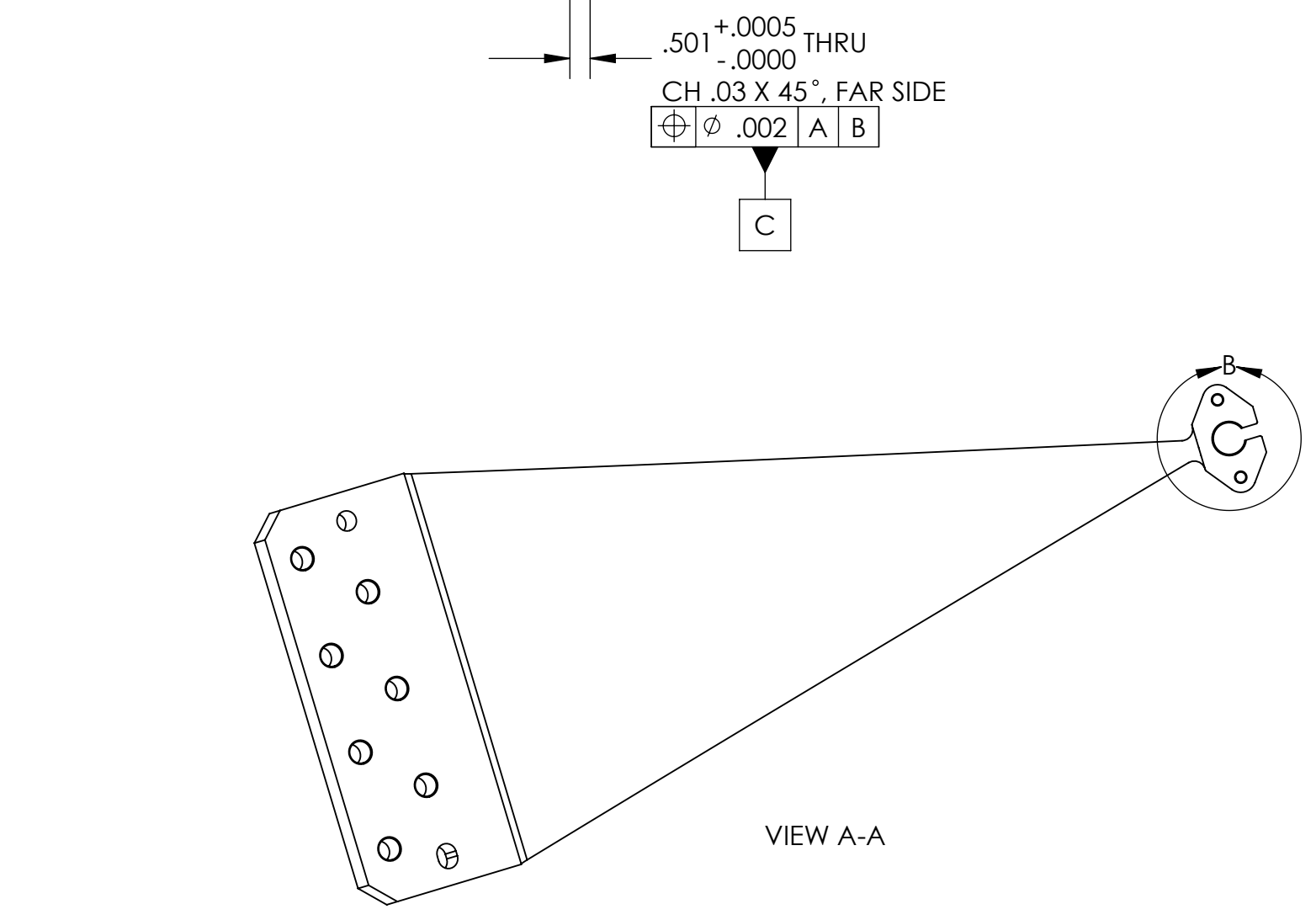
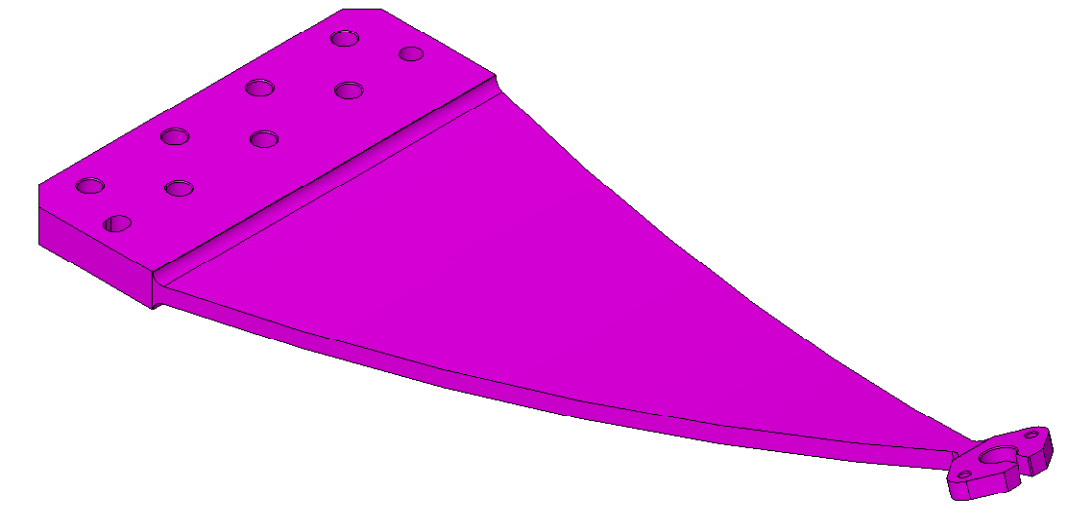
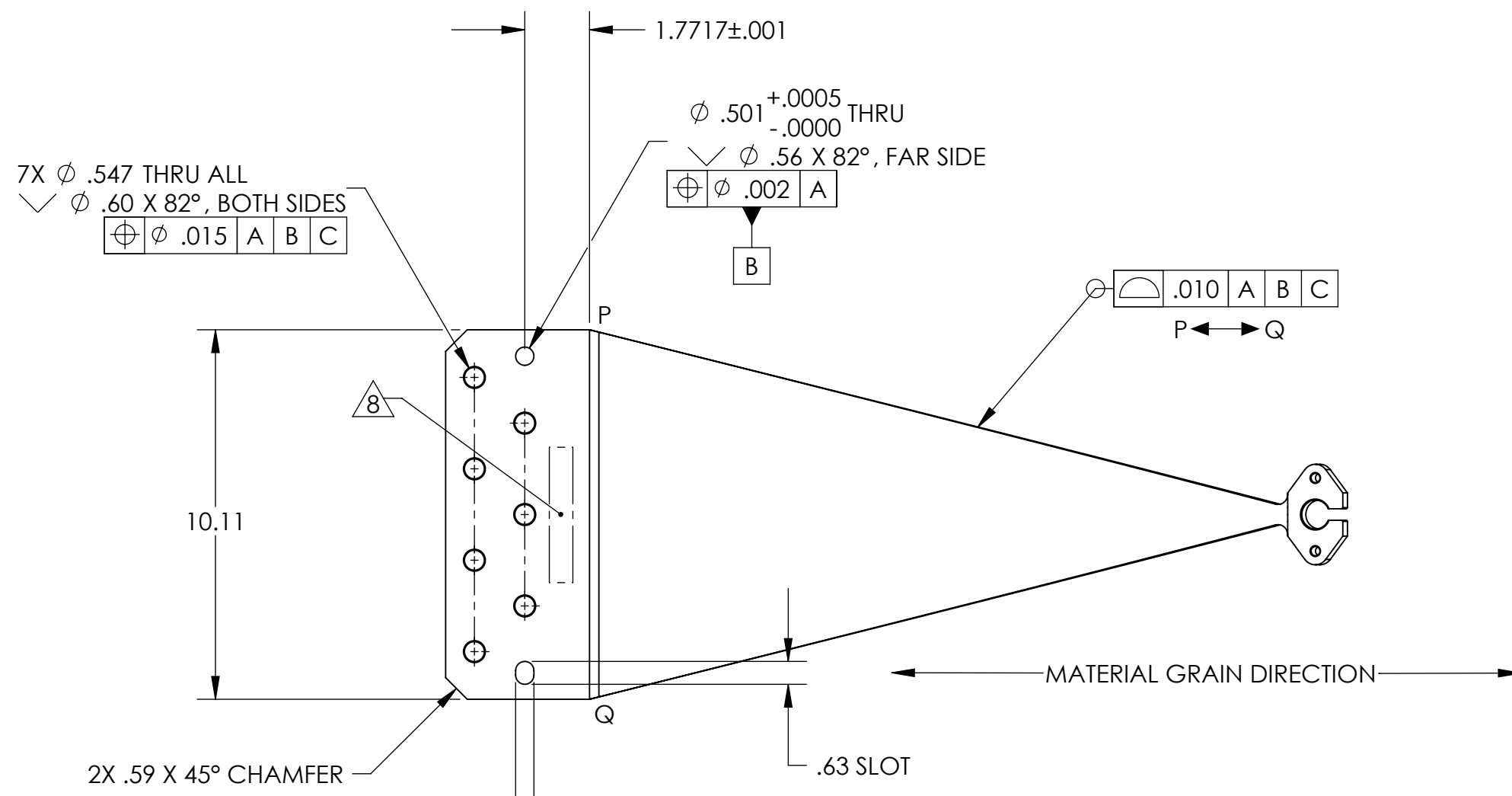
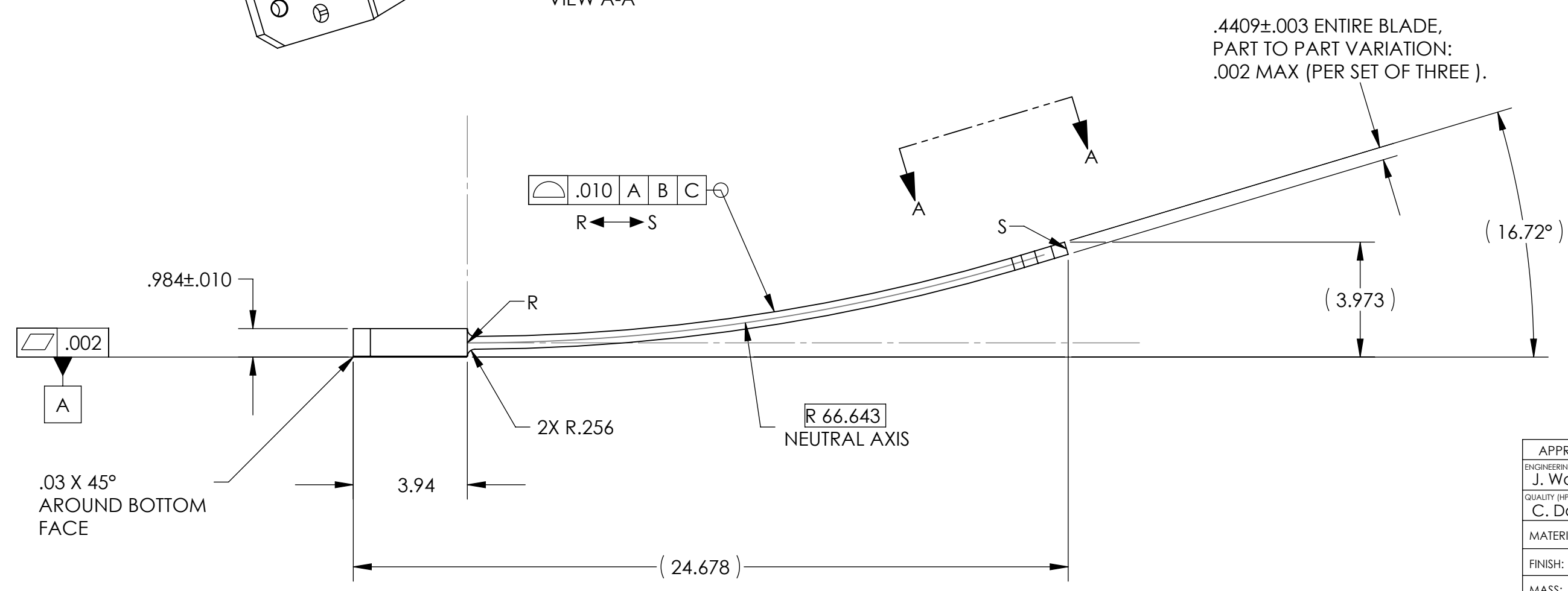


REVISION HISTORY				
REV	DATE	ECO	APPROVAL	DESCRIPTION
V1 / C	11 Jul 2007	1068	Dan Bryce	Release for Enhanced LIGO.
V2	20 Mar 2009		A. Stein	Release for Advanced LIGO. Added chamfer to bottom mounting surface. Added c/sinks.



- MACHINING NOTES:
- 1) MACHINE ALL SURFACES TO REMOVE OXIDES AND MILL FINISH. ABRASIVE REMOVAL TECHNIQUES (OTHER THAN DRESSED BLANCHARD GRINDING) ARE NOT ACCEPTABLE.
 - 2) ALL MACHINING FLUIDS MUST BE WATER SOLUBLE AND FREE OF SULFUR, CHLORINE, AND SILICONE, SUCH AS CINCINNATI MILACRON CIMTECH 410.
 - 3) THOROUGHLY CLEAN PART TO REMOVE ALL OIL, GREASE, DIRT, AND CHIPS.
 - 4) MATERIAL GRAIN DIRECTION MUST BE ORIENTED AS SHOWN.
 - 5) ALL SPRINGS FOR 1 HAM ISI (3 SPRINGS PER SYSTEM) MUST BE MACHINED FROM ONE BLOCK OF MARAGING 300 (MIL-S-46850D). BEGIN WITH MATERIAL IN SOLUTION ANNEALED STATE. INTERMEDIATE MACHINING AND STRAIN RELIEF STEPS ARE ACCEPTABLE.
 - 6) ROUGH MACHINE, THEN HEAT TREAT AS FOLLOWS (INERT ATMOSPHERE REQUIRED):
 - HEAT TO 480°C. SOAK FOR 40 MINUTES
 - AGE FOR 4-6 HOURS
 - AIR COOL TO ROOM TEMP
 - 7) MACHINE TO FINAL DIMENSIONS.
 - 8) WHERE INDICATED, MECHANICALLY SCRIBE, STAMP, OR ENGRAVE THE FOLLOWING INFORMATION AS SHOWN BELOW: **PART NUMBER-REVISION** (AND **TYPE** IF INDICATED), FOLLOWED ON THE NEXT LINE WITH A UNIQUE 3-DIGIT **SERIAL NUMBER** STARTING AT 001 FOR THE FIRST PART AND INCREMENTING THEREAFTER. USE 0.38" TALL CHARACTERS UNLESS PART SIZE DICTATES SMALLER.
D071100-V2
S/N - ###
 - 9) APPLY ELECTRO-LESS NICKEL PLATING, PER STATEMENT OF WORK (SOW).
- POST-MACHINING NOTES:
- P1) CLEAN TO LIGO STANDARDS, CLASS A. BAKING PROCESSES MUST NOT ALTER MECHANICAL PROPERTIES.



APPROVALS	DATE
ENGINEERING (HPD): J. Waterman	6/15/2007
QUALITY (HPD): C. Danaher	6/15/2007
MATERIAL:	See Notes
FINISH:	See Notes
MASS:	23.1 lbs

UNLESS OTHERWISE SPECIFIED:	
DIMENSIONS ARE IN INCHES	
DECIMAL TOLERANCES: XX ±.015 .XXX ±.005	
ANG TOL: ± 1° SURFACE ROUGHNESS: .63	
REMOVE ALL SHARP EDGES. LEAVE .005 X 45° MIN CHAMFER, OR .005 MIN RADIUS.	
THIS PRINT & THE EMBEDDED CAD MODEL ARE THE DOCUMENTATION OF RECORD. UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS IN THE MODEL ARE BASIC, WITH TOLERANCES GIVEN BY:	
\oplus ϕ .010 A B C	

ORIGINAL DESIGN BY:	High Precision Devices		MODIFIED BY:
	1468 Valtec Lane, Suite C, Boulder, Colorado 80301 Phone: (303) 447-2558 Fax: (303) 447-2548 Web Site: www.hpd-online.com		
DESCRIPTION:	Spring		
P/N:	D071100	CONFIG:	-
CAD FILE NAME:	D071100_Spring		
PROJECT:	HAM ISI, Advanced LIGO		
SIZE	SCALE: 1:4	DRAWN BY: Jonas Waterman (HPD)	REV
C	SHEET 1 OF 1	DATE PRINTED: 3/20/2009	V2