

CADD Standards and Procedures Manual



SECTION 2 - PLAN DEVELOPMENT

2.1 Files for Consultants

The most current files and CADD standards for consultants to use in the creation of engineering plans will be on the City website and can be downloaded at any time. See the link below to obtain the CADD Standards and the related design files. These files and procedures should be used on all plan deliverables developed for the City Public Works and the Water Utility Services departments.

Files that may be used for plan development include the following. Please see [City of Waco Public Works CADD Standards webpage](#) for all associated files available.

- 1) COW CADD Standards
- 2) COW Titleblocks
- 3) COW CADD Block Library
- 4) COW CADD Linetypes
- 5) COW CADD Hatch Patterns
- 6) COW CTB Files

2.2 Requesting Electronic Files or Data From the City of Waco

Consultants may request specific CADD or GIS Data from the City if available by filling out and submitting a [CADD Release Form](#). The consultant should be clear on what exactly they need from the City. Contact the City Engineering Division at 254-750-5440 for CADD and GIS data requests.

Disclaimer: Data received from the City is provided for the convenience of the recipient only and should not be misused or redistributed without approval from the City. Data provided may have been gathered from a variety of sources, and it may or may not conform to current CADD or GIS standards set forth by the City. Let it be understood that data may be incomplete or may not accurately reflect current conditions. The City makes no representation as to the completeness or accuracy of the data. Consultants should keep in mind that CADD or GIS data may appear to be accurate because it is computer-generated; however, its appearance does not guarantee that the data truly represents existing conditions.

2.3 Standard Details Electronic Files

The release of City of Waco Standard Details to consultants is considered under two circumstances.

- 1) Future Standard Detail: intention is to make modifications and submit the final file as a future standard detail to be released by the Engineering Division and published to the City website. The line work and the title block will be provided to the consultant for this situation. Before including in the plan set, the modified detail with revised drawing number shall be submitted to the City Engineer or his/her appointee for approval.

- 2) Project Based: intention is to make modifications to the detail and use it for a specific project contracted out by the City. Only the line work and text will be provided for use. The consultant is responsible for any changes made to the detail and must include the revised detail as one of their own. Approval by the City Engineer or his/her appointee prior to insertion in the plan set is not required.

2.4 Software Applications and Versions

Autodesk Civil 3D Design© (C3D) is the software application suite used by City Public Works and Water Utility Services to perform engineering design of roadway, storm drainage, utility plans and other associated plans. All drawings used by, or provided to, the City shall be AutoCAD© DWG format in the latest supported version of AutoCAD©. **Reference Sections 5 and 14 for requirements when working with MicroStation (DGN) files.**

2.5 Plan Development Phases

During plan set development by consultants, submittals will be guided by the project specifications. The typical phases and contents of plan documents are detailed in Appendix C. Additional plans may be requested by the City and must still comply with the requirements outlined here.

All elements of the drawing files will be reviewed, with particular attention to Layers, Symbols (Blocks), Object Tables, X-Refs, and Linetypes. If revisions are necessary, the consultant must make them at no additional cost to the City and complete them promptly. Final changes must be approved by the Cit. **Refer to Chapter 12 for City GIS requirements.**

2.6 Other Plans (These plans may be needed at any time during the project)

Other drawings and/or plans that could be requested by the project manager are as follows. A review of drawing files will be made to determine conformity to the City of Waco CADD Standards. If changes are required, they will be made by the consultant at no further expense to the City and completed within a timely manner.

Survey Drawings If not included with the project files, an electronic file along with a PDF copy that has been stamped and signed by the Registered Professional Land Surveyor (RPLS).

Council Map A single sheet that shows the project location and description. This is created to present to the City Council as part of the project package. A PDF file is required for submittal. See Appendix D for sample Council Map. See [City of Waco Public Works CADD Standards webpage](#) for a downloadable template.

2.8 Plan Review

All projects with plans will be reviewed for compliance before final acceptance and payment is made. **The consultant will be responsible for all revisions to the plans to make them conform to the City CADD Standards.** Consultants shall ensure that their sub-consultants follow the City CADD Standards as well. Final pay request for consultant work will not be

approved until the City has received from said consultant CAD files that conform to the City CADD Standards.

Every effort must be made by consultants to reduce drawing file size. It is the responsibility of the consultant to clean up the drawings as best as possible and organize project drawing information coherently to maintain reasonable file sizes. Files are to be PURGED and AUDITED before deliverables are received by the City to remove unnecessary data and reduce file size. Also, detach any unused X-Refs within drawings, and keep X-Refs at a minimum for project drawings sent to the City. Remove any unnecessary or unused files within these project folders. **Reference Chapter 12 for additional GIS Requirements.**

Drawing deliverables that are sent to the City should be checked so that information within the drawings is compliant with the City's CADD Standards and Procedures.

2.9 Methods of Delivery

CAD files and PDF files will be delivered through Projectmates. Hard copy plans (when requested) can be delivered on bond paper to the following addresses. These will be stamped and signed when bid sets & record sets are delivered.

City of Waco Public Works Department
401 Franklin Ave, Waco, Tx 76701

City of Waco Water Utility Services
200 Colcord Ave, Waco, TX 76707

2.10 What to Deliver

CAD and PDF Files are required at the completion of each project phase unless otherwise stated in the project specifications.

CAD files should include the AutoCAD drawing files, design files, AutoCAD line and font definitions, and all other associated files for that phase of the project. CAD files shall be accompanied by a "readme" file which describes the set and includes project information such as the project design engineer, date of completion, etcetera.

Review periods will be set by the City's Project Manager and outlined in the project specifications. Refer to Section 5 and Section 14 for file requirements.

At 30% Design, 60% Design, 90% Design, 100% Design

CAD files shall be submitted for review. Refer to "Project Phase Contents" Located in Appendix C for submittal of those items. X-Refs are allowed at these phases. Reference Section 11 for X-Ref requirements.

At Final Set & at Conformed Set

CAD files will be provided as indicated within this document. Refer to Section 5 and Section 14 file requirements. An engineer's stamp or signature is **not** needed on these files.

PDF files will be provided as indicated within this document. The drawing sheets shall be one complete set. **An engineer's stamp and signature are required on these files.**

2.11 City of Waco and TxDOT Details

Standard details downloaded from the City or TxDOT do not need to be submitted to the City as electronic files. However, they must be included in the PDF set of plans delivered to the City, as specified in Appendix C.

2.12 File Naming Convention

It is recommended that files submitted to the City for review are to be named in the manner outlined in Figure 2.12a.

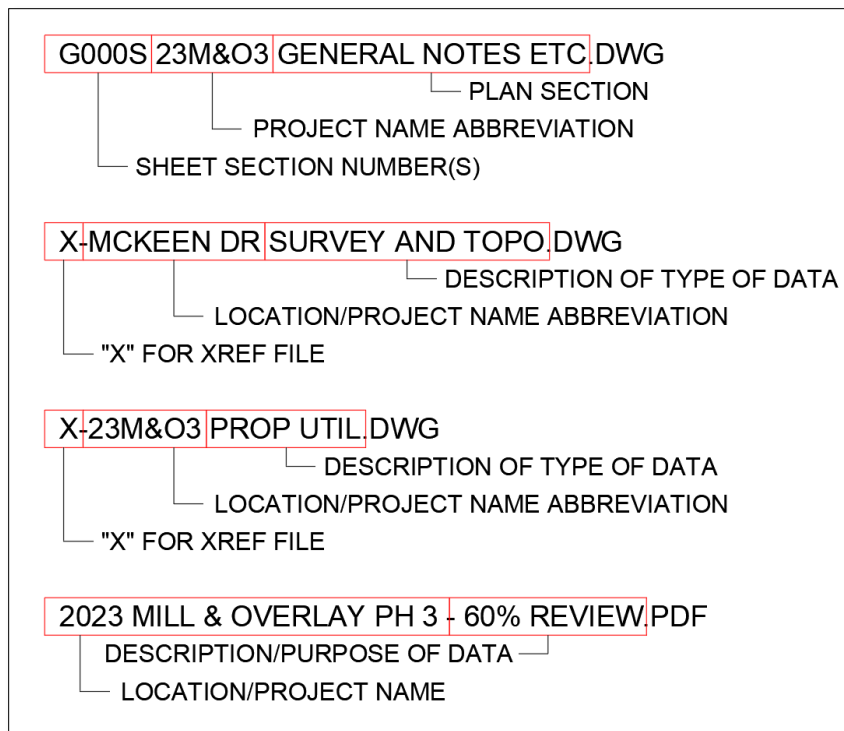


Figure 2.12a
File Naming structure