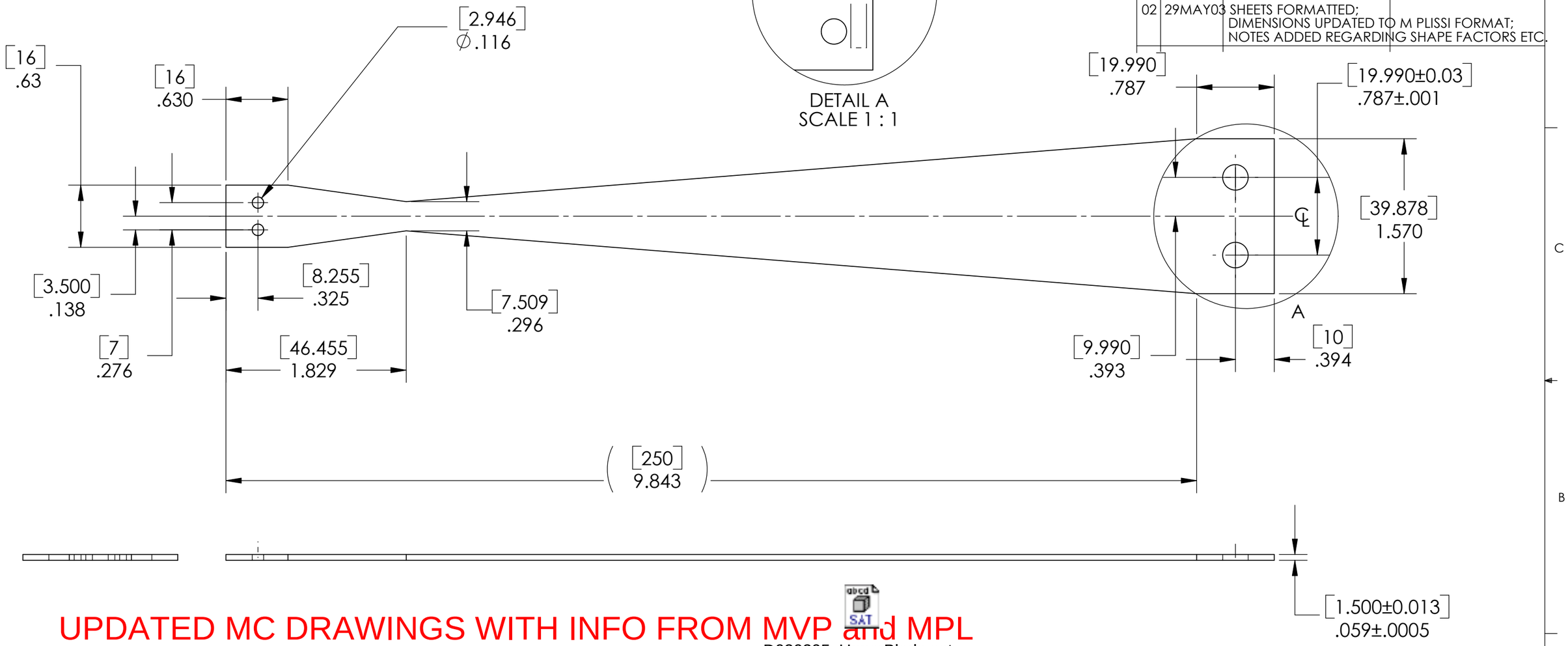
REV.	DATE	DCN #	DRAWING TREE #
01	01JUL02	RADIUS AND DEFLECTION UPDATED TOLERANCE REDUCED ON HOLES ADDED DIMENSION - NARROW WIDTH OF BLADE ADDED DIMENSION - FLAT WIDTH	
01	JUL02	USED FOR ORDER WITH LOBART AND SUPERIOR JIG	
01	MAY 03	DUAL DIMENSIONS ADDED, NEW NOTE ADDED (3) re: ENGRAVING/STAMPING	
02	29MAY03	SHEETS FORMATTED; DIMENSIONS UPDATED TO M PLISSI FORMAT; NOTES ADDED REGARDING SHAPE FACTORS ETC.	



UPDATED MC DRAWINGS WITH INFO FROM MVP and MPL

D020205_UpperBlade.sat

PARTS LIST

NOTES: (UNLESS OTHERWISE SPECIFIED)

1. REMOVE ALL SHARP EDGES, R.02 MIN.
2. ALL MACHINING FLUIDS SHALL BE WATER SOLUBLE AND FREE OF SULFUR, CHLORINE AND SILICONE, SUCH AS CINCINNATI MILACRON'S CIMTECH 410 (STAINLESS STEEL)
3. ENGRAVE OR STAMP DRAWING PART NUMBER ON NOTED SURFACE OF PART AND A THREE DIGIT SERIAL NUMBER. SERIAL NUMBERS START AT 001 FOR THE FIRST PART AND PROCEED CONSECUTIVELY. USE .07" HIGH CHARACTERS. EXAMPLE: D020188- 001. A VIBRATORY TOOL MAY BE USED.
4. VIEWS PRIOR TO FORMING
5. AFTER FORMING THE BLADES ARE ANNEALED AT 490°C FOR 4 HOURS AND AIR COOLED BACK TO ROOM TEMPERATURE

DIMENSIONS ARE IN INCHES

TOLERANCES:
.XX ± .01
.XXX ± .005

ANGULAR ± 0.5°

MATERIAL MARAGING STEEL C250

FINISH

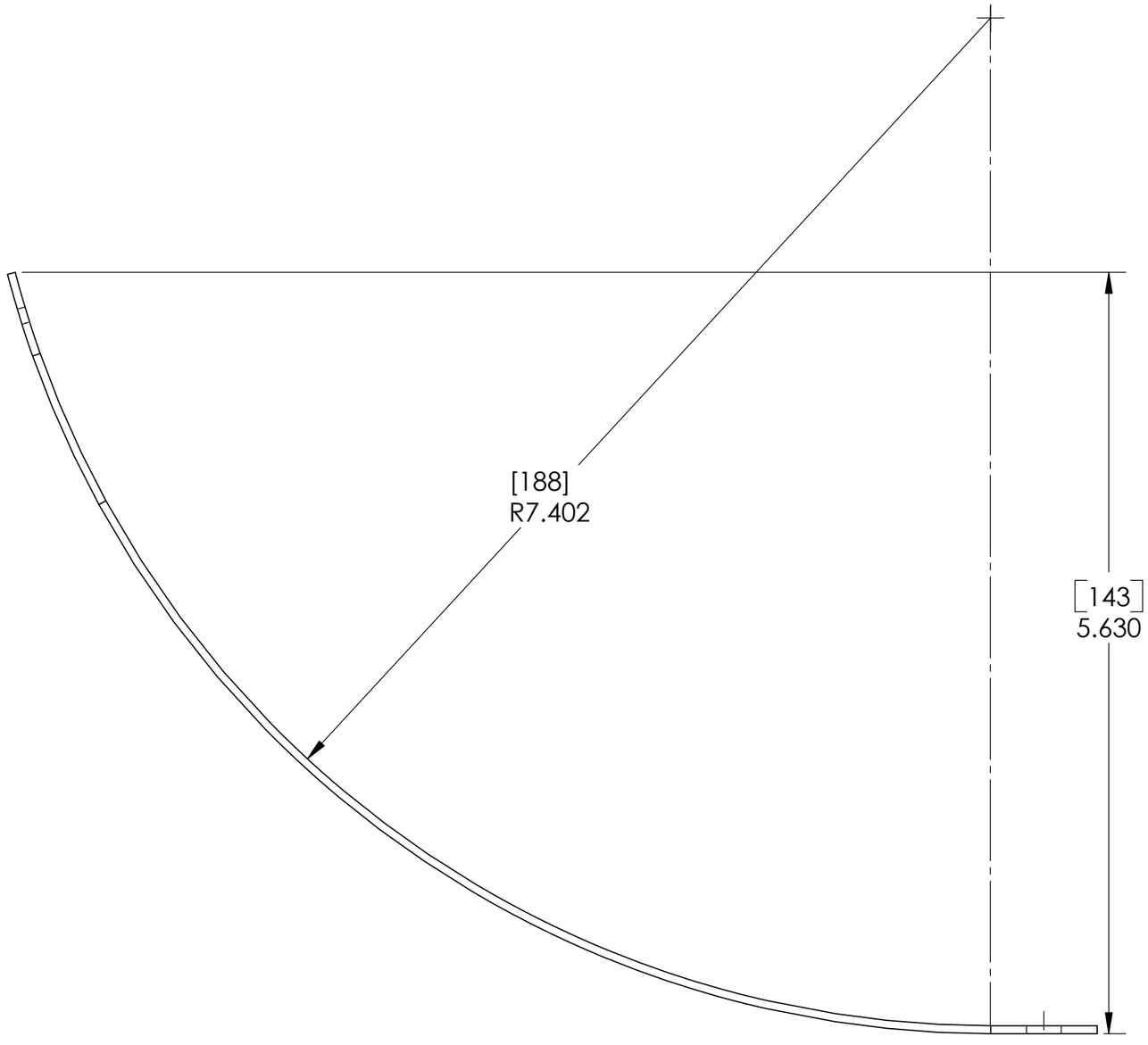
	NAME	DATE
DRAWN	CIT	MAY02
CHECKED	MPL	29MAY03
	MVP	29MAY03
APPROVED		

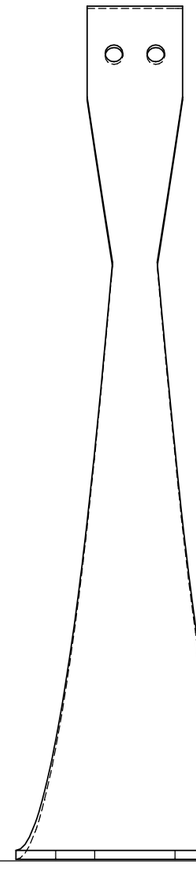
CALIFORNIA INSTITUTE OF TECHNOLOGY
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
IGR, GLASGOW UNIVERSITY GEO 600 GROUP

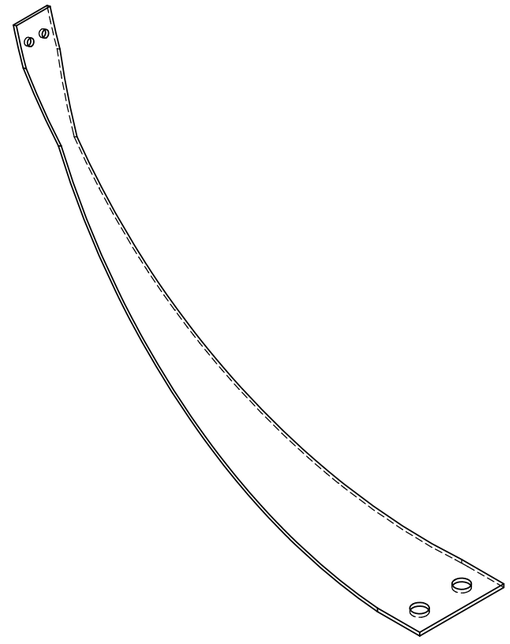
SYSTEM	ADVANCED LIGO
SUB-SYSTEM	SUS
NEXT ASSY	MC UPPER BLADES
PART NAME	UPPER BLADE
SIZE B	DWG. NO. D020205
REV.	02
SCALE: NTS	PROJECTION:
SHEET 1 OF 2	

FILE NAME/LOCATION:

REV.	DATE	DCN #	DRAWING TREE #







PARTS LIST

NOTES: (UNLESS OTHERWISE SPECIFIED)

1. MANUFACTURE NOTES
1.1 VIEWS SHOWN ARE THOSE AFTER FORMING AND ANNEALING.
1.2 AS SHOWN, THE RADIUS OF CURVATURE IS THE INTERNAL RADIUS.
1.3 AS SHOWN, THE OVERALL DEFLECTION IS MEASURED FROM THE BOTTOM OF THE BASE POINT TO THE HIGHEST POINT ON THE TIP OF THE BLADE.
2. OTHER NOTES (FOR INTERNAL USE)
2.1 SHAPE FACTOR FOR LOWER BLADE = 1.32
2.2 LOAD ON LOWER BLADE (FLAT) = 4.6kg
2.3 PREDICTED UNCOUPLED FREQUENCY = 2.3Hz
2.4 PREDICTED FIRST INTERNAL MODE = 90Hz.
(These were extrapolated from an earlier blade design using Equations highlighted in MVP blade paper)
2.5 MAXIMUM STRESS = 745MPa
2.6 SOLIDWORKS RADIUS VALUE OVER WRITTEN, WITH VALUE CALCULATED BY MVP.
2.7 IN SW PART, BLADE MUST BE DRAWN WITH SHEET METAL AND EXTRUDED VERTICALLY DOWNWARDS.
2.8 IN SW PART RADIUS SHOULD BE ADJUSTED TO ATTAIN DESIRED LENGTH ON DRAWING SHEET.

DIMENSIONS ARE IN INCHES

TOLERANCES:
.XX ± .01
.XXX ± .005

ANGULAR ± 0.5°

MATERIAL

FINISH

	NAME	DATE
DRAWN		
CHECKED		
APPROVED		

LIGO — CALIFORNIA INSTITUTE OF TECHNOLOGY, MASSACHUSETTS INSTITUTE OF TECHNOLOGY, IGR, GLASGOW UNIVERSITY GEO 600 GROUP

SYSTEM	ADVANCED LIGO
SUB-SYSTEM	SUS
NEXT ASSY	MC: UPPER BLADE
PART NAME	UPPER BLADE
SIZE B / DWG. NO.	D020205
REV.	02
SCALE: NTS / PROJECTION:	SHEET 2 OF 2

FILE NAME/LOCATION: