DISCLAIMER

SRC Technical Notes are informal memos intended for internal communication and documentation of work in progress. These notes are not necessarily definitive and have not undergone a pre-publication review. If you rely on this note for purposes other than its intended use, you assume all risk associated with such use.
SECTION 1: GENERAL CONSIDERATIONS

1.a Function These mirrors will be used in a High Resolution Monochromator currently under construction at the Synchrotron Radiation Center.

1.b Scope of Work The successful bidder shall provide all of the materials, fixtures, and labor required to fabricate the mirrors specified in this document and shown on SRC Drawing No. 4577C003.

SECTION 2: MIRROR BLANKS

2.a A total of two mirrors are required as follows:

2.a.1 One mirror of blank size 200 x 65 x 45 mm, per SRC Drawing 4577C003. Spherical surface tolerances are to be held on a 200 x 50 mm area centered on a 200 x 65 mm face.

2.a.2 One mirror of blank size 160 x 65 x 45 mm, per SRC Drawing No. 4577C003. Spherical surface tolerances are to be held on a 160 x 50 mm area centered on a 160 x 65 mm face.

2.b All unspecified non-optical surfaces must be ground to within 0.001 inches (TIR).

2.c Blank material will be silicon carbide.

2.d Spherical radius = 62216.52 mm ± 62.2 mm

2.e Slope error on the spherical surface shall be equal to or less than 1.0 arc-sec.

2.f Surface roughness on the spherical surface must be equal to or less than 1.0 nanometers RMS.

2.g The spherical radius, slope error, and surface roughness shall be measured prior to delivery. It is recommended that the bidder have these measurements made at a facility that has a Long-trace Profilometer. If the bidder has another technique which will produce the same accuracy, he should state this in his bid submittal along with a statement describing the measurement technique. The results of these measurements will be sent to SRC with the mirrors.
SECTION 3: FABRICATION

3.a The mirrors will be used in an Ultrahigh Vacuum Environment and must comply with the applicable sections of SRC Technical Note 99.

3.b Any testing by the bidder which requires a stripable surface coating must use silver.

3.c No aluminum may be used on the mirror surfaces and all precoating materials must be removed by methods specified in SRC Technical Note 99.

SECTION 4: SHIPPING

4.a All handling of the mirrors after final cleaning must be compatible with standard clean room practices.

4.b Talcum powder free clean room gloves must be used when handling the mirrors.

4.c Oil, finger prints, dust and other contaminants must be kept off the mirrors.

4.d Hermetically sealed packaging which will protect the mirrors from dust and contamination during shipping must be used.

4.e The mirrors must be held securely in its shipping container such that contaminating particles are not produced by chafing in shipment between the mirror and its container.

SECTION 5: SUBMITTALS

5.a Bidders must submit with their quotation the following information:

5.a.1 Examples of work previously done which demonstrates the bidders capability to perform the operations required to produce the mirrors specified in this document and shown on SRC Drawing No. 4577C003.

5.a.2 Any exceptions or variations to statements in this document or to dimensions and tolerances shown on SRC Drawing No. 4577C003.

SECTION 6: SPECIAL CONDITIONS

6.a SRC reserves the right to visit the bidders facility before awarding a contract.

6.b SRC reserves the right to inspect the mirrors during fabrication.

6.c Delivery is desired at the earliest possible date. Timeliness of delivery will be used in the bid evaluation.

6.d SRC Drawing No. 4577C003 and SRC Technical Note 99 are considered to be part of this specification.