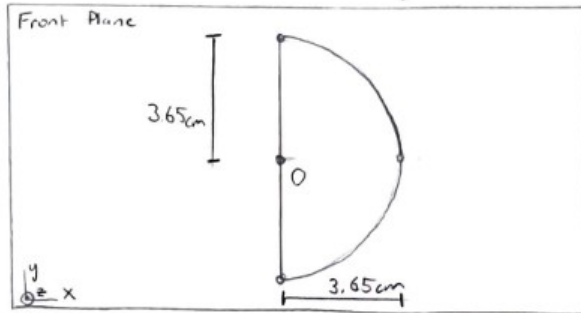# Pre-CAD Plan:

The intent of this project is to engrave 2 letters (initials) into a metalic sphere, π rad from each other.

<u>1st sketch</u> — Sphere

Using the line & 3pt arc tool, a half circle will be constructed around the origin on the front plane.

Tools: ✏ — line

🔘 — Centerpoint arc

🖌 — Smart dimension

The dimensions are set to maintain ratio in case of size adjustment. Dimensions chosen are that of a baseball.

The half circle will then become a sphere using 🔄 — Revolved Boss/Base.

<u>2nd sketch</u> — Letter 'A'

A plane will be selected from 'Reference Geometry' & placed in front of the front plane, such that it just touches the surface of the sphere. Name — 'A plane'.
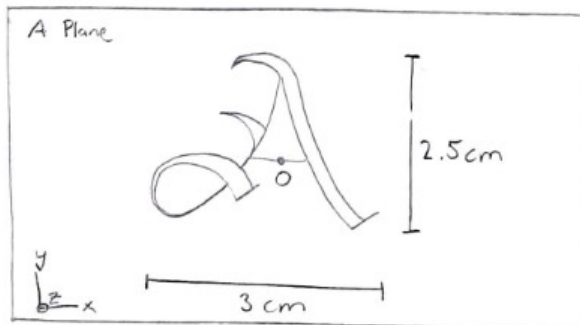
Tools: ✏ — Line

🔘 — Centerpoint Arc

〰 — Spline

◎ — Circle

✂ — Trim Entities

🖌 — Smart Dimension

3rd Sketch — Letter 'B'

A plane will be selected from 'Reference Geometry' & placed behind the front plane, so that it just touches the edge of the sphere. Name — 'B plane'.

Tools — Same as 2nd Sketch.
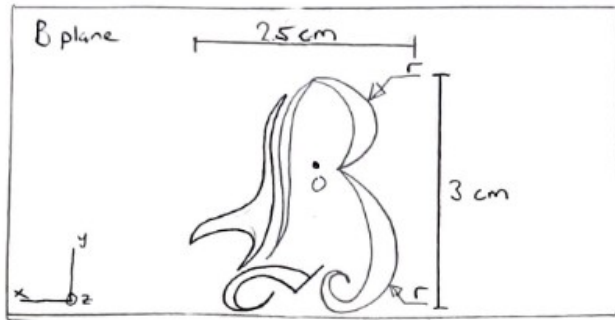
Final step

Using ▦ - Wrap, the A & B sketches will be warped to fit the surface of the sphere, being treated as extruded cuts in order to engrave them into the spheres surface.

Noted Challenges:

1. Due to the complex nature of the font, there is uncertainty as to which dimensions need defined in order to maintain shape during resizing.

2. Tools to make said shapes are not all listed as what will be needed is unclear.

3. 'Wrap' can be finnicky & may distort lettering.
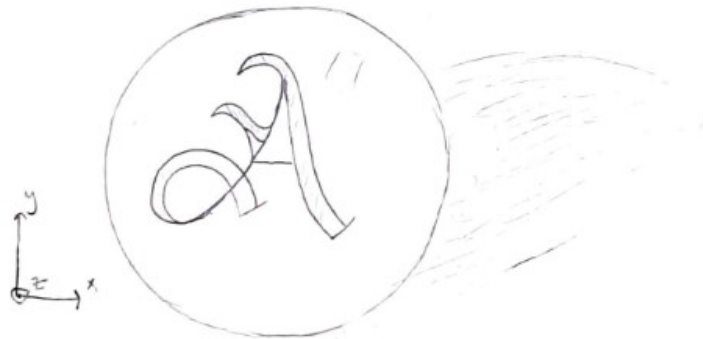
Main recommendations on how to make this an even better pre-cad plan:

1. Add initial modeling assumptions.
2. Add bulleted list of feature creation steps.
3. Provide a preliminary 3D sketch that shows roughly where each plane will be with respect to the object. Label these planes on this sketch so you can refer to these names later.
4. Enlarge the 2D sketches so you have space to show key dimensions and relations that will be used to fully define the sketch.
5. Show key dimensions and key relations that you plan to use to fully define your letters. It's okay if this plan changes.