# Mobile District
# Advanced Modeling (AM) Bulletin
# Design Files Management – Mil Projects
# SAM AMB 2024-05

Based on the standards produced by the

**CAD·BIM**
TECHNOLOGY CENTER

**US Army Corps of Engineers**
**Mobile District**
Engineering Division
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Version changes:

October 2020

1.  New bulletin 2020-05

September 2024

1.  Change the bulletin version to 2024-05

Table of Contents

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# General

### Overview

Management of design files is a necessity and a requirement to ensure integrity of files during design and at major design milestones. Version control of the files further preserves historical information for future references as well as providing a fallback option in the event of a design directive changes.

At major milestones, versioning shall be performed to create entire record sets of design files that match the legal contract drawings advertised and awarded.

Post-award, individual file versioning can be performed to preserve and record design changes at the file level.

This bulletin focuses on the management of Advanced Modeling design files for military construction design projects using Bentley ProjectWise. Please refer to the Mobile District Design Guide and consult with the Project Technical Lead for design and technical requirements.

# ProjectWise Folder Structure

A standard template folder structure is maintained and used in the creation of new project folders. The creation of new project folders is reserved as a function of the Technical Services Branch, EN-T.

Beginning October 2020, an enhanced *'02 Engineering – Design'* folder structure will be used for all new military projects. Within the enhanced *'02 Engineering – Design'* folder there is now the following updated structure:



### 00 Photos

The Photos folder is a common folder for uploading of project photos, images, and videos. For further organization, sub-folders with dates may be used.

## *01 Base Design Guides & Criteria*

Generally, Base design guides and criteria should be stored at the base level folder. This folder is intended for base design guides and criteria that may be unique the project.
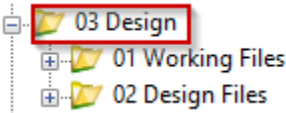
## *02 Pre-Design*

The pre-design folder is intended for pre-design documents including user-provided documents, Charrette and Programming information. Other documents include Advanced Modeling requirements and any project templates.
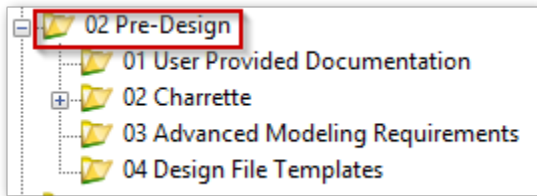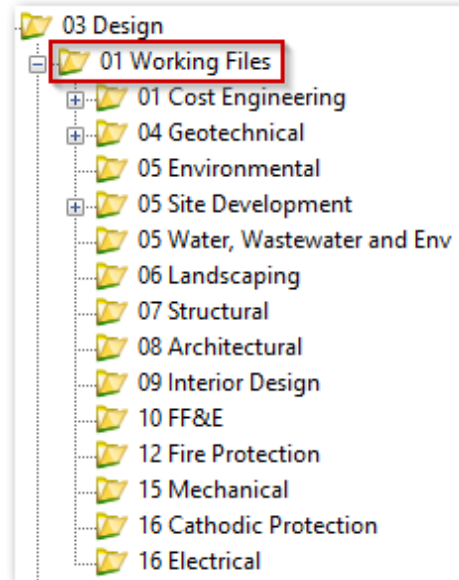


## *03 Design*

The 03 Design folder will be where the bulk of the design effort takes place. There are two subfolders.

## 01 Working Files

The Working Files folder is intended to be the designers' sandboxes where the design efforts occur. Files include but are not limited to design analyses, calculations, sketches, notes, and temporary files. Sub-folders are provided for each discipline numbered to follow the discipline order in the A/E/C CADD Standard. Designers are encouraged to adopt a practical method to organize and name working files. Standard sub-folders within each discipline folder may be established at a future date. Designers are also encouraged to utilize ProjectWise versioning capability to create file versions as needed.



## 02 Design Files

Files within the 02 Design Files folder are the current design files. Design files are segregated by file types as follows.
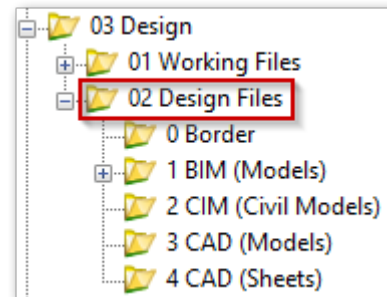


### *0 Border*

This folder will typically contain only one CAD border file for the project.

### *1 BIM (Models)*

This folder is intended for Building Information Modeling files including Revit model files (rvt), Navisworks, IFC, 3D PDF, and VR/AR files.

### *2 CIM (Civil Models)*

This folder is intended for Civil Information Modeling files including Civil 3D models (dwg) and other Civil and Civil Site design files.

### *3 CAD (Models)*

This folder is intended for all other CAD models, including Electrical Site model files (dwg).

### *4 CAD (Sheets)*

This folder is intended for all CAD sheet files. For typical military design projects, this will primarily contain Civil Site and Electrical Site and Electrical Details sheet files.

### 04 ITR

The Independent Technical Review (ITR) folder serves as the repository to post documents for the respective ITRs.
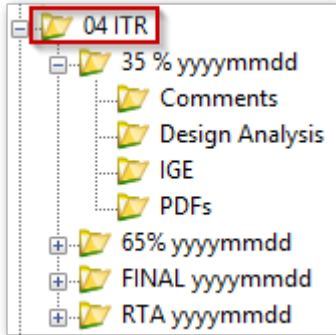


### 05 Submittals

The Submittals folder serves as the repository for submitted documents at each of the respective design milestones. Consult with the Project Technical Lead and the Mobile District Design Manual for specific technical requirements pertaining to submittals.
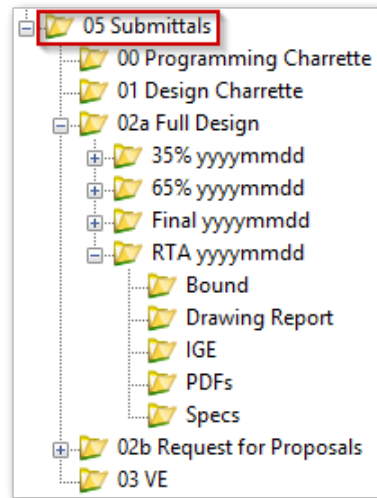


# RTA Record Sets

## RTA Design Record Set

At the project's established RTA milestone date (prior to the creation of PDFs for RTA), the design team shall ensure that all pertinent design files are in ProjectWise in the '03 Design/02 Design Files' folder, updated, checked in, and ready for the EN-TS Drawing Coordinator to set Final Status. With the Final Status state applied, the design files become the **RTA Design Record Set** and the '02 Design Files' will be renamed '02 Design Files_RTA'.
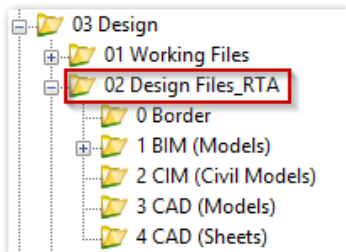


The RTA Design Record Set is then ready for PDF creation. With few exceptions, no further changes are permitted after the RTA date. If the Final Status is required to be rolled back to address critical issues, a determination at that point shall be made by the EN-TS Drawing Coordinator as to whether some or all existing PDFs will be required to be re-generated once the Final Status is reapplied to the design files.

### *RTA PDF Record Set*

Prior to the project's established RTA PDF due date, the design team shall ensure that all PDF files are in ProjectWise in the '05 Submittals\RTA yyyymmdd\PDFs\' sub-folder; and the files are updated, checked in, and ready for the EN-TS Drawing Coordinator to set Final Status. With the Final Status state applied, the PDF files become the **RTA PDF Record Set**.

With few exceptions, no further changes to the RTA PDF Record Set are permitted after the RTA PDF due date. In the event that the Final Status is required to be rolled back, a determination at that point shall be made by the Technical Services Project Support Section Chief as to whether some or all PDFs will be unlocked and whether some or all PDFs must be re-generated.

# Design Revisions

All design changes after RTA are considered revisions. There are two official types of revisions: <u>Amendment</u> – revision occurring prior to contract award; <u>Modification</u> – revision occurring after contract award. Prior to the start of a design revision, designers should first coordinate with the Project Technical Lead.

### *Amendments*

<u>Initial Amendment</u>

Not all amendments will require changes to design files. For the first amendment that requires changes to the design files, the EN-TS Drawing Coordinator shall duplicate the **RTA Design Record Set** (the '02 Design Files_RTA' folder) to create a new active design set with an 'AMDxx' suffix that corresponds to the amendment number.
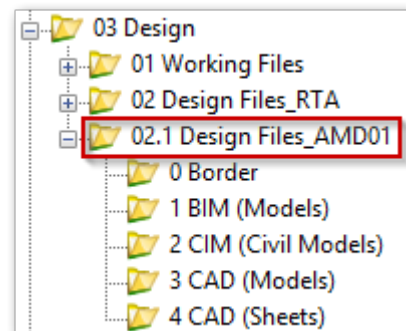


When the entire **RTA Design Record Set** is duplicated in ProjectWise, document links within the set is automatically updated to reflect the new set of documents and references made to documents outside of the set remain intact.

If **Civil 3D data shortcuts** are used, then a new version of data shortcut file shall be created, and the data shortcut paths shall be updated to reflect the paths pointing to the new AMDxx set of files. The new Data shortcut file version and description shall include the AMDxx designation.

Designers shall then proceed to make changes as necessary for the amendment. File management shall follow the same general workflow leading up to RTA, including setting Final Status at the amendment due date to create the Amendment version of the Design Record Set and setting Final Status at the amendment PDF due date to create the PDF Record Set.

Subsequent Amendments

For subsequent amendments that requires changes to the design files, the EN-TS Drawing Coordinator shall duplicate the most current amended Design Record Set (e.g. '02 Design Files_AMD01' folder) to create a new active design set with an 'AMDxx' suffix that corresponds to the amendment number.

## *Modifications*

Post-award, when changes to the design files are required, the EN-TS Drawing Coordinator shall duplicate the last amended Design Record Set to create a new active design set with a '_POSTAWARD' suffix.
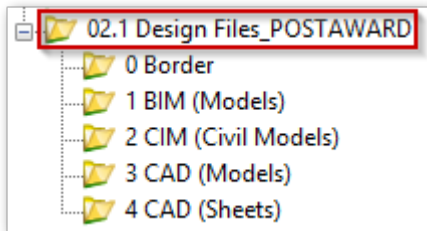


This will be the last active design set for the project. Designers are encouraged to use the ProjectWise document versioning feature to manage changes per document from this point forward.

To create a new document version, right-click on a document and select 'New, Version…'
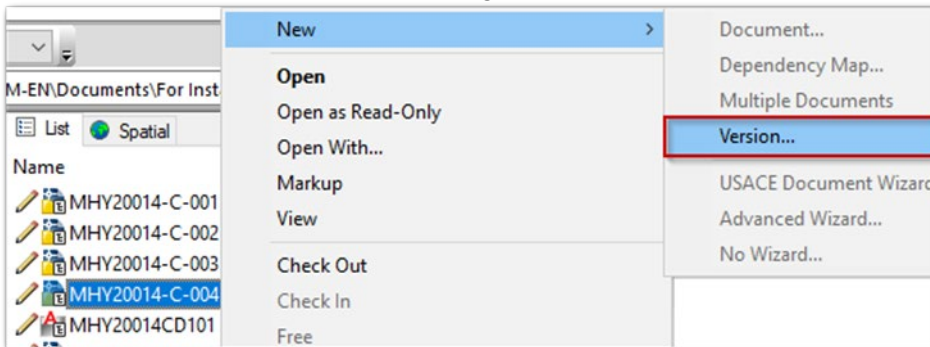


The New Document Version dialog appears. Specify a meaningful version for the current document and new document.
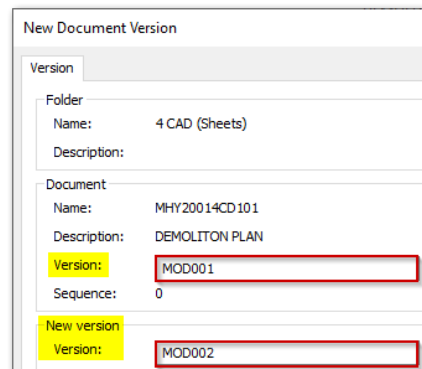
After the new document is created, the document description of the new version can also be updated to better reflect the changes in that version.
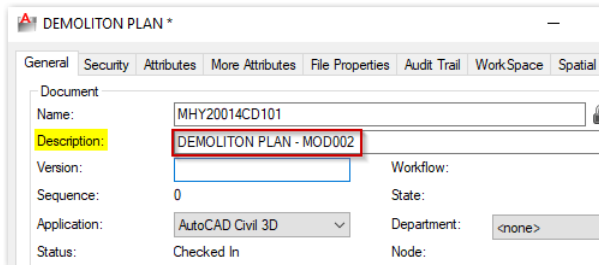


## RFIs

Design file changes can also occur post-award in support of RFIs. These are not considered design revisions; however, designers are encouraged to follow the same post-award procedure for modifications to create new versions of documents in response to RFIs.

Folder structure tree:

- 02 Engineering - Design
  - 00 Photos
    - yyyymmdd
  - 01 Base Design Guides & Criteria
  - 02 Pre-Design
    - 01 User Provided Documentation
    - 02 Charrette
      - Design
      - Programming
    - 03 Advanced Modeling Requirements
    - 04 Design File Templates
  - 03 Design
    - 01 Working Files
      - 01 Cost Engineering
      - 04 Geotechnical
      - 05 Environmental
      - 05 Site Development
      - 05 Water, Wastewater and Env
      - 06 Landscaping
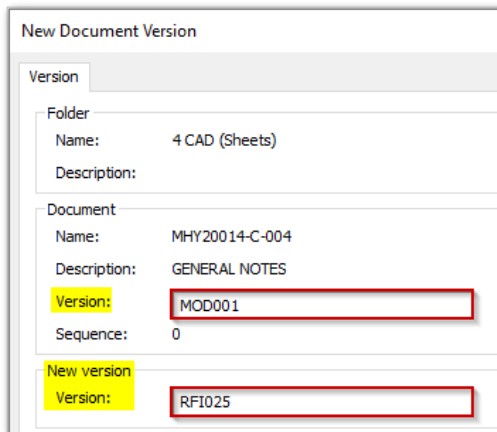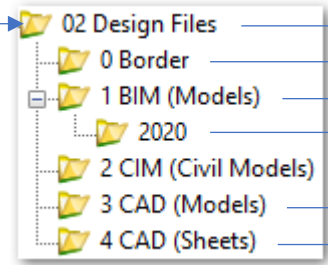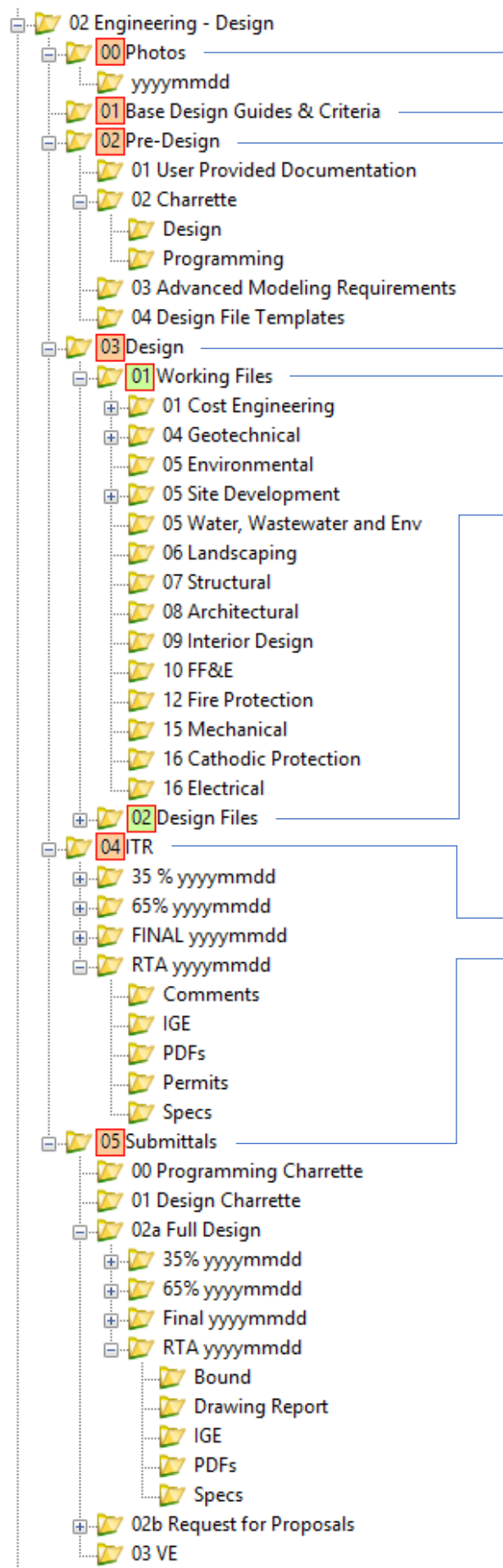      - 07 Structural
      - 08 Architectural
      - 09 Interior Design
      - 10 FF&E
      - 12 Fire Protection
      - 15 Mechanical
      - 16 Cathodic Protection
      - 16 Electrical
    - 02 Design Files
  - 04 ITR
    - 35 % yyyymmdd
    - 65% yyyymmdd
    - FINAL yyyymmdd
    - RTA yyyymmdd
      - Comments
      - IGE
      - PDFs
      - Permits
      - Specs
  - 05 Submittals
    - 00 Programming Charrette
    - 01 Design Charrette
    - 02a Full Design
      - 35% yyyymmdd
      - 65% yyyymmdd
      - Final yyyymmdd
      - RTA yyyymmdd
        - Bound
        - Drawing Report
        - IGE
        - PDFs
        - Specs
    - 02b Request for Proposals
    - 03 VE

02 Design Files sub-tree:
- 02 Design Files
  - 0 Border
  - 1 BIM (Models)
    - 2020
  - 2 CIM (Civil Models)
  - 3 CAD (Models)
  - 4 CAD (Sheets)

| Document Location Link | Description |
|---|---|
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| 2020 | BIM models are further segregated by Revit version |
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| 3 CAD (Models) | all other CAD models, including Electrical Site model files (dwg). |
| 4 CAD (Sheets) | CAD sheet files. For typical military design projects, this will primarily contain Civil Site and Electrical Site and Electrical Details sheet files. |
| 04 ITR | Independent Technical Review (ITR) |
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Documents in these folders are subject to version control for creation of the RTA set and the amendment sets.

**Project Folder Structure Quick Guide**

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