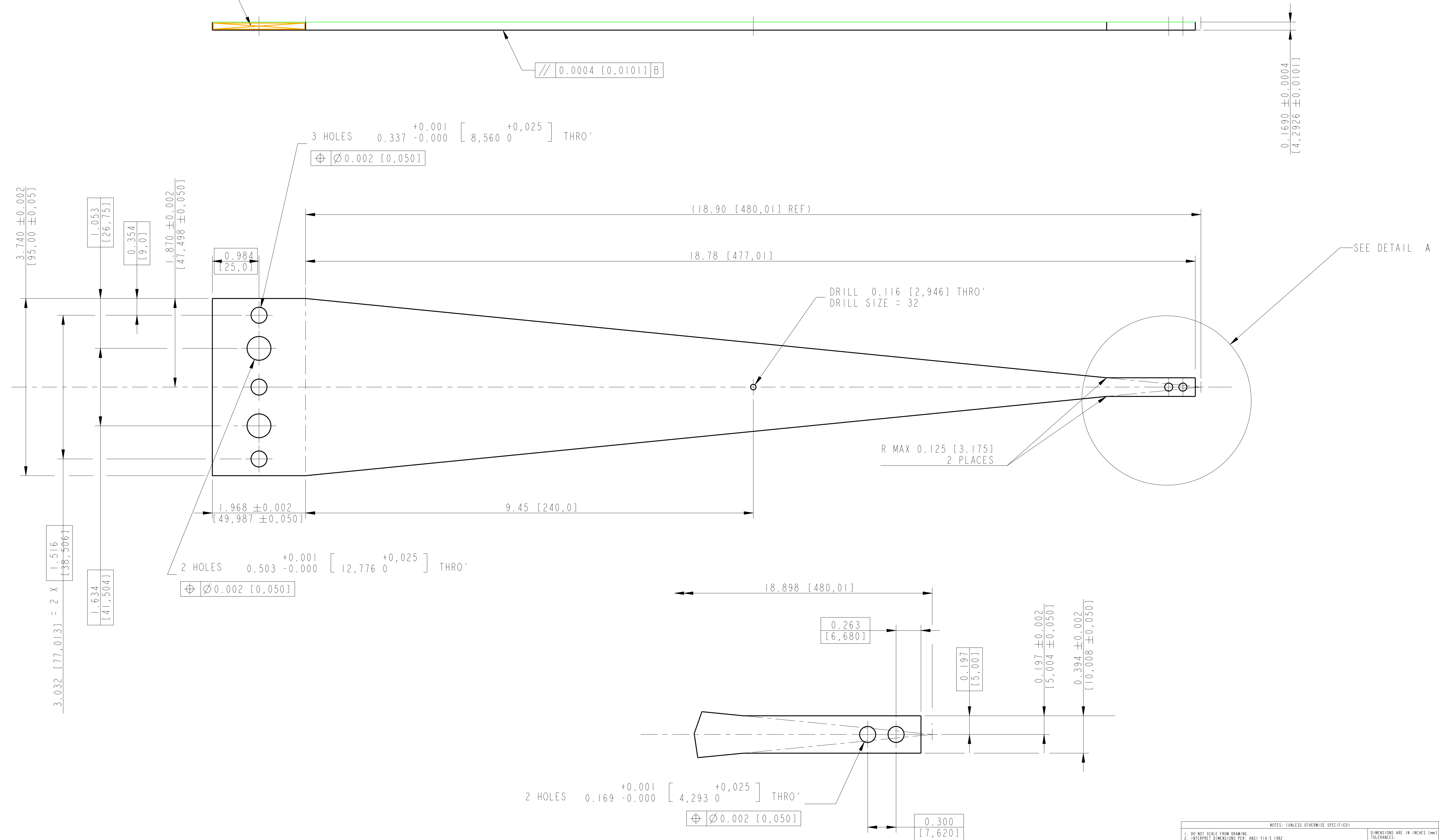


REV.	DATE	DCN #	DRAWING TREE #
A	02/JUL/04	E040312-01-K	
B	20/JUL/04	E040345-00-K	

FLAT BLADE PROFILE

ENGRAVE PART NO.
SEE NOTES



DETAIL A
SCALE 2:1

NOTES: (UNLESS OTHERWISE SPECIFIED)

- DO NOT SCALE FROM DRAWING.
- INTERPRET DIMENSIONS PER: ANSI Y14.5-1982
- ALL MACHINING FLUIDS SHALL BE WATER SOLUBLE AND FREE OF SULFUR, CHLORINE AND SILICONE, SUCH AS CINCINNATI MILACON'S CIMTECH 410 (STAINLESS STEEL).
- FABRICATE FROM SHEET MATERIAL: FORM RADIUS BY ROLLING.
- REMOVE ALL SHARP EDGES: R.02 MIN.
- SCRIBE, 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: 00010P.001. A V BRACKETED TOOL MAY BE USED.
- AFTER PARTS ARE ROLLED TO RADIUS, HARDEN FOR HEAT TREATMENT AT 435 DEG. C FOR 100 HOURS AND AIR COOL. PARTS MUST BE SUPPORTED WITH TOOLING DURING HEAT TREATMENT TO AVOID RADIUS CHANGE DUE TO SELF WEIGHT. TOOLING FOR HEAT TREATMENT MAY BE A "SINE BACK" TYPE OF TOOL THAT WILL ALLOW THE PARTS TO BE MOUNTED ON THEIR SIDES. PARTS MAY BE ROLLED AGAIN AFTER HEAT TREATMENT TO ADJUST RADIUS TO SPECIFICATION.

DIMENSIONS ARE IN INCHES (mm)	
X, XX ± 0.01 (0.250 mm)	
X.XXX ± 0.005	
ANGULAR ± 0.250 °	
MATERIAL: HARDENING STEEL 250	
FINISH: CLEAN AND DEGREASED	
√(1/16) (1.6mm) Ra = 32 (10.8)	

SYSTEM	PART NAME	SCALE
ADVANCED LIGO	TOP STAGE BLADES	1:1
SUB-SYSTEM: SUS	QUAD CONTROLS PROTOTYPE	

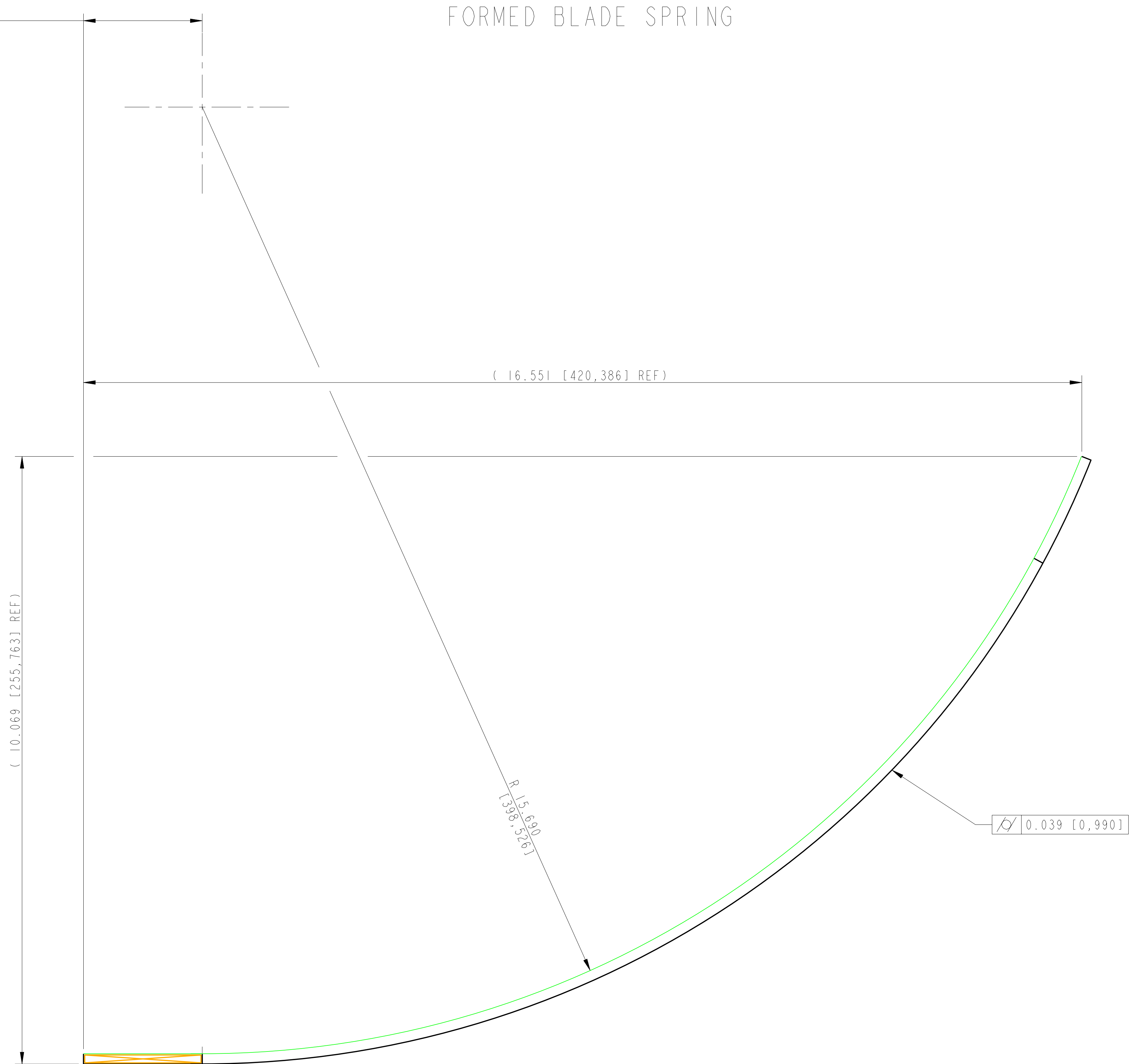
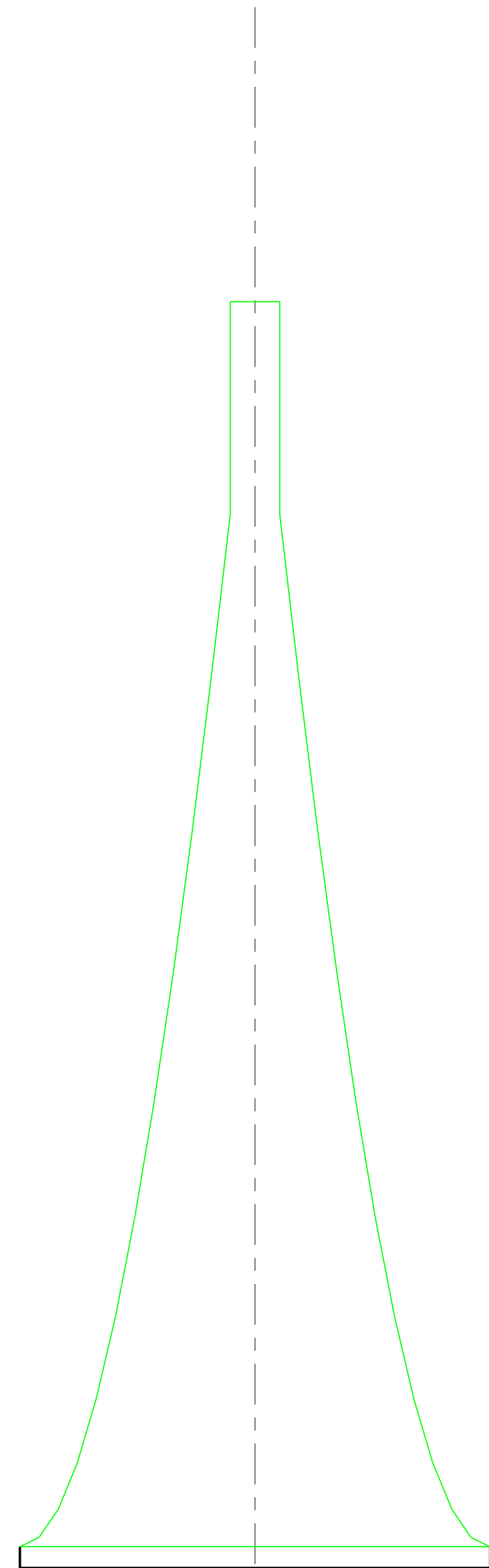
DATE	NAME	DATE	NAME
21/JUL/04	J. WILMOT	21/JUL/04	J. WILMOT
	CHECKED		APPROVED

SCALE: 1:1 PROJECTION: SHEET 1 OF 1

FOR INTERNAL USE ONLY:
 E=186Gpa
 ALPHA=1.35
 TOTAL SUSP MASS = 61 KG
 P MASS = 11 KG
 PREDICTED:
 F = 2.33Hz
 1st INTERNAL MODE = 70.26Hz
 σ MAX = 981Mpa
 REF: COMMUNICATION WITH BLADE COMMITTEE

+0.10
 1.97 -0.00
 [50,0 0]

FORMED BLADE SPRING



NOTES: (UNLESS OTHERWISE SPECIFIED)

- DO NOT SCALE FROM DRAWING.
- INTERPRET DIMENSIONS PER: ANSI Y14.5 1982
- ALL MACHINING FLUIDS SHALL BE WATER SOLUBLE AND FREE OF SULFUR, CHLORINE AND SILICONE, SUCH AS CINCINNATI MILACON'S CIMTECH 410 (STAINLESS STEEL).
- FABRICATE FROM SHEET MATERIAL. FORM RADIUS BY ROLLING.
- REMOVE ALL SHARP EDGES. 0.02 MIN.
- 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 01" HIGH CHARACTERS. EXAMPLE: 000100-001. A VIBRATORY TOOL MAY BE USED.
- AFTER PARTS ARE ROLLED TO RADIUS, HARDEN FOR HEAT TREATMENT AT 435 DEG C FOR 100 HOURS AND AIR COOL. PARTS MUST BE SUPPORTED WITH TOOLING DURING HEAT TREATMENT TO AVOID RADIUS CHANGE DUE TO SELF WEIGHT. TOOLING FOR HEAT TREATMENT MAY BE A "SHAKE BACK" TYPE OF TOOL THAT WILL ALLOW THE PARTS TO BE MOUNTED ON THEIR SIDES. PARTS MAY BE ROLLED AGAIN AFTER HEAT TREATMENT TO ADJUST RADIUS TO SPECIFICATION.

DIMENSIONS ARE IN INCHES (mm)	
X.XX ±0.01 (0.250 mm)	
X.XXX ±0.005	
ANGULAR ±0.250 °	
MATERIAL: MARAGING STEEL 250	
FINISH: CLEAN AND DEGREASED	
√(10 μm) Ra = 32 (10.8)	
DATE	DATE
NAME	NAME
DRAWN: J. MILMOT 21/JUL/04	DATE
CHECKED: ...	DATE
APPROVED: ...	DATE

CALIFORNIA INSTITUTE OF TECHNOLOGY MASSACHUSETTS INSTITUTE OF TECHNOLOGY IGR, GLASSBORO UNIVERSITY GEO 600 GROUP WORTHINGTON APPLETON LABORATORIES	
SYSTEM	ADVANCED LIGO
SUB-SYSTEM	SUS
NEXT ASSY	TOP STAGE
PART NAME	TOP STAGE BLADES
QUAD CONTROLS	PROTOTYPE
DRG. NO.	D040298
SCALE	1:1 PROJECTION
SHEET	2 OF 2