

CITY UTILITIES DESIGN STANDARDS MANUAL

**Book 6
CADD Standards (CADD)
CADD6 Layers**

June 2015

CADD6.01 Purpose

This Chapter establishes the minimum standards for layers as related to Computer Aided Design and Drafting (CADD) work performed by or for City Utilities Engineering (CUE).

Layers allow organization, efficiency, and coordination of information within CADD drawings. They help with visualization on a computer screen and aid with converting information as needed for the printed version of construction drawings.

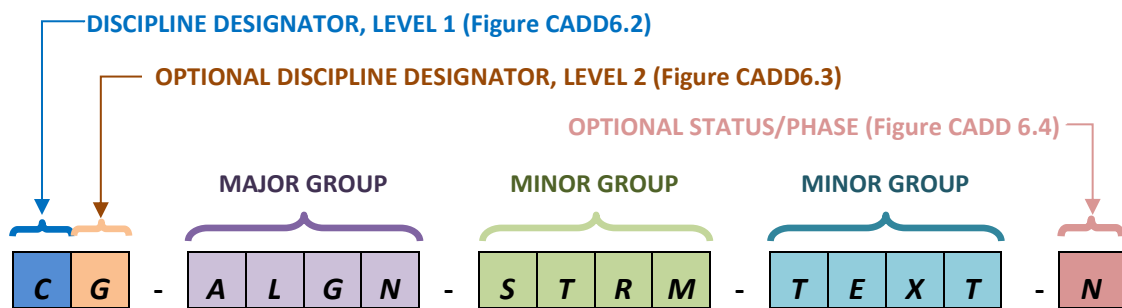
Layer requirements set by this chapter build on and conform to the NCS Version 5 (AIA CAD Layer Guidelines).

CADD6.02 Layer Format

The CADD Standard layer names are organized as a hierarchy. This arrangement allows expansion and addition to the layer list. This arrangement allows selecting from a number of pre-defined options for naming layers according to the level of detail desired.

Layers may consist of up to five (5) data field groups, separated from one another by dashes, which combined may add up to fifteen characters. Figure CADD6.1 shows all possible data field groups of the layer name format. The first two characters denote the discipline designator. The next four characters denote the major group. The following two data field groups (four characters each) denote minor groups. The minor groups are followed by one optional character identifying the project status/phase.

Figure CADD6.1 Layer Name Format



Figures CADD6.2 and CADD6.3 show the letters that shall be used for the Level 1 and Level 2 discipline designator character of the discipline code. Level 2 is an optional modifier which should only be used when a greater level of detail is desired.

Figure CADD6.2 Discipline Designator, Level 1

Level 1 Discipline Designators	
A	Architectural
B	Geotechnical
C	Civil
D	Process
E	Electrical
F	Fire Protection
G	General
H	Hazardous Materials
I	Interiors
L	Landscape
M	Mechanical
O	Operations
P	Plumbing
Q	Equipment
R	Resource
S	Structural
T	Telecommunications
V	Survey/Mapping
W	Distributed Energy
X	Other Disciplines
Z	Contractor/Shop Drawings

Figure CADD6.3 Examples for Discipline Designator, Level 1 and Level 2

Level 1 Designator	Level 2 Designator	Discipline
A		Architectural
A	D	Architectural Demolition
A	E	Architectural Elements
A	F	Architectural Finishes
A	G	Architectural Graphics
A	I	Architectural Interiors
A	S	Architectural Site
A	J	User Defined
A	K	User Defined
C		Civil
C	D	Civil Demolition
C	G	Civil Grading
C	I	Civil Improvements
C	J	User Defined
C	K	User Defined
C	N	Civil Nodes
C	P	Civil Paving
C	S	Civil Site
C	T	Civil Transportation
C	U	Civil Utilities
E		Electrical
E	D	Electrical Demolition
E	I	Electrical Instrumentation
E	J	User Defined
E	K	Electrical Lighting
E	P	Electrical Power
E	S	Electrical Site
E	T	Electrical Telecommunications

Figure CADD6.3 Examples for Discipline Designator, Level 1 and Level 2 (Cont.)

Level 1 Designator	Level 2 Designator	Discipline
E	Y	Electrical Auxiliary Systems
G		General
G	C	General Contractual
G	I	General Information
G	J	User Defined
G	K	User Defined
G	R	General Resource
V		Survey / Mapping
V	A	Survey / Mapping Aerial
V	C	Survey / Mapping Computed Points
V	F	Survey / Mapping Field
V	I	Survey / Mapping Digital
V	J	User Defined
V	K	User Defined
V	N	Survey / Mapping Node Points
V	S	Survey / Mapping Stake Points
V	U	Survey / Mapping Combined Utilities

Figure CADD6.4 Status/Phase Field Codes

Status/Phase Field Codes	
A	Abandoned
D	Existing to Demolish
E	Existing to Remain
F	Future Work
M	Items to be moved
N	New Work
T	Temporary Work
X	Not in contract
1-9	Phase numbers

All layer names shall have the Level 1 discipline designator, a major group data field, and one minor group field.

The colors for each layer shall be consistent and all objects shall be drawn in color BYLAYER. Using BYLAYER will ensure all objects assigned to a specific layer should be the same color. Each layer shall use the appropriate Plot Style provided.

Layers shall fall into the following two categories:

- Model file layers
- Sheet file layers

Model file layers are designated for objects and information found within model files which are typically shared or referenced between other model files. Sheet file layers are designated for sheet-specific objects and information found within sheet files which are usually not shared or referenced between other files.

The following layering conventions shall be used:

- General Sheet File Layers – Used for sheet specific items on General Drawings, Detail Drawings and sheet title blocks.
- Surveying/Mapping Model File Layers – Used for existing items derived from maps or surveying placed in model space.
- Civil Model File Layers – Used for proposed Civil items in model space.

City Utilities Engineering (CUE) compiled a list of common layer names and assignments within model and sheet files to follow for the creation of drawings. Refer to the CUE [Standard Layer Lists](#).

CADD6.03 New Layers

The need to create a new layer can arise in cases when CUE custom-defined layers are not available. Drawings shall follow the layer format, requirements and pre-defined data field groups described in this section and NCS Version 5 to allow for ease of customization. All created layers shall be listed and be subject to CUE review for conformance.