

The University of Alaska Fairbanks receives many different types of facilities related data files

General Requirements & Procedures

This section applies to general CADD Department procedures and to all types of facilities data files related to CAD, BIM, or GIS. Requirements for each data type are located in a section specific to that software platform.

Data Requests

- Requests should be made to the University's project manager. The project manager will review the request and forward it to the CADD Department.
- If a project requires multiple requests or would benefit from direct requests to the CADD Department, coordinate the process and approval with the University's project manager prior to making any requests of the CADD Department.
- Under no conditions will information be released by the CADD Department during an ongoing Request for Proposals (RFP) or bidding process unless specifically directed by the University's project manager to do so.

Scope

To collect and maintain standardized facilities data related to existing and ongoing construction and maintenance/repair projects at UAF related to the following three data types:

- CAD (Computer Aided Drafting)
 - As of 2015, the University collects and manages its inventory of buildings using AutoCAD files (dwg). Required CAD files shall comply with this standard. See Part A: CAD Standard
- BIM (Building Information Modeling)
 - Many UAF consultants are using BIM software, primarily Revit, to produce construction documents for projects. While the University is not yet using BIM internally, it is our intent to collect completed BIM model files whenever used for production of a project. The model files shall be submitted per this standard. See Part B: BIM Standard.
- GIS (Geographic Information System)
 - Any projects utilizing or generating GIS data shall submit the data to the University at the conclusion of the project. See Part C: GIS Standard.

File Organization and Transmittal to UAF

In order to keep track of materials submitted to UAF, a clear catalog of information needs to accompany the materials submitted to UAF. This includes the materials on a CD, DVD, or USB thumb drive with files conformed to a naming convention, produced

- As-built drawings shall be prepared based upon the red-line set of as-built conditions kept by the contractor during construction.
 - The production and approval of the digital as-built record drawings shall be the responsibility of the contractor.
 - The contractor shall document all changes to the drawings per their contract with the owner.
 - Each sheet of as-built electronic files and hard-copies shall contain the following block:
-
- Locate the block in the lower right corner of the drawing area adjacent to the title block. If sheet contents conflict with the stamp, adjust the location of the stamp.

Projects involving Additions, Repair, and Renovation

Many projects at UAF involve rehabilitation or changes to existing space in the form of additions, renovations, or repairs.

- Consultant teams for a project shall work together to ensure that graphics used to indicate new, existing, and to be demolished work are well-coordinated within the design team and individual disciplines.
- Individual CAD layers or Revit construction phases shall be used to distinguish the different types the work.
- Graphic conventions use to distinguish between new, existing, and to be demolished work shall be clear and distinctive.

Document Submittal Requirements & Deadlines

Submittal requirements may vary per contract requirements.

-

University of Alaska Fairbanks - Facilities CADD Standard

In-House Work			
<i>Bid Drawings Deliverables</i>	<i>Resp. Party</i>	<i>Format</i>	<i>Due Date</i>
- Bid Drawings CAD Files	PM	.dwg	Prior to construction
- Bid Drawings PDF Files	PM	.pdf	Prior to construction
<i>As-Built Drawings Deliverables</i>	<i>Resp. Party</i>	<i>Format</i>	<i>Due Date</i>
- As-Built Drawings CAD Files	PM	.dwg	1 week prior to final inspection.
- As-Built Drawings PDF files	PM	.pdf	1 week prior to final inspection.

Short-form Projects (Less than \$200,000)			
<i>Bid Drawing Deliverables</i>	<i>Resp. Party</i>	<i>Format</i>	<i>Due Date</i>
- BID Drawings CAD Files	A/E or PM	.dwg	Per contract

Part A: CAD Standard

General

The UAF CAD Standard is based on the National CAD Standard 6.0 (NCS) and refers to it extensively. Sections of the NCS found not applicable and/or impractical have been modified or removed.

- Monotext font.
 - This font creates text characters that are evenly spaced. Monotext font should be used where text fields need to be aligned such as in schedules or, in some cases, title blocks.
- Proportional font.

-

Part B: BIM Standard

General

Part C: GIS Standard

General

Projects at UAF utilize Geographic Information Systems (GIS). In order to ensure that the GIS data arrives in a usable and complete format, we are in the process of writing a GIS standard. In the meantime, requirements for GIS submittals are as follows.

GIS Deliverables

Data delivery preferred in Esri File geodatabase format. Esri Shapefile format accepted, unless database specifications require file geodatabase.

Data projected in Alaska State Plane Zone 3, NAD 83, U.S. Survey Feet.

Elevation data in NAVD88, Meters or U.S. Survey Feet.

Each layer should have unique identification numbers, and symbolized according to previously agreed upon attributes.

All attributes should be normalized as much as possible.

Part D: Appendices

Contents:

Appendix 1 - CAD File Checklist

Appendix 2 - References

Appendix 3 - Not Used

Appendix 1 - CAD File Checklist

Submitted drawings include a text file with a complete listing of all materials submitted, including filenames for each item included in the submittal with a description. *(File Organization and Transmittal to UAF, Page 2)*

Appropriate phase of project/conformed or as-built stamp is attached to each sheet or incorporated into the title block. *(File Organization and Transmittal to UAF, Page 2)*

If the drawings files are for an Addition, Repair, or Renovation; the drafting conventions for new, existing, and to be demolished construction are consistent throughout the drawing set. *(Projects Involving Additions, Repair, & Renovation; Page 4)*

CAD files are submitted as AutoCAD dwg files. *(File Format Requirements, Page 6)*

CAD files are submitted unbound. *(CAD File Transmittal, Page 6)*

CAD files contain only information relevant to this project. Extra details, studies, design options have been deleted from the files. *(Housekeeping, Page 6)*

Plan views and files have a common point of origin. *(Coordinate Origins in CAD data files, Page 7)*

Sheet files have a common point of origin and location of the title block in the layout view. *(Coordinate Origins in CAD data files, Page 7)*

AIA Layer formatting requirements are followed. *(AIA CAD Layer Guidelines, Page 7)*

Colors, line types, and line weight are set to ByLayer. There may be exceptions where title block and block components require assignment of properties directly to the object, but these should be the exception. *(AIA CAD Layer Guidelines, Page 7)*

A single sheet file is required for each physical sheet. *(Uniform Drawing System, 1.4 File Naming, Page 8)*

Sheet file names shall reflect the number of the sheet, such as A101, C105, M351, etc. *(Uniform Drawing System, 1.4 File Naming, Page 8)*

Correct Title Block shall be used. *(Uniform Drawing System, 2.3 Sheet Layout, Page 9)*

In general, drafting conventions are adhered to and are consistent throughout the drawing set. If poor drafting conventions exist throughout the drawing set, resulting in information that is unclear or confusing for the viewer, the drawing set may be rejected. *(Module 4 - Drafting Conventions, Page 9)*

Text height for full size drawing shall be 1/8". *(Module 4 - Drafting Conventions, Page 10)*

Dimensions are associative. *(Module 4 - Drafting Conventions, Page 10)*

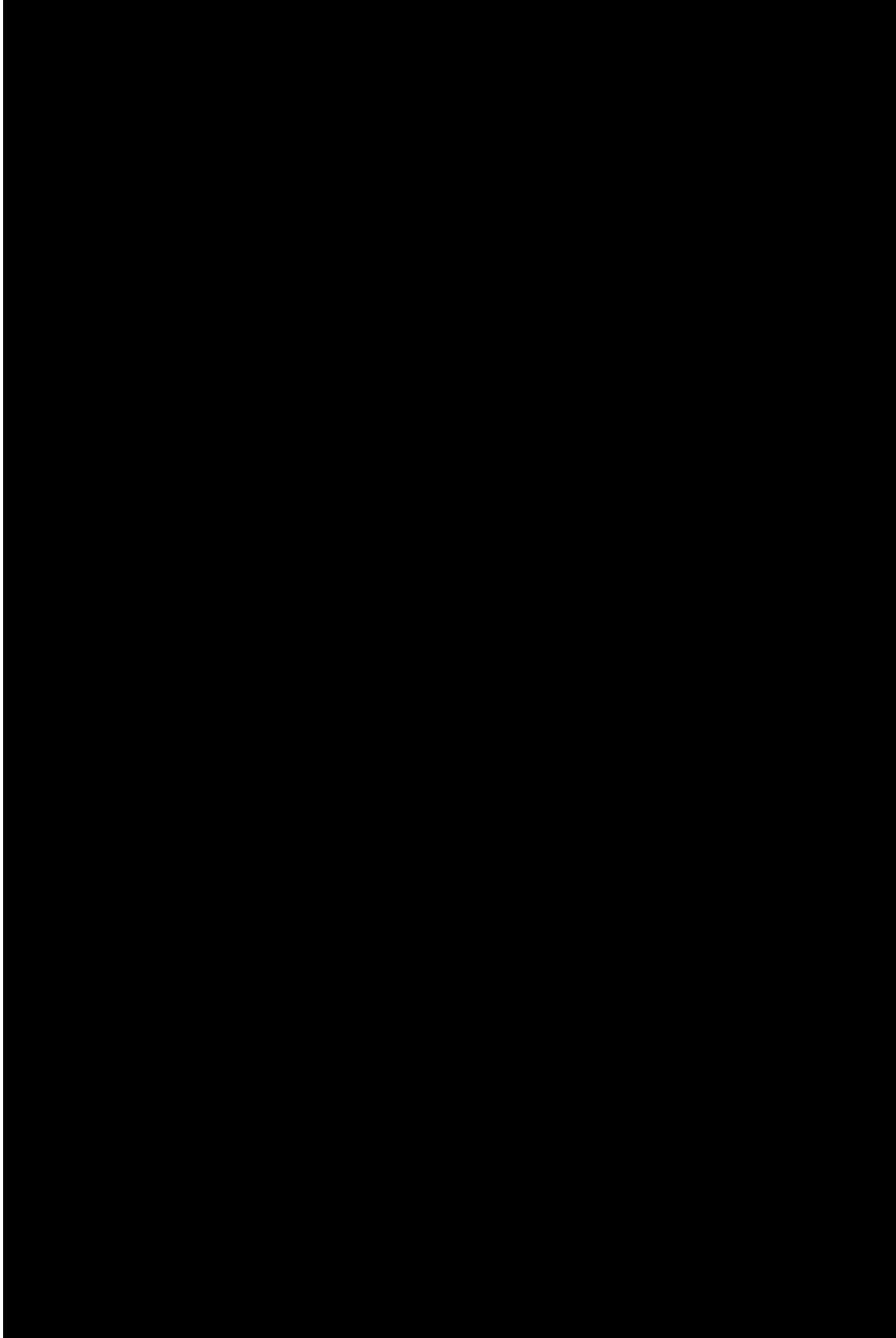
No forced dimensions exist in the drawing files. *(Module 4 - Drafting Conventions, Page 10)*

Abbreviations adhere to the NCS or other published standards. If no abbreviation exists, the consultant shall establish one and clearly indicate it in their abbreviations schedule. *(Module 5 - Terms & Abbreviations, Page 11)*

Symbols adhere to the NCS or other published standards. If no symbol exists, the consultant shall recommend one for approval by the owner. *(Module 6- Symbols, Page 11)*

A current CTB or STB file is included with the submitted files. *(Plotting Guidelines, Page 11)*

Appendix 2 - UAF Title Block Example



Appendix 3 - UAF Plot Style (.ctb) Graphic

