



University of Missouri  
Campus Facilities  
Planning Design and Construction

## **Document Submission Guidelines**

*As part of the Consultant Procedures and Design Guidelines, this document is incorporated in full into the Consultant Agreement (Exhibit A). The directions contained herein provide minimum requirements for satisfactory performance of the Consultant's contractual obligations with the University of Missouri related to document production and submission.*

The purpose of this document is to guide Design Consultants in preparing required documentation for their work done for the University of Missouri. If any questions arise, the consultant is encouraged to ask the MU Project Manager assigned to their project for guidance. If the MU Project Manager cannot provide immediate help, they will be able to refer you to someone who can answer your questions.

Consultants are not required to have copies of the bid and construction sets printed for contractor use. Consultant copies of the bid and construction sets shall be printed at the consultant's expense unless otherwise approved by the Project Manager.

Documents must be submitted by noon on the date required unless approved in advance by the MU Project Manager. It can take up to three days for the University to process submittals once received, so adequate time should be added in each phase of the project to accommodate document processing. Where the consultant is providing all review sets or originals for printing by the Owner, the drawings and project manual must be furnished as outlined.

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. Costs for re-printing, re-assembly, or project damages due to the consultant's failure to follow these guidelines may affect the consultant's fees. We urge the consultant to discuss any questions or issues with the MU Project Manager in advance of submittals.

## I. Requirements for 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 to these guidelines.
2. Submittals not in this format and in the file structure described will be rejected and the consultant will have to resubmit the proper files in such time as to prevent delays in the project review process.

### B. Drawing Assembly Requirements

1. Project drawings are to be assembled in such a manner that when they are printed full size, each set is manageable. The minimum full size is 24" x 36" with a maximum of 36" x 48". The maximum number of sheets in a volume (per binding) is 100 sheets. If a set is over 100 sheets, it should be divided into two or more volumes.
2. 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.
3. 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. Printed drawings will be printed to scale.
4. A graphic scale must be provided with each scaled detail, floor plan, etc.
5. The first page of each volume shall be the cover sheet labeled COVER. This page shall have a list of all sheets in the plan set listed in the order the plans are printed. The title of each additional page shall reflect the sheet number, for example A1.01, A1.02, M1.03, M1.10, etc. All page numbers shall be reflected in the bookmarks within the PDF document.
6. Drawings should be assembled in the following order unless approved otherwise by the MU Project Manager:
  - a. Cover Sheet
  - b. Site/Civil/Survey
  - c. Architectural including code sheets
  - d. Structural
  - e. Mechanical/HVAC
  - f. Fire Protection
  - g. Plumbing
  - h. Electrical

### C. Project Manual – Basic Assembly Requirements

1. Review documents shall be submitted at least two weeks prior to review unless approved otherwise by the Project Manager. This policy allows stake-holders an opportunity to review submitted documents and provide feedback prior to the review meeting.
2. The project manual shall be submitted for printing in Adobe Acrobat format.
3. Only one file per volume shall be submitted containing all specifications from all consultants on the project.
4. Project Manuals are to be assembled in such a manner that when printed, the volume (one binding) is no more than 400 physical sheets (or up to 800 pages printed on both sides). If the project manual is over 400 physical sheets, it should be divided into two or more volumes
5. Project Manual divisions must follow the outline in the [Division 1](#) document provided to the consultant from the University of Missouri Facilities Planning and Development.
6. All Project Manual pages shall be individually numbered with the specification division number followed by the page number.
7. The Table of Contents provided in Division 1 shall be filled out completely by the consultant and included with every review submittal except Schematic Design or Programming documents.
8. The project manual shall be assembled such that all “slip sheets” or blank pages required to make the pagination work correctly are inserted.
  - a. Blank pages in the project manual should contain the statement, “This page was intentionally left blank.”
9. Every Project Manual section must have the words “End of Section” printed on the last page below the final text of that section.

## II. Submittal Requirements

### A. Design Review Submittals

1. **All** design review submittals (Schematic Design, Design Development, and Other Reviews) are required to be submitted through the Owner’s project management website (Projex4) in Adobe® **PDF** format for direct printing and electronic shared review by the University, as reflected in the Standard Consulting Agreement *as amended*.
2. Drawings - There should only be one PDF per volume containing all drawings from all consultants on the project.
3. Project Manual (Specifications)
  - a. There should only be one PDF per volume containing all

specifications from all consultants on the project.

- b. Please try to adhere to the basic assembly requirements (above) for project manuals, regardless of design phase.

## B. Bid Documents

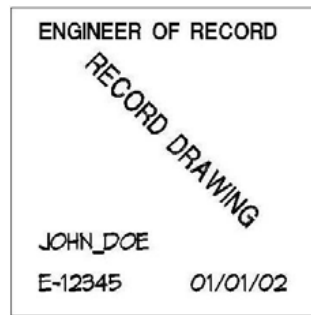
1. Original drawings are issued at the time of advertisement in the form of plots on specified bond paper, and this set of sealed drawings is not changed for subsequent addenda, change orders, or as-built (record) conditions. Rather, this set of drawings is a permanent record of the “as designed” condition.
2. The University of Missouri distributes bid documents electronically. All documents must be delivered in PDF format. Please adhere to [Section IV. Electronic Document Format and Criteria](#).
3. The scans of the sealed hard copies are to be submitted, and the original wet-sealed hard copy must be delivered to the University at least three (3) business days prior to advertisement date.
4. Printing of bid documents provided to the contractor is done by others. The consultant provides original sealed documents in accordance with the Consultant Agreement, each individual drawing shall bear the wet seal of the professional. Drawings are to be provided on paper as specified in [Section III. Media Requirements for Bid Sets, Construction Sets, and Record Drawings](#) unless directed otherwise by the MU Project Manager.

## C. Issued for Construction (IFC) Documents

1. If applicable for the project, these are bid documents that have been modified to incorporate addenda and/or alternates that have been accepted. These do not constitute contractual documents, and unless specifically agreed, arrangements to print these will be made at the contractor’s expense.
  - a. All sheets shall be re-plotted and the project manual shall be reprinted. The original bid date shall be left on the new plots and project manual.
  - b. Furthermore, the consultant will note in the revision block the date of each change made to that sheet, including applicable addenda, alternates taken, and a notation that the sheet was re-issued as a construction drawing with the date of issue.
    - (1) Changes on the drawings **must** be clouded for reference where such changes are due to addenda.
  - c. The project manual shall have a note on the cover page that states, “Construction Set Issued: MM-DD-YY” with the appropriate date.

## D. Project Completion / Record Documents

1. Record Drawings are created based on information provided to the consultant by the contractor on marked-up field drawings in addition to changes made by addenda, ASI/ESI, change orders or field changes noted by the consultant.
  - a. Apply a disclaimer to the electronic version that would appear in the plotted version noting the document is an as-built document. A suggested disclaimer is:
    - (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 one below should be inserted in the place of the Engineer or Architect’s seal.



2. *Required hard copy As-Built documents.* The consultant shall furnish to the Owner two bound sets of As-Built Record Drawings on engineering bond and one set of bound As-Built Record Specifications on paper in compliance with [Section III. Media Requirements for Bid Sets, Construction Sets, and Record Drawings](#) unless stated otherwise in Exhibit A.
3. *Required electronic As-Built documents.* The consultant shall furnish to the Owner the As-built Record Drawing Files and Specifications in the following electronic formats in compliance with [Section IV. Electronic Document Format and Criteria](#):
  - a. One set of AutoCad® (DWG) files for the Record Drawings;
  - b. Word Document (DOC) files for each section of the Record Specifications; and
  - c. One PDF file each for the complete Record Drawings and the complete Record Specifications or volumes thereof.
  - d. Any available compiled BIM and Revit model files

4. Terms such as “Record Set” or “As-Built” must be visible on the face of the Document.
    - a. Drawings shall indicate as-built conditions at final completion of the project based upon information supplied by the contractor, and shall be of sufficient quality to facilitate reproduction.
  5. All of the above are to be submitted to the Owner within twenty-one (21) days of receipt of the marked up drawings from the contractor. Final payment to the consultant will not be made until submittals meeting these conditions are met.
- E. Reports, Studies, Surveys, and Other Project Documents
1. The consultant shall furnish to the Owner one set of final reports, studies, surveys, etc. in approved electronic form, *in addition to and at the same time as*, the requested original document and/or drawings. The consultant shall make every effort to prepare the entire document using one of the specified software programs. If this is not possible the consultant may provide the original files in their native format and, at the MU Project Manager’s discretion, an Acrobat PDF file containing a printable version of the report in its entirety.
    - a. Originals of these documents must be submitted in accordance with the same guidelines applicable to submitting project manuals in [Section III. Media Requirements for Bid Sets, Construction Sets, and Record Drawings](#), unless approved otherwise by the MU Project Manager.

### **III. Media Requirements for Bid Sets, Construction Sets, and Record Drawings**

- A. Generally
1. Signed/sealed Bid Sets are to be submitted loose and not bound.
  2. All other sets of drawings are to be submitted in a bound format.
  3. Check the document to ensure that there are no missing sheets/pages and that they are in proper order.
- B. Paper for Project Manuals
1. Provide on acid free bond paper 20-24 lb weight.
- C. Paper for Drawing Originals
1. Provide acid free bond paper 20-24 lb weight designed to work with

xerographic equipment.

#### IV. **Electronic Document Format and Criteria**

##### A. Generally Applicable Electronic File Submittal Requirements

1. Check with the MU Project Manager if there are any questions as to the format of any given submittal.
2. Please use following file naming convention:
  - a. ProjectNumber\_Bldg\_BidSet\_[Drwg/Spec]\_[Vol\_01\_of\_X].pdf  
(1) EX. CP100581\_MUPC\_Bid\_Dwg\_Vol\_01.pdf
  - b. Please do not use any spaces or special characters in the file name. Consider abbreviating long project names.
  - c. Use the volume indicator only if there is more than one volume for the plans or specs.
3. The target file size for electronic files is 50 MB. This is a loose target to be used as a guideline, in particular, when determining how to split drawings or specifications into volumes.
  - a. Compressed files are not acceptable.
4. Contact the Campus Facilities, PD&C Document Center for assistance when transferring large files to the Owner's file sharing site.

##### B. Adobe ® Acrobat ® PDF Files

1. PDF files are the **preferred** media container format unless otherwise specified (e.g., DWG, DOC, etc.), and it is highly encouraged that PDFs always be provided in addition to any files that are requested in other formats.
2. Please note that some versions of drawing software may encounter errors when converting to PDF. Please print your documents after converting to PDF in order to check for errors *prior* to submitting the document to the University.

##### C. Word processing files

1. When word processing files are requested, Microsoft Word® \*.doc or .docx extensions are acceptable.
2. 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."
3. In naming files, make sure file name is in compliance with Microsoft Windows standards.

## D. 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 Revit® was used for the project, both the Revit ® drawing and one DWG file should be submitted for each Record drawing sheet.

### 2. File Names

- a. CAD files must follow the U.S. National CAD Standard current version for file naming.
- b. 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 ***CP150001\_A01.dwg*** for the Architectural sheet file for drawing A-1 of the set.

### 3. Plot Control Files

- a. A copy of the AutoCAD® .PC\* files shall be included with all drawings. One PC file should be included for each plot setup and should be stored in directories with the applicable file(s).
- b. For example, if there is one prime consultant and two sub-consultants, it would be advisable that each consultant plot their drawings in one format and then create a PC\* file for that format. The files submitted would then have one directory for each consultant with each directory containing one PC\* file and multiple drawing files.

### 4. 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, X-ref, shall be bound into one file prior to submission of the construction and record sets.
  - (2) Each sheet contained in the physical drawing set 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. Layers
    - (1) Layer naming shall follow the U.S. National CAD Standard, current version of AIA CAD/Layer Guidelines for Layer Naming.
  - e. Number of Fonts
    - (1) The number of drawing fonts employed must be limited to a quantity of ten or less, and a copy of each font used shall be included with any drawings submitted. The predominant font style in a drawing shall be created as “standard” style.
- E. 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. Site plan CAD files shall comply with the AIA CAD guidelines noted above unless approved in advance by the MU Project Manager.
  - 3. Mapping, site plans, utility or survey CAD files shall be in compliance 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 Standards.