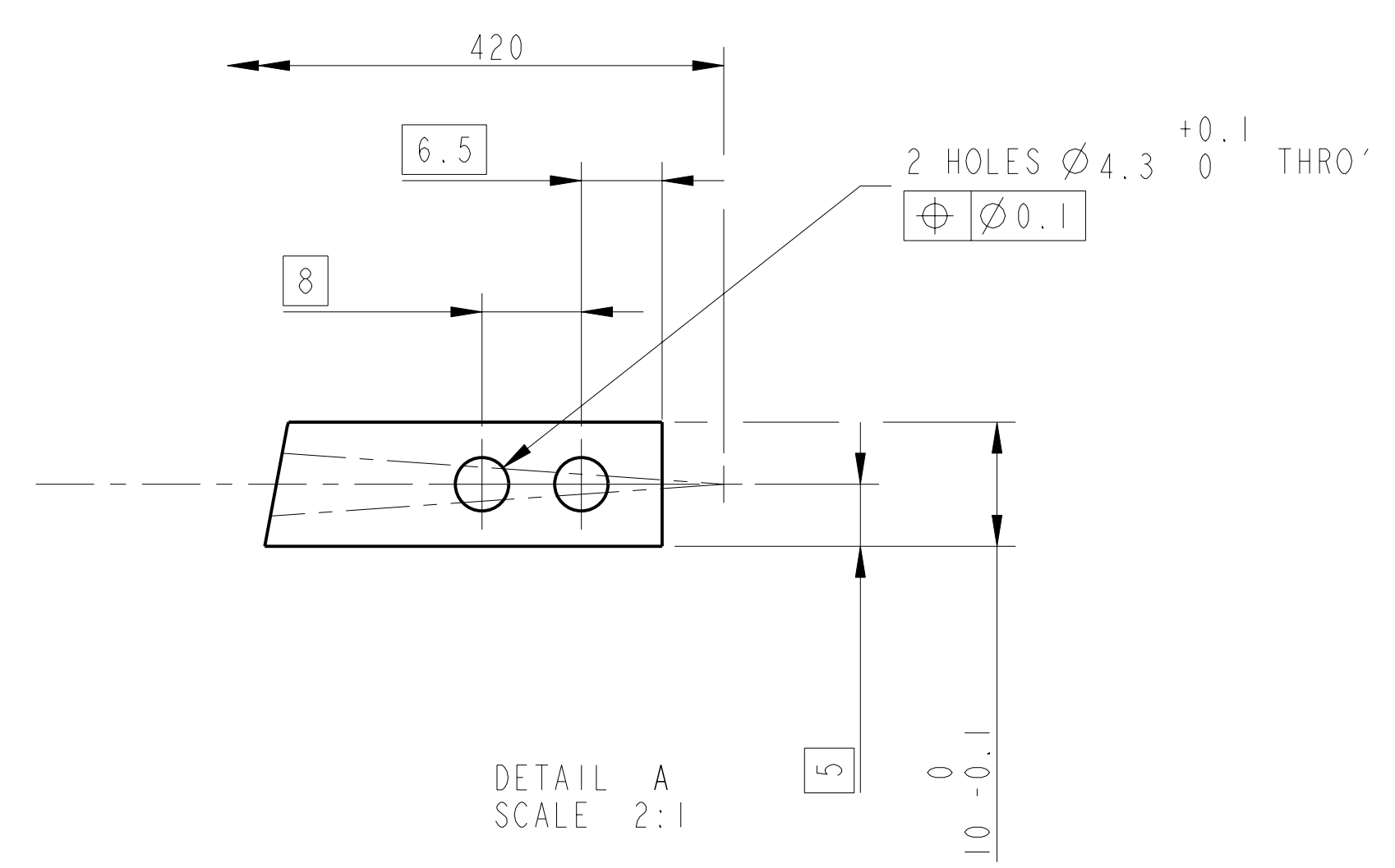
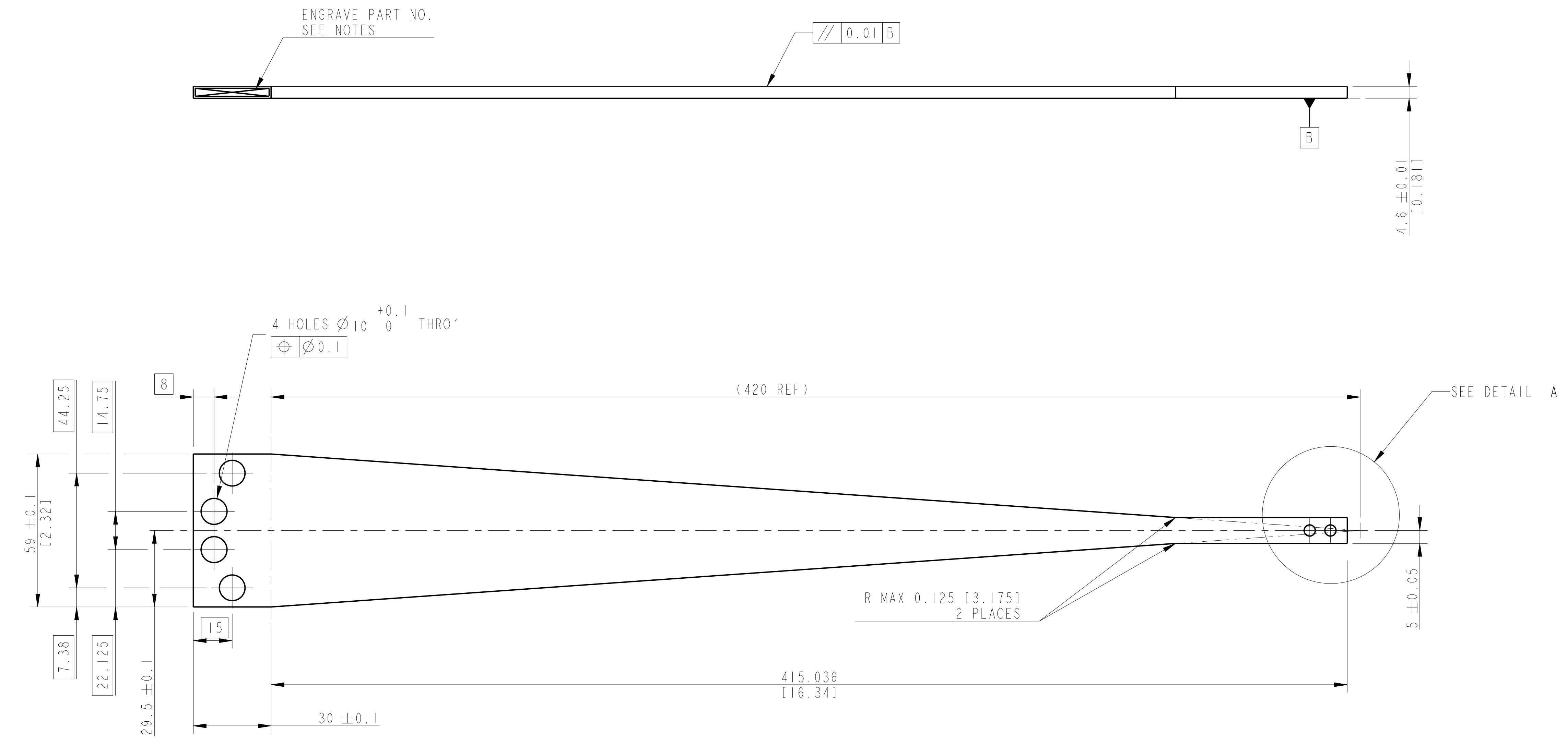


# FLAT PROFILE



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.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 "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  $\pm 0.25$  mm  
ANGULAR  $\pm 0.25^\circ$

MATERIAL: MARAGING STEEL 250  
 $\sqrt{um}$  (min) Ra = 0.8

FINISH: CLEAN AND DEGREASED  
Ra = 0.8

NAME	DATE
DRAWN	1 WILMOT 26/JUL/06
CHECKED	RJS 27/JUL/06
APPROVED	RJS 27/JUL/06

DRG. NO. D060236

SCALE 1:1 PROJECTION

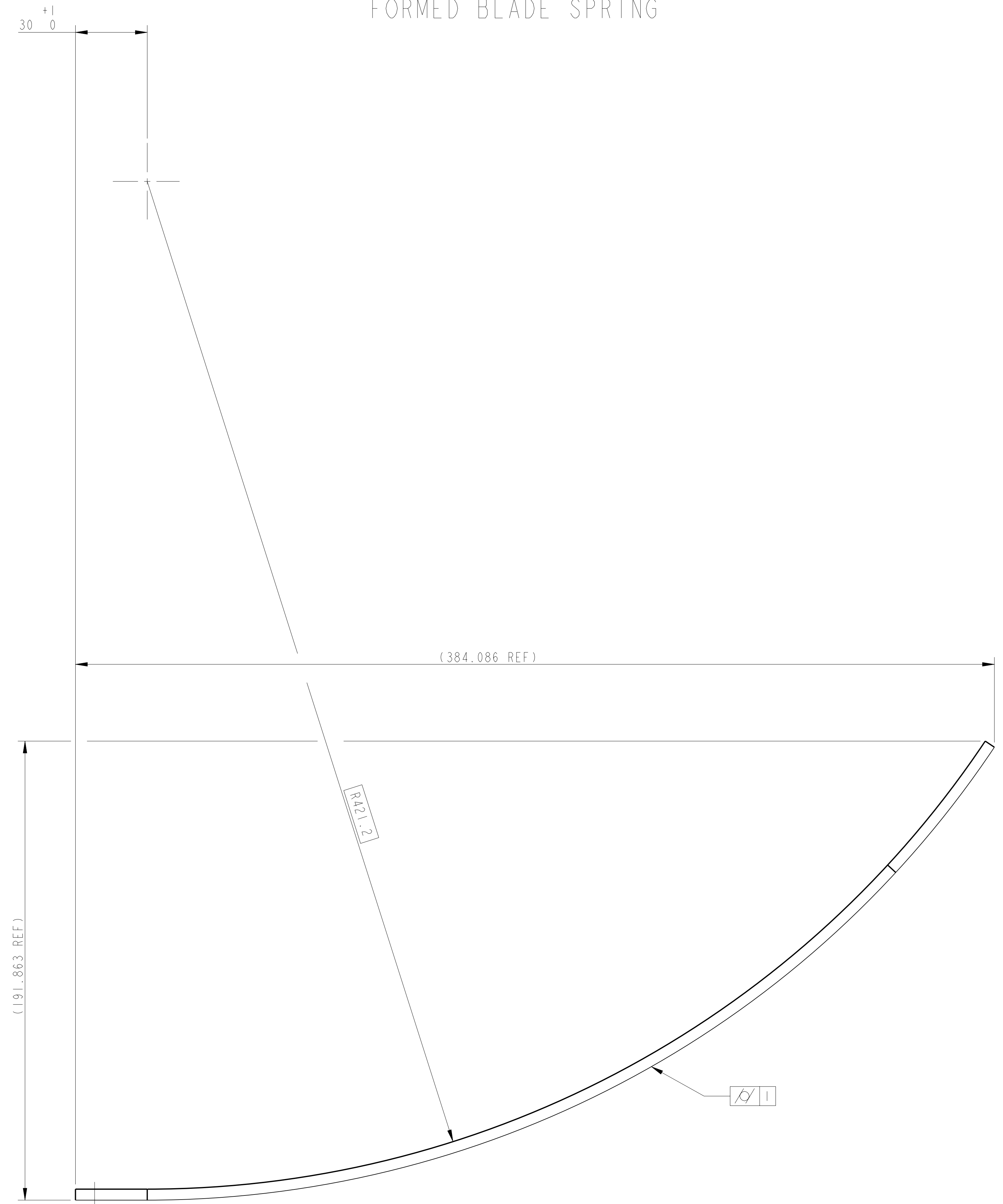
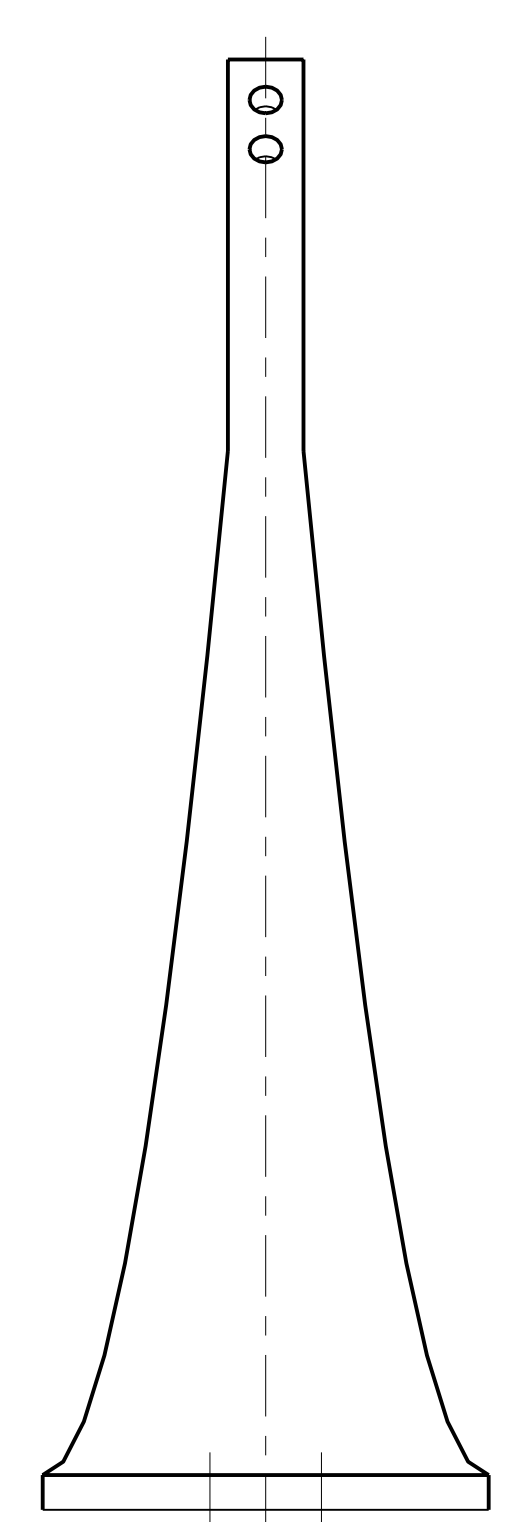
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MASSACHUSETTS INSTITUTE OF TECHNOLOGY  
OPR. GLASGOW UNIVERSITY GEG ROX GROUP  
RUTHERFORD APPLETON LABORATORIES

SYSTEM ADVANCED LIGO  
SUB-SYSTEM SUS  
NEXT ASSY QUAD N-PTYPE TOP MASS  
PART NAME MIDDLE BLADE SPRING

SHEET 1 OF 2

INTERNAL NAME: D060236-A  
 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.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 "BIRE 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

NAME	DATE
DRAWN: I WILMOT	26/ JUL / 06
CHECKED: RJS	27/ JUL / 06
APPROVED: RJS	27/ JUL / 06

SCALE: 1:1 PROJECTION: SHEET: 2 OF 2

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 OR, GLASGOW UNIVERSITY GED R&D GROUP  
 RUTHERFORD APPLETON LABORATORIES

SYSTEM: **ADVANCED LIGO**  
 SUB-SYSTEM: **SUS**  
 NEXT ASSY: **TOP MASS**  
 PART NAME: **MIDDLE BLADE SPRING**

DRG. NO.: **D060236**  
 RBY: **C**