



1. REMOVE ALL BURRS AND SHARP CONERS
2. SURFACE ROUGHNESS  $32 \sqrt{}$  UNLESS OTHERWISE SPECIFIED.
3. SPECIMEN TO BE IDENTIFIED AT ALL TIMES DURING FABRICATION WITH MATERIAL, HEAT #, PLATE #, HEAT TREATMENT AND SPECIMEN # BY DIE MARKING, MASKING TAPE, OR LABELED ENVELOPS
4. MARK WITH APPLICABLE SPECIMEN NUMBER ON BOTH ENDS, ENGRAVE. DO NOT STAMP. VIBRATING TYPE ENGRAVING TOOL IS PERMISSIBLE.
5. FINAL MACHINING OF SPECIMEN GAGE LENGTH REGION (.250 DIA.) SHALL BE AS FOLLOWS:
  - (A) ROUGH MACHINING SHALL LEAVE 0.010 IN. STOCK ON THE RADIUS SPECIFIED WITH IT'S SHAFT AT 90° TO THE SPECIMEN LONGITUDINAL AXIS
  - (B) USING A GRINDER, SET UP THE GRINDING WHEEL OF RADIUS SPECIFIED WITH ITS SHAFT AT 90° TO THE SPECIMEN LONGITUDINAL AXIS. GRIND WET
  - (C) REMOVE .002 IN MATERIAL EACH PASS WHILE ROTATTING THE SPECIMEN ABOUT IT'S LONGITUDIAL AXIS.
  - (D) BUFF TO A 8-11 MICROINCH FINISH BY POLISHING IN A MANNER PARALLEL TO THE SPECIMEN LONGITUDINAL AXIS.
  - (E) POLISH GAGE LENGTH AREA IN THE LONGITUDINAL DIRECTION TO REMOVE ALL CIRCUMFERENTIAL WORK MARKS VISIBLE AT APPROXIMATELY 20X MAGNIFICATION UNDER A LIGHT MICROSCOPE.
6. .750 RADII AND UNIFORM GAGE SECTION (.0250 IN Ø) MUST BLEND SMOOTHLY WITHOUT UNDERCUT.
7. DIAMETER OF UNIFORM GAGE SECTION IS TO BE UNIFORM WITHIN 0.0002 IN. OVER 0.750 GAGE LENGTH.
8. ALL DIMENSIONS IN INCHES.
9. TOLERANCES: .XXX ± .005, .XX ± .020 UNLESS OTHERWISE SPECIFIED.

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| Material -      | Tolerance Unless<br>Otherwise Specified:<br><br>Fractions $\pm 1/64$<br>Decimals $\pm .005$<br>Angles $\pm 3'$ | Oak Ridge National Laboratory<br>Metal and Ceramics Division |
| Heat No. -      |  |  |
| No. Required -  |  | Drawn: 1-15-2008   |
| Specimen ID:    |  | DWG No. BLS-61   |
| Scale - 1.125:1 | Uniform Gage<br>Length Fatigue Specimen  |  |