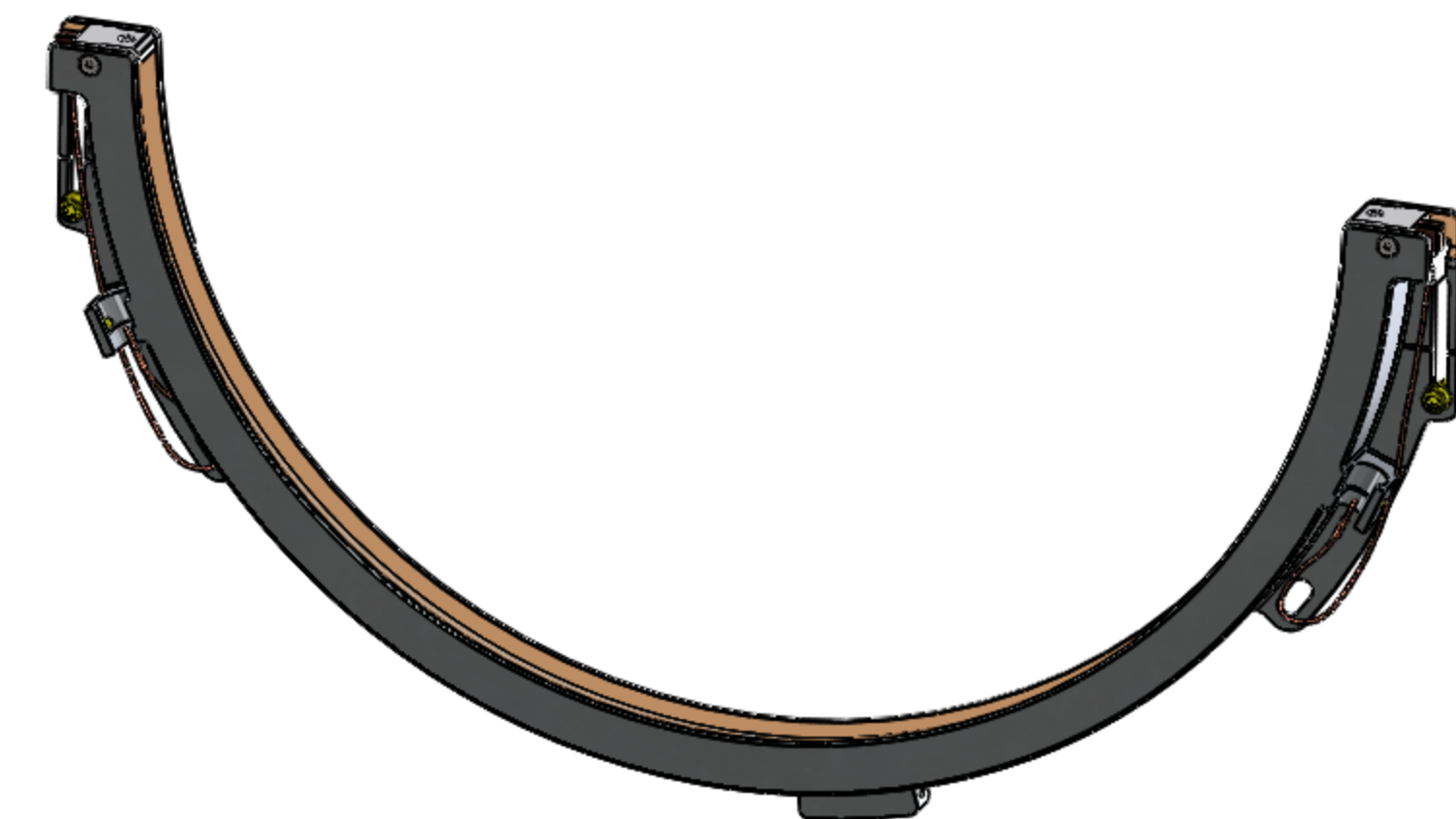
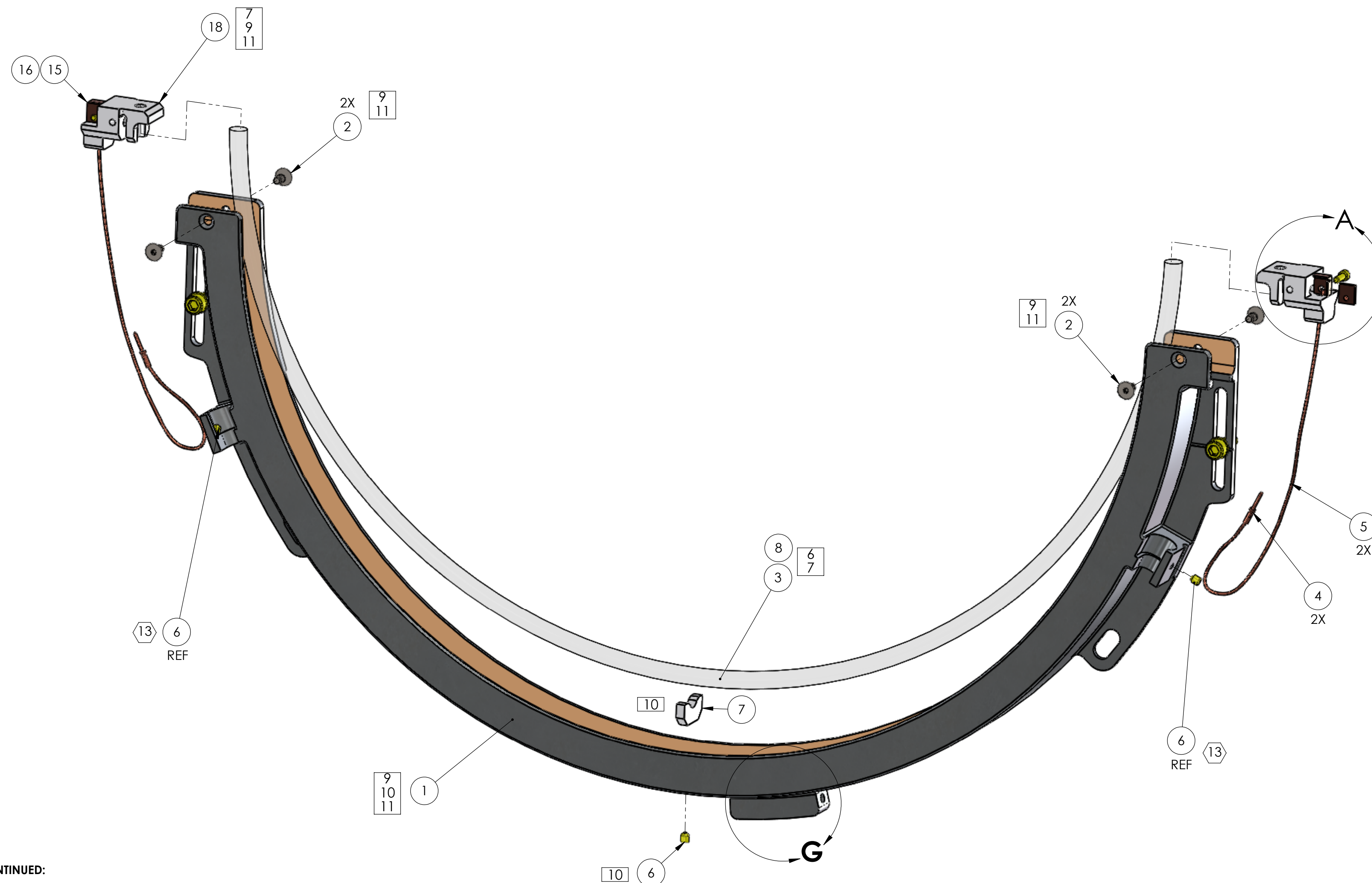


REV.	DATE	DCN #	DRAWING TREE #
v1	04-AUG-2010	E1000291	E1000295-v1
v2	17-NOV-2010	E1000291-v3	E1000295-v4
v3	03-DEC-2010	E1000291-v4	E1000295-v5
v4	06-JAN-2011	E1000291-v5	E1000295-v6
v5	28-FEB-2011	E1000291-v6	E1000295-v7
v6	26-APR-2012	E1100950-v1	E1000295-v8



NOTES CONTINUED:

ASSEMBLY SEQUENCE. SEE ALSO LIGO-T1100123.

- 5 ONE OF ITEM 4 IS CRIMPED TO ONE END OF EACH OF TWO PIECES OF ITEM 5 (EACH CUT TO A LENGTH OF 6.875in)
- 6 ITEM 8 IS NOT DEPICTED; IT IS PRE-FORMED AND SLEEVED ONTO ITEM 3 PRIOR TO ASSEMBLY.
- 7 ITEM 3 IS SEATED INTO THESE RETAINERS, ITEMS 9 AND 18.
- 8 THE FREE ENDS OF ITEMS 8 AND 5 ARE CLAMPED BETWEEN ITEMS 13 & 14 AND 15 & 16 BY TORQUING ITEM 17 TO 2.5 in-lb, MAX.
- 9 ITEM 1 IS BROUGHT INTO PLACE AND 2X ITEM 2 ARE SECURED -EITHER- INTO ITEM 9 -OR- INTO ITEM 18 (NOT BOTH). MAX TORQUE, ITEM 2, IS 3.5 in-lb
- 10 ITEM 1 IS PIVOTED ABOUT THIS NEWLY SECURED JOINT SO THAT ITEM 7 CAN BE INSERTED BETWEEN ITEMS 3 AND 1 AT THE MIDSPAN. ITEM 6 IS USED TO SECURE ITEM 7, AS NECESSARY. MAX TORQUE, ITEM 6, IS 5.0 in-lb
- 11 ITEM 1 IS PIVOTED BACK SO THAT THE OPPOSITE UNSECURED ITEM 9 OR 18 CAN BE SECURED USING 2X ITEM 2 MAX TORQUE, ITEM 2, IS 3.5 in-lb

12 SUBSYSTEM INTEGRATION STEP 1:

TWO #8-32 SHCS AND FLAT WASHERS ARE USED TO SECURE THE ASSEMBLY INTO PLACE ON THE SUS QUAD STRUCTURE SEE SHEETS 2 AND 4 FOR INTERFACE DETAILS

13 SUBSYSTEM INTEGRATION STEP 2:

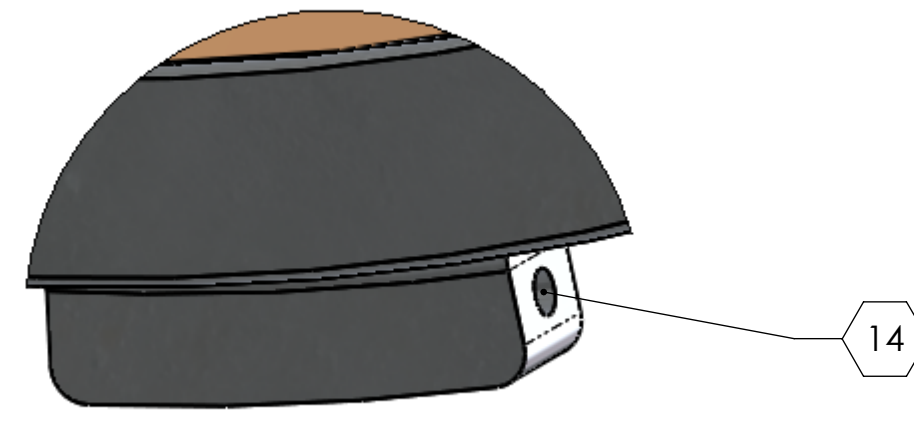
ITEM 4 IS SECURED INTO EACH OF THE JOINTS J5 AND J6 OF ASSEMBLY D1001519
ITEM 6 IS USED TO SECURE JOINTS J5 AND J6 TO THE SHIELD (ITEM 1)

14 SUBSYSTEM INTEGRATION STEP 3:

THE SENSOR OF ASSEMBLY D1001519 AT THE END OF THE FIBERGLASS-COVERED CABLE IS TO BE INSERTED INTO THIS CAVITY.

15 SUBSYSTEM INTEGRATION STEP 4:

ITEM 12, NOT DEPICTED, IS USED TO SECURE ITEM 5 TO ITEM 1



**DETAIL G
SCALE 2 : 1**

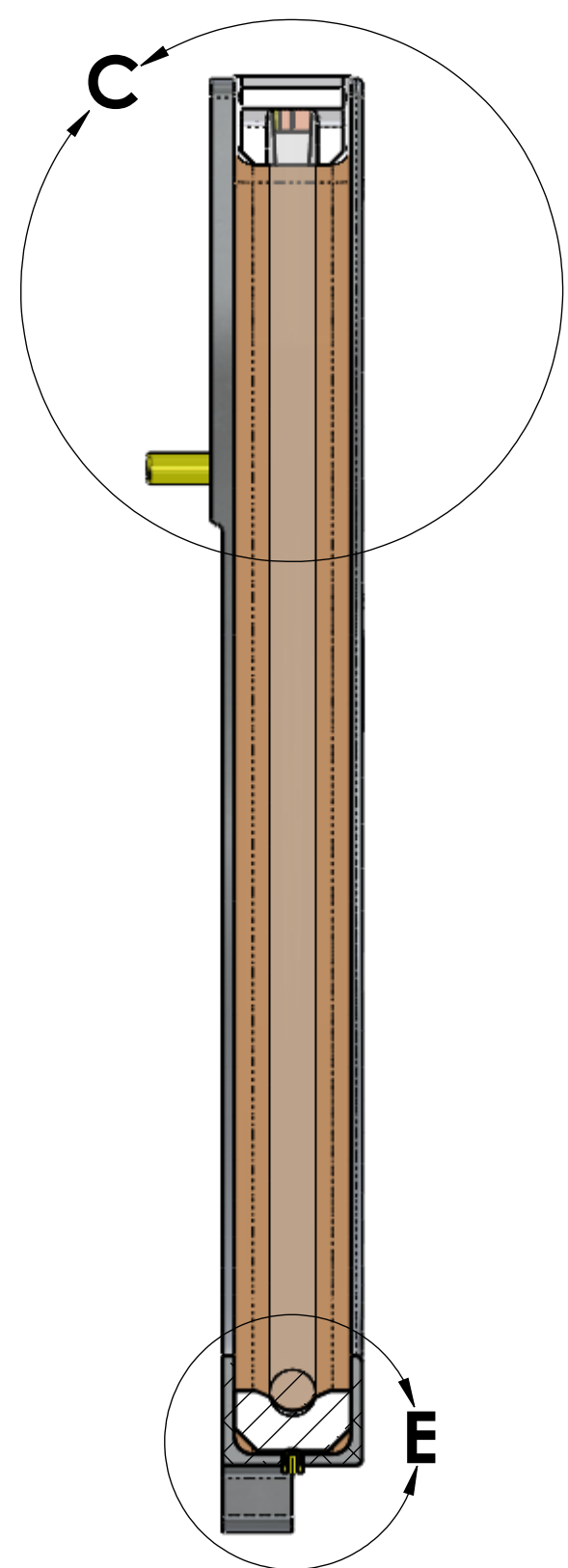
ITEM NO.	PART NUMBER	DESCRIPTION	MATERIAL	REQ	SPARE	TOTAL
18	D1002544-02	RH ELEMENT CONNECTOR, SIMPLIFIED RIGHT	MACOR CERAMIC	1	0	1
17	C-204-N	SHCS, #2-64 UNF-2A X 0.25 LONG, UC COMPONENTS	18-8 SS	2	1	3
16	D1200561-02	Cu CLAMP, RIGHT SIDE	Copper	1	0	1
15	D1200560-02	BASE OF Cu CLAMP, RIGHT SIDE	Copper	1	0	1
14	D1200561-01	Cu CLAMP, LEFT SIDE	Copper	1	0	1
13	D1200560-01	BASE OF Cu CLAMP, LEFT SIDE	Copper	1	0	1
12	A31189	1/8 IN STAINLESS STEEL CABLE TIE, WTG GROUP	SSTL	2	2	4
11	WFV-08	FLAT VENTED WASHER, #8, UC COMPONENTS	18-8 SS	2	2	4
10	C-812	SHCS, #8-32 X .75 LONG, VENTED, UC COMPONENTS	18-8 SS	2	2	4
9	D1002543-02	RH ELEMENT CONNECTOR, SIMPLIFIED LEFT	MACOR CERAMIC	1	0	1
8	MM 8880K52	24AWG NICHROME WIRE, PRE-CUT	CHROMEL-C	20 FT	10 FT	30 FT
7	D1002545	SIMPLIFIED RH ELEMENT STANDOFF	MACOR CERAMIC	1	1	2
6	T-402	SCREW, SOCKET SET, #4-40 UNC-2A X 0.125 LONG	18-8 SS	3	1	4
5	100680	22 AWG KAPTON INSULATED SOLID Cu WIRE, ACCUGLASS	AU PLT, SOLID CORE Cu, KAPTON INSULATED	6.875 IN X2	6.875 IN	20.625 IN
4	100170	Pin Contact, 10-24 AWG, AccuGlass	AU PLATED Cu	2	2	4
3	D1002538	SIMPLIFIED GLASS FORMER	GLASS, ANNEALED	1	0	1
2	FA-404	VENTED, FSHCS #4-40 UNC-2A x .25 LG, UC COMPONENTS	18-8 SS	4	2	6
1	D1001680	αLIGO TCS LOWER MONOLITHIC RH SHIELD	6061 Alloy	1	0	1

PARTS LIST

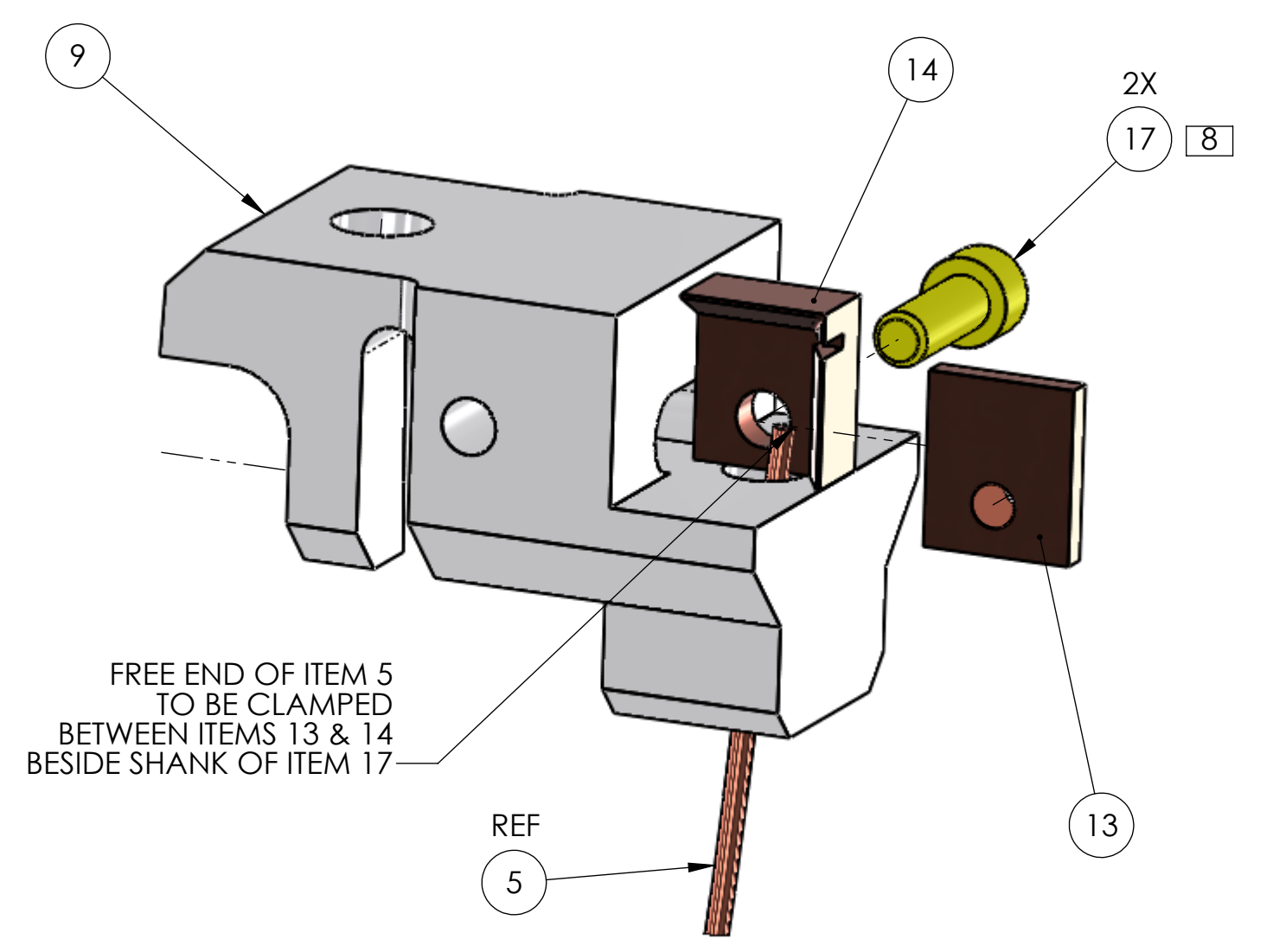
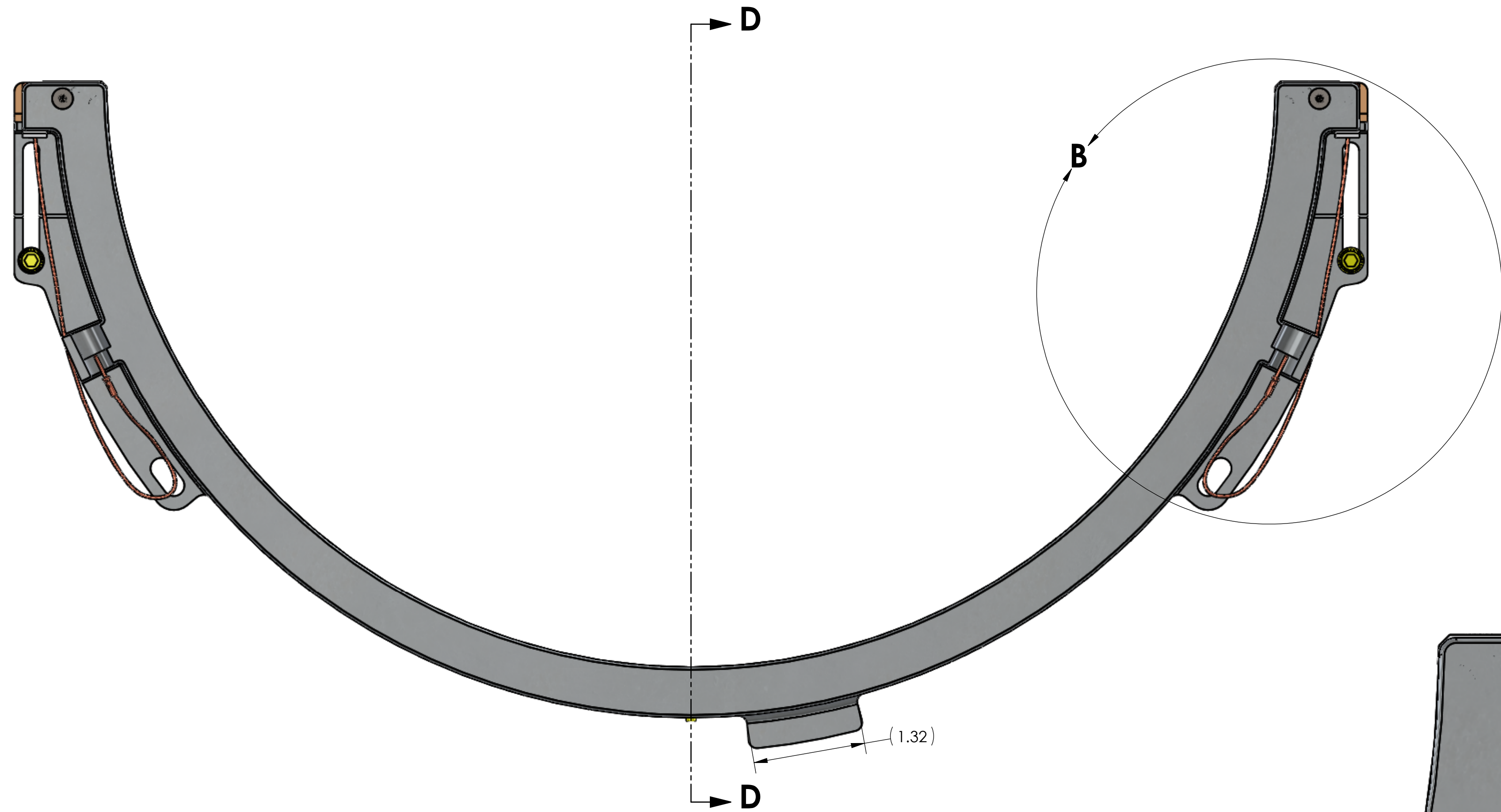
NOTES AND TOLERANCES: (UNLESS OTHERWISE SPECIFIED)	
1. INTERPRET DRAWING PER ASME Y14.5-1994. 2. REMOVE ALL SHARP EDGES, R.02 MIN. 3. DO NOT SCALE FROM DRAWING. 4. ALL MACHINING FLUIDS MUST BE FULLY SYNTHETIC, FULLY WATER SOLUBLE AND FREE OF SULFUR, SILICONE, AND CHLORINE.	
DIMENSIONS ARE IN	
TOLERANCES:	
.XX ±	
.XXX ±	
ANGULAR ± °	
MATERIAL	N/A
FINISH	N/A μinch

CALIFORNIA INSTITUTE OF TECHNOLOGY MASSACHUSETTS INSTITUTE OF TECHNOLOGY		PART NAME αLIGO TCS RING HEATER LOWER SEGMENT ASSY	
SYSTEM	ADVANCED LIGO	SUB-SYSTEM	AOS
NEXT ASSY	D1002027	DESIGNER	M. JACOBSON 26 JUL 2010
		DRAFTER	A. COLE 30 JUL 2010
		CHECKER	M. JACOBSON 20-MAR-2012
		APPROVAL	D. COYNE 20-MAR-2012
SIZE DWG. NO. D D1001895		REV. v6	
SCALE: 1:2		PROJECTION:	
		SHEET 1 OF 4	

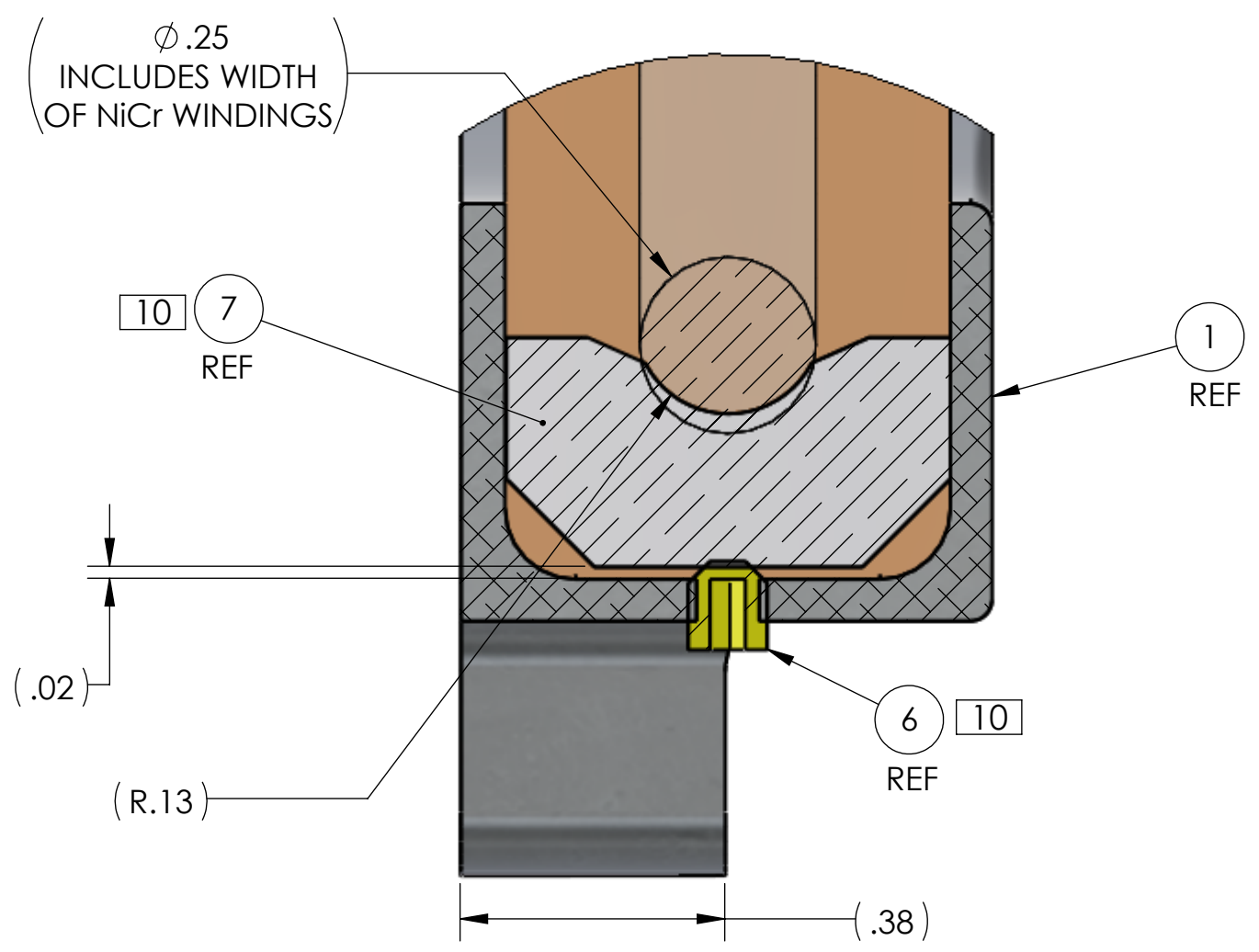
D1001895_αLIGO TCS RING HEATER LOWER SEGMENT ASSY - PART PDM REV: X-202, DRAWING PDM REV: X-047



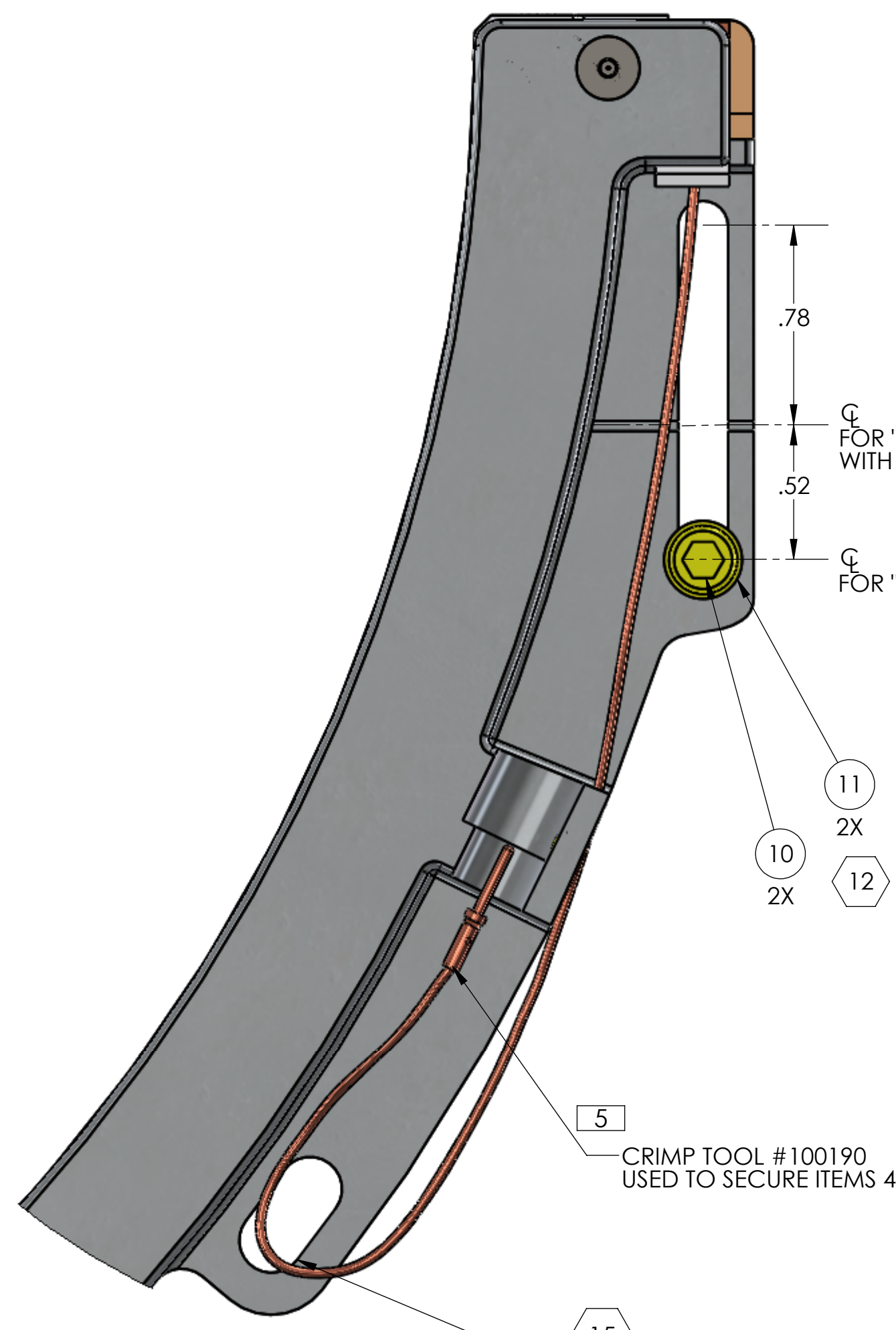
**SECTION D-D
SCALE 1 : 1**



**DETAIL A
SCALE 4 : 1**



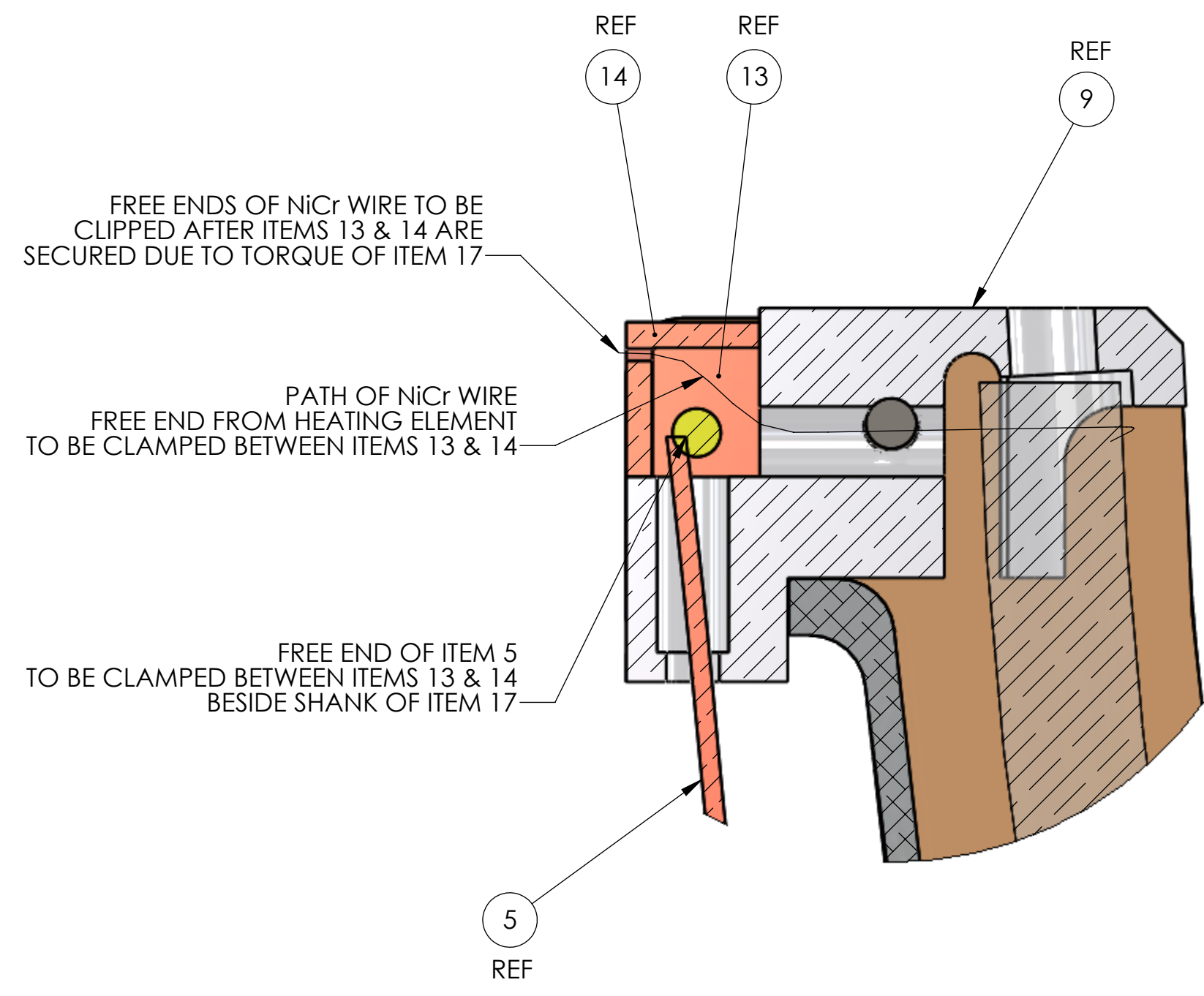
**DETAIL E
SCALE 4 : 1**



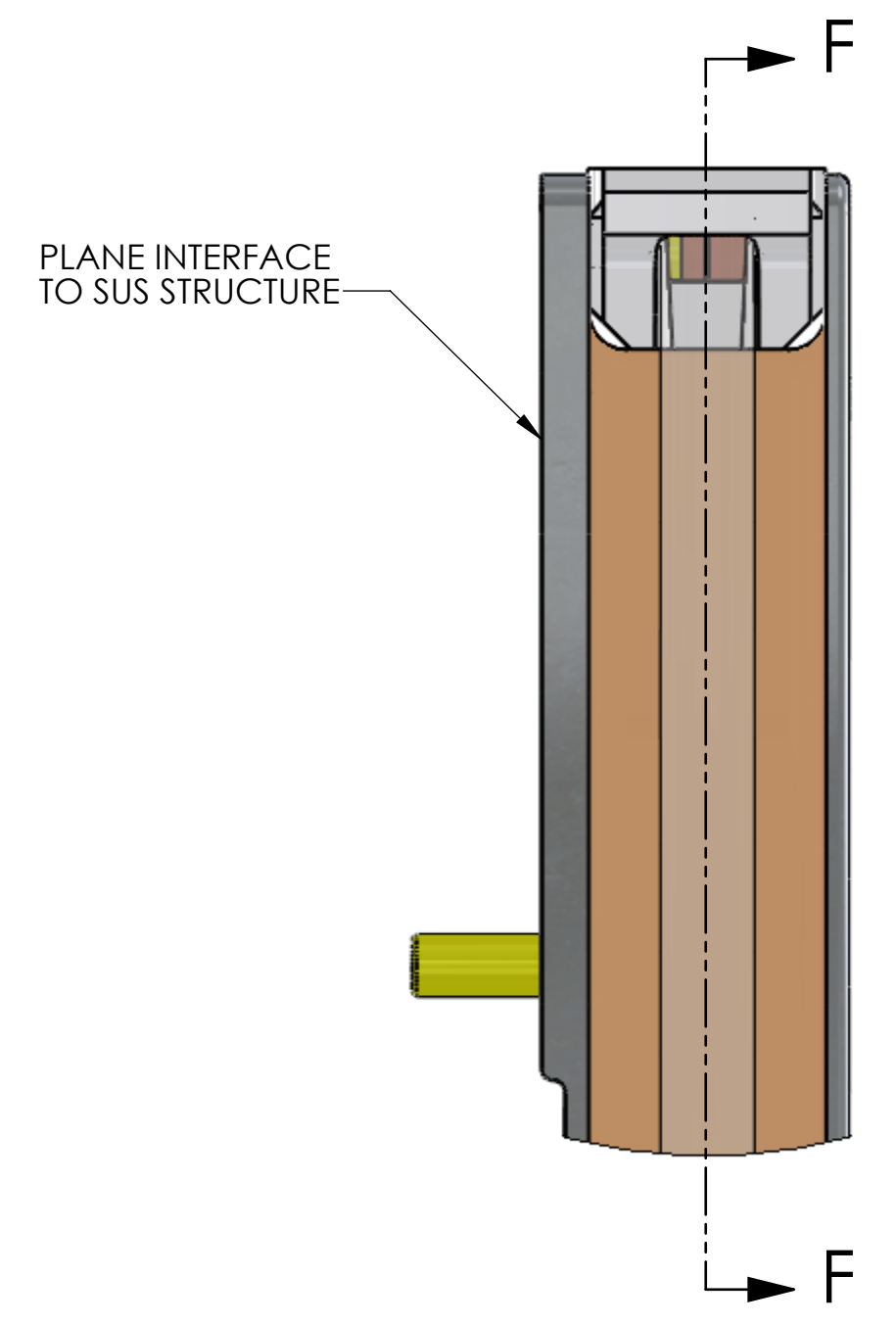
**DETAIL B
SCALE 2 : 1**

LIGO CALIFORNIA INSTITUTE OF TECHNOLOGY MASSACHUSETTS INSTITUTE OF TECHNOLOGY	
SIZE DWG. NO.	REV.
D D1001895	V6
SCALE: 1:2	PROJECTION: SHEET 2 OF 4

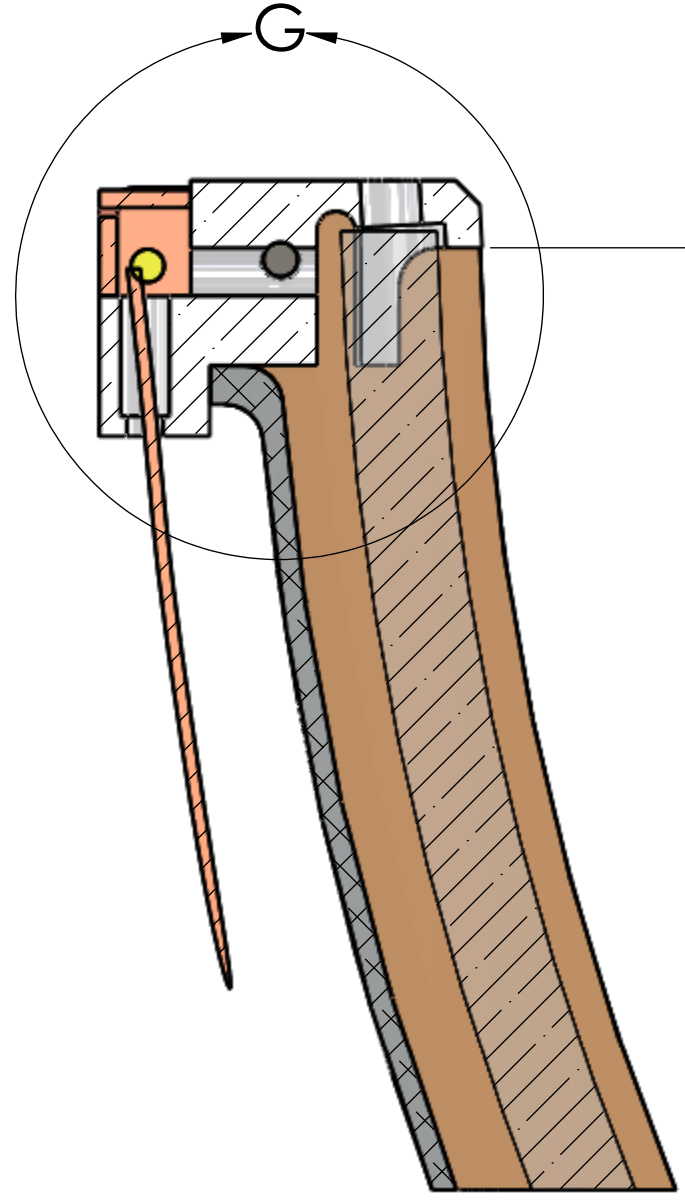
D1001895_01UGO TCS BRING HEATER LOWER SEGMENT ASSY.PART PDM REV: X-302. DRAWING PDM REV: X-047



DETAIL G
SCALE 4 : 1



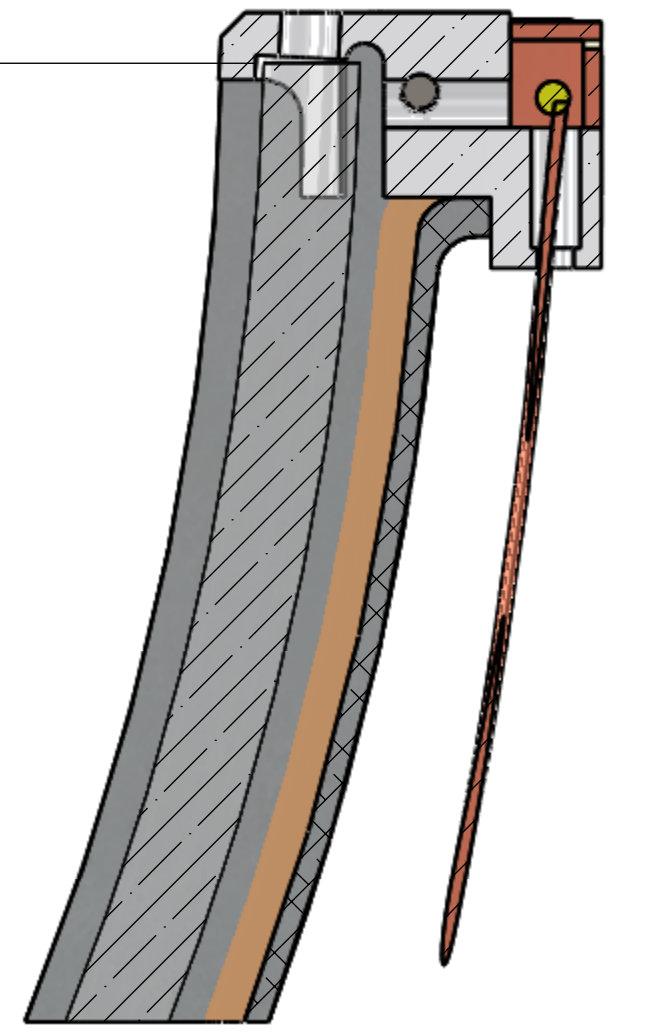
DETAIL C
SCALE 2 : 1



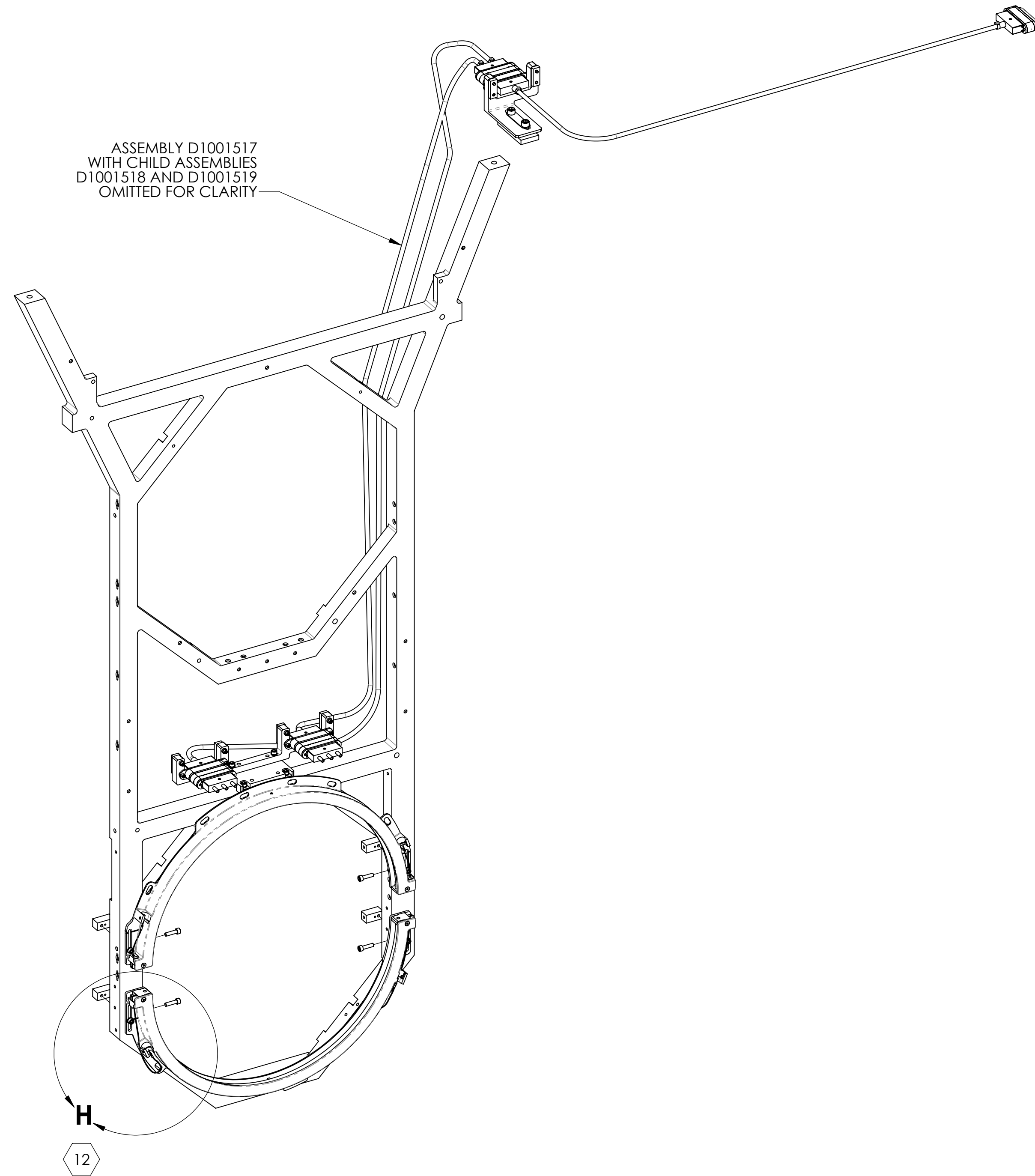
(.04)

SEE ALSO
DETAIL E
OF SHEET 2

SECTION F-F
SCALE 2 : 1

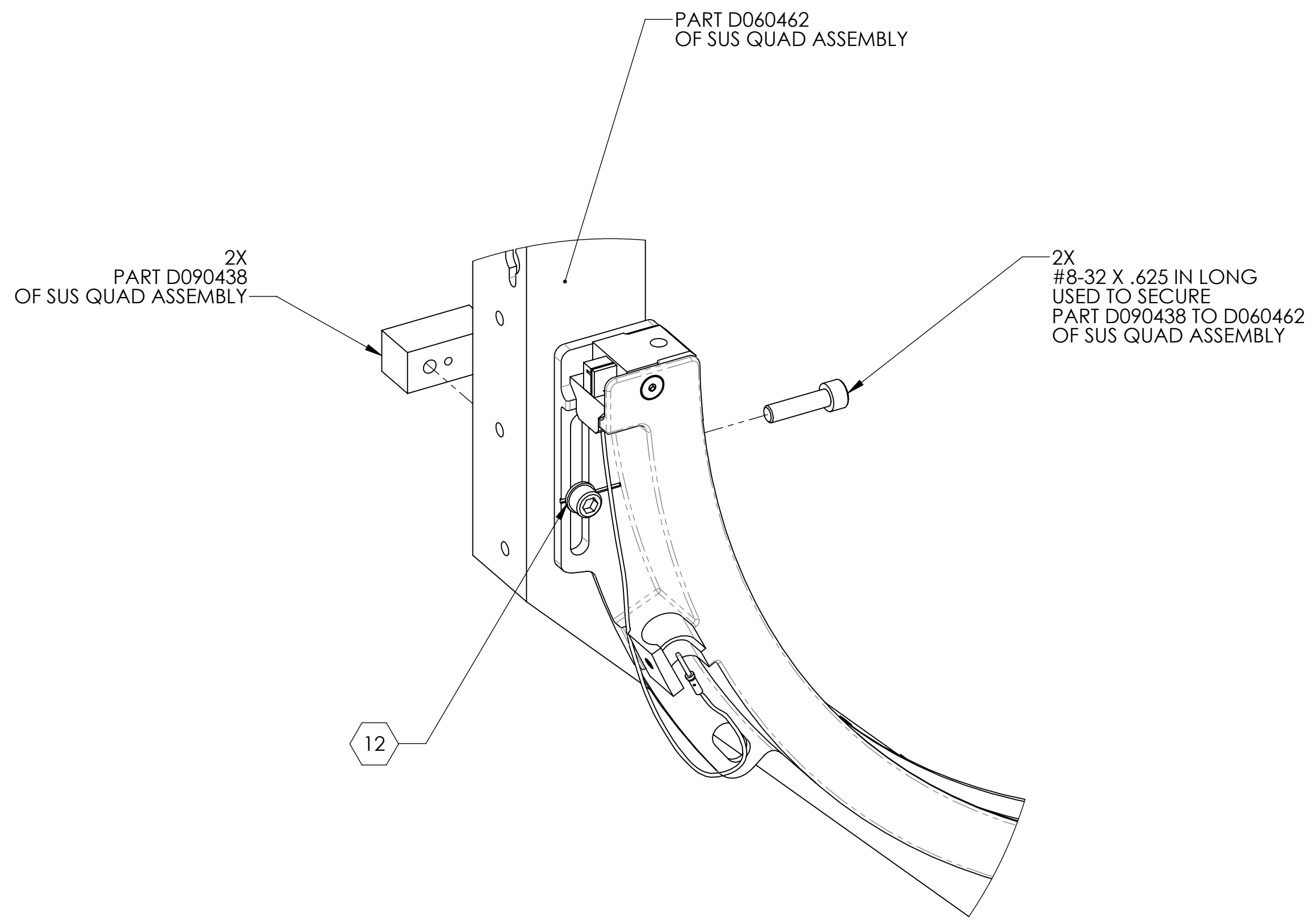


D:\001895_01\UGO TCS BRING HEATER LOWER SEGMENT ASSY.PART PDM REV: X-202 DRAWING PDM REV: X-047



ASSEMBLY D1001517
WITH CHILD ASSEMBLIES
D1001518 AND D1001519
OMITTED FOR CLARITY

SCALE 1:4



DETAIL H
SCALE 1:1

CALIFORNIA INSTITUTE OF TECHNOLOGY MASSACHUSETTS INSTITUTE OF TECHNOLOGY		REV.
SIZE	DWG. NO.	REV.
D	D1002027	V6
SCALE: 1:2	PROJECTION:	SHEET 4 OF 4

D1001895_01UGO_TCS_RING_HEATER_LOWER_SEGMENT_ASSY.PART.PDM.REV.X:110.DRAWING.PDM.REV.X:047