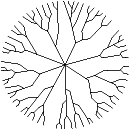
1. **GENERAL**
   1. **Geographic Information System (GIS) Data Description**
      1. Below is the template to provide spatial information for integration into BCIT’s campus GIS.
      2. All data should be accompanied by metadata, including:
         1. Title
         2. Summary (Purpose)
            1. Project or program
            2. Source of data (survey, design, as-built)
         3. Description (Abstract)
            1. Approximate accuracy or range of accuracies
            2. Date of collection, or range of dates for applicable project
         4. Any third party considerations or restrictions
         5. Coordinate system (can be embedded in the data)
      3. Metadata can accompany the data in a variety of formats. It should be easily accessible by the GIS operator (i.e. as meta data in the file geodatabase, as stand-alone pdf/word/text document etc.)
2. **Data Format**
   * 1. Data must include both spatial geometry and attribute information. There are a variety of acceptable formats that can be used to provide this information, including spreadsheets (for points), CAD, shapefiles, file geodatabases, etc.
     2. So long as the format provided is easily readable by ArcGIS Pro, it is acceptable. If there is any question as to the suitability of a format, contact BCIT’s GIS department in Campus Development to confirm the suitability of a proposed format.
   1. **Spatial Projection**
      1. All data should be located in a projected coordinate system, North American Datum 1983 (CSRS) Universal Transverse Mercator Zone 10n (NAD 83 CSRS UTM Z10).
      2. If a local, or alternate, coordinate system is used for the working data, data should be provided in both systems.
   2. **Attributes**
      1. Data should be complete with applicable attributes. These include any data that is associated with a shapefile or feature class. Data that has been paid for by BCIT and is related to the shapefile or feature class should be included. File names should be relevant to what data portrays.
      2. At the outset of the project, the project team should clearly define the attributes that will be collected and provided along with the spatial data. At a minimum the attributes should include:
         1. Date of installation
         2. Unique ID
         3. Status (As-Built/Survey/In-Service or other as agreed upon with the project team)
         4. Survey Accuracy or Method
      3. BCIT may additionally provide templates for key data with additional attributes required.
3. **QUALITY AND CAD TO GIS**
   1. Asset information should be appropriately continuous, and should be reviewed for quality, so that, for example, linear assets aren’t artificially broken to show a label, or the ends of linear assets are disconnected or have dangling ends.
   2. It is recommended that GIS attribute and symbology are considered, in that, it will be easily integrated into the GIS. CAD data and its symbology when converted to GIS is sometimes problematic because line work is indiscriminately converted, such that features that are points in GIS are represented as polylines. An example of this is tree symbology in CAD.

Tree symbology can be represented as radiating lines, as shown in **Figure 1** (below). When this is converted into GIS, it becomes a polyline layer. This becomes problematic, because ideally the tree would be a point layer that can be attributed. If it is a polyline layer, it becomes difficult to perform analyses or attribute it correctly because each polyline becomes a different piece of information.

* 1. **Figure 1. Tree symbology in CAD**
  2. **Point File**
     1. The point file is used to represent individual, location-by-location, features such as fire hydrants, trees, standpipes, etc. The symbols that are used in CAD/CIVIL3D should not contain any additional lines or points attached to the single point. The point feature must be represented as simply a point for easy integration and data preservation into the GIS.
  3. **Polyline File**
     1. The polyline file is used to represent linear features such as storm pipes, sewer systems, etc. The polyline file must contain only relevant information for easy integration into the GIS. It should not contain any additional unnecessary line work that may have been derived from the labeling/symbolizing of features or any other purpose besides displaying relevant information.
  4. **Polygon File**
     1. The polygon file is used to represent area features such as land parcels, buildings, water features, etc. This is to represent any feature which is defined by its area. All polygons should be a closed polygon.
  5. **Attributes/Properties**
     1. All CAD data can have one or more additional attributes/properties, which might either reflect a Unique ID that can be used to relate to a spreadsheet for additional attributes, or may have multiple attributes added. Additional CAD formats are potentially useful (such as spatial data stores), however, a quick review with BCIT’s GIS department should be conducted prior to determining the usefulness of any non-\*.dwg formats. Attributes should not be stored in a separate annotation layer.

\*\*\* END OF **SPECIAL PROCEDURES - GIS** SECTION \*\*\*