1. **REFERENCE FRONT END RAYTRACE DRAWING**: SR-TF 3PM 5801.

2. **UNLESS OTHERWISE SPECIFIED**: THE BM-B SOURCE POINT IS THE ORIGIN FOR ALL ORIGINATE DIMENSIONS.

3. **UNLESS OTHERWISE SPECIFIED** ALL ORIGINATE DIMENSIONS ARE TO THE CENTER OF EACH COMPONENT.

4. **HORIZONTAL AND VERTICAL MAX FANS ARE DEFINED AS FOLLOWS:**
   
a) BEAM REFLECTING OFF THE SAGITTALLY AND TANGENTIALLY CURVED SURFACE OF PFM AT 26.571M MUST TAPER HORIZONTALLY AND VERTICALLY TO A FOCUS OF LESS THAN 1 MM WIDE AT SSA1 (53.142 M).

b) THE MAX HORIZONTAL FAN FROM THE FRONT END RAYTRACE IS EFFECTIVELY REDUCED BY PBS1.

c) THE MAXIMUM HORIZONTAL ENVELOPE OF BEAM CONNECTS THE WIDEST SOURCE POINT (PBS1) TO THE WIDEST POSSIBLE LOCATIONS OF BEAM AT THE FOCUS (SSA1). MAXIMUM DIVERGENCE FROM THE SSA1 TO THE BEAM STOP (SSA1) IS DETERMINED BY THE CROSSING RAYS FROM THE INBOARD EXTREME OF SOURCE (PBS1) TO THE OUTBOARD EXTREME OF BEAM AT SSA1 (0.5MM FROM CENTER), AND VICE VERSA.

5. **SEE SHEET 6 FOR LEAD COLLIMATOR / STOP CROSS-SECTION VIEWS AT US FACE OF LEAD.**

6. **SEE SHEETS 7 & 8 FOR HORIZONTAL AND VERTICAL MAX SYNCHROTRON MISSTEER RAYTRAces.**
   
   *THESE SHEETS ARE FOR REFERENCE ONLY*

7. **CD1 & CD2 ARE REQUIRED FOR SECONDARY BREMSSTRAHLUNG AND TOP-OFF RADIATION PROTECTION.**

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**ABBREVIATIONS:**

- **CO**: BREMSSTRAHLUNG COLLIMATOR
- **BS**: BREMSSTRAHLUNG STOP
- **BS**: BEAM STOP
- **DS**: DOWNSTREAM
- **MONO**: MONOCHROMATOR
- **MSK**: FIXED MASK
- **PBS**: PINN BEAM STOP (FIXED MASK)
- **PFM**: PHOTON COLLIMATING MIRROR
- **PFM**: PHOTON FOCUSING MIRROR
- **PSH**: PHOTON SHUTTER
- **SCHM**: SAMPLE CHAMBER
- **SLT**: SLIT
- **SSA**: SECONDARY SOURCE APERTURE
- **US**: UPSTREAM
- **WIN**: WINDOW
LEAD COLLIMATOR & STOP DETAILS

Scale 1:2