NOTES: UNLESS OTHERWISE NOTED
1. MACHINED SURFACE ROUGHNESS #4
2. RING GROOVES AND SURFACES #2
3. REMOVE ALL BURRS/SHARP CORNERS

BILL OF MATERIAL

<table>
<thead>
<tr>
<th>NO.</th>
<th>REQ'D</th>
<th>REF DRW</th>
<th>DESCRIPTION</th>
<th>MATERIAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>N/A</td>
<td>1</td>
<td>SN4-012A</td>
<td>AXIAL SPRING TRIPLET</td>
<td>PHOS. BRONZE</td>
</tr>
</tbody>
</table>

SECTION A-A

INSTITUTE FOR ASTRONOMY
2680 WOODLAWN DR, HONOLULU, HI 96822

INSTRUMENT: SPXL - CROSS DISPERSED SPECTROGRAPH
PART NAME: AXIAL SPRING TRIPLET
TELESCOPE: IRTF

REVDATE: N/A
DATE: 11/14/97
DESIGN: STAHLMETZ
DRAWN: STAHLMETZ
APPROV: J. RAYNER

TOLERANCES

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<tr>
<th>XX</th>
<th>XX</th>
<th>XXX</th>
<th>Angle</th>
<th>Fraction</th>
</tr>
</thead>
<tbody>
<tr>
<td>+/- .015</td>
<td>+/- .005</td>
<td>+/- .002</td>
<td>+/- 30 min</td>
<td>+/- 1/32</td>
</tr>
</tbody>
</table>

DRW NO: SN4-012A
SCALE: 1:1

SIZE: A
POS NO: 725
SHEET: 1 OF 1

PLOT: 10/19/99