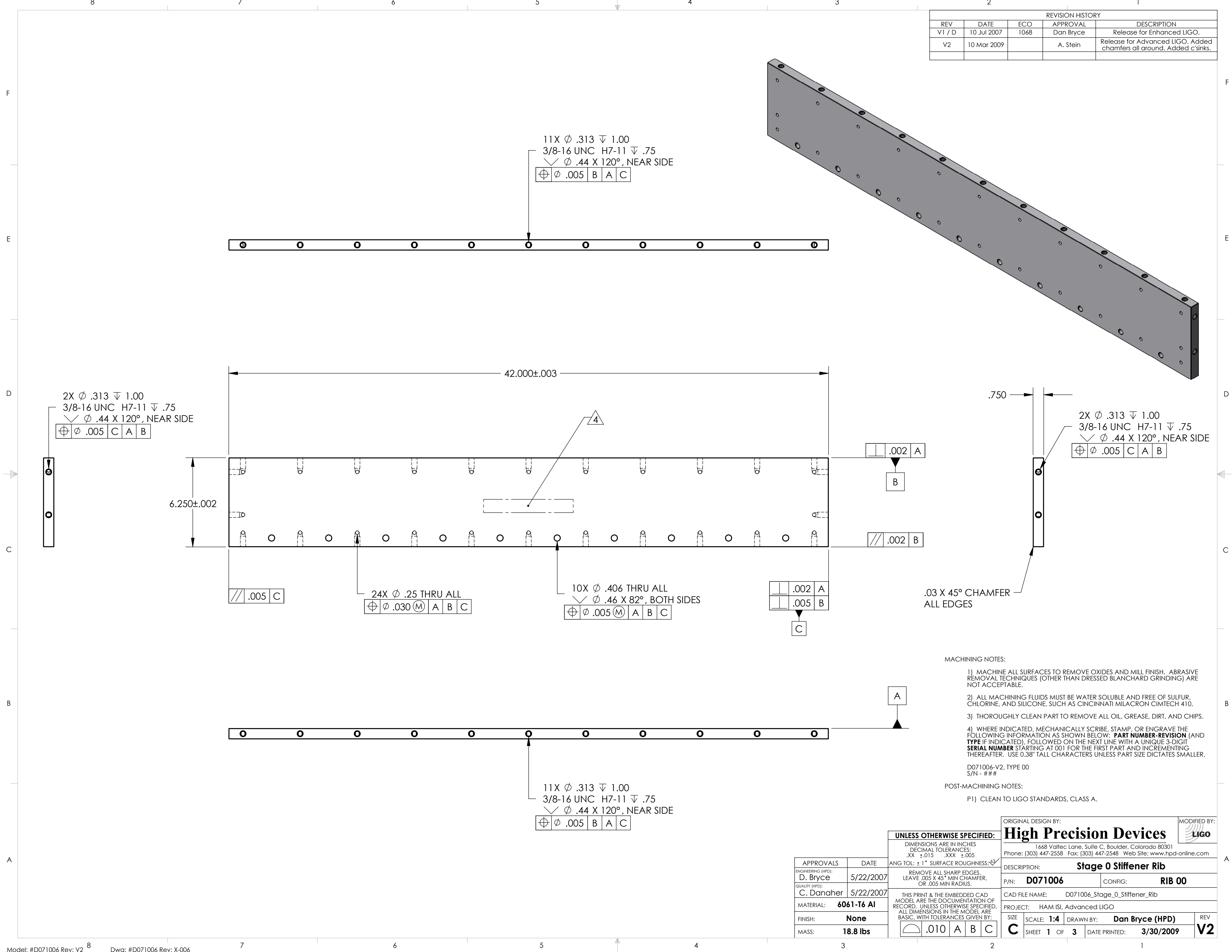


REVISION HISTORY				
REV	DATE	ECO	APPROVAL	DESCRIPTION
V1 / D	10 Jul 2007	1068	Dan Bryce	Release for Enhanced LIGO.
V2	10 Mar 2009		A. Stein	Release for Advanced LIGO. Added chamfers all around. Added c'sinks.



MACHINING NOTES:

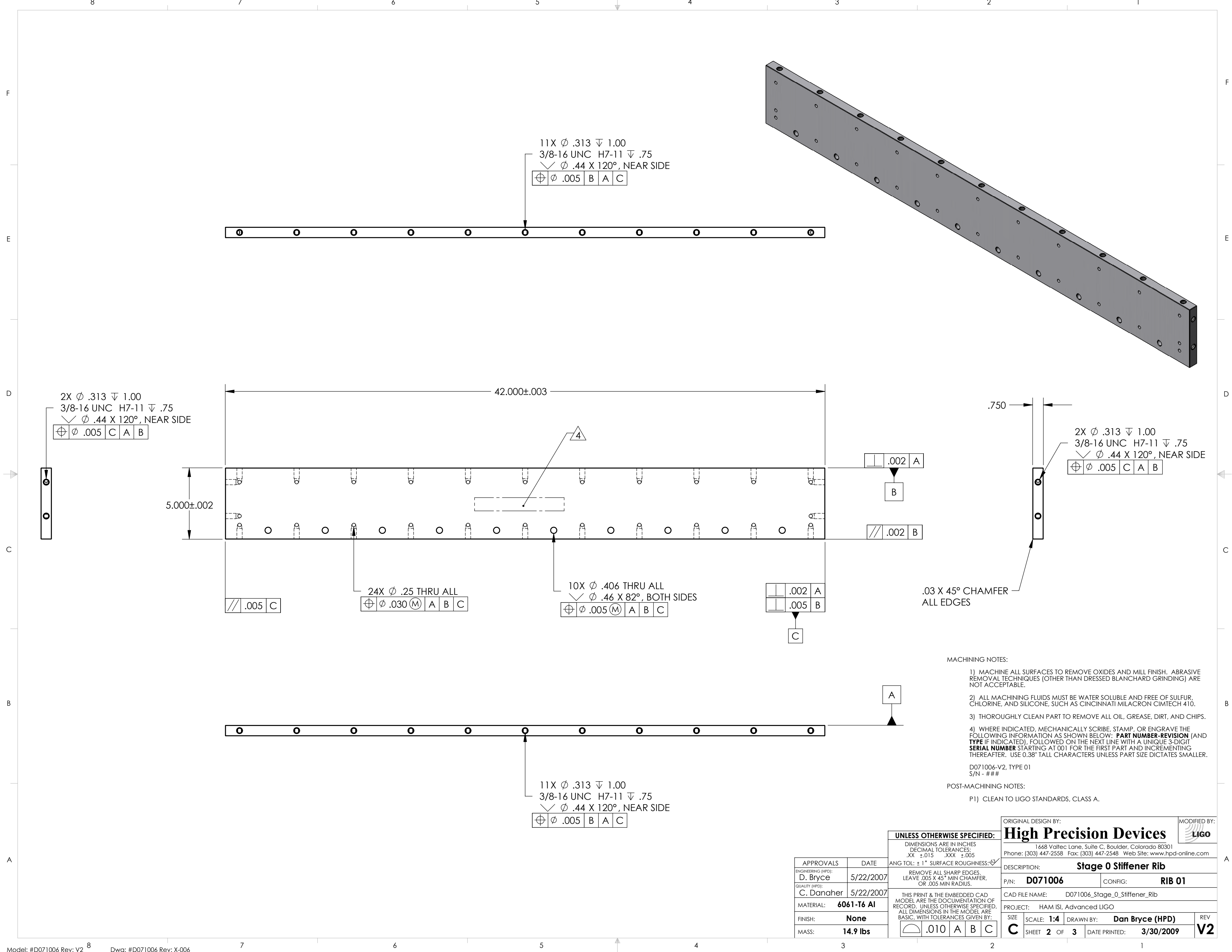
- 1) MACHINE ALL SURFACES TO REMOVE OXIDES AND MILL FINISH. ABRASIVE REMOVAL TECHNIQUES (OTHER THAN DRESSED BLANCHARD GRINDING) ARE NOT ACCEPTABLE.
- 2) ALL MACHINING FLUIDS MUST BE WATER SOLUBLE AND FREE OF SULFUR, CHLORINE, AND SILICONE, SUCH AS CINCINNATI MILACRON CIMTECH 410.
- 3) THOROUGHLY CLEAN PART TO REMOVE ALL OIL, GREASE, DIRT, AND CHIPS.
- 4) 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.

D071006-V2, TYPE 00
S/N - ###

POST-MACHINING NOTES:

P1) CLEAN TO LIGO STANDARDS, CLASS A.

UNLESS OTHERWISE SPECIFIED:		High Precision Devices		MODIFIED BY:	
DIMENSIONS ARE IN INCHES		1468 Valtec Lane, Suite C, Boulder, Colorado 80301		LIGO	
DECIMAL TOLERANCES:		Phone: (303) 447-2558 Fax: (303) 447-2548 Web Site: www.hpd-online.com			
.XX ±.015 .XXX ±.005		DESCRIPTION: Stage 0 Stiffener Rib			
ANG TOL: ± 1° SURFACE ROUGHNESS: 6.3		P/N: D071006 CONFIG: RIB 00			
REMOVE ALL SHARP EDGES. LEAVE .005 X 45° MIN CHAMFER, OR .005 MIN RADIUS.		CAD FILE NAME: D071006_Stage_0_Stiffener_Rib			
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:		PROJECT: HAM ISI, Advanced LIGO			
APPROVALS		SIZE		REV	
ENGINEERING (HPD): D. Bryce	DATE: 5/22/2007	SCALE: 1:4	DRAWN BY: Dan Bryce (HPD)	SIZE: C	REV: V2
QUALITY (HPD): C. Danaher	DATE: 5/22/2007	SHEET 1 OF 3	DATE PRINTED: 3/30/2009		
MATERIAL: 6061-T6 Al					
FINISH: None					
MASS: 18.8 lbs					



11X $\phi .313 \pm 1.00$
 3/8-16 UNC H7-11 $\nabla .75$
 $\nabla \phi .44 \times 120^\circ$, NEAR SIDE
 $\phi .005$ B A C

2X $\phi .313 \pm 1.00$
 3/8-16 UNC H7-11 $\nabla .75$
 $\nabla \phi .44 \times 120^\circ$, NEAR SIDE
 $\phi .005$ C A B

2X $\phi .313 \pm 1.00$
 3/8-16 UNC H7-11 $\nabla .75$
 $\nabla \phi .44 \times 120^\circ$, NEAR SIDE
 $\phi .005$ C A B

24X $\phi .25$ THRU ALL
 $\phi .030$ (M) A B C

10X $\phi .406$ THRU ALL
 $\nabla \phi .46 \times 82^\circ$, BOTH SIDES
 $\phi .005$ (M) A B C

.03 X 45° CHAMFER
 ALL EDGES

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) 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.

D071006-V2, TYPE 01
 S/N - ###

POST-MACHINING NOTES:

P1) CLEAN TO LIGO STANDARDS, CLASS A.

11X $\phi .313 \pm 1.00$
 3/8-16 UNC H7-11 $\nabla .75$
 $\nabla \phi .44 \times 120^\circ$, NEAR SIDE
 $\phi .005$ B A C

UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN INCHES
 DECIMAL TOLERANCES:
 .XX ±.015 .XXX ±.005

ANG TOL: ± 1° SURFACE ROUGHNESS: $R_{a} \leq 6.3$

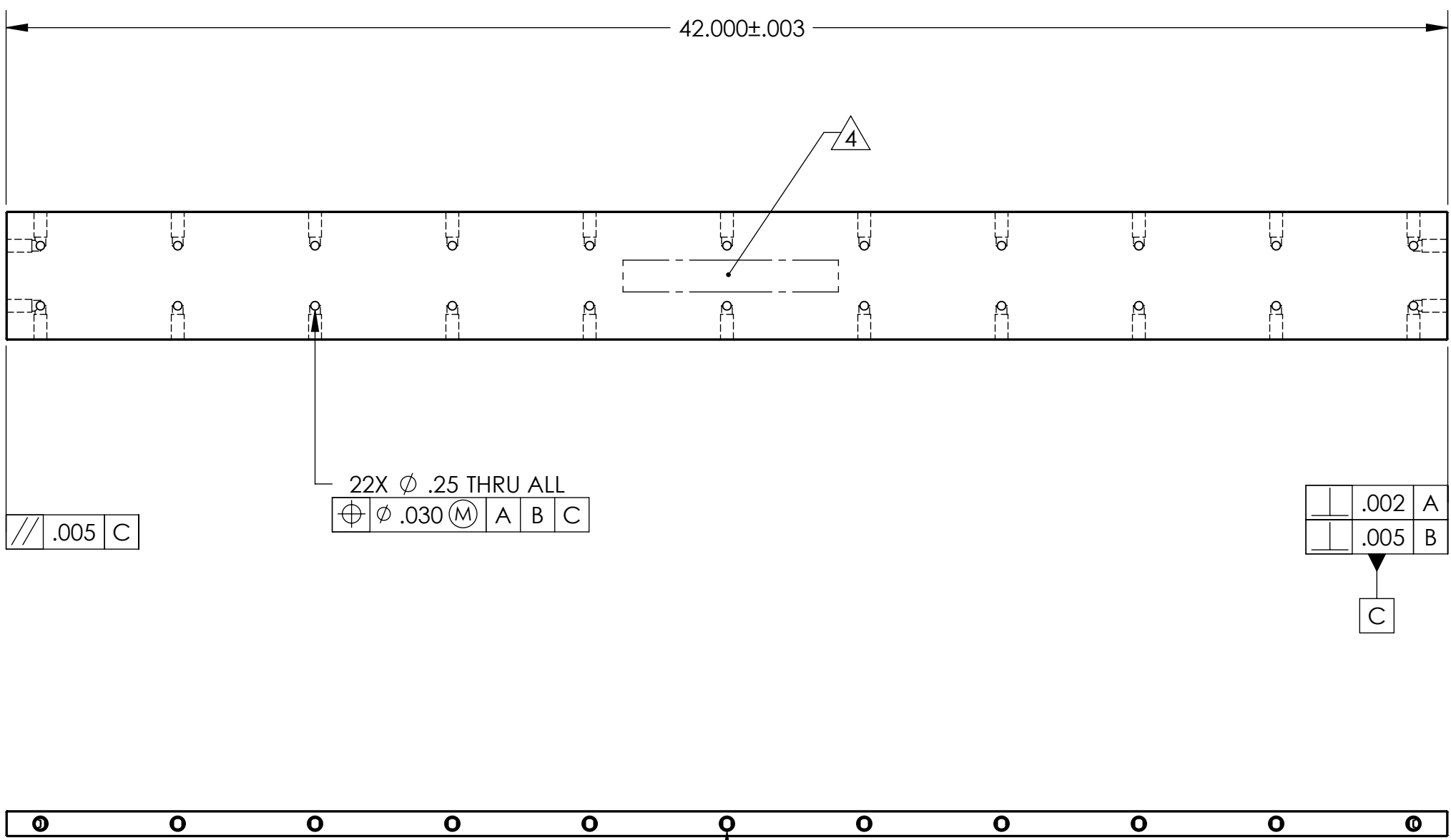
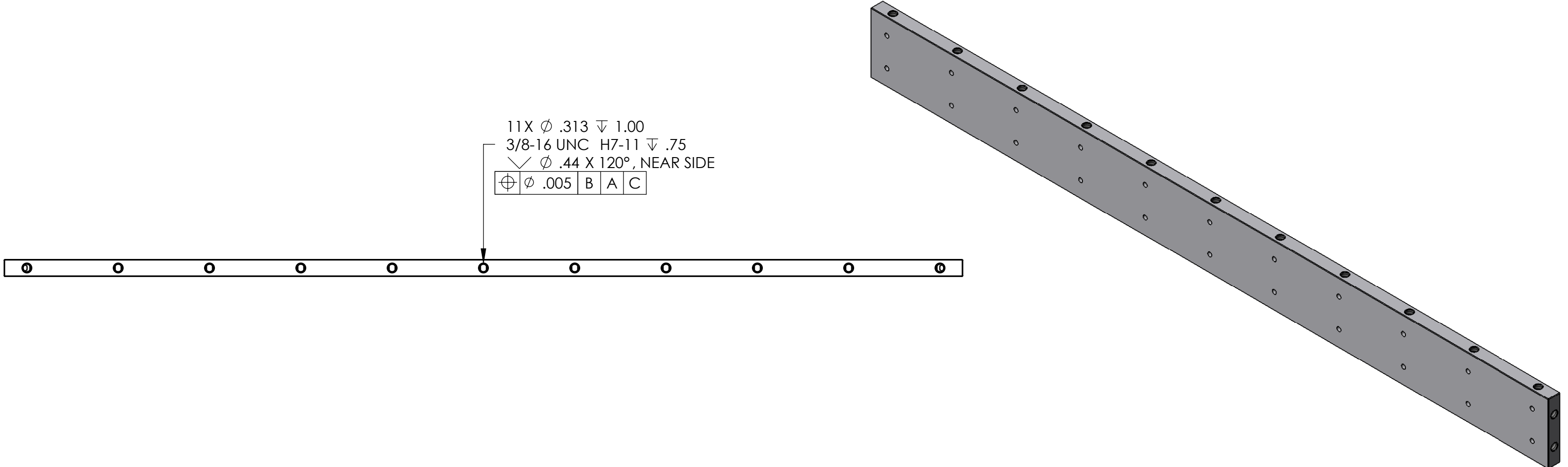
REMOVE ALL SHARP EDGES.
 LEAVE .005 X 45° MIN CHAMFER,
 OR .005 MIN RADIUS.

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:

$\phi .010$	A	B	C
-------------	---	---	---

APPROVALS	DATE
ENGINEERING (HPD): D. Bryce	5/22/2007
QUALITY (HPD): C. Danaher	5/22/2007
MATERIAL:	6061-T6 Al
FINISH:	None
MASS:	14.9 lbs

ORIGINAL DESIGN BY:	MODIFIED BY:
High Precision Devices	
1448 Valtec Lane, Suite C, Boulder, Colorado 80301 Phone: (303) 447-2558 Fax: (303) 447-2548 Web Site: www.hpd-online.com	
DESCRIPTION: Stage 0 Stiffener Rib	
P/N: D071006	CONFIG: RIB 01
CAD FILE NAME: D071006_Stage_0_Stiffener_Rib	
PROJECT: HAM ISI, Advanced LIGO	
SIZE	REV
SCALE: 1:4	DRAWN BY: Dan Bryce (HPD)
SHEET 2 OF 3	DATE PRINTED: 3/30/2009
C	V2



11X ϕ .313 ∇ 1.00
 3/8-16 UNC H7-11 ∇ .75
 ∇ ϕ .44 X 120°, NEAR SIDE
 \oplus ϕ .005 | B | A | C

2X ϕ .313 ∇ 1.00
 3/8-16 UNC H7-11 ∇ .75
 ∇ ϕ .44 X 120°, NEAR SIDE
 \oplus ϕ .005 | C | A | B

2X ϕ .313 ∇ 1.00
 3/8-16 UNC H7-11 ∇ .75
 ∇ ϕ .44 X 120°, NEAR SIDE
 \oplus ϕ .005 | C | A | B

22X ϕ .25 THRU ALL
 \oplus ϕ .030 (M) | A | B | C

\perp .002 | A
 \perp .005 | B

11X ϕ .313 ∇ 1.00
 3/8-16 UNC H7-11 ∇ .75
 ∇ ϕ .44 X 120°, NEAR SIDE
 \oplus ϕ .005 | B | A | C

- MACHINING NOTES:
- 1) MACHINE ALL SURFACES TO REMOVE OXIDES AND MILL FINISH. ABRASIVE REMOVAL TECHNIQUES (OTHER THAN DRESSED BLANCHARD GRINDING) ARE NOT ACCEPTABLE.
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- D071006-V2, TYPE 02
 S/N - ###
- POST-MACHINING NOTES:
- P1) CLEAN TO LIGO STANDARDS, CLASS A.

UNLESS OTHERWISE SPECIFIED:		ORIGINAL DESIGN BY:		MODIFIED BY:													
DIMENSIONS ARE IN INCHES		High Precision Devices		LIGO													
DECIMAL TOLERANCES:		1468 Valtec Lane, Suite C, Boulder, Colorado 80301															
.XX ±.015 .XXX ±.005		Phone: (303) 447-2558 Fax: (303) 447-2548 Web Site: www.hpd-online.com															
ANG TOL: ± 1° SURFACE ROUGHNESS: \sqrt{Ra}		DESCRIPTION: Stage 0 Stiffener Rib															
REMOVE ALL SHARP EDGES. LEAVE .005 X 45° MIN CHAMFER, OR .005 MIN RADIUS.		P/N: D071006		CONFIG: RIB 02													
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:		CAD FILE NAME: D071006_Stage_0_Stiffener_Rib															
<table border="1"> <tr> <th>APPROVALS</th> <th>DATE</th> </tr> <tr> <td>ENGINEERING (HPD): D. Bryce</td> <td>5/22/2007</td> </tr> <tr> <td>QUALITY (HPD): C. Danaher</td> <td>5/22/2007</td> </tr> <tr> <td>MATERIAL: 6061-T6 Al</td> <td></td> </tr> <tr> <td>FINISH: None</td> <td></td> </tr> <tr> <td>MASS: 11.2 lbs</td> <td></td> </tr> </table>		APPROVALS	DATE	ENGINEERING (HPD): D. Bryce	5/22/2007	QUALITY (HPD): C. Danaher	5/22/2007	MATERIAL: 6061-T6 Al		FINISH: None		MASS: 11.2 lbs		PROJECT: HAM ISI, Advanced LIGO		SIZE: C	
APPROVALS	DATE																
ENGINEERING (HPD): D. Bryce	5/22/2007																
QUALITY (HPD): C. Danaher	5/22/2007																
MATERIAL: 6061-T6 Al																	
FINISH: None																	
MASS: 11.2 lbs																	
<table border="1"> <tr> <td>SCALE: 1:4</td> <td>DRAWN BY: Dan Bryce (HPD)</td> </tr> <tr> <td>SHEET 3 OF 3</td> <td>DATE PRINTED: 3/30/2009</td> </tr> </table>		SCALE: 1:4	DRAWN BY: Dan Bryce (HPD)	SHEET 3 OF 3	DATE PRINTED: 3/30/2009	REV: V2											
SCALE: 1:4	DRAWN BY: Dan Bryce (HPD)																
SHEET 3 OF 3	DATE PRINTED: 3/30/2009																