CITY UTILITIES
DESIGN STANDARDS MANUAL

Book 6
CADD Standards (CADD)
CADD2 Introduction

June 2015

CADD2.01 Purpose

This Chapter establishes the minimum standards for all Computer Aided Design and Drafting (CADD) work performed by or for City Utilities Engineering (CUE). These standards establish procedures and requirements for proper development, delivery and reuse of CADD electronic data and drawings. They ensure that end products are clear and applicable for their intended use for project design, approval, and construction.

These CADD Standards are not required, but are recommended for non-capital projects.

CADD2.02 Administration

1. CADD Standards Scope

    The CADD Standards shall be followed for the production and dissemination of electronic information and construction drawings. The United States National CAD Standard (NCS) will be utilized to supplement this document.

    CUE has adopted NCS Version 5 published in April 2011 except for Uniform Drawing System (UDS) Module 8.0: Code Conventions

    CADD deliverables prepared for CUE, including design and construction, shall comply with all adopted aspects of NCS Version 5. Information about the National CAD Standard Version 5 can be found at the following website: http://www.nationalcadstandard.org/ncs5/.

    These CADD Standards establish additional requirements for the organization and format of CADD drawings, specifications, and data.

    It is anticipated that some projects will not utilize all parts of the CADD Standards due to the size, scope and type of the project. However, the CADD Standards shall be applied on each CADD drawing, plan sheet, specification, etc… created; including all supporting data files used to produce a CUE project. Also, portions of the CADD Standards are labeled as "optional" or "recommended" and substantial conformance with the CADD Standards would not necessarily require use of these items.

2. Implementation

    CUE will provide, via electronic or web distribution, documents and tools to aid in the CADD Standards implementation.

    Concerns regarding the impact of the CADD standards on a particular project must be discussed with the project CUE Project Manager.

3. Software Information

    This standard does not target any specific CAD System or software. CUE is currently using Autodesk's AutoCAD Civil 3D software. Engineer shall verify the current software release with the project CUE CADD Working Leader. Other software packages may be utilized for creating CADD drawings, CADD specifications, and data.

CADD2.03 Resources Available from CUE

Below is a list of CADD Standards-related files available for download (or as an integral part of another file).

No warranties are extended or granted, either expressed or implied, with respect to the accuracy and/or performance of any materials or resources provided.

1. Project Folder Structure Template

    Standard project folder template created to help develop and implement a standard electronic filing structure for efficient use and retrieval. See "Project (CADD) Folder Structure" Exhibit CADD2-1.

2. AutoCAD/Civil 3D Templates

    DWT templates which contain items and settings required within the CADD drawing (*.dwg) model files such as object styles, layers layouts, etc... It is recommended that all project drawings be created utilizing these templates.

3. CUE Civil 3D Pipes Catalog

    Configuration and drawing files for AutoCAD Civil 3D Part Catalog containing definitions for storm sewer, sanitary sewer, and other modelled pipe networks that can be inserted into a drawing.

4. CUE Civil 3D Corridor Assemblies

    Standard resource files with CUE customized subassembly parts to depict typical sections.

5. Standard Symbols

    Standard resource files containing commonly used symbols and blocks.

6. Plot Styles (Pen Settings)

    Tables within a file which control how an object or layer is plotted by determining plotted properties such as lineweights, color, and fill style.

7. CADD Layers

    Standardized layers within unique discipline groups designed to control the visibility of objects and to assign properties to objects in drawings.

8. DWS Standards Files

    Standard DWS format files used to check CADD standards such as layers, dimension styles, text styles, colors, etc... within certain versions or Autodesk AutoCAD-based software such as AutoCAD and Civil 3D.

9. Border and Title Block Sheets

    Standard DWG format templates developed for use when preparing sheet file drawings, including borders, title blocks, drawing settings, layouts, layers, etc...

10. Font and Shape Files

    Standard fonts and shapes utilized within drawings.

11. Line Type Files

    Standard files containing custom line types.

12. Minimum Electronic CADD Deliverables Checklist

    Refer to Exhibit CADD3-1.

Additional resources that may be available include existing CADD data from past projects. The data shall be used as a base reference only. Engineer is responsible for field verification of existing conditions and ensuring that all electronic deliverables are accurate and conform to the CADD Standards. In addition, it is recommended to research City documents including existing sanitary, stormwater, water, and transportation facilities data for existing mapping, record drawings, City and County (GIS), and other pertinent data for the project area.