

Construction manager and design professional responsibilities

The Construction Manager at Risk will deliver a complete set of redlined “as-built” drawings to the Design Professional Construction Manager, who will review them for accuracy and approval.

The DP will use the “as-built” drawings provided by the CM to produce and deliver a set of reproducible project “record drawings” to Arizona State University.

The intent of these guidelines is to enable the university to collect, archive and use digital copies of record drawings for any construction project at a later date. These projects include new construction, renovations, additions, utility work and interior work. It is essential to maintain accurate records of new work for the following purposes:

- Accurate base drawings for future projects, enabling consultants to modify existing drawings instead of creating new drawings from field measurements.
- Accurate data for campus map information system and geographic information systems mapping.
- Accurate information for future projects such as underground utilities and tunnels.

The DP is responsible for verifying the accuracy of all drawings. The digital copies must match the hard copies. Appropriate notation from each drawing should be attached, such as record drawings or detached official stamps.

Formatting

Follow the format below to ensure the overall consistency of the record drawings:

- a. **Drawings:** Submit in an AutoCAD .DWG format.
- b. **Graphics:** Use .jpg and .pdf formats for graphics like photos, sketches, renderings, etc.
- c. **Paper:** One full-size paper set of plans.

Content of record drawings — digital submission

In addition to the one full-size hard copy of the updated record drawings set, a digital copy of each sheet in the set and a list of each sheet by page number with the sheet’s contents and the name of any attached images must be provided.

Record drawings label

Use the following format when creating a record drawings label:

- Revision dates should be updated for each submission in the title block. The last date of the record drawings submission must be included.
- The term “record drawings” must be clearly seen on the right side in bold letters along the bottom of the sheet or near the title block.

Digital record drawings

Use the following format when creating digital record drawings:

- All Xref files must be included. Any Xrefs no longer needed in a drawing should be “detached” and not “unloaded.”
- Digital copies of the record drawings must be usable in AutoCAD 2010. The drawings do not need to be drawn in this release, but should be compiled in AutoCAD 2010 or newer.
 - ASU defines usable as being able to complete the following:
 - Easily identify the file needed.

- Find a missing. ctb or .stb file.
- Open the file.
- Reconnect and find external references and raster images.
- Select the appropriate layout tab representing one sheet from the hardcopy set.
- Send it to the plotter without having to assign proxy graphics.
- Each sheet must be set up on a layout tab of its own in paper space. Each layout tab should be renamed with the sheet number represented. Any unused layout tabs should be deleted.
- Include the file with pen weights — .ctb or .stb files — on the disc with any other non-standard font or shape files.
- Keep files available in the root or first folders when opening the disc. An individual should not have to open two or more folders to find a file.
- Place all raster images in the same folder as the file to which they are referenced. This process will prevent missing raster images before burning the digital files to a compact disc.

All files should be burned to discs. In addition to the disc(s), a binder(s) should contain an index and an 8.5 by 11-inch set of the record drawings.

Index of sheets in a record drawings set formatting

The binder should include an index created in Microsoft Excel or Microsoft Word listing .dwg files, the sheet numbers each file contains, the contents of each sheet, a list of all raster images and object linking and embedding images inserted into a drawing. Since many images may be used in several drawings, the consultant may provide a coding system listing all images with a corresponding letter or numerical code.

Example

Sheet numbers	Contents of the sheet	Image references
A9.01	Enlarged floor plan, first floor	
A9.02	Enlarged floor plan, second floor	
A9.03	Enlarged floor plan, third floor	
A9.04	Enlarged floor plan, fourth floor	
A10.01	Details-entry	

The binding of the binder and the disc label should contain the following information:

- Arizona State University.
- Building number.
- Contact information.
- Discipline — architectural, mechanical, landscape, etc.
- Firm name.
- Project name.
- Project number.

Record drawings date of the record drawings submission.