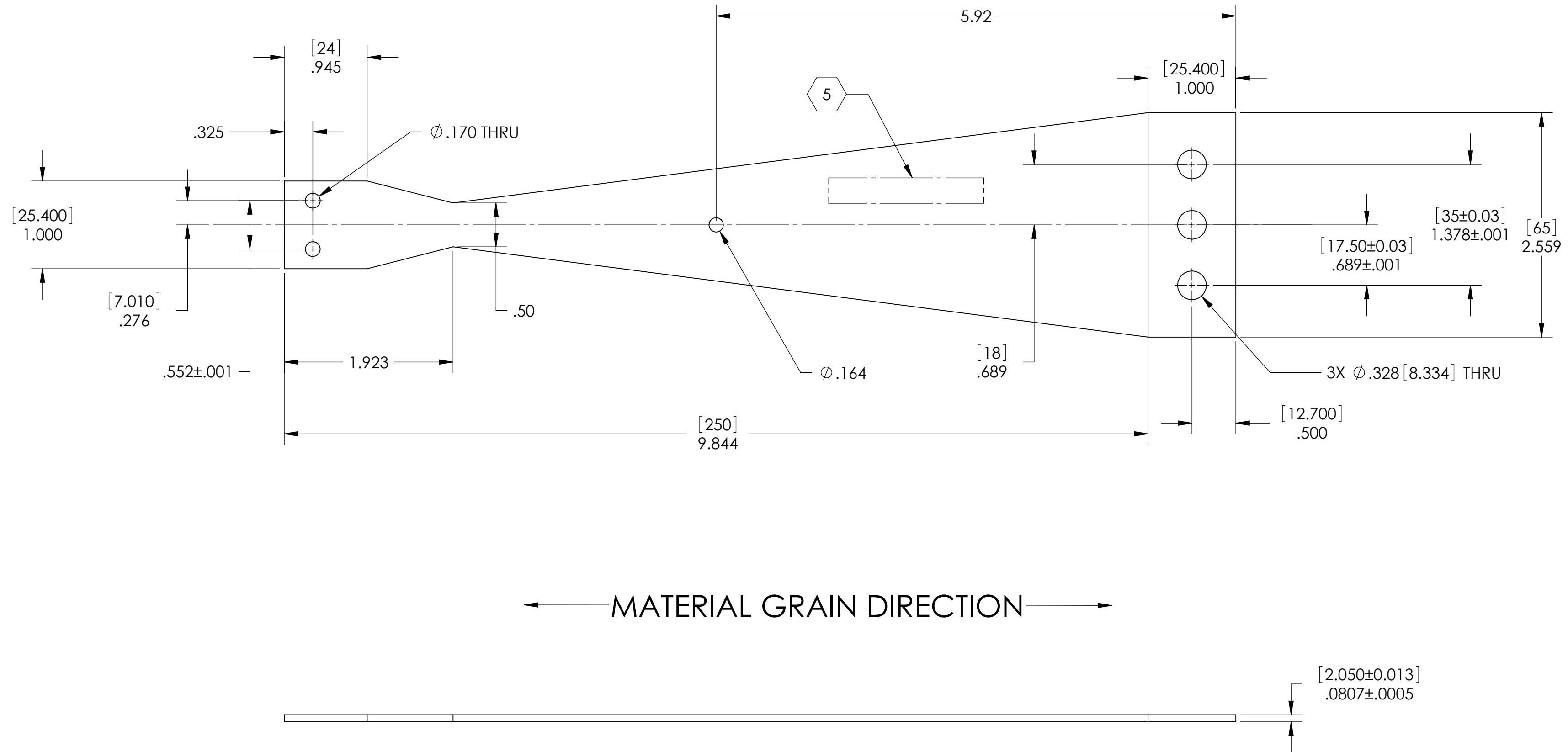


- NOTES:**
1. INTERPRET DRAWING PER ASME Y14.5-1994.
 2. REMOVE ALL SHARP EDGES, R.02 MIN.
 3. DO NOT SCALE FROM DRAWING.
 4. ALL MACHINING FLUIDS MUST BE FULLY SYNTHETIC, FULLY WATER SOLUBLE AND FREE OF SULFUR, SILICONE, AND CHLORINE.
 5. SCRIBE, ENGRAVE, OR MECHANICALLY STAMP (NO INKS OR DYES) DRAWING 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 500 FOR THE FIRST ARTICLE AND PROCEED CONSECUTIVELY. USE MINIMUM 0.12" HIGH CHARACTERS, UNLESS THE SIZE OF THE PART DICTATES SMALLER CHARACTERS. A VIBRATORY TOOL MAY BE USED. EXAMPLE: DXXXXXX-VY, TYPE-XX, S/N XXX
 6. ALL PARTS SHALL BE MANUFACTURED IN ACCORDANCE WITH LIGO SPECIFICATION E0900023.

REV.	DATE	DCN #	DRAWING TREE #
08	17 JAN 2008	UPDATED PER LATEST COMPUTATIONS	-
A	17 APR 2008	RELEASED FOR RFQ PER DCN E080066	-
B	17 APRIL 2008	E080169-00	-
C/v1	24 APRIL 2008	E080179-00	-
v2	16 JUL 2010	E1000255	E080191



← MATERIAL GRAIN DIRECTION →

INTERNAL LIGO NOTES:

1. EXCEL SPREADSHEET REF T1000353-v2
2. SHAPE FACTOR FOR UPPER BLADE = 1.36 AND YOUNGS MODULUS USED IS 1.86e11 Pa.
3. LOAD ON UPPER BLADE (FLAT) = 18.225 kg AND UNCOUPLED LOAD = 6.05 kg.
4. PREDICTED UNCOUPLED SUSPENSION FREQUENCY = 2.27 Hz.
5. PREDICTED FIRST BLADE INTERNAL FREQUENCY = 123 Hz.
6. MAXIMUM STRESS = 982 MPa
7. MID TO MID DEFLECTION = 145.9 mm.
8. LENGTH IS 250 mm (275 mm INCLUDING CLAMPING LENGTH), THICKNESS IS 2.05 mm AND WIDTH IS 65 mm.
9. RADIUS IS 182.8 mm CALCULATED USING BLADE EQUATIONS.
10. IN THE CURVED SKETCH IN SW PART ADD MID TO MID DEFLECTION AND ADJUST RADIUS UNTIL DESIRED LENGTH IS ATTAINED.
11. IN SW PART, BLADE IS DRAWN WITH SHEET METAL AND EXTRUDED VERTICALLY DOWNWARDS.
12. ON SW DRAWING, SOLIDWORKS RADIUS VALUE IS THE VALUE MEASURED DIRECT FROM SW USING THE DIMENSION TOOL.

VIEWS PRIOR TO FORMING

NOTES AND TOLERANCES: (UNLESS OTHERWISE SPECIFIED)

DIMENSIONS ARE IN INCHES [MM]

TOLERANCES:
 .XX ± .01
 .XXX ± .005

ANGULAR ± 0.5°

MATERIAL

MARAGING STEEL C250

FINISH

32 μinch

LIGO CALIFORNIA INSTITUTE OF TECHNOLOGY
 MASSACHUSETTS INSTITUTE OF TECHNOLOGY

SYSTEM

ADVANCED LIGO

SUB-SYSTEM

SUS

NEXT ASSY

HLTS ROTATIONAL ADJUSTER ASSY

PART NAME

HLTS UPPER BLADE

DESIGNER

B. KIRSNER 17 JAN 2008

DRAFTER

B. KIRSNER 17 JAN 2008

CHECKER

C. TORRIE 17 JAN 2008

APPROVAL

SIZE

c

DWG. NO.

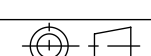
D020617

REV.

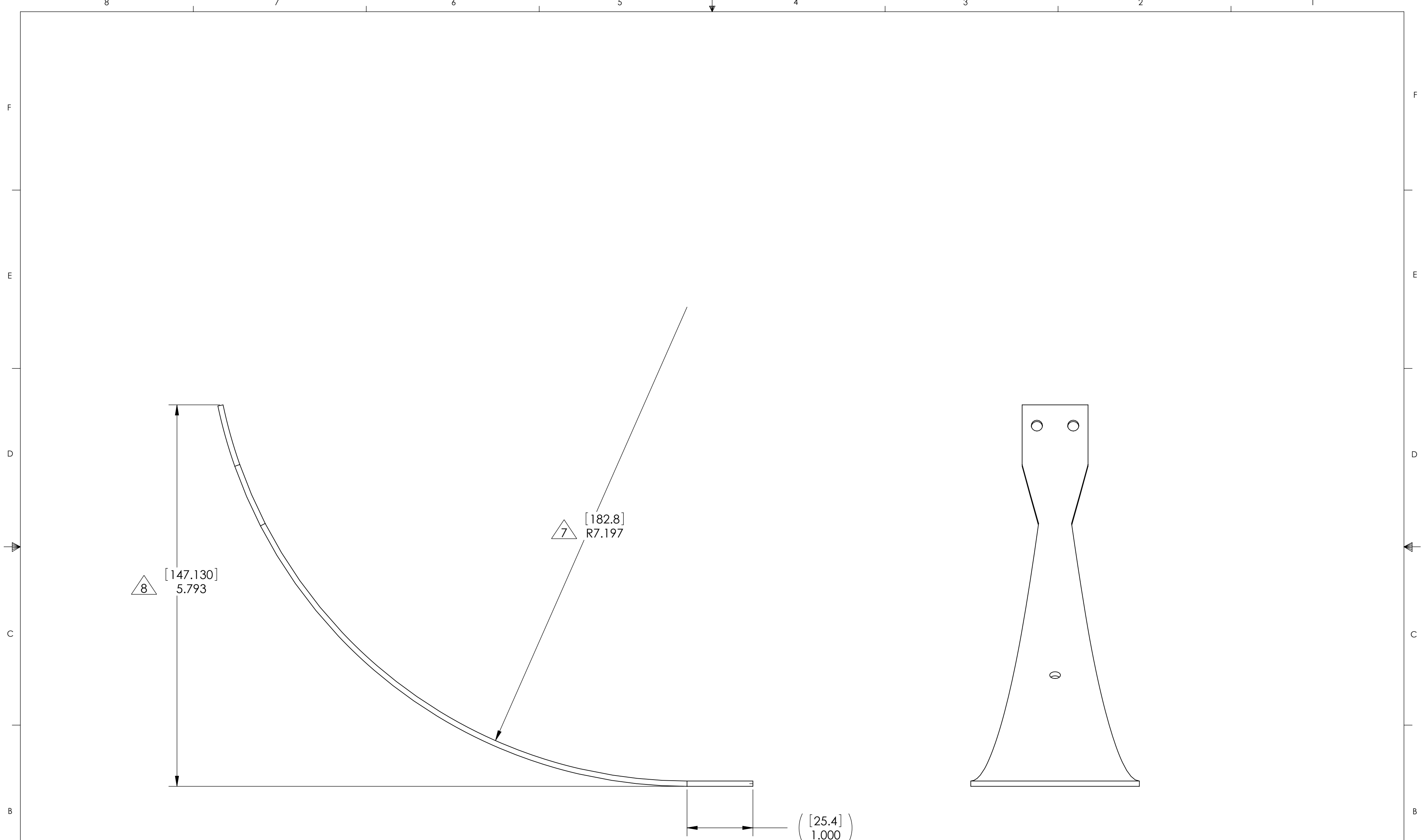
v2

SCALE: 1:1

PROJECTION:





SHEET 1 OF 2



VIEWS AFTER FORMING AND HEAT TREATMENT

- △ 7 THE RADIUS OF THE CURVATURE IS THE INSIDE RADIUS
- △ 8 THE OVERALL DEFLECTION IS MEASURED FROM THE BOTTOM OF THE BASE POINT TO THE HIGHEST POINT ON THE TIP

 CALIFORNIA INSTITUTE OF TECHNOLOGY MASSACHUSETTS INSTITUTE OF TECHNOLOGY		
SIZE C	DWG. NO. D020617	REV. v2
SCALE: 1:1	PROJECTION: 	SHEET 2 OF 2