



ELECTRONIC DATA REQUIREMENTS

INTRODUCTION

In order for projects to be more seamless and consistent, it is important that the method of drafting and structure of the drawing be standardized. As well, this will facilitate electronic data transfer with the employment of the following guidelines for standardization. These standards will be practiced to all applicable projects. If there may be instances where a variance from these standards will provide more flexibility, approval must be received from SACWSD. Check with SACWSD's GIS Supervisor. Submitted Electronic Data (CAD, GIS, PDF's, etc.) drawings shall meet requirements and specifications as detailed in SACWSD's [Design Standards and Specifications](#) as well as all requirements listed within the CAD/GIS As-built Standards.

General Checklist for AutoCAD/Civil 3D

- Plans in compliance with SACWSD's [Design Standards and Specifications](#) & CAD/GIS As-built Standards.
- Plans are projected in the appropriate Projection / Coordinate system
 - SACWSD uses the following projection / Coordinates
 - NAD1983 State Plane Colorado Central FIPS 0502 (US Feet)
 - WKID 2232
 - When you begin a drawing assigned the coordinate system from the beginning. In Civil 3D go to the Map Setup tab, then select Assign. In the search bar you can search using Colorado – The coordinate system we use is NAD 1983 State Plane Colorado Central FIPS 0502 (US Feet) the AutoCAD code is CO83-CF.
 - Commerce City uses a modified projection, **all electronic data must be in our projection.**
 - Contact the GIS Department if you would like projected parcel data to help align the project you are working on.
- Line work needs to be done as polylines. Having the line work as polyline will eliminate any unnecessary line breaks. The only line breaks should be at tees, crosses, reducers, valves and other fittings of this nature.
- **Block References & xrefs are not allowed.** Different pipe types need to be on their own layer so the various individual layers can be turned off and on. Make sure to use your snapping tool when creating drawings.
- Parcel & lot lines need to be included in the DWG.
- South Adams County Water and Sanitation District will accept **Civil 3D® 2013 through 2017 .DWG file**. The .DWG file shall be free from any intelligent (proxy).
- If the submittal was created using a program other than AutoCAD® or Civil 3D® then the submitting organization is responsible for converting the file to a plain (no proxy) Civil 3D® 2013 through 2017.DWG file.
- South Adams County Water and Sanitation District reserves the right to decline **any** submittal due to incompatibility issues.

Surveying & Record Drawings

- Surveying will be completed by a licensed surveyor, working for the Developer, Engineer, or Contractor, while the trench is open with the surveying tool touching the infrastructure.
- All fittings associated with the project (Tees, Bends, Valves, Taps, Pits, Service Lines, Manholes, Test Stations, Point of Commencement, Point of Beginning, Etc...) will be surveyed horizontally and vertically to the foundation of a building(s) when applicable. If there is a question contact the SACWSD GIS Department.
- Survey points will be used to create the Record Drawings. Record Drawings will reflect how the infrastructure was actually installed. Add Red lines to Record Drawings as necessary.
- SACWSD accepts Quality Level B or higher Record Drawings.
- Record Drawings must be approved before and initial walk and or TCO / CO can be given.
- All infrastructure needs to be labeled accordingly (Size, Material, Type, Angle, Rim Elevation, Invert In, Invert Out, Slope). Labels need to be legible and neat.

FROM APPENDIX A OF DESIGN STANDARDS AND SPECIFICATIONS

STANDARDS FOR SUBMITTING ELECTRONIC DRAWING FILES FOR APPROVED AND RECORD WATER AND WASTEWATER PLANS

PRIMARY PURPOSE

Electronic file submittal standards and data standards were developed to facilitate the smooth integration of digital information into the District's Geographic Information System (GIS) datasets. This document is intended to provide guidance for electronic files submitted to the South Adams County Water & Sanitation District and are deemed necessary in order to establish electronic file submittal standards that:

1. Result in reliable mapping that clearly displays parcel boundaries, the District's legal boundaries, and the District's water and sewer facilities.
2. Reduce the labor and cost of updating District maps with information submitted by developers.
3. Enable the District to establish graphical relationships to parcel addresses, tax identification numbers, and the District's account numbers.

COORDINATE SYSTEM

The District's base maps have been registered to the Colorado State Plane, Central Zone coordinate system, North American Datum (NAD) 1983, in feet. As a matter of data exchange policy, the District requires that all data must be projected as such.

Submittals that do not adhere to these guidelines, or are provided in a relative coordinate system with arbitrary origin and no projection, will not be considered and must be resubmitted.

DRAWING STANDARDS AND NAMING CONVENTIONS

The District requests that the maps provided by developers be in AutoCAD 14 or higher drawing file format (DWG), and that the information in the drawings be organized according to the standards established in this document. Platted property data, street centerlines and edge of pavement lines, water mains and appurtenances, and sewer mains and appurtenances shall be submitted in separate drawing files as follows:

FROM APPENDIX B OF DESIGN STANDARDS AND SPECIFICATIONS

Record drawings showing all changes from the approved construction drawings shall be submitted to the District prior to the initiation of the required warranty period of two years as defined in SACWSD's "Grant Of Acceptance Of Utilities Agreement". The record drawings will consist of a marked-up set of "Issued For Construction" drawings verifying the following:

- All lengths, sizes, and materials of installed pipe, fittings, manholes, and any other improvement.
- Horizontal locations either by Station and Offset, or by Northing and Easting Coordinates of all manholes, bends, cleanouts, valves, taps, wyes, stubs, plugs, tees, etc.
- Invert elevations of all sanitary manholes, inlets, outlets, stub ends, top of pipe, finished rim elevation, and bottom of pipe elevations of each utility crossing, etc.
- The constructed slope of sanitary sewer pipes between manholes and structures.
- Top of pipe elevations at regular intervals and/or fittings for water lines.
- Any other variations from the construction documents must be clearly noted and detailed on the plans.
- The As-Built drawings are to be provided and stamped/signed and dated by a Colorado registered Professional Land Surveyor.
- Electronic AutoCAD drawing files as outlined in the Districts Standards and Specifications are to be submitted, along with a PDF, and a hardcopy set.