



BROWN

December 16, 2004

***Brown University Computer Aided Design (CAD) Deliverable Guidelines***

**Intent:**

The *CAD Deliverable Guidelines* will ensure that work produced for the Owner will integrate into existing CAD files.

**CAD Coordination Meeting:**

At the start of the project, a CAD coordination meeting will be held between the Owner and those producing CAD files. We will review the CAD Deliverable Guidelines, identify any specific concerns, and develop a testing procedure.

**Electronic Deliverables:**

When a large amount of files are to be submitted, files may be compressed using ZIP format. Submit all files as follows:

**CAD Format:**

Deliver all drawing files in Autodesk's AutoCAD native drawing (.dwg) format version 2000i or newer. Each sheet in the drawing set must be saved as an individual file.

Multiple drawing sheets combined and saved in a single file will not be accepted.

*Note:* Autodesk's Data Exchange Format (.dxf) may be substituted with prior consent from the Owner.

**PDF:**

Deliver all drawing sheets in Adobe's Portable Document Format (.pdf) format. Submit one PDF file for each drawing sheet. The PDF document size is to be the same as the full size drawing sheet size.

**Support Files:**

Deliver all CAD Support files necessary to recreate output that matches hard copy submittals. Support files include, but are not limited to, the following: External References (XRefs), Plot configurations (.ctb, .pc3), Blocks, Write Blocks, Images (Logos), Shapes (.shx) and Fonts. Deliver files to the Owner free of any copyrighted or other material whose distribution is prohibited.

**Support Documentation:**

Provide support documentation in text (.txt) or MS-Word Document (.doc) format.

Support documentation includes, but is not limited to, the following: List of all layers, layer descriptions, an index matching each CAD file name to the corresponding drawing sheet, and any other special circumstances that warrant further clarification.

Media:

Transmit files on CD. Email may be used with prior consent from the Owner.

Provisioning of CAD files:

CAD files (Building Plans and Base Maps) are available for use from the Owner.

*Disclaimer:* All CAD files provided by the Owner are the “Best Available” at the time of transfer and are for information only. Field verify data as necessary prior to the commencement of any work to ensure accuracy.

Layering:

Logically group together all similar entities on their own layers within the CAD files. The ability to isolate any set of similar entities must be maintained. Define all entities by layer and not by entity type (e.g. Color and Linetype will be defined as “ByLayer”). Save all drawing files in a ‘plot ready state’ (i.e. Layer information not shown on the final output must be frozen or purged).

External Reference Files (XRefs):

Each XRef file will have an insertion point of 0,0,0; Scale factor of 1; Rotation angle of 0; and reside on a separate layer within the dependent file. In addition, XRef files must be included with each submittal and be located in the same directory as the dependent file. The ‘Insert’ and ‘Bind’ options for XRefs will not be accepted.

Paper Space/Model Space – Tabs and Plotting layouts:

Each sheet of the drawing set will have one corresponding DWG file. The geometry contained in a file will be in Model Space at full scale. Use Paper Space primarily for setting up the appropriate output size, appearance, border, and title block information. Model Space entities will not be dimensioned or labeled in Paper Space. Plotting Tab names in Paper Space will clearly delineate the intended output for that tab and be consistent between drawings. (e.g. tab name ‘L24x36’ for landscape 24”x36”). Plotting in Paper Space will be at a scale of 1 to 1.

Mapping:

Mapping files must align with the Rhode Island State Plane Coordinate System as defined in the *Brown University Survey Control Standards*. In general, all files must reference each other with an insertion point of 0,0,0, scale factor of 1, and rotation angle of 0. Files that do not align with the Owner’s mapping files will not be accepted and will require a resubmittal.

Drawing Sheet Requirements:

Standard Sheet Size: ARCH D (ARCH 4) – 24”x36”

Maximum paper size: ARCH E1 (ARCH 5) – 30”x42”

Title Block:

The title block will include, but not be limited to, the following information:

Title – Includes Facility name, floor and room numbers as applicable.

Owner's Project Name and Number

Sheet Number

Drawing File Name

Revision History – Revision Number and Date

Drawing Phase – BID, CONSTRUCTION, AS-BUILTS, etc...

Architect, Engineer, Consultant, Contractor, and/or Sub-Consultant

Acceptance of electronic deliverables:

The Owner will review electronic file deliverables for compliance with these guidelines prior to acceptance. Files that do not meet these guidelines will require a resubmittal.