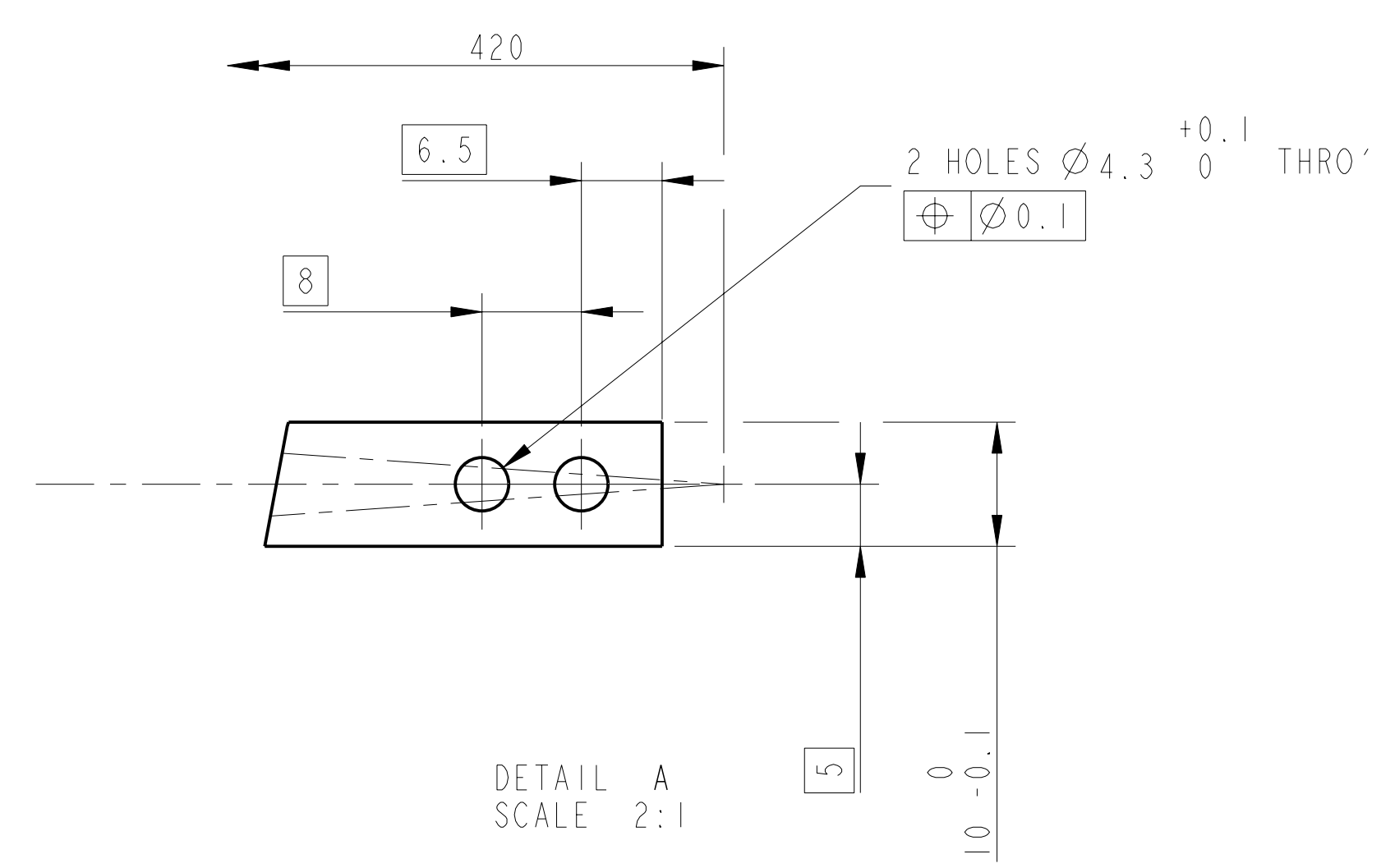
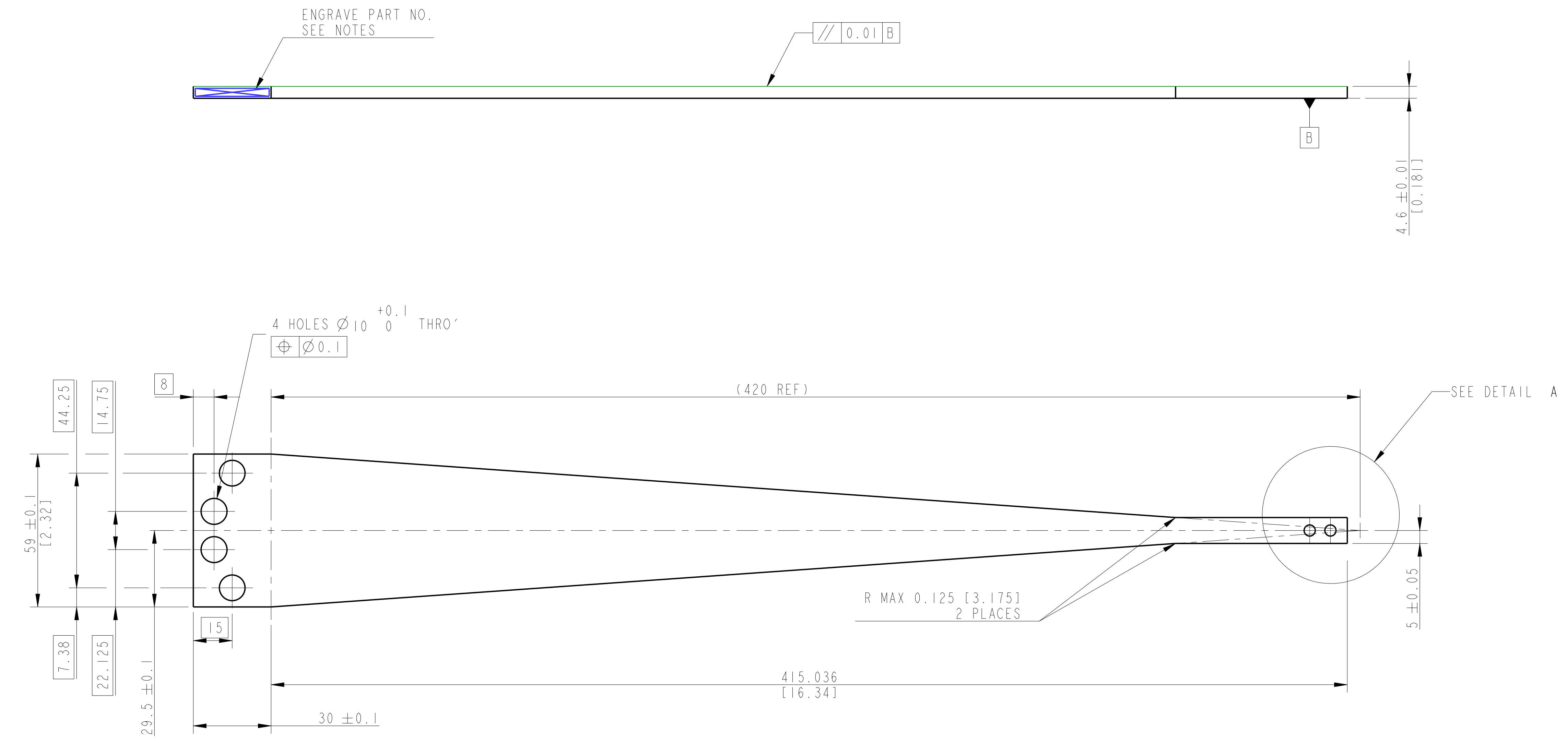


FLAT PROFILE



NOTES: (UNLESS OTHERWISE SPECIFIED)

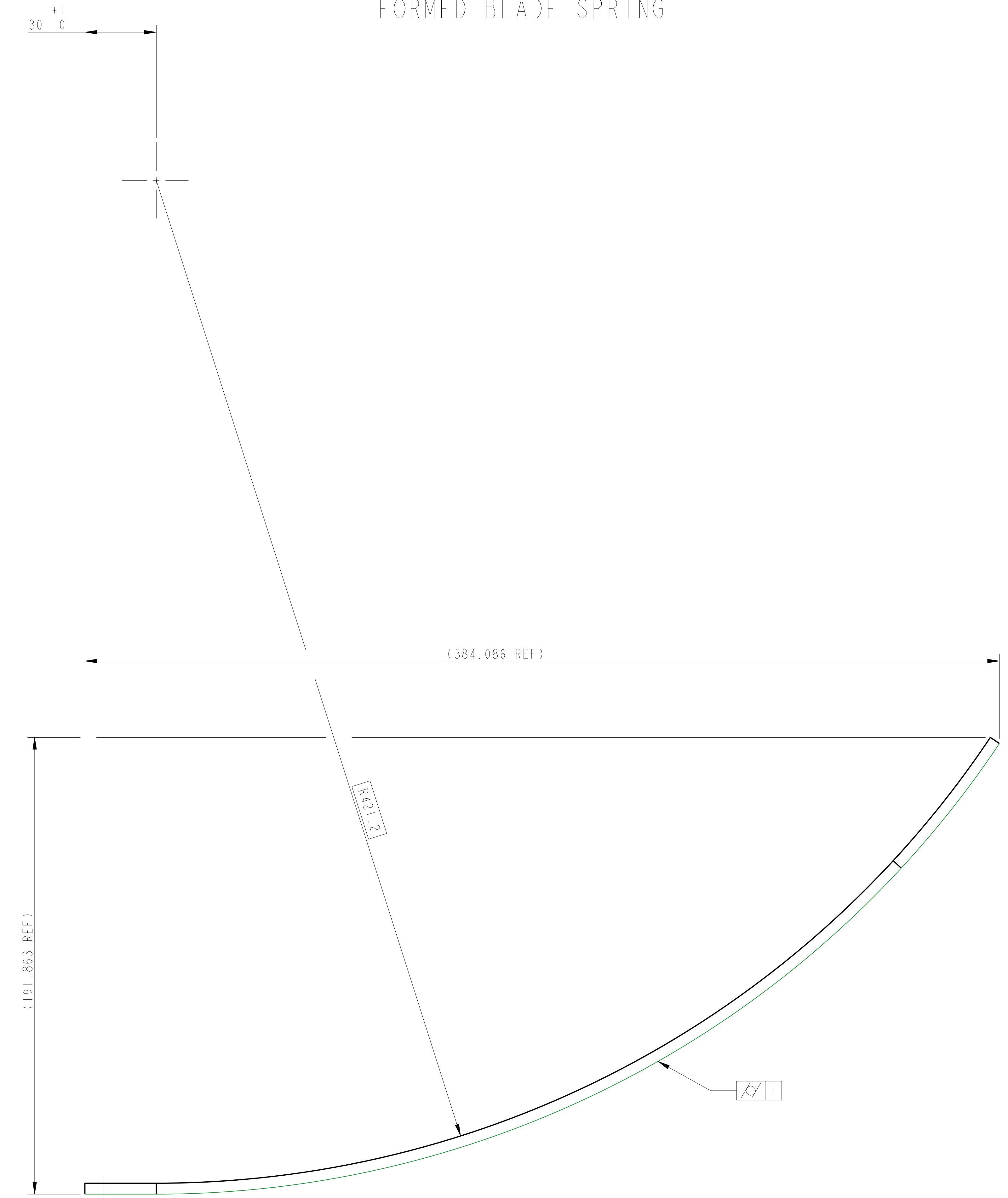
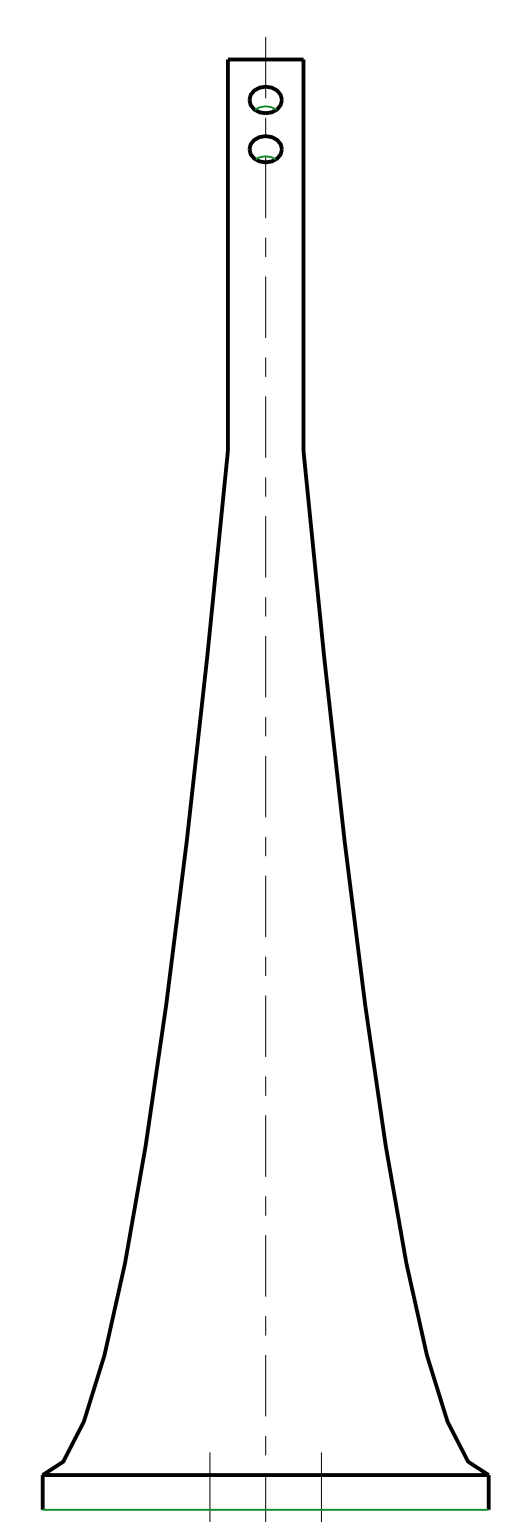
- DO NOT SCALE FROM DRAWING.
- INTERPRET DIMENSIONS PER: ANSI 114.5 I-82
- ALL MACHINING FLUIDS SHALL BE WATER SOLUBLE AND FREE OF SULFUR, CHLORINE AND SILICONE, SUCH AS CINCINNATI MILACRON'S CIMTECH 410 (STAINLESS STEEL).
- FABRICATE FROM SHEET MATERIAL; FORM RADIUS BY ROLLING.
- REMOVE ALL SHARP EDGES - R 0.25 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 "01" HIGH CHARACTERS. EXAMPLE: 000100-01. A VIBRATION 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 "SHINE 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 mm		TOLERANCES:	
LINEAR ± 0.25 mm		ANGULAR $\pm 0.25^\circ$	
MATERIAL: MARAGING STEEL 250			
FINISH: CLEAN AND DEGREASED		$R_a = 0.8$	
NAME	DATE	NAME	DATE
DRAWN	1 WILMOT 26/JUL/06	CHECKED	MB 15/MAR/10
APPROVED	JOD 15/MAR/10	APPROVED	JOD 15/MAR/10

CALIFORNIA INSTITUTE OF TECHNOLOGY	MASSACHUSETTS INSTITUTE OF TECHNOLOGY
OPR., GLASGOW UNIVERSITY GEG ROX GROUP	RUTHERFORD APPLTON LABORATORIES
SYSTEM	aLIGO
SUB-SYSTEM	SUS - QUAD
NEXT ASSY	TOP MASS QUAD
PART NAME	MIDDLE BLADE SPRING
DRG. NO.	D060236
SHEET	1 OF 2

FOR INTERNAL USE ONLY:
 E=186Mpa
 TOTAL SUSP MASS = 70.775 KG
 WIRE CLAMP OFFSET = 3.9MM DOWN
 BLADE BEND RAD CALCULATED BY FEA

FORMED BLADE SPRING



NOTES: (UNLESS OTHERWISE SPECIFIED)

- DO NOT SCALE FROM DRAWING.
- INTERPRET DIMENSIONS PER: ANSI Y14.5 1987.
- ALL MACHINING FLUIDS SHALL BE WATER SOLUBLE AND FREE OF SULFUR, CHLORINE AND SILICONE, SUCH AS CINCINNATI MILACRON'S CIMTECH 410 (STAINLESS STEEL).
- FABRICATE FROM SHEET MATERIAL; FORM RADIUS BY ROLLING.
- REMOVE ALL SHARP EDGES, R 0.02 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 "01" HIGH CHARACTERS. EXAMPLE: 000100-001. A VIBRATION 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 "SHIRE 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 mm
 TOLERANCES:
 LINEAR ± 0.25 mm
 ANGULAR ± 0.25 °

MATERIAL: MARAGING STEEL 250
 FINISH: CLEAN AND DEGREASED
 Ra = 0.8

DRAWN	1 WLMUT	26/JUL/06
CHECKED	MB	15/MAR/10
APPROVED	JDB	15/MAR/10

CALIFORNIA INSTITUTE OF TECHNOLOGY
 MASSACHUSETTS INSTITUTE OF TECHNOLOGY
 RUTHERFORD APPLTON LABORATORIES
 SYSTEM **aLIGO**
 SUB-SYSTEM **SUS - QUAD**
 NEXT ASSY **TOP MASS**
 PART NAME **MIDDLE BLADE SPRING**
 DRG. NO. **D060236**
 SCALE 1:1 PROJECTION **D** SHEET 2 OF 2