

CADD Standards and Procedures Manual



SECTION 6 - LAYERS

6.1 Industry CADD Standards for Layering

The City standards are loosely based off the National CADD Standard (NCS). While complying with industry standards as close as possible, the City may make slight variances from these industry standards to meet the City's needs.

6.2 City of Waco Civil Layering Standards

This standard is setup primarily for Civil Engineering Drawings. These Standards are to be used for Engineering, Civil, Survey, Public Works, and all Other Drawings not associated with Building Architecture at the City. These standards are taken based on the NCS and a review of past drawings issued to the City. Drawings that will follow this may include, but not limited to, the following Civil features:

- Site Layouts
- Survey
- Site Utilities
- Stormwater
- Sanitary Sewer
- Water
- Bridges
- Topography and Surface Features
- Environmental Work
- Railroad
- Road Construction
- Traffic Striping
- Various Sections and Details

6.3 Civil Drawings Layering Organization

There can be up to five (5) defined layer name data fields:

Field 1 Field 2 Field 3 Field 4 Field 5

Discipline Designator - Major group - Minor group – Minor group / Status – Minor group / Status

The Discipline Designator, Major group, and the first Minor group are mandatory. The Minor group/Status fields are optional. With the layer names organized as a hierarchy, you can have options for naming layers according the level of detail required.

Field 1: The **Discipline Designator** denotes the category of subject matter contained on the specified layer. It consists of one character (for Civil Engineering Plans).

Example: **C** Civil

Field 2: The **Major Group** is a two-to-five-character field that identifies a major system.

Examples: C-ALGN	Civil–Alignment
C-ROAD	Civil–Road
C-TOPO	Civil–Topography
C-WATER	Civil–Water
C-STRM	Civil–Stormwater

Field 3: The **Minor Group** is a mandatory, two-to-five-character field used to further define the Major Groups.

Examples: C-ALIGN-ANNO	Civil–Alignment–Annotation
C-ROAD-CNTR	Civil–Road–Center
C-TOPO-EXIST	Civil–Topographic–Existing
C-WATER-PIPE	Civil–Water–Pipe
C-STRM-ANNO	Civil–Stormwater–Annotation

Field 4: The first **Minor group / Status** is an optional field used to further define the Major Groups or to distinguish the status of the work or construction phase.

Examples: C-ALIGN-ANNO	Civil– Alignment – Annotation
C-ROAD-CNTR-PROP	Civil– Road – Center – Proposed
C-TOPO-EXIST-MJR	Civil– Topographic – Existing - Major
C-WATER-PIPE-DEMO	Civil– Water – Pipe – Demolition
C-STRM-ANNO-PLAN	Civil– Stormwater – Annotation – Plan view

Field 5: The second **Minor group / Status** is an optional field used to further define the Major Groups or to distinguish the status of the work or construction phase.

Examples: C-ALIGN-ANNO	Civil – Alignment – Annotation
C-ROAD-CNTR-PROP	Civil – Road – Center – Proposed
C-TOPO-EXIST-MJR	Civil – Topographic – Existing - Major
C-WATER-PIPE-DEMO	Civil–Water – Structures – Demolition
C-STRM-ANNO-PLAN-PROP	Civil–Stormwater–Annotation–Plan– Proposed

6.4 Discipline Designations for Civil Drawings

The following is the computer-aided drafting layer naming convention used for Civil, Survey, Environmental, Topography and Utilities at the City. Drawings that consultants submit to the City must use and conform to these current CADD layering standards. If submittals do not conform to the City’s layering standards, the City can reject the submittals from the consultant. The consultant will be responsible for making necessary revisions to the materials to make them conform to the City’s layering standards.

Discipline

B	Bridge
C	Civil
S	Survey
T	Traffic
Z	Reference layers

Major/Minor Groups (not an all inclusive list)

ALGN	Alignment
ANNO	Annotation
BRDG	Bridge features
BOC	Back of curb
CL	Center line
CNTR	Center
ELEC	Electric
FEAT	Feature
GAS	Gas utility line
GEN	General
GTR	Gutter line
MOUN	Monuments
PIPE	Pipe networks
PLAN	Plan views
PROF	Profile views
PTS	Points
RAIL	Railroad and trolley
ROAD	Road features – i.e. back of curb, edge of road, gutter flow line
ROW	Right-of-Way
SSWR	Sanitary sewer
STRC	Structures (manholes, water valves, etc.)
STRM	Stormwater
SWLK	Sidewalk
TELE	Telephone
TOPO	Topographic (surfaces, contour lines, etc.)
UTIL	Franchise utilities (gas, electric, cable, etc.)
WATER	Water

Status

DEMO	Demolition
EXIST	Existing
PROP	Proposed