



MU Electronic Document Guidelines

The information contained within this document is intended to provide additional guidance related to document production and submission throughout the course of a project. Consultants must comply with the requirements and standards set forth in the Consultant Procedures & Design Guidelines- Section 2- Planning and Contract Development Guidelines.

The purpose of this document is to assist design consultants in understanding the requirements and expectations for the preparation of project documentation and work product prepared for the University of Missouri- Columbia (MU). If questions arise, the consultant is encouraged to speak with the assigned MU Project Manager.

The prime consultant on the project is responsible for coordinating all document submittals, including the quality and content of the submittals of their sub-consultants.

I. Assembling Drawings and Project Manual

A. Assembly Responsibility

1. The primary consultant is responsible for reviewing and assembling documents from all sub-consultants to assure they conform with the Agreement, Consultant Procedures and Design Guidelines (CPDG) and these guidelines.
2. Submittals not in the conformance with the format and/or file structure described below will be rejected and thus recompiled and submitted by the consultant in such time as to prevent delays to the project schedule.

B. Drawing Assembly Requirements

1. One PDF file is to be created for each volume of drawings to be printed. Pages shall be coordinated for plot orientation as landscape. All pages shall be orientated the same direction within the file such that all pages can be read as the file is normally opened.
2. The prime consultant shall examine all sheets submitted by their sub-consultants before submitting them to the University and ensure that all sheets are consistently of the same size.
3. Drawings should be assembled per the Consultant Procedures and Design Guidelines Section 2- Planning and Contract Development Guidelines unless approved otherwise by the MU Project Manager. It is desired to have each sheet number reflected as individual “bookmarks” within the PDF compilation.



C. Project Manual – Basic Assembly Requirements

1. One PDF file is to be created for each volume of the project manual to be printed. Pages shall be coordinated for print orientation as portrait. All pages shall be orientated the same direction within the file such that all pages can be read as the file is normally opened.
2. Project Manual divisions must follow the outline in the Division 1 document provided to the consultant and available on the University of Missouri Facilities Planning and Development “Document Page” website.
3. The Table of Contents provided in Division 1 shall be completed by the consultant and included with every review submittal except for Programming documents and Schematic Design.
4. All Project Manual pages shall be individually numbered with the specification division number followed by the page number.

II. Submittal Requirements

A. Design Review Submittals

1. All design review submittals (Schematic Design, Design Development, and Other Reviews) are required to be submitted in PDF format through the Owner’s project management website (Projex4 or Unity Construct). A shared electronic review will be managed and conducted by the MU Project Manager.
 - a. Drawings - Only one PDF per volume containing all drawings from all consultants on the project will be produced for these review submittals.
 - b. Project Manual - Only one PDF per volume containing all portions of the project manual from all consultants on the project will be produced for these review submittals.
 - c. Project Related Documentation- Budget Estimates, Reports, Commissioning Plans, etc related to the project shall be prepared in PDF format and uploaded with related review documents.

B. Bid Documents

1. The University of Missouri distributes bid documents electronically. All documents must be delivered in PDF format. Please see below for Electronic Document Format and Criteria.
2. Printing of bid documents is performed by others and initiated/coordinated through Planning, Design & Construction. The consultant provides original pdf documents in accordance with the



Consultant Agreement; each individual drawing shall bear the seal of the professional.

C. Issued for Construction (IFC) Documents

1. If applicable for the project, the Owner may request that the prime consultant be responsible for compiling the bid documents with any addenda or modifications published during the bid period. This recompilation is often referred to as a “convenience set”.

- a. The contract documents including the project manual, drawing sheets, and related addenda published prior to award shall be compiled electronically. The original bid date shall be left on the contract documents.
- b. The consultant will include the date of each published change within the revision block, including applicable addenda, alternates taken, and a notation that the sheet was re-issued as a convenience document with the date of issue.
 - (1) Changes on the drawings must be clouded for reference where such changes are related to published addenda.
- c. Subsequent modifications to the contract documents issued after the date of award will be incorporated via standard industry protocol including Architect/Engineer Supplemental Instruction (ASI/ESI), RFI, and Change Orders. Modifications to the contract documents will utilize sequential numbered “delta”. For example, addenda published during the bid period will utilize delta 1, 2, and 3. Thereafter, ASI 1 would utilize delta 4.

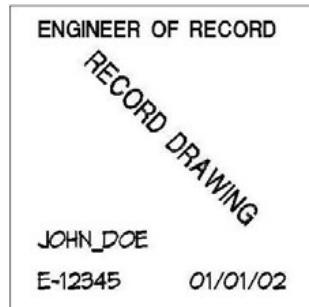
D. Project Completion / Record Documents

1. Record Drawings are to be prepared by the primary consultant based on information provided to the consultant by the contractor on marked up, or red lined field drawings in addition to changes made by ASI/ESI, request for information (RFI), change orders or field changes noted by the consultant.

- a. The consultant will apply a disclaimer to the electronic version that will appear in the plotted pdf version noting the document is a record document. Include a statement similar to that included below
 - (1) *“These design drawings have been altered to indicate as-built information supplied by the construction contractor. The Engineer-of-Record is not responsible for the accuracy of said information. A record of as-designed drawings are maintained by the Owner”*



- b. A block similar to the that depicted below is to be inserted in the place of the Engineer or Architect's seal.



2. Required Electronic Record documents. The consultant shall furnish to the Owner the Record Document Files in the following electronic formats:
- One set of AutoCad® (DWG) Drawings
 - Building Information Modeling files
 - One PDF file for each drawing volume and one PDF file for each project manual volume. Strategies to reduce file size by subdividing volumes into separate PDF shall be discussed with the Project Manager
 - Word Document (DOC) file or files for each volume of the project manual
- E. Reports, Studies, Surveys, and Other Project Documents
- The consultant shall furnish to the Owner one set of final reports, studies, surveys, etc. in PDF form. If technical documents were prepared such as .dwg files, calculations, and related, these files will be furnished in the original file format as well as in the pdf report itself.

III. Electronic Document Format and Criteria

- A. PDF Files
- PDF files are the required format unless otherwise specified (e.g., DWG, DOC, etc.), PDFs are always to be provided in addition to any files that are requested in other formats.
- B. Word processing files
- When word processing files are requested, provide files that are compatible with Microsoft Word® *.doc or .docx extensions are acceptable.
 - File names must be descriptive of the document content.



- a. For example, when naming specification sections, the file name should closely track the Table of Contents information, e.g., “Division number – Section Title.”

C. CAD files

1. AutoCAD® DWG file format

- a. If DWG conversion is not available, files may be submitted in AutoCAD® compatible DXF file format. All files must be readable by the Owner; any files not readable or corrupted shall be resubmitted.
- b. If the project drawings were developed using Revit®, both the Revit® file and one DWG file will be submitted for each Record drawing sheet.

2. File Naming

- a. The file name must be descriptive of document content, containing the design discipline and sheet number.
 - (1) An example of a descriptive file name would be ***CP260001_A01.dwg*** for the Architectural sheet file for drawing A-1 of the set.

3. Drawing parameters on individual files shall comply with the following:

- a. All model space plans shall be drawn full size scale 1” = 1”.
- b. Details, elevations, etc. should also be drawn full size where a scale applies. Schematics or standard details where a scale does not apply may be drawn at other scales or no scale.
- c. X-ref and binding
 - (1) Drawings using separate reference files, images, tables, workbooks, X-ref, shall be bound into one file prior to submission of the construction and record sets.
 - (2) Each sheet shall be a separate file.
 - (3) When binding the file, all layers, colors, line types, and other settings shall be set as they were when the file was plotted to create the physical drawing set.
 - (4) Binding shall be done in such a way as to exclude the X-ref file name within the layer names. When using AutoCAD, this shall be done using the “Bind, insert” option rather than the “Bind, bind” option during the binding process.
- d. Number of Fonts
 - (1) The maximum number of drawing fonts employed



must be limited to a quantity of ten, and a copy of each font used shall be included with the drawings submitted. The predominant font style in a drawing shall be created as “standard” style.

- D. Mapping and Site Plan Files
 - 1. Utility and survey CAD files shall be provided using the surveying firm’s CAD standards. Those standards should be based on the surveying software used as well as the established coordinate and datum systems for the Columbia/Boone County area. If further information is needed, the MU Project Manager will clarify these requirements.
 - 2. Mapping, site plans, utility or survey CAD files shall comply with the State Plane Coordinate System: Missouri Central Zone, Horizontal Datum: NAD 83, Vertical Datum: NGVD 29, Units: US Survey Feet, and the United States National Map Accuracy S