

Attachment D

University of Washington

CAD and BIM Standards, PDF Requirements, and CAD Compliance Review Submittals

This document describes the University of Washington standards for A/E project drawings that must be submitted for all capital projects. This includes CAD and BIM drawing standards, PDF requirements, and the schedule of documents submittals for Owner's compliance review. The A/E may request a compliance review at any time during the Project through the UW Project Manager.

CAD Compliance Submittal Review Requirements (format and content):

- BIM models shall be submitted in Revit.rvt format in a mutually agreed upon release.
- All CAD files are to be submitted as an AutoCAD .dwg format
- Custom menus or arx applications are not allowed if it creates a requirement for the drawing to be used. No menus, custom user interface (cui) files or arx applications are to be submitted.
- Each CAD drawing should represent a single printed sheet where the file name conspicuously identifies the sheet number (e.g., sheet A2.1 CAD file name might be A2 1.dwg).
- All CAD drawings shall use the following folder structure:
 - One folder per discipline, by discipline name (Civil, Landscape, Architecture, etc).
 - One support folder per discipline folder, for supporting files including, but not limited to, font file, line type files, plot configurations, plot style tables.
- No .zip files are allowed.

CAD Standards Compliance Review – Schedule of Submittals: All CAD drawing submittals shall be provided electronically to the UW Project Manager, for review by the UW CAD Compliance Coordinator.

- Schematic Design Phase (where applicable) – 100% Complete:
 - Room numbering schematic methodology is required for review.
 - Representative sample of each discipline in CAD format shall be submitted for review.
 - The Owner will provide comments, as appropriate. Files with changes do not need to be resubmitted at this time.
- Design Development (DD) and/or Preliminary Design Phase – 100% Complete:
 - Room numbering plan is required for review.
 - Representative sample of each discipline in CAD format shall be submitted for review.
 - The Owner will provide comments, as appropriate. Files with changes do not need to be resubmitted at this time.
- Construction Documents Phase – 100% Complete:
 - Room numbering revisions, from the reviewed DD and/or Preliminary Design Phase submittal, are required for review and comment prior to A/E submitting for a building permit. Only Owner approved room numbers are to populate the Construction Documents.
 - All Construction Drawings shall be submitted for CAD format review, including the separate documentation for projects with phased construction permit submittals.
 - Provide a cover sheet with a master sheet index of all drawings in the document set.

Attachment D
University of Washington
CAD and BIM Standards, PDF Requirements,
and CAD Compliance Review Submittals

- Construction Completion Phase - Project Record Drawings:
 - All Record Drawings shall be submitted for Owner's review and approval.
 - Provide Owner CAD files of the final Record Drawings, including a final cover sheet with a master sheet index of all drawings, clearly noting any additional drawings added from the Construction Documents and deleting all documents prepared by Owner's consultants.
 - To the maximum extent possible, record all as-built drawing conditions on the original construction drawings.
 - Printing of the final Record Drawings shall not occur before Owner's approval. Contractor's CAD shop drawings such as fire alarm, CAAMS, and Environmental Control Systems shall not be submitted by the A/E.

CAD Standards:

- Title block
 - All sheets are to have a title block.
 - Title block information is to be on the right side of the sheet.
 - Title blocks must contain the following information:
 - Date
 - University Project Number
 - University Facility Number (FACNUM)
 - Project Name
 - Sheet Name
 - Sheet Number
 - A Key Plan
 - List of Revisions
 - Consultant Company Name
 - The Architect/Engineer's Seal
- Layering Format
 - Use Army Corps of Engineers A/E/C CAD standard found at <https://cadbim.usace.army.mil/CAD>
- Scale and Units
 - All objects are to be drawn at full scale for the assigned unit of measure.
 - All drawings are to have a unit of measure assigned and not set to "unitless".
- External references usage in CAD Documents
 - External references are not allowed for submittals. All external references are to be bound using the Bind option (instead of the insert option).
- Area of Work
 - CAD drawings shall include a boundary to define the Area of Work encompassing all areas, and only those areas where work is to be performed.

Attachment D
University of Washington
CAD and BIM Standards, PDF Requirements,
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BIM Standards:

- If BIM is required, all CAD drawings shall be exported from Revit.

Portable Document Format (PDF) Requirements:

- All documents are to be created as PDF files from the original source files, unless approved otherwise in writing by Owner.
- PDF files shall reside in the same folder as the CAD version of the sheet.
- The CAD printer shall be Autodesk DWG to PDF.pc3 print configuration.
 - Layer information shall not be included.
- All documents are to be created with a resolution of not less than 300 dpi.
- All fonts are to be embedded in the PDF.
- When compression is used, the algorithm must be LZW, CITT Group 4, or PackBits.
- The PDF document size must be the same as the original document size if the document were printed (e.g., a 24x36 print should have a PDF sheet size of 24x36).
- Each document must be submitted as a single file, as follows:
 - A single document, such as a pre-design report, design calculations, or project manual, is one file.
 - A single drawing is one file.
 - A document larger than 11x17 inches is defined as a single document and is one file.
- No .zip files are allowed.

Contact Information

Please direct all compliance-related questions to:

UW Capital Projects Office
CAD Compliance Coordinator
(206) 543-5200
cadcheck@u.washington.edu